

2023 ANNUAL WATER QUALITY REPORT

**FOR THE
SCILA LANDFILL
61-SDP-1-78P
WINTERSET, IOWA**

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Certification

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Section 1.0 Background Information

1.1 Report Format

Table 1 through Table 18 are attached to this report and satisfy the IDNR requirement to provide the tables to meet the IDNR format requirements included in Special Provision 4.h. of the Permit, dated December 11, 2023 (Doc #108426).

1.2 Report Priority

Sampling in accordance with Table 1 and Table 2 is recommended. It is recommended that detection, assessment, and corrective action monitoring continue in accordance with the approved HMSP as approved in Special Provision 4.a. of the Permit, dated December 11, 2023 (Doc #108426) and in the CAMP approved by IDNR on June 4, 2020 (Doc #97864). An Alternate Source Demonstration (ASD) related to metals at MW-28 has been completed and was confirmed on April 27, 2023 (Doc #106469). Based on the ASD, continued assessment monitoring is proposed at MW-28 in lieu of Assessment of Corrective Measures activities.

1.3 Period of Report Coverage

Water quality data evaluation is based on a running compilation of data beginning on September 23, 2014. Statistical evaluations herein are based on the most recent water quality data collected March 23, 2023; May 9, 2023; July 12, 2023; September 5, 2023; November 13, 2023; November 28, 2023, and December 6, 2023.

1.4 Current Site Map

Figure 1 and Figure 2 are attached illustrating the current site and property boundaries. Figure 3 is a Site Plan of the area of interest that features all monitoring well locations, and subsurface gas probe locations in relation to waste boundaries. Figure 4 is a Site Plan of the area of interest that highlights the approximate boundaries of the bedrock outcroppings and surfaces at the site. Phase 1 Cell A and Cell B expansion is constructed on the Ladore Shale surface. A Water contour Map for the Ladore Shale is included as Figure 5.

1.5 Site Status and Applicable Rules

Site Location

The SCILA Sanitary Landfill is located in NW1/4 Section 34, T76N, R27W, Madison County, Iowa. The facility is situated on Highway 92 midway between Winterset and Patterson, Iowa. The facility operates under the Iowa Department of Natural Resources (IDNR) Permit Number 61-SDP-1-78P.

Landfill Layout

The site is situated in the uplands above the Middle River valley to the south.

Expansion Areas are designated Cell 1 (2007), Cell 2 (2007), Cell 3 (2011), Cell 4 (2016), and Cell 5 (2018) in the western landfilling area. A contiguous closed landfill is situated to the west of the Subtitle D Landfill Cells 1 and 2 and north of Cell 5. Cell 1, Cell 2, Cell 3, Cell 4, and Cell 5 are actively receiving waste from the planning area.

The Cell A and Cell B of the Phase 1 Expansion Area was approved for waste acceptance on December 11, 2023 in Permit Revision 7 (Doc #108426).

Applicable Rules

Iowa Administrative Code (IAC) 567-113 is applicable to the site due to the contiguous nature of the Closed Landfill and the active areas (Cell 1, 2, 3, 4, and 5). IAC 567-113 is also applicable to the applicable Cell A and Cell B of the Phase 1 Expansion Area.

1.6 Summary of Hydrologic Monitoring System Plan (HMSP)

The HMSP sampling performed March 23, 2023; May 9, 2023; July 12, 2023; September 5, 2023; November 13, 2023; November 28, 2023, and December 6, 2023 conforms to Permit Provisions.

Water monitoring points and the gas monitoring network are illustrated on Figure 1, Figure 2, Figure 3, and Figure 4. Water Contour Maps are included as Figures 5, Figure 6, and Figure 11. Concentration summary maps are included as Figures 7, 8, 9, and 10 (Unconsolidated Formations - System #1) and as Figure 12, 13, and 14 (Exline Formation – System #4). The current HMSP is summarized in Table 1. The HMSP Implementation Schedule for 2024 is itemized in Table 2. A listing of all site monitoring points that currently exist on site is included in Appendix A.

MONITORING WELL MAINTENANCE PERFORMANCE REEVALUATION

Table 3 outlines the status of well performance and maintenance activities performed as required by IAC 567-113.10(2) f.

High & Low Water Levels

Current year water elevation data is included on Table 4. Historic water elevation data is included in the Table 4 Supplement. Water Contour Maps (Figures 6 and 11) dated September, 2023 are included with this report. The Water Contour Maps illustrates the water surfaces in the formations of interest at this site. Review of the 2023 data does not indicate excessive variability compared to historic water elevation data.

Well Depth & Sedimentation

Well depth measurements were made in September, 2023. Review of the well depth data included on Table 4 indicate that well sedimentation is estimated to be less than one (1) foot at all site monitoring wells.

Well Recharge Rates & Chemistry

The originally measured horizontal hydraulic conductivity testing results (2016 & 2020) for each site monitoring well is included on Table 4. Horizontal hydraulic conductivities ranged between 10^{-3} cm/sec and 10^{-7} cm/sec.

Field recovery data recorded for March 28, 2022 (on Table 4) indicates that the monitoring wells recover to at least 90% recovery within 6 to 24 hours after purging. The exception is at MW-32 and MW-14D, where greater than 24 hours was required for the wells to recover. Well recovery information indicates that recharge to the individual wells remained sufficient to promote collection of representative water quality samples and the wells were functioning as intended. Monitoring well recharge reevaluation is due biennially according to 113.10(2)"f", and should be evaluated again in 2024.

Based on the apparent static condition of the water table and the water surfaces across the site, the conclusions of the well recharge evaluation, and the existing water elevation database, it appears that the semi-annual water elevation data is sufficient to adequately monitor the hydrologic condition of the site. Therefore, it appears that the integrity of monitoring wells is intact (except MW-4), that the wells are appropriately located to detect impact from the fill, and that no changes in monitoring system are recommended.

MW-4 (aka MW-4A), MW-4B, and MW4C

The well heads at MW-4, MW-4B, and MW4C were severely damaged on March 5, 2022 by moving debris from a tornado that destroyed most structures on the site near MW-4, MW-4B, and MW4C. MW-4 is a background well for the facility and is still in need of repair or replacement. MW-4B and MW4C are retained for water elevation measurements. The well heads at MW-4B and MW-4C were repaired on August 7, 2023. MW-4C still has an obstruction in the casing at a depth of approximately 39.55 feet below top of casing (well depth is approximately 66 ft.). Water elevation data was recorded on September 5, 2023 and is included in this report.

GU-1

GU-1 tile is a monitoring point for the west lagoon as required by IDNR for demonstration that the west lagoon is not leaking. The lagoon is built on unconsolidated fill that was historically placed on top of the underlying bedrock. GU-1 tile is placed within the unconsolidated fill soils. GU-1 has been consistently recorded as dry since installation. The fact that GU-1 is dry is interpreted to be a positive finding and sufficiently demonstrates that the west lagoon liner has not leaked. This information is deemed to be more valuable and more immediately telling than recording water quality trends over time.

Cell A and Cell B, Phase 1 Expansion Area

Groundwater underdrains constructed in 2023 in the Phase 1 Expansion include GU-2, the underdrain located below the east lagoon, GU-A, the underdrain beneath Cell A, and GU-B, the underdrain beneath Cell B. Water samples were collected from each of the underdrains in November and December, 2023.

Monitoring wells MW-45A (completed in the Ladore Shale) and MW-45D (completed in the Exline Limestone) were constructed December 8, 2023. The five (5) monitoring points (GU-2, GU-A, GU-B, MW-45A, and MW-45D) in the Phase I Expansion Area are incorporated in the HMSP as approved in Special Provision 4.h. of the Permit, dated December 11, 2023 (Doc #108426). Water sampling (baseline) at GU-2, GU-A, and GU-B was initiated in November, 2023 prior to waste acceptance in Cell A or Cell B. Monitoring wells MW-45A and MW-45D were developed on January 8, 2024. Water quality sampling at MW-45A and MW-45D will be initiated in March, 2024.

Construction documentation of the groundwater underdrains is included in the Quality Control and Assurance Report (QC&A Report) for the “Phase 1, Cell A&B Expansion” (Doc #108364). Monitoring Well Construction Documentation for Monitoring Wells MW-45A and MW-45D was submitted January 11, 2024 (Doc # 108772).

Section 2.0 Reporting Period Monitoring Activities

A summary of the planned 2024 sample collection events at each monitoring point is included on Table 2. A comprehensive summary of all sampling episodes to date are included in the Table 2 Supplement. Field sampling data related to the March 23, 2023; May 9, 2023; July 12, 2023; September 5, 2023; November 13, 2023; November 28, 2023, and December 6, 2023 sampling episodes are included on the field forms (IDNR Form 542-1322) in Appendix B.

A comprehensive summary of Analytical Data for the episodes between March 25, 2008 and September 5, 2023 is included on Table 9.

Per the Permit dated December 11, 2023 (Doc #108426) the HMSP includes the following:

Glacial Till/Fill (System #1)

Background Points MW-4A, MW-18, and MW-38A.

Downgradient Point of Compliance (POC) Wells MW-1R, MW-6A (Bethany Falls), and MW-45A (Ladore Shale)

Downgradient Attenuation Zone (AZPOC) points MW-21, MW-44, Tile 1 (corrective action system), Tile 2 (corrective action system).

Groundwater Underdrain Points GU-1 (west lagoon), GU-2 (east lagoon), GU-A (Cell A), and GU-B (Cell B).

Exline Limestone Formation (System #4)

Background MW-11C, MW-39D, MW-41D, and MW-42D

Downgradient POC MW-14D, MW-17R, MW-28, and MW-45D

Surface Water Monitoring (System #5)

Background SW-1

Downgradient POC SW-2B

Supplemental Groundwater Monitoring Wells

MW-8B (Unconsolidated). Cobalt SSL – AZPOC is MW-21

MW-9AR (Unconsolidated). Cobalt, cis-1,2-dichloroethylene, and Vinyl Chloride SSLs – AZPOC is Tile 1 & Tile 2

MW-15R (Unconsolidated). Arsenic SSL – AZPOC is MW-44

Passive Engineered Conveyance Structure

SW-102

Corrective Action Monitoring Points

MW-31

MW-32

Leachate Well LW-26

Passive Landfill Gas Vents (Vents) 1-6

It is recognized that GU-2, GU-A, GU-B, and MW-45A are completed in the Ladore Shale and may require consideration of a separate groundwater monitoring system based on the baseline water quality collected from the Ladore Shale sampling points in 2023 and 2024. Similarly, intrawell statistical methods may be appropriate to the Ladore system, since baseline water quality will be established at the underdrains prior to acceptance of waste in Cell A and Cell B.

2.1 Current Detection Monitoring Activities/Sampling Requirements

Till/Bedrock Interface - Background wells MW-4A, MW-18, and MW-38A, along with downgradient well MW-1R (POC), monitoring well MW-21 (AZPOC), monitoring well MW-45A (POC), west lagoon underdrain GU-1 (POC), east lagoon underdrain GU-2 (POC), Cell A underdrain GU-A (POC), and Cell B underdrain GU-B (POC), remain in detection monitoring.

Exline Bedrock System - Background wells MW-11C, MW-39D, MW-41D, and MW-42D and downgradient monitoring well MW-45D remain in detection monitoring.

Surface Water System - Surface water sampling points SW-1 (background) and downgradient SW-2B remain in detection monitoring.

2.2 Current Assessment Monitoring Activities
Till/Bedrock Interface – MW-6A (POC) and MW-44 (AZPOC) are included in the Assessment Monitoring Program.

Exline Bedrock System –MW-14D (POC), MW-17R (POC), and MW-28 (POC) are in the Assessment Monitoring Program.

2.3 Current Corrective Action Activities
MW-8B, MW-9AR, and MW-15R are Supplemental wells within the originally defined plumes that are included in the Corrective Action Monitoring System. Tile 1 (AZPOC – Corrective Action System) and Tile 2 (AZPOC – Corrective Action System) are discharges from the corrective action remedy (groundwater cutoff tile).

Additional monitoring points are included in the approved Corrective Action Monitoring System; Tile 1, Tile 2, MW-31, MW-32, LW-26, and Vents 1-6.

2.4 Passive Engineered Conveyance Structure (PECS)
The Passive Engineered Conveyance Structure (PECS) performance is monitored for VOC at SW-102.

Section 3.0 Data Evaluation and Summary

Statistical Evaluations are prepared by Otter Creek Environmental Services for each monitoring episode. The Groundwater Statistics Report for the South Central Iowa Landfill, First Semi-Annual Monitoring Event in 2023, dated April, 2023 is included in Appendix C.1. The Groundwater Statistics Report for the South Central Iowa Landfill, Second Semi-Annual Monitoring Event in 2023, dated September, 2023 is included in Appendix C.2.

The Analytical Reports for the laboratory testing of the March 23, 2023; May 9, 2023; July 12, 2023; September 5, 2023; November 13, 2023; November 28, 2023, and December 6, 2023 sampling episodes are included in Appendix D.

QUALITY ASSURANCE/QUALITY CONTROL

A blind duplicate sample was collected at MW-39D during the March 23, 2023 sampling episode. A blind duplicate was collected at MW-44 during the September 5, 2023 sampling episode. The purpose of the field duplicate is to evaluate the precision of sample collection and analysis process from the field through the laboratory. The calculation of the Relative Percent Difference (RPD) for duplicate pair results is used as the means to evaluate the precision.

The Quality Control (QC) limit for the RPD on field duplicates is established at thirty percent (30%) for duplicate pairs that have reported concentrations five (5) times greater than the laboratory Reporting Limit. For samples and respective duplicates with reported analyte concentrations nearer the Reporting Limit, the RPD calculations demonstrate greater variability and the RPD can be very large. RPD values are considered non-representative in the following conditions:

- a) Both the original and the duplicate results are less than five (5) times the Reporting Limit.
- b) One or both results are qualified, flagged, or estimated.
- c) A result is non-detected.

The results of the blind duplicate and the monitoring well results (both March 23, 2023 and September 5, 2023) were within the limits established and indicate that the data quality is acceptable without restriction.

BACKGROUND DATA VALIDATION

On July 10, 2014 an unnumbered Permit Amendment and Memo was issued by the IDNR regarding turbidity (Doc # 80699). A TSS and Field Turbidity Evaluation Report was prepared and submitted on January 28, 2015 (Doc# 82349) and was approved by IDNR on May 5, 2015 (Doc #83305). The approved TSS and Field Turbidity Evaluation Report includes a requirement to evaluate and sort data within the background data pool and retain only data that is validated as appropriate.

“No-Purge” sample methods were employed at this site beginning September 23, 2014. The background data for sample collection episodes that occurred prior to September 23, 2014 have been removed in accordance with IDNR requests to do so. A summary table of field measured turbidity is included in Appendix E.

Upgradient Data, Table 1, Attachment B (shallow groundwater); Upgradient Data, Table 1, Attachment D (bedrock groundwater); and Upgradient Data, Table 1, Attachment F (surface water) included in the September, 2023 Statistical Evaluation Report (Appendix C.2) includes a summary of the background data. The site prediction limits established in the 2023 Statistical Evaluation Reports (Appendix C.1 and C.2) are based on the validated background. The calculated Site Prediction Limits are in Table 5.

SITE SPECIFIC GWPS

Table 5 includes the comparison of the site prediction limits to the published IAC 567, Chapter 137 Statewide Standard. The instances where the Prediction Limit exceeds the published IAC 567, Chapter 137 Statewide Standard are highlighted in yellow in Table 5.

Previously approved Site-Specific GWPS include the following:

Shallow System

<u>Compound</u>	<u>Site-Specific GWPS</u>	<u>IAC 137 GWPS</u>
Arsenic	40.66 ug/L	10.0 ug/L
Cobalt	7.2 ug/L	2.1 ug/L

Exline System

<u>Compound</u>	<u>Prediction Limit</u>	<u>IAC 137 GWPS</u>
Antimony	10.9 ug/L	6.0 ug/L
Cobalt	5.4 ug/L	2.1 ug/L

The Site-Specific GWPS should not be set lower than the Site Prediction Limit calculated from the site background data. For this report, the values itemized above are utilized as the Site-Specific GWPS for the respective HMSP Systems. For all other compounds the published IAC 567, Chapter 137 Statewide Standard are utilized as the GWPS. Site-Specific GWPS are included on Table 7, 8, and 10.

SUPPLEMENTAL WELL EVALUATION

Supplemental Wells MW-8B, MW-9AR, and MW-15R are not evaluated statistically. Time series trend analyses are evaluated at MW-8B, MW-9AR, and MW-15R to observe changes in water quality over time.

Time Series plots illustrate the trends in Supplemental Wells MW-8B, MW-9AR, and MW-15R and are included in Attachment F of The Groundwater Statistics Report for the South Central Iowa Landfill, Second Semi-Annual Monitoring Event in 2023, dated September, 2023 (Appendix C.2).

STATISTICALLY SIGNIFICANT INCREASE (SSI) EVALUATION

The detected concentrations of each compound are compared to the site prediction limit for each respective compound calculated based on the background data set. In detection monitoring wells, a detected concentration for a compound that is in excess of the calculated site prediction limit is recorded as a Statistically Significant Increase (SSI). In 2023 there was a new SSI recorded at MW-14D for cobalt and at MW-44 for barium. MW-14D and MW-44 were moved to the assessment monitoring system. There were no other SSI recorded at the downgradient monitoring wells included in the detection monitoring system.

In assessment monitoring wells, the exceedances are not required to be reported as SSI. A running summary of recorded exceedances of the prediction limit is included in Appendix F.

Table 6 is a summary of all compounds at site monitoring wells that have exceeded a *current* prediction limit in 2023. Table 7 includes brown highlighted values that signify detected concentrations that exceeded the prediction limits (SSI) over time at the assessment monitoring wells.

This report serves as notice to the operating record in accordance with IAC 567-113.10(5)c.

ASSESSMENT MONITORING SUMMARY

Assessment monitoring is required to be repeated annually per IAC 567-113.10(6)b. However, a five (5) year full Appendix II sampling frequency is approved (in Special Provision 4.f. of the Permit, dated December 11, 2023 (Doc #108426)) where at least two (2) full Appendix II samples have been collected.

Full rounds of Appendix II assessment monitoring have been completed at MW-6A (2 episodes), MW-8B (3 episodes), MW-9A/9AR (4 episodes), MW-15/15R (2 episodes), MW-14D (2 episodes), MW-17R (3 episodes), Tile 1 (2 episodes), Tile 2 (2 episodes), MW-28 (2 episodes).

Appendix II detections (beyond the Appendix I list) have **not** been detected above laboratory method detection limits, with the single exception of bis(2-ethylhexyl) phthalate (9.0 ug/L) at MW-9A in September, 2010; bis(2-ethylhexyl) phthalate (12.0 ug/L) at MW-15 in March, 2017; bis(2-ethylhexyl) phthalate (55.0 ug/L) at MW-6A in March, 2019; bis(2-ethylhexyl) phthalate (7.0 ug/L) at MW-6A in March, 2020, and bis(2-ethylhexyl) phthalate (13.0 ug/L) at MW-17R in March, 2022 .

Based on the results to date, the detection of bis (2-ethylhexyl) phthalate occurs as isolated events and has not yet been detected at more than one (1) well during any given sampling event. The request to discontinue bis (2-ethylhexyl) phthalate sampling at assessment and corrective action monitoring points, except during the required full Appendix II sampling events on the five (5) year frequency was approved by IDNR on June 9, 2017 (Doc #89661).

The summary of assessment monitoring detections to date is presented in Appendix G. The full Appendix II sampling episodes are highlighted in green in the tables in Appendix G.

STATISTICALLY SIGNIFICANT LEVEL (SSL) EVALUATION

The compounds with detections that exceed site prediction limits (see summary in Table 1) are utilized to calculate the Confidence Interval (the 95% lower confidence limits (LCL) and the 95% upper control limits (UCL)) in accordance with the 2009 Unified Guidance for Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities by US EPA. The 95% LCL values are compared to applicable GWPS. Any 95% LCL value that exceeds an applicable GWPS is recorded as an SSL. All wells with a recorded SSL require the plume of impact to be defined in the horizontal and vertical directions and require completion of an Assessment of Corrective Measures (ACM). The exception to this statement is MW-28. An Alternate Source Determination (ASD) has been completed at MW-28 and the inorganic compounds detections at MW-28 are attributed to the reducing conditions documented in the subsurface near MW-28. The ASD was completed in late 2021 (Doc #102120) has been confirmed in the field in 2022 (Doc #104138) and in 2023 (Doc # 106469) as required.

The SSL Evaluation is based on data for each downgradient monitoring well. The Confidence Intervals (95% LCL and 95% UCL) are calculated during each statistical evaluation based on the most recent four (4) data points. The 95% LCL evaluation is presented in Table 7.

The 95% LCL values at assessment/corrective action monitoring wells are below the applicable Site Specific GWPS or Statewide Standards published in IAC 567, Chapter 137, except where highlighted in yellow in Table 7.

Based on the evaluations to date and review of Table 7, the following are identified:

Attenuation Zone Point of Compliance (AZPOC) Wells

95% LCL Exceedances in 2023 at MW-21 – None

95% LCL Exceedances in 2023 at Tile 1 – None

95% LCL Exceedances in 2023 at Tile 2 – Vinyl Chloride (9/14/2021 only)

95% LCL Exceedances in 2023 at MW-44 – None

Point of Compliance Wells

There were no new 95% LCL Exceedances at any POC wells.

Alternate Source Demonstration (ASD) Findings MW-28

Elevated detections of arsenic, barium, cobalt, and nickel are recorded at MW-28, and the cobalt concentrations yield 95% LCL concentrations above the GWPS. However, the elevated inorganic compound detections are attributed to the reducing conditions documented in the subsurface near MW-28. The reducing conditions are characterized by low dissolved oxygen concentrations, and a negative ORP. Low pH is also documented at MW-28 and facilitates the release of inorganics from the mining spoils present at MW-28. Based on the ASD, the assessment of corrective measures are not warranted at MW-28. Due to the on-going detection of low-level (below the GWPS) concentrations of VOC at MW-28 (cis-1,2-dichloroethylene and vinyl chloride), MW-28 is maintained in the assessment monitoring program at the site.

ASSESSMENT OF CORRECTIVE MEASURES

The initial Assessment of Corrective Measures report related to MW-9A was submitted July 1, 2011. Revision of the ACM for the area near MW-9A and near MW-8B was submitted in March, 2017 (Doc #88918) and a Supplement was submitted September 11, 2019 (Doc #95931) that addressed MW-8B, MW-9AR, and MW-14D. The ACM report was approved by IDNR on October 11, 2019 (Doc #96104).

The arsenic impact at MW-15R was incorporated into the approved ACM on August 14, 2023 (Doc # 107470).

CORRECTIVE ACTION MONITORING & EVALUATIONS

The corrective measure was selected by SCILA on January 15, 2020 and the final Corrective Action Plan (CAP) and Corrective Action Monitoring Plan (CAMP) was submitted January 24, 2020. The CAP/CAMP was approved by IDNR on June 4, 2020 (Doc #97864). The Corrective Action includes Monitored Natural Attenuation coupled with the construction of six (6) passive landfill gas vents along the west edge of the waste mass. The six (6) vents were constructed August 17, 2020 and August 18, 2020. Construction documentation for the six (6) vents was submitted on September 11, 2020 (Doc # 98442) and was approved September 25, 2020 (Doc #98526).

The arsenic impact at MW-15R was assessed and incorporated into the remedy (Monitored Natural Attenuation coupled with the construction of six (6) passive landfill gas vents along the west edge of the waste mass) in 2023. The Corrective Action Plan (CAP)/Corrective Action Monitoring Plan (CAMP) were revised and submitted on August 3, 2023 (Doc #107390) to address the arsenic at MW-15R. The revised CAP/CAMP was approved by IDNR on August 14, 2023 (Doc #107470).

The Confidence Intervals of Attenuation Zone Point of Compliance (AZPOC) Wells are utilized to determine the success of the Corrective Measures (Monitored Natural Attenuation) implemented June 4, 2020 at Supplemental Wells MW-8B, MW-9AR, and MW-15R. As noted previously, Tile 2 recorded a 95% LCL that exceeded the GWPS (SSL) for vinyl chloride on 9/14/2021.

The 95% UCL evaluation for Tile 2 is presented in Table 8. The green highlights in Table 8 indicate the 95% UCL values for vinyl chloride that exceed the GWPS.

Table 10 represents the summary of the recorded SSI and SSL over time at Tile 2. Table 11 includes the evaluation of the corrective action trends over time.

Note that there are no ACM or corrective measures required at Tile 2 based on the SSL. Tile 2 is the collected groundwater discharge from the corrective action for the facility. The discharge from Tile 2 is directed to the Passive Engineered Conveyance System (PECS) and is successfully treated.

Evaluation of Cobalt at Supplemental Well MW-8B and AZPOC MW-21

Based on recorded data, there is no SSI for cobalt at MW-21 (Table 7). The remedy is considered complete as of June, 2023 (three years following selection of the remedy).

Evaluation of Cobalt, Cis-1,2 DCE, and Vinyl Chloride at Supplemental Well MW-9AR and AZPOC Tile 1 & Tile 2

The 95% LCL value for cobalt, cis-1,2-dichloroethylene, and vinyl chloride at Tile 1 are below the GWPS. The 95% LCL value for cobalt and cis-1,2-dichloroethylene, at Tile 2 are also below the GWPS.

Only the 95% LCL/95% UCL value for vinyl chloride at Tile 2 remains above the GWPS. This indicates that additional time is required until the remedy can be considered complete at MW-9AR.

The detection of VOC at Tile 1 and Tile 2 is expected, as the sample collection points represent the outfall of the cut-off trench and groundwater collection tile installed to truncate the VOC migration route, to release migrating gas, and to actively remedy the release near MW-9AR. The remedy is documented as effective, but not yet complete.

The performance of the Passively Engineered Conveyance System (PECS) to treat the VOC impacts at Tile 1 and Tile 2 is demonstrated to be effective as all VOC at PECS sampling point (SW-102) are undetected and reported as below the MRL (Table 12).

Evaluation of Arsenic at Supplemental Well MW-15R and AZPOC MW-44

Based on recorded data, there are no SSI for arsenic at MW-44 (Table 7). If the water quality at MW-44 remains the same, the remedy at MW-15R will be complete in August of 2026 (three years following selection of the remedy).

Corrective Action Monitoring Plan Findings

Corrective Action Monitoring has been on-going at MW-31 and MW-32 (Table 13). Corrective Action Monitoring at Leachate Well LW-26 was initiated in 2020 (Table 14). Monitoring of landfill gas at Vents 1-6 was initiated in 2020 (Table 15). The required annual Corrective Action Monitoring of dissolved methane, ethane, ethene and alkalinity and pH at LW-26 and Supplemental Wells (MW-8B, MW-9AR) was initiated in 2020 (Table 16). Corrective Action Monitoring of dissolved methane, ethane, ethene and alkalinity and pH at Supplemental Well MW-15R started in 2023.

At MW-31 and MW-32 (Table 13) the detected VOC compound concentrations in 2020-2023 are below the applicable GWPS (Statewide Standards published in IAC 567, Chapter 137).

CAMP monitoring events at LW-26 (Table 14) indicates that historically ammonia (as nitrogen) and cobalt were detected at concentrations that exceed GWPS, but did not exceed the GWPS in 2022. In 2023, the detected concentrations of ammonia and cobalt at LW-26 were slightly above the GWPS. To date there is insufficient data to ascertain any long-term trends in the data.

Monitoring events have been ongoing (quarterly) since 2020 at landfill gas Vents 1-6 (Table 15). Review of the data indicates gas concentrations (%LEL) indicate a slightly increasing trend at all vents, except Vent #1. The data is still considered preliminary and is anticipated to change over time.

Five (5) rounds of monitoring for dissolved methane, ethane, ethene and alkalinity and pH have been completed as part of the CAMP (Table 16). Trends are not established, but do not appear to be increasing. It is noted that ethane and ethene are undetected at all monitoring points (LW-26, MW-8B, MW-9AR, MW-14D, and MW-15R). Only one (1) round of data is available at MW-15R to date.

Section 4.0 Leachate Collection System Performance Evaluation

Between January 1, 2023, and December 31, 2023, staff reported that approximately 1,825,000 gallons of leachate were recirculated to Cells 1, 2, 3, 4, and 5 in accordance with Special Provision X.5 of the July 12, 2021 SDP Permit. Dates and reported volumes of leachate recirculation are included on the Daily/Weekly Leachate Recirculation Log forms for 2023 in Appendix H.1.

A revised Leachate Recirculation Operation Plan was submitted to IDNR on August 27, 2018 (Doc #93043) and approved in Special Provision X.5 in SDP Permit dated December 11, 2023 (Doc #108426). Note that, in accordance with the Leachate Recirculation Operation Plan, compliant measurements from LW-101 were taken weekly during recirculation in 2023 and leachate thickness at LW-101 was recorded at less than 1' during recirculation activities. The date of measurement of LW-101 is included on the Daily/Weekly Leachate Recirculation Log forms for 2023 in Appendix H.1 and in Table 17.

The facility also has an Authorization to Discharge leachate at the Des Moines Metropolitan Wastewater Reclamation Authority (WRA); however, no leachate was disposed of at the WRA in 2023.

RCRA Subtitle D Cells 1, 2, 3, 4, and 5 LCP

The leachate collection system in Cell 1 and Cell 2 was completed in July, 2007. Cell 1 and Cell 2 were approved for waste deposition by IDNR on August 3, 2007. The leachate collection system in Cell 3 was completed in October, 2011. Cell 3 was approved for waste deposition by IDNR on October 25, 2011. The leachate collection system in Cell 4 was completed in September, 2016. Cell 4 was approved for waste deposition by IDNR on September 15, 2016. The leachate collection system in Cell 5 was completed in August, 2018. Cell 5 was approved for waste deposition by IDNR on August 20, 2018. A leachate head monitoring point (LPZ-101) is constructed near the lowest point of Cell 1, 2, 3, 4, and 5. LPZ-101 measurements are recorded in Table 17 and demonstrate that less than one (1.0) foot of leachate head was recorded in LPZ-101 during all measurement events in 2023.

RCRA Subtitle D Phase 1, Cell A & Cell B

Leachate head piezometers were constructed in Cell A (LPZ-A) and Cell B (LPZ-B). Measurements were initiated on January 8, 2024 and will be reported in the 2024 Annual Water Quality Report. The supplemental leachate measurement data outlined in Special Provision 2.f. of the SDP Permit dated December 11, 2023 (Doc #108426) was not necessary in 2023.

Closed Landfill LCP

In December, 2010 five (5) leachate wells designated LW-21 through LW-25 were installed in satisfaction of Special Provision 2.b. of the SDP Permit. Leachate well LW-1E existed prior to December, 2010 but was not useable as the extraction pump was stuck in the well. Efforts to remove this pump were unsuccessful, and LW-1E was replaced by LW-26 in October, 2015.

Dedicated leachate extraction pumps have been installed in each LW with leachate conveyance piping also installed to each LW. The leachate conveyance piping conveys leachate from the leachate extraction wells to the leachate storage lagoon. Construction documentation on the leachate conveyance piping and pumping system for LW-21 through LW-25 was submitted to IDNR on September 26, 2013 and approved in Permit Amendment #7 dated December 2, 2013. Construction documentation for LW-26 was submitted to IDNR on November 13, 2015. The documentation for the construction of LW-26 and abandonment of LW-1E was incorporated into the permit on April 15, 2016. Figure 1 in the body of the report illustrates the location of the leachate head monitoring points.

Prior to 2015, the extraction wells were only operated seasonally due to the exposed leachate discharge piping at each well head. Pitless adaptors were installed at each LW in September and October, 2015 to move the discharge piping below the frost line and allow year round operation of the extraction wells.

PVC piping (1-inch or 2-inch diameter) was installed in LW-21, -22, -23, -24, and -25 in August, 2013 and in LW-26 during construction of LW-26 in 2015. The PVC piping allows measurement of leachate elevations in the wells when the pumps, discharge piping, electrical wire, etc. are installed. The monthly leachate head monitoring point measurements are recorded in Table 17.

In the late fall of 2020 separate electric supply lines were installed from the control panel to LW-21 and LW-22. The separate electric services were installed in order to eliminate the recurring overload (and tripped circuit) experienced on the original service line that supplied both LW-21 and LW-22.

On August 17, 2020 the main supply service line to the control panel for the extraction well pumps (located near LW-24) was severed during construction of Landfill Gas Vent #4. Repair of the main supply line was hindered by the inability to get electric materials and equipment during the pandemic. Repair of the main supply line was completed on December 3, 2020.

Review of leachate elevation data in the leachate wells (Table 17) indicates fluctuating leachate thicknesses in the first one-half of 2023 in LW-21, LW-23, LW-25, and LW-26 due to ongoing operational issues with the pumps. New pumps and controls for the leachate wells were ordered in November, 2022 with delivery in March, 2023. The pumps and controls were installed in June, 2023 and began operation. It was discovered on July 12, 2023 that the pumps at LW-21 and LW-26 were not operating. Several months were required to properly diagnose the problem with the controls at LW-21 and LW-26. The equipment supplier and the installation contractor eventually determined that the controls at LW-21 and LW-26 had a corrupted configuration file in the system firmware. On December 14, 2023, the configuration files were replaced and the pumping systems at LW-21 and LW-26 began operation. The January 8, 2024 measurements at LW-21 and LW-26 demonstrate that the leachate surface has been lowered at LW-21 and LW-26 since the December 14, 2023 start-up.

The LCSPE will again be reevaluated in the 2024 AWQR as required by rule.

Leachate Storage System

Leachate collected at the site is stored in either the east or west leachate storage lagoons. Both the east and the west leachate lagoons are constructed with a Subtitle D composite liner.

The west lagoon has a capacity of approximately 651,000 gallons. The lagoon was constructed in 2013 and use of the lagoon was approved by IDNR in Permit Amendment #7 dated December 2, 2013.

The east lagoon was constructed in 2023 in the Phase 1 Expansion Area and has a capacity of 1,005,700 gallons. The lagoon was approved by IDNR in Permit dated December 11, 2023 (Doc #108426).

Leachate Line Cleaning

The leachate gravity collection and conveyance lines in the Subtitle D composite lined area are illustrated in the Figure in Appendix I. The leachate lines were cleaned in January, 2021. As per IDNR regulations, the lines should be cleaned every 3 years (next cleaning will be scheduled for 2024).

Section 5.0 Gas Monitoring

Explosive gas monitoring per 113.9(2) and the approved GMSP was conducted quarterly during the last reporting period (2023). Recorded gas concentrations are below actionable levels. Note that the GMSP includes new monitoring points based on the final construction of the new office/scale house and the new equipment shop. Additionally, underdrains were constructed in Cell A and Cell B of the Phase I Expansion and below the new leachate storage lagoon. The new buildings and the new gas monitoring points GU-2, GU-A, and GU-B were monitored starting in December, 2023.

Explosive gas concentrations are recorded as percent lower explosive limit (% LEL) and were undetected or below action levels at all points during the monitoring episodes. A Summary table of gas monitoring is as Table 18.

Section 6.0 Recommendations

Sampling in accordance with Table 2 is recommended. It is recommended that detection, assessment, and corrective action monitoring continue in accordance with the approved HMSP.

Based on the Alternate Source Demonstration completed at MW-28 for metals (including cobalt), we recommend continued detection/assessment water quality monitoring at MW-28 for 2023 and beyond. Water Quality at MW-28 should continue to be evaluated, along with the site conditions that justify the Alternate Source of cobalt impact, until the statistical evaluation can be augmented with intrawell statistics (in 2026 when 13 data points are available).

We recommend that MW-14D and MW-44 be assigned to the assessment monitoring program starting in 2024.

We recommend that MW-9AR remain in the HMSP as a Supplemental Well until the cobalt, cis-1,2-dichloroethylene, and vinyl chloride concentrations diminish. The remedy will be considered complete when vinyl chloride concentrations at Tile 1 and Tile 2 demonstrate compliance with water quality standards for three (3) years (estimated 2030).

We recommend that MW-8B remain in the HMSP as a Supplemental Well, but the remedy be considered complete.

We recommend that MW-15R remain in the HMSP as a Supplemental Well until the arsenic concentrations diminish. The remedy will be considered complete when arsenic concentrations at MW-44 demonstrate compliance with water quality standards for three (3) years (estimated 2026).

Continue to monitor the operation of the new leachate extraction equipment in the leachate extraction wells.

Figures

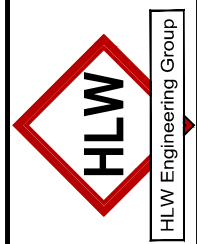


FIGURE: 1

REVISION	NO.	DATE
DRAWN	DRA	PROJECT NO. 6022
		DATE 1-22-24

SITE PLAN - AERIAL
SOUTH CENTRAL IOWA SANITARY LANDFILL
WINTERSET, IOWA

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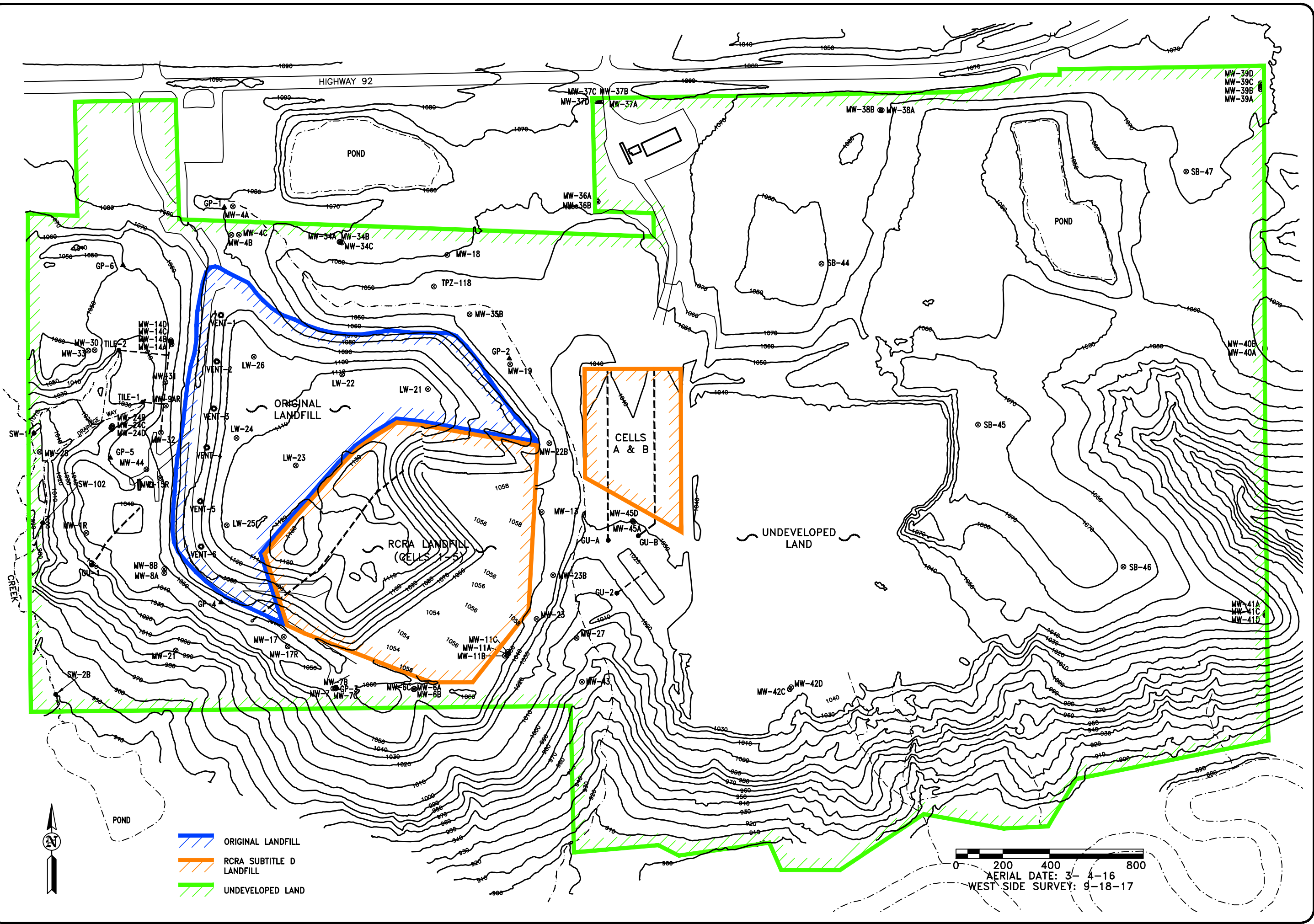
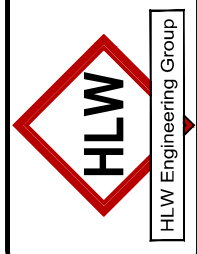


FIGURE: 2

REVISION	NO.	DATE
DRAWN	6022	1-22-24
DRA		

SITE PLAN - TOPO
SOUTH CENTRAL IOWA SANITARY LANDFILL
WINTERSET, IOWA

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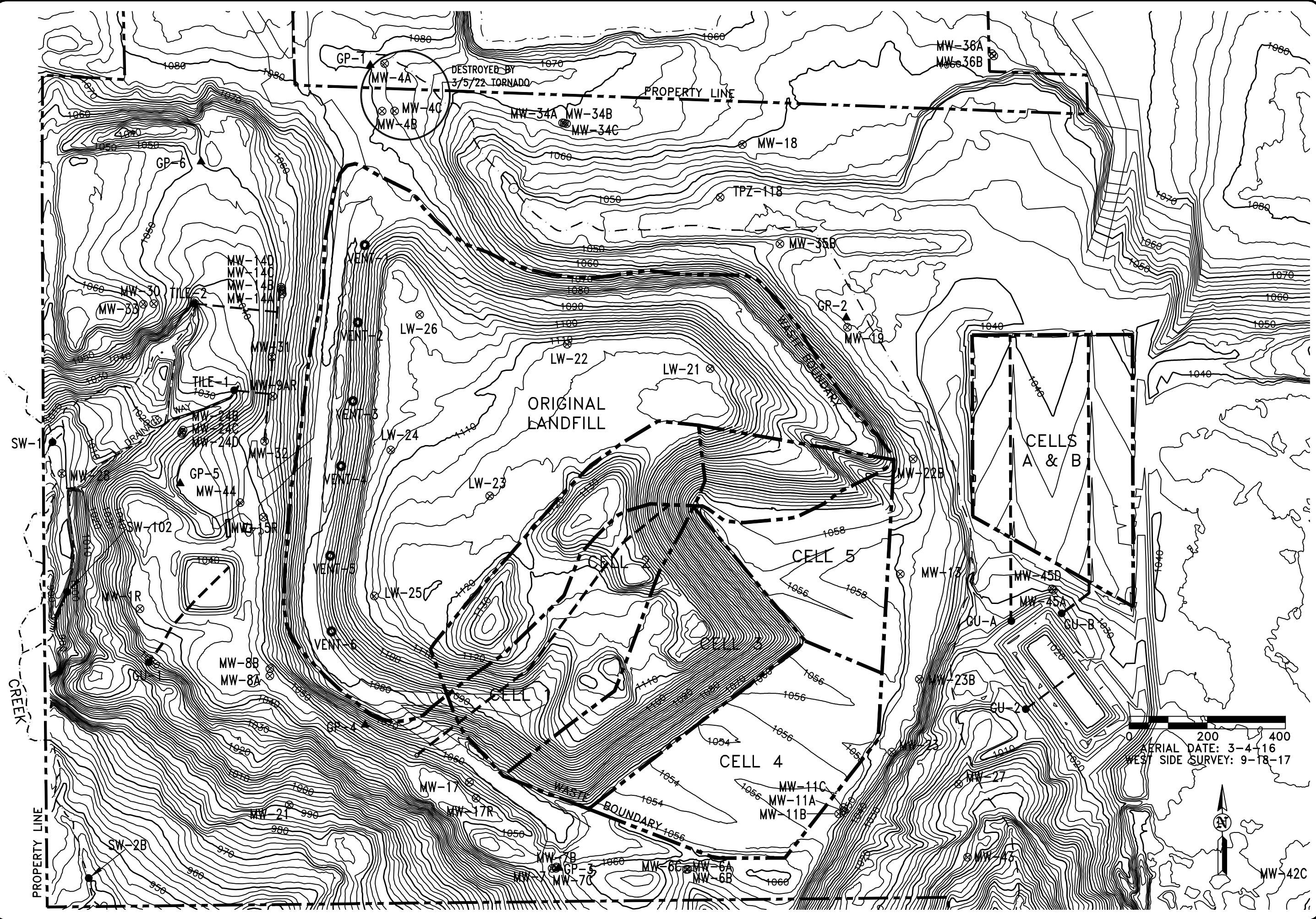
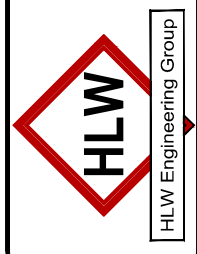


FIGURE: 3

REVISION	NO.	DATE
DRAWN	PROJECT NO.	DATE
DRA	6022	1-22-24

SITE PLAN OF INTEREST
AREA OF INTEREST
 SOUTH CENTRAL IOWA SANITARY LANDFILL
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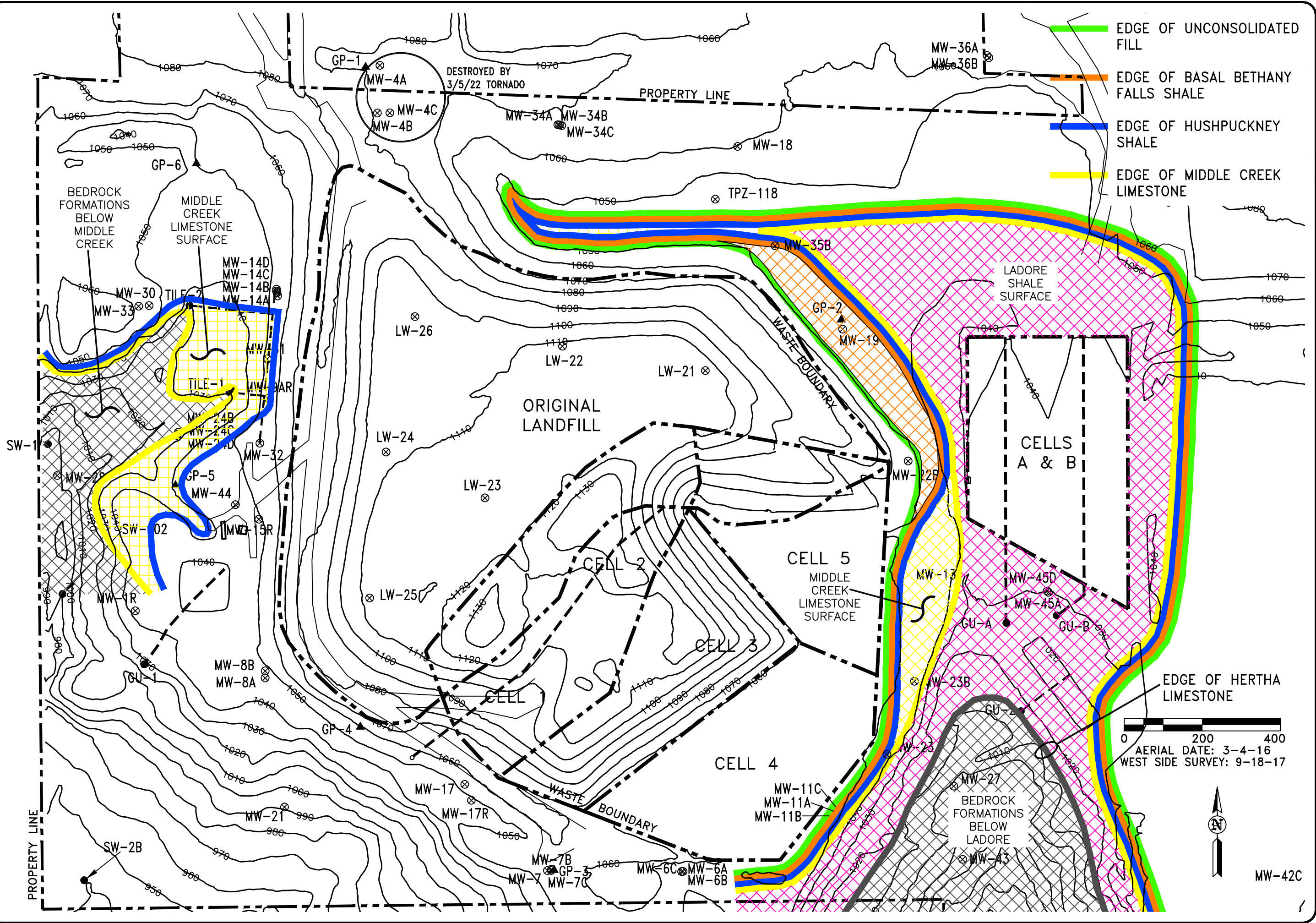
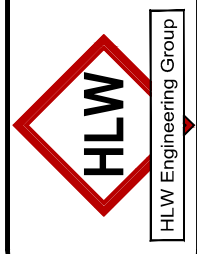


FIGURE: 4

REVISION	NO.	DATE
DRAWN	PROJECT NO.	DATE
DRA	6022	1-22-24

**SITE PLAN
WITH BEDROCK OUTCROPPING
SOUTH CENTRAL IOWA SANITARY LANDFILL
WINTERSET, IOWA**

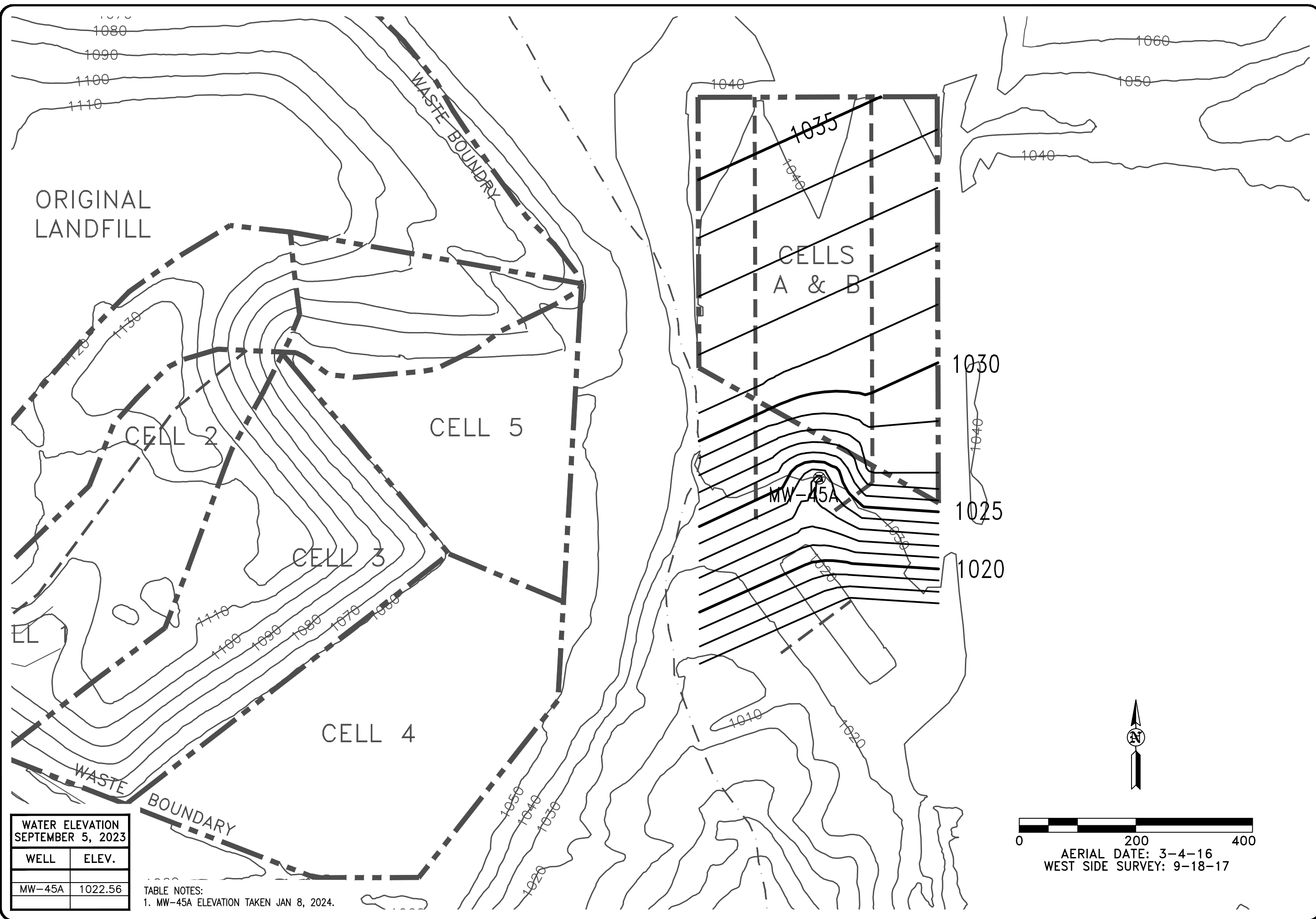
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 Story City, Iowa 50248
 Phone: (515) 733-4144
 FAX: (515) 733-4146



0 200 400
 AERIAL DATE: 3-4-16
 WEST SIDE SURVEY: 9-18-17



MW-42C



WATER ELEVATION SEPTEMBER 5, 2023	
WELL	ELEV.
MW-45A	1022.56

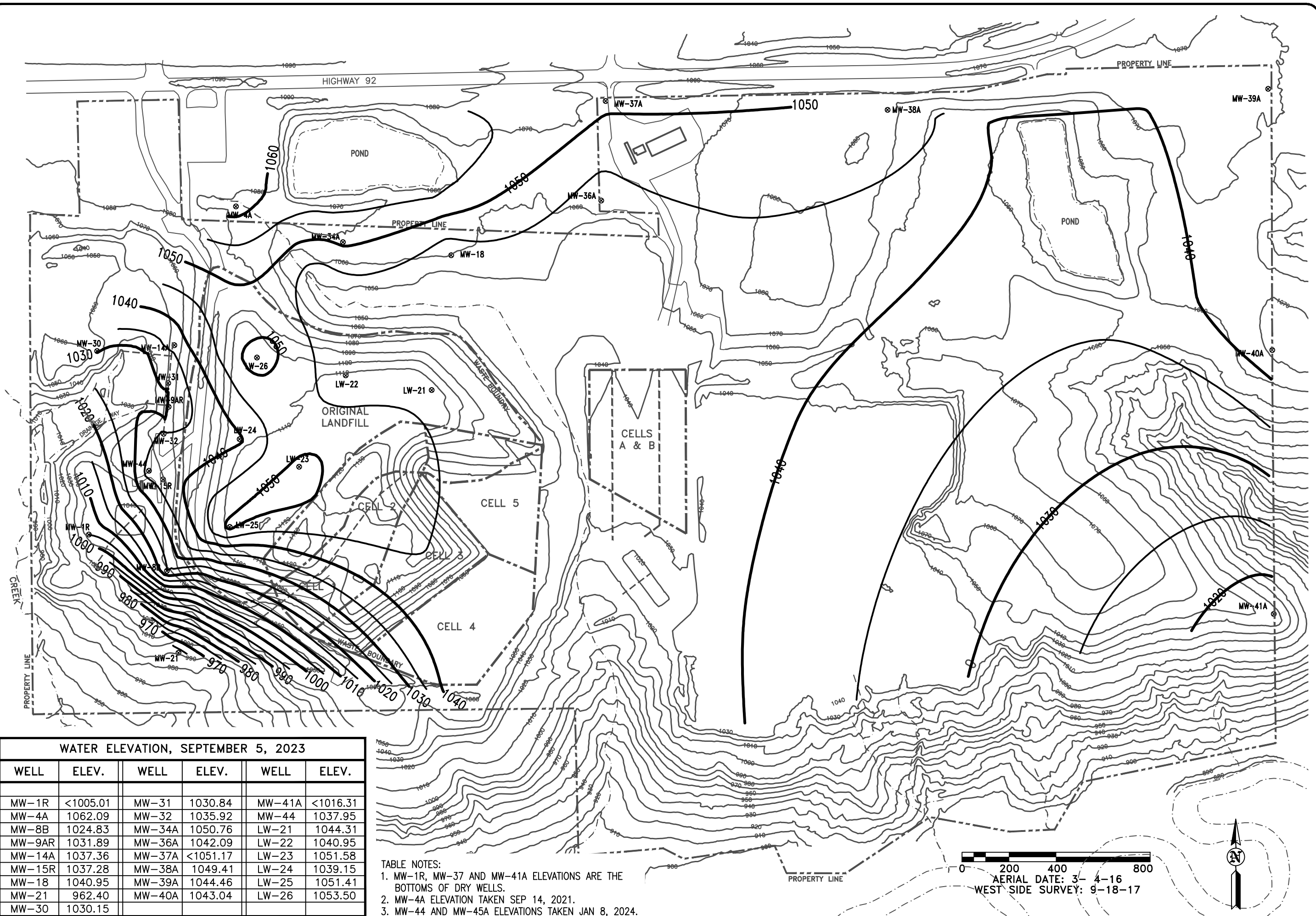
TABLE NOTES:
1. MW-45A ELEVATION TAKEN JAN 8, 2024.

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2023 GROUNDWATER CONTOURS
GROUNDWATER SYSTEM #6
LADORE SHALE
SOUTH CENTRAL IOWA SANITARY LANDFILL
WINTERSET, IOWA

REVISION	NO.	DATE
DRAWN	PROJECT NO.	DATE
DRA	6022	1-22-24

FIGURE: 5



WATER ELEVATION, SEPTEMBER 5, 2023

WELL	ELEV.	WELL	ELEV.	WELL	ELEV.
MW-1R	<1005.01	MW-31	1030.84	MW-41A	<1016.31
MW-4A	1062.09	MW-32	1035.92	MW-44	1037.95
MW-8B	1024.83	MW-34A	1050.76	LW-21	1044.31
MW-9AR	1031.89	MW-36A	1042.09	LW-22	1040.95
MW-14A	1037.36	MW-37A	<1051.17	LW-23	1051.58
MW-15R	1037.28	MW-38A	1049.41	LW-24	1039.15
MW-18	1040.95	MW-39A	1044.46	LW-25	1051.41
MW-21	962.40	MW-40A	1043.04	LW-26	1053.50
MW-30	1030.15				

TABLE NOTES:

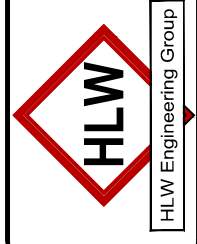
- MW-1R, MW-37 AND MW-41A ELEVATIONS ARE THE BOTTOMS OF DRY WELLS.
- MW-4A ELEVATION TAKEN SEP 14, 2021.
- MW-44 AND MW-45A ELEVATIONS TAKEN JAN 8, 2024.

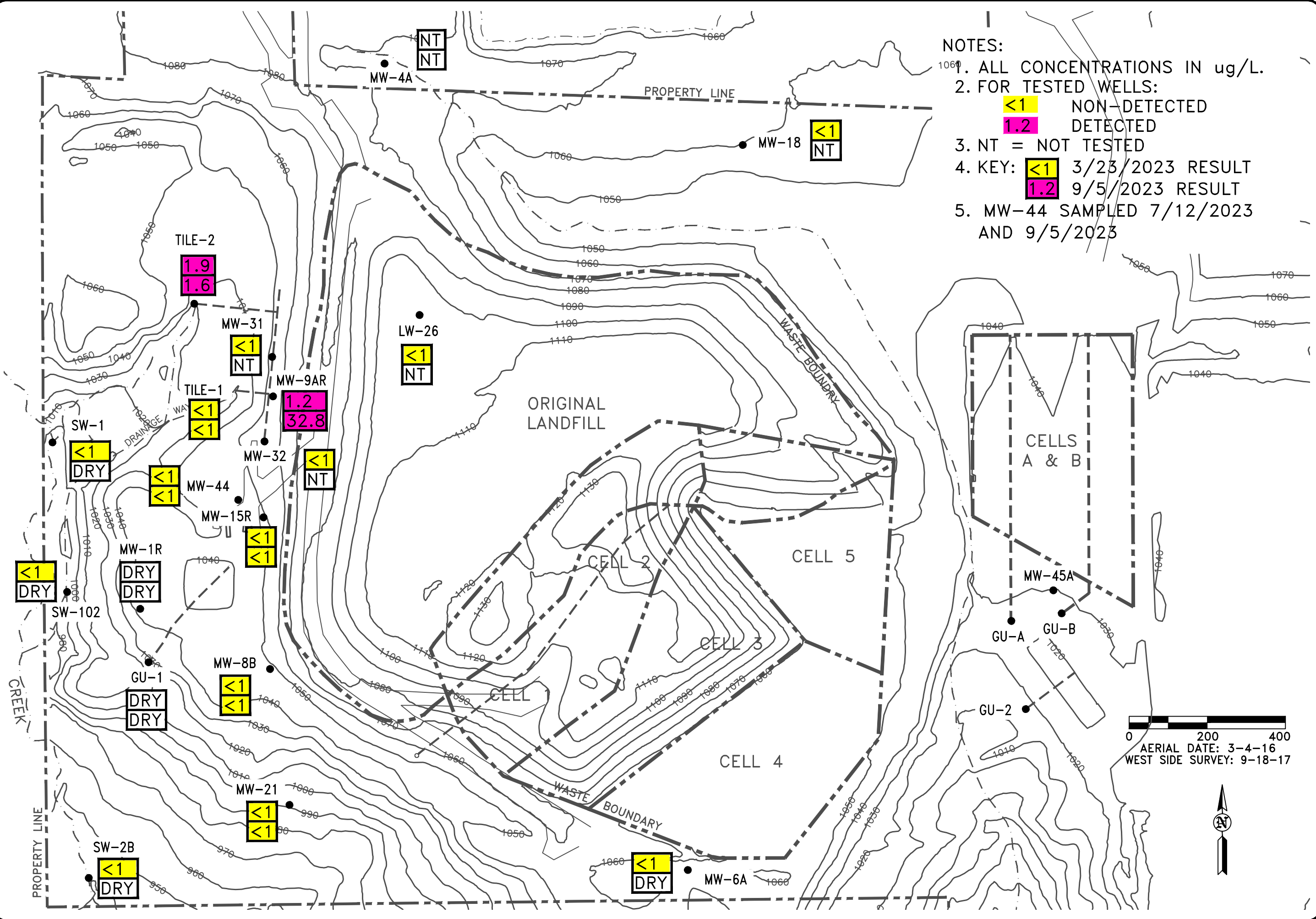
FIGURE: 6

REVISION	NO.	DATE
DRAWN	PROJECT NO. 6022	DATE 1-22-24
DRA		

2023 GROUNDWATER CONTOURS UNCONSOLIDATED SYSTEM #1 TILL/FILL
SOUTH CENTRAL IOWA SANITARY LANDFILL WINTERSET, IOWA

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 FAX: (515) 733-4146





- NOTES:
1. ALL CONCENTRATIONS IN ug/L.
 2. FOR TESTED WELLS:
<1 NON-DETECTED
1.2 DETECTED
 3. NT = NOT TESTED
 4. KEY: <1 3/23/2023 RESULT
1.2 9/5/2023 RESULT
 5. MW-44 SAMPLED 7/12/2023 AND 9/5/2023



REVISION		NO.	DATE
DRAWN		PROJECT NO.	DATE
DRA		6022	1-22-24

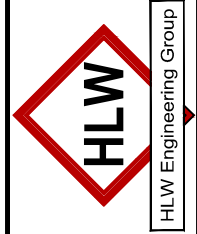
FIGURE: 7

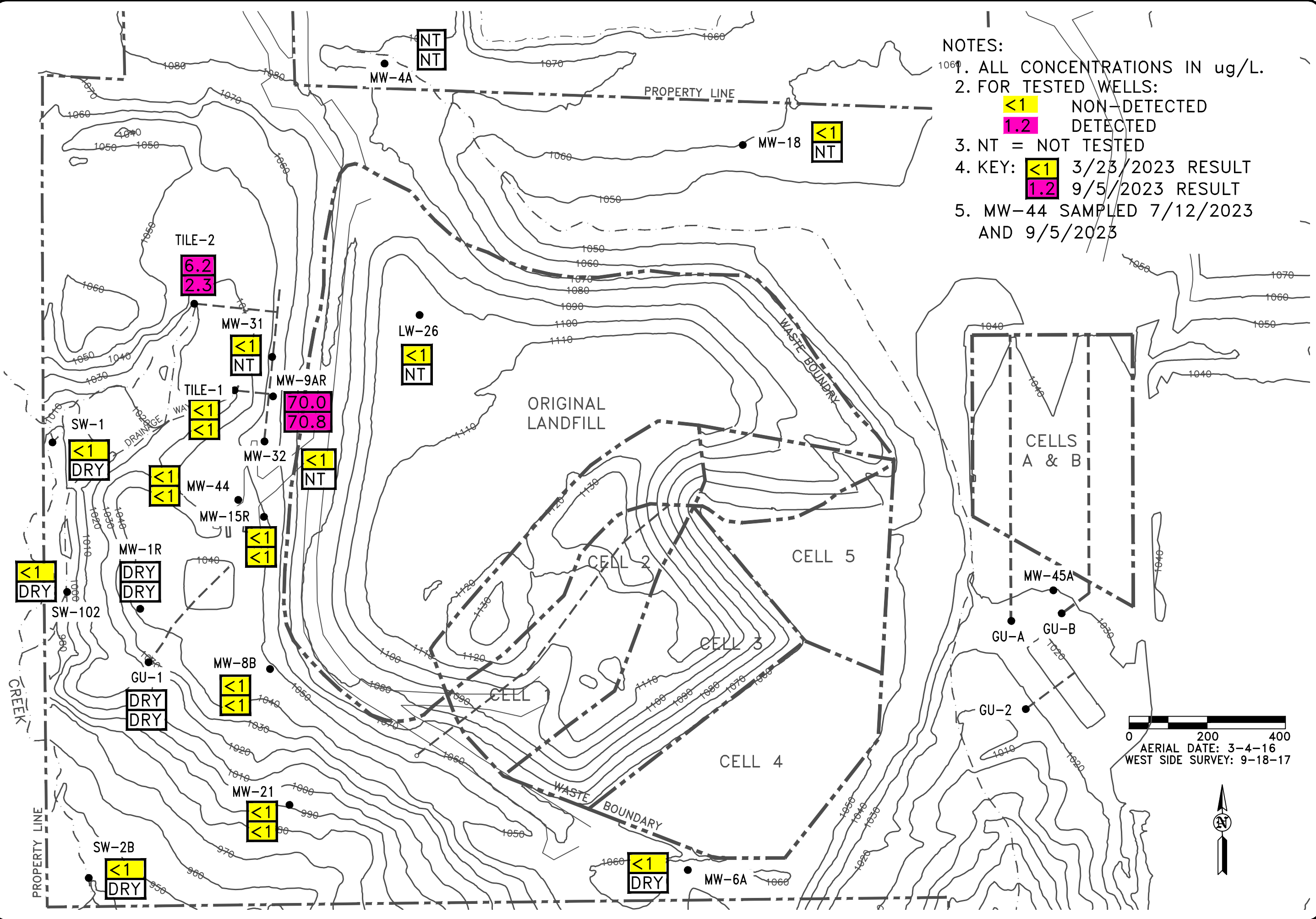
**2023 CONCENTRATION SUMMARY
UNCONSOLIDATED SYSTEM #1**

VINYL CHLORIDE

**SOUTH CENTRAL IOWA SANITARY LANDFILL
WINTERSET, IOWA**

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 FAX: (515) 733-4146





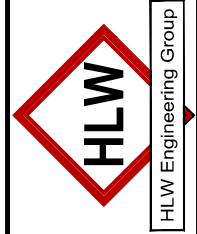
- NOTES:
1. ALL CONCENTRATIONS IN ug/L.
 2. FOR TESTED WELLS:
<1 NON-DETECTED
1.2 DETECTED
 3. NT = NOT TESTED
 4. KEY: <1 3/23/2023 RESULT
1.2 9/5/2023 RESULT
 5. MW-44 SAMPLED 7/12/2023 AND 9/5/2023

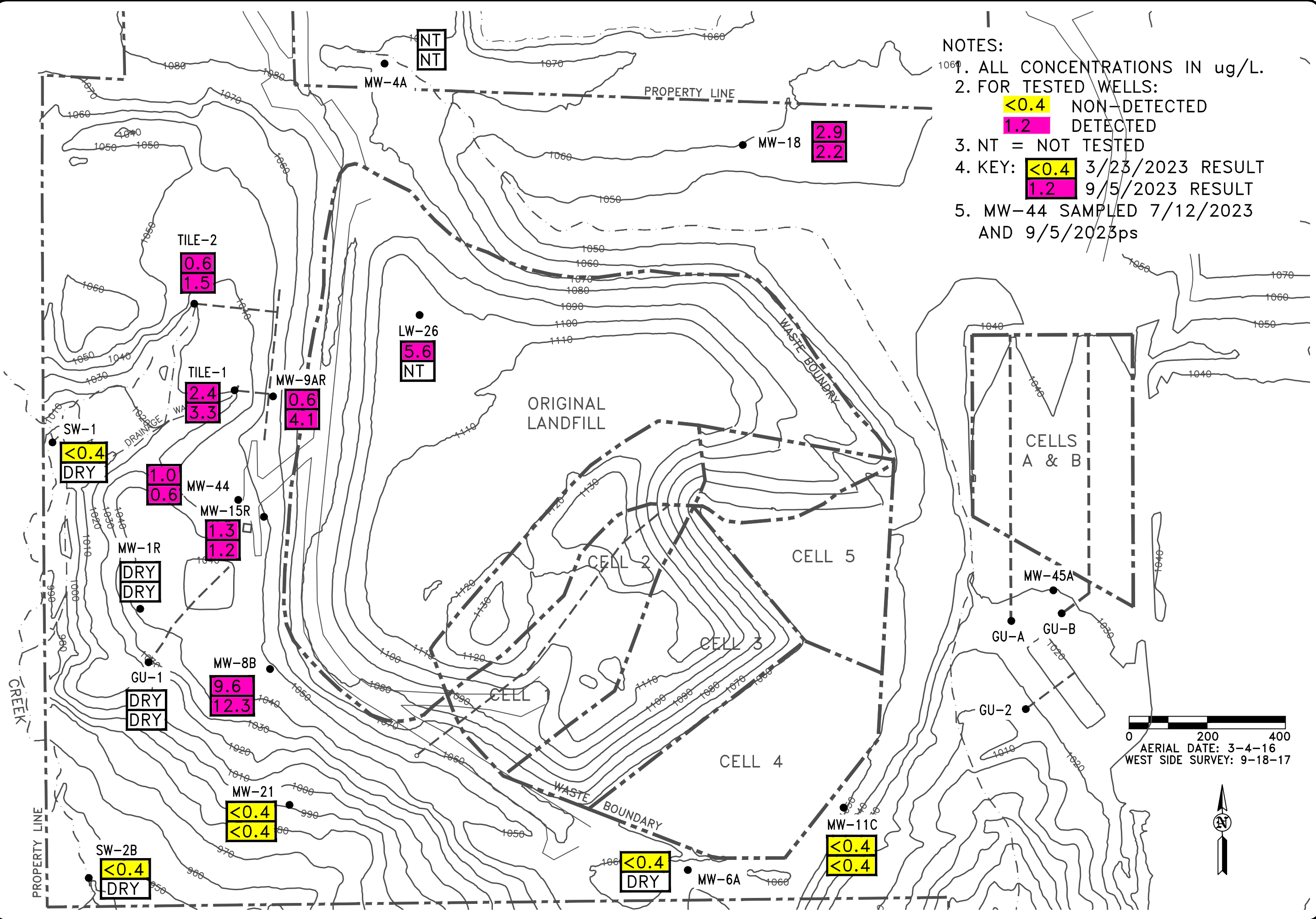


REVISION		NO.	DATE
DRAWN		PROJECT NO.	DATE
DRA		6022	1-22-24

FIGURE: 8
2023 CONCENTRATION SUMMARY
UNCONSOLIDATED SYSTEM #1
CIS-1,2 DICHLOROETHANE
SOUTH CENTRAL IOWA SANITARY LANDFILL
WINTERSET, IOWA

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 FAX: (515) 733-4146





- NOTES:
1. ALL CONCENTRATIONS IN ug/L.
 2. FOR TESTED WELLS:
<0.4 NON-DETECTED
1.2 DETECTED
 3. NT = NOT TESTED
 4. KEY: <0.4 3/23/2023 RESULT
1.2 9/5/2023 RESULT
 5. MW-44 SAMPLED 7/12/2023 AND 9/5/2023ps

0 200 400
 AERIAL DATE: 3-4-16
 WEST SIDE SURVEY: 9-18-17



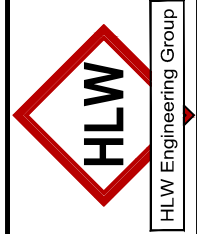
REVISION		NO.	DATE
DRAWN		PROJECT NO.	DATE
		DRA	6022
			1-22-24

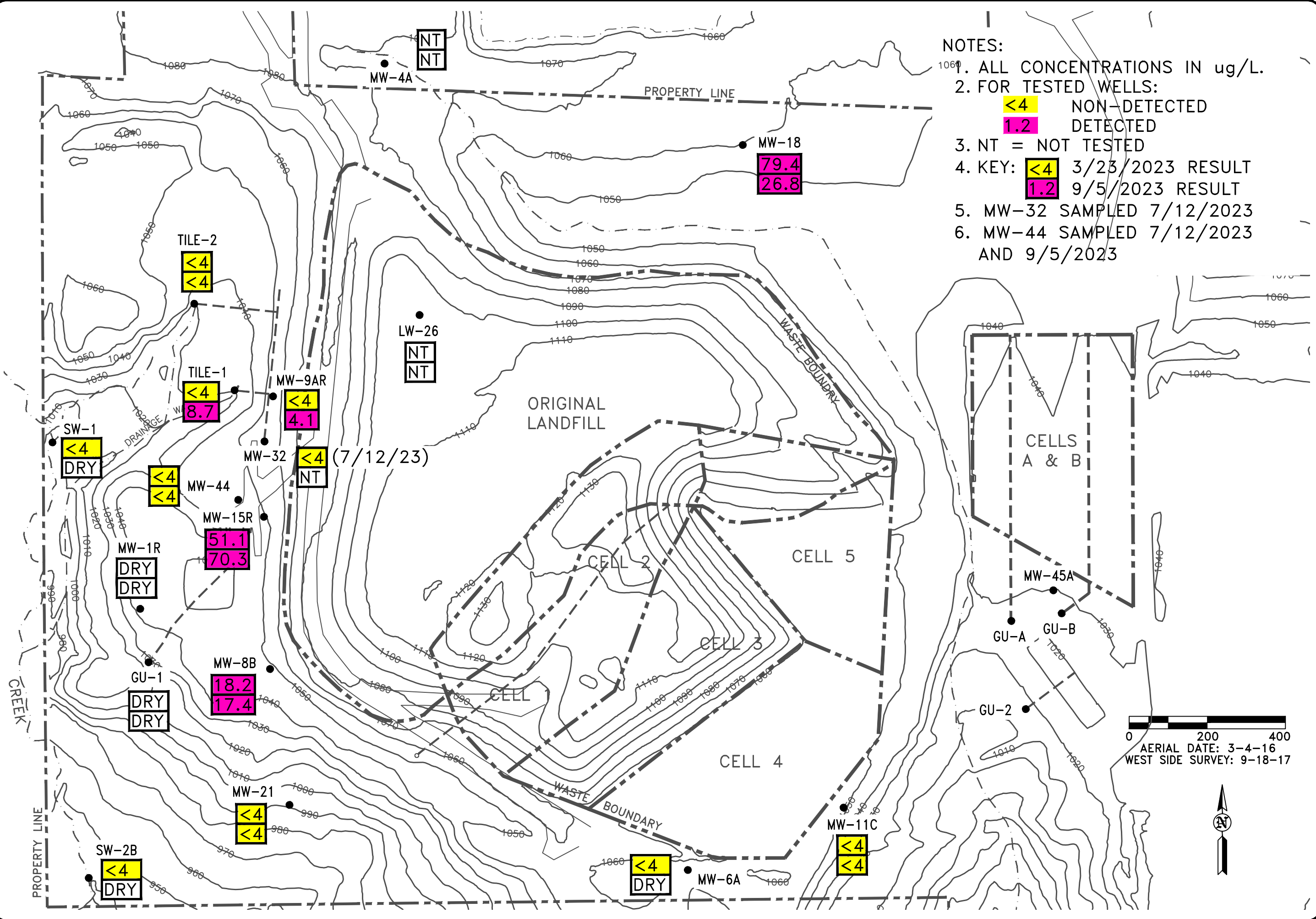
FIGURE: 9

**2023 CONCENTRATION SUMMARY
 UNCONSOLIDATED SYSTEM #1
 COBALT**

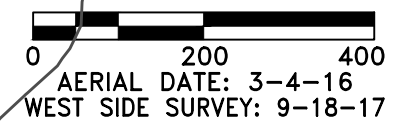
SOUTH CENTRAL IOWA SANITARY LANDFILL
 WINTERSET, IOWA

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 Story City, Iowa 50248
 Phone: (515) 733-4144
 FAX: (515) 733-4146





- NOTES:
1. ALL CONCENTRATIONS IN ug/L.
 2. FOR TESTED WELLS:
<4 NON-DETECTED
1.2 DETECTED
 3. NT = NOT TESTED
 4. KEY: <4 3/23/2023 RESULT
1.2 9/5/2023 RESULT
 5. MW-32 SAMPLED 7/12/2023
 6. MW-44 SAMPLED 7/12/2023 AND 9/5/2023



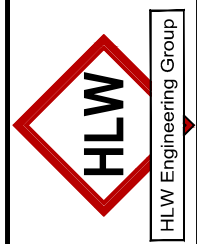
REVISION		NO.	DATE
DRAWN		PROJECT NO.	DATE
		DRA	6022
			1-22-24

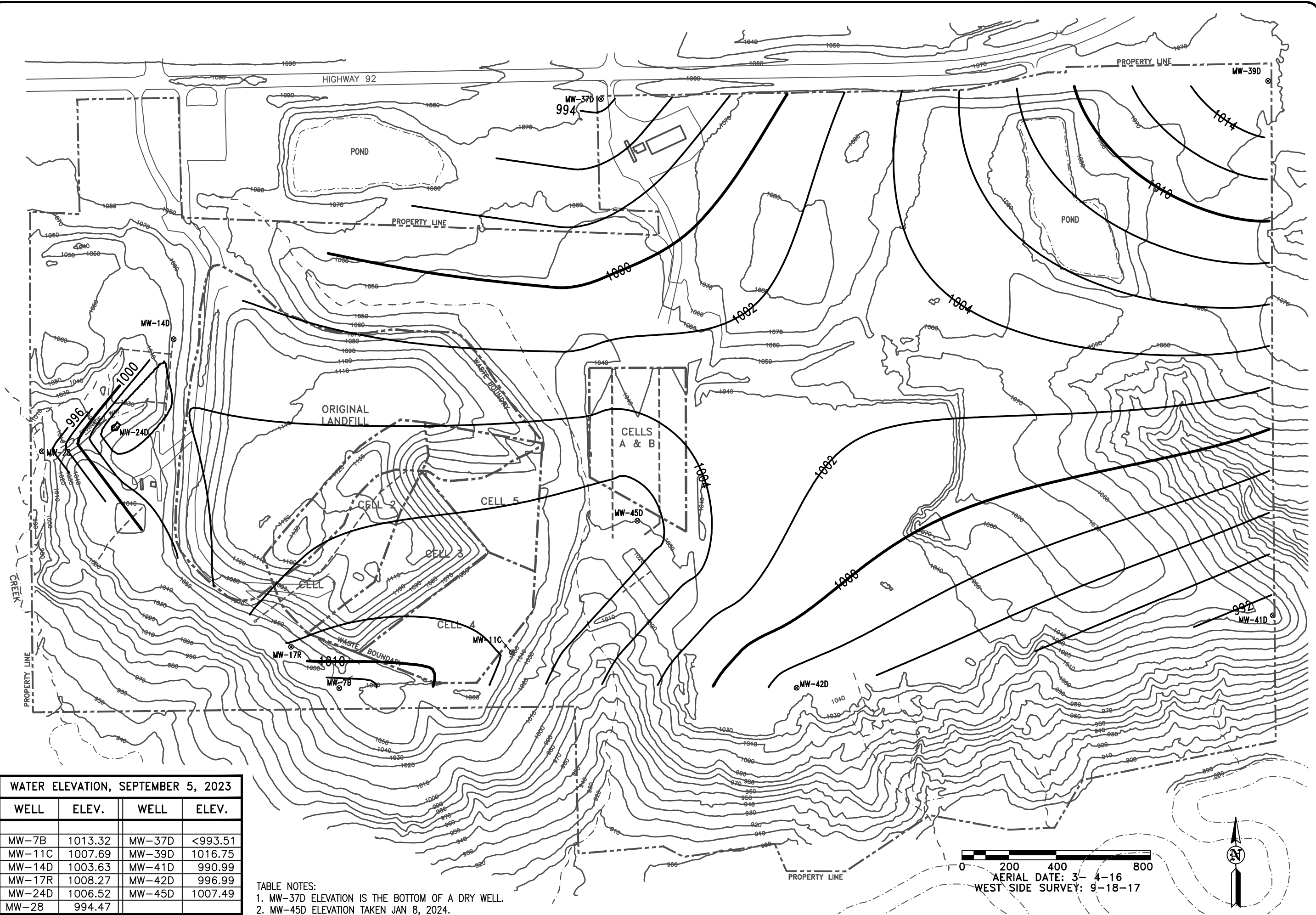
FIGURE: 10

**2023 CONCENTRATION SUMMARY
UNCONSOLIDATED SYSTEM #1
ARSENIC**

SOUTH CENTRAL IOWA SANITARY LANDFILL
WINTERSET, IOWA

HLW Engineering Group
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WATER ELEVATION, SEPTEMBER 5, 2023

WELL	ELEV.	WELL	ELEV.
MW-7B	1013.32	MW-37D	<993.51
MW-11C	1007.69	MW-39D	1016.75
MW-14D	1003.63	MW-41D	990.99
MW-17R	1008.27	MW-42D	996.99
MW-24D	1006.52	MW-45D	1007.49
MW-28	994.47		

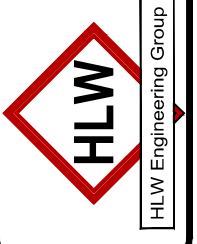
TABLE NOTES:
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 2. MW-45D ELEVATION TAKEN JAN 8, 2024.

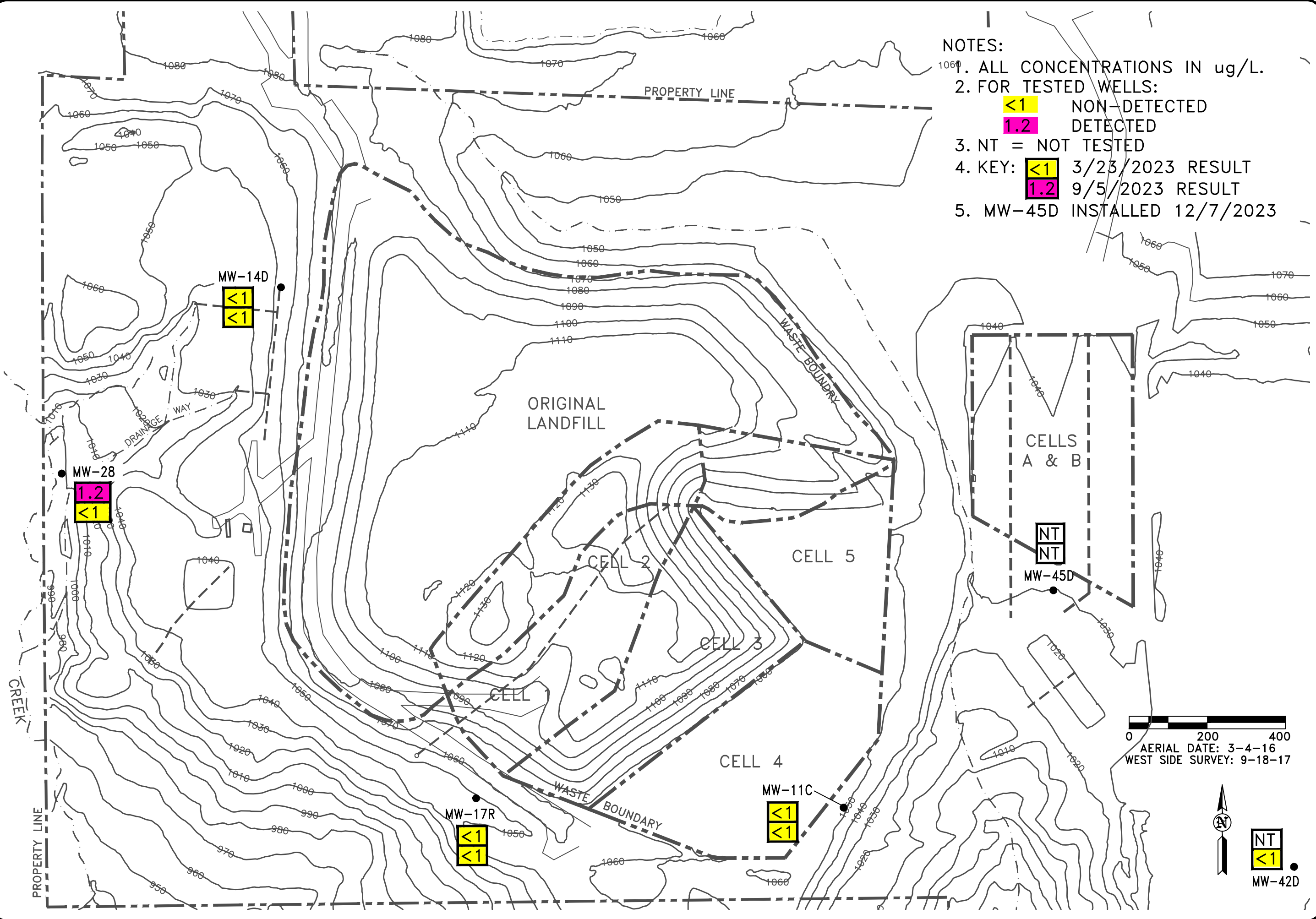
FIGURE: 11

REVISION	NO.	DATE
DRAWN	6022	1-22-24

2023 GROUNDWATER CONTOURS
 GROUNDWATER SYSTEM #4
 EXLINE LIMESTONE
 SOUTH CENTRAL IOWA SANITARY LANDFILL
 WINTERSET, IOWA

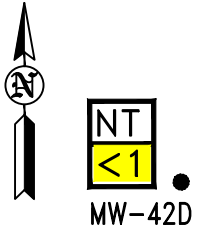
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 Story City, Iowa 50248
 Phone: (515) 733-4144
 FAX: (515) 733-4146





- NOTES:
1. ALL CONCENTRATIONS IN ug/L.
 2. FOR TESTED WELLS:
<1 NON-DETECTED
1.2 DETECTED
 3. NT = NOT TESTED
 4. KEY: <1 3/23/2023 RESULT
1.2 9/5/2023 RESULT
 5. MW-45D INSTALLED 12/7/2023

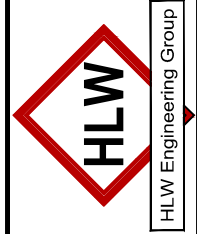
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 AERIAL DATE: 3-4-16
 WEST SIDE SURVEY: 9-18-17

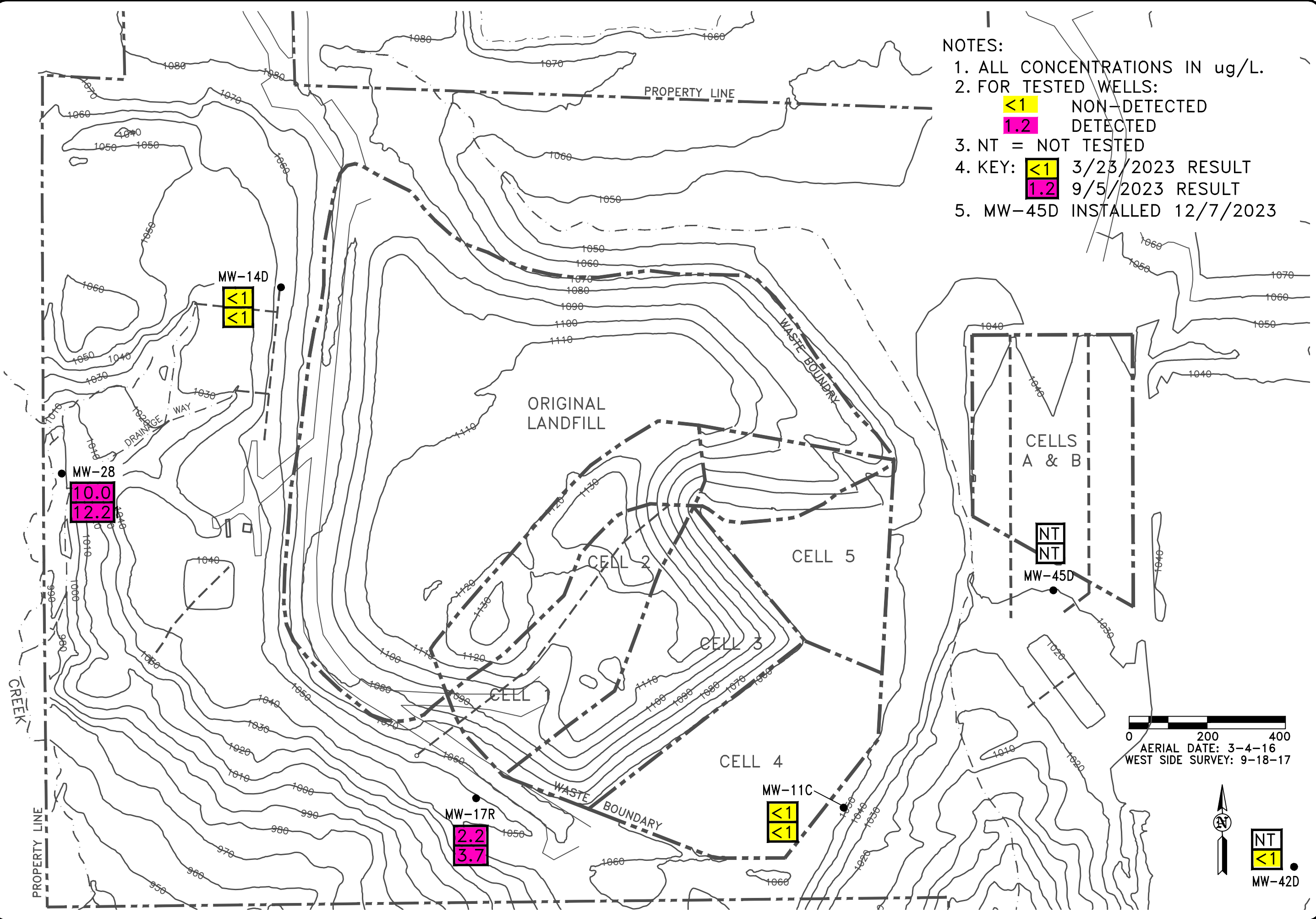


REVISION		NO.	DATE
DRAWN		PROJECT NO.	DATE
DRA		6022	1-22-24

FIGURE: 12
 2023 VINYL CHLORIDE IMPACT
 GROUNDWATER SYSTEM #4
 EXLINE LIMESTONE
 SOUTH CENTRAL IOWA SANITARY LANDFILL
 WINTERSET, IOWA

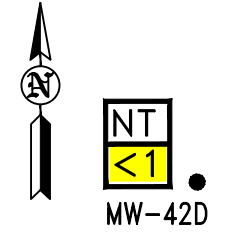
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 FAX: (515) 733-4146





- NOTES:
1. ALL CONCENTRATIONS IN ug/L.
 2. FOR TESTED WELLS:
<1 NON-DETECTED
1.2 DETECTED
 3. NT = NOT TESTED
 4. KEY: <1 3/23/2023 RESULT
1.2 9/5/2023 RESULT
 5. MW-45D INSTALLED 12/7/2023

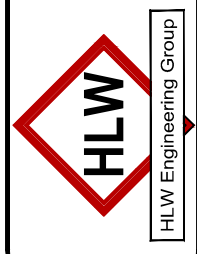
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 AERIAL DATE: 3-4-16
 WEST SIDE SURVEY: 9-18-17

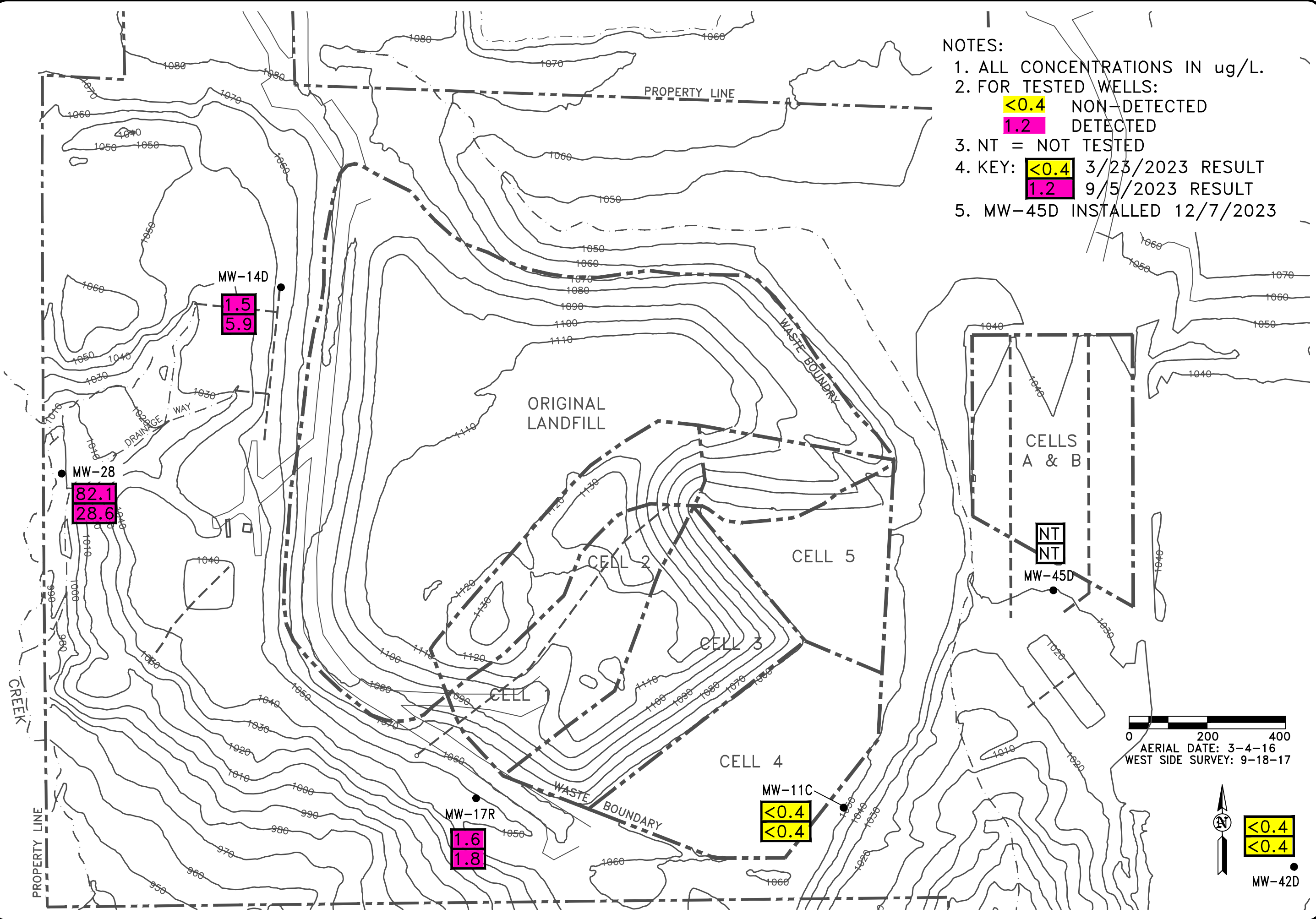


REVISION		NO.	DATE
DRAWN		PROJECT NO.	DATE
DRA		6022	1-22-24

FIGURE: 13
 2023 CIS-1,2 DICHLOROETHANE
 GROUNDWATER SYSTEM #4
 EXLINE LIMESTONE
 SOUTH CENTRAL IOWA SANITARY LANDFILL
 WINTERSET, IOWA

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- NOTES:
1. ALL CONCENTRATIONS IN ug/L.
 2. FOR TESTED WELLS:
<0.4 NON-DETECTED
1.2 DETECTED
 3. NT = NOT TESTED
 4. KEY: <0.4 3/23/2023 RESULT
1.2 9/5/2023 RESULT
 5. MW-45D INSTALLED 12/7/2023

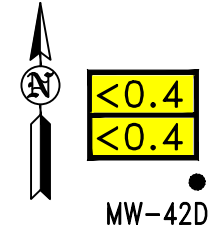
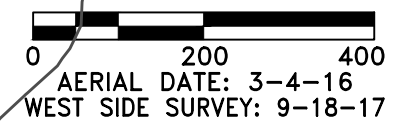
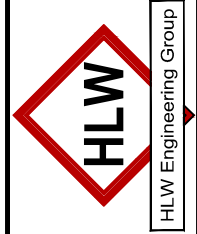


FIGURE: 14

REVISION	NO.	DATE
DRAWN	6022	DATE
DRA		1-22-24

2023 COBALT IMPACT
GROUNDWATER SYSTEM #4
EXLINE LIMESTONE
SOUTH CENTRAL IOWA SANITARY LANDFILL
WINTERSET, IOWA

HLW Engineering Group
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(in IDNR Format)

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Table 1 – Monitoring Program Summary

Table 1
Monitoring Program Summary
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

Monitoring Well	Formation	Current Monitoring Program	Change for next sampling event	Historically detected Constituents w/ SSI	Current Year Constituents w/ SSI	Current Year Constituents w/ SSL	Total # of Samples in each monitoring program since September 23, 2014		
							Detection	Assessment	Corrective Action
Glacial Till/Mining Spoils									
MW-4 or Replacement	Glacial Till, Fm. #1	Background	NC	None	None	None	15	0	0
MW-18	Glacial Till/Mining Spoils, Fm. #1	Background	NC	None	None	None	22	0	0
MW-38A	Glacial Till/Mining Spoils, Fm. #1	Background	NC	2024 Evaluation	2024 Evaluation	2024 Evaluation	0	0	0
GU-1	Glacial Till/Mining Spoils, Fm. #1	Detection - West Lagoon	NC	None	None	None	0	0	0
GU-2	Glacial Till/Mining Spoils, Fm. #1	Detection - East Lagoon	NC	2024 Evaluation	2024 Evaluation	2024 Evaluation	2	0	0
GU-A	Glacial Till/Mining Spoils, Fm. #1	Detection - Detection Cell A	NC	2024 Evaluation	2024 Evaluation	2024 Evaluation	1	0	0
GU-B	Glacial Till/Mining Spoils, Fm. #1	Detection - Detection Cell B	NC	2024 Evaluation	2024 Evaluation	2024 Evaluation	2	0	0
MW-1R	Glacial Till/Mining Spoils, Fm. #1	Detection - POC	NC	None	None	None	0	0	0
MW-6A	Bethany Falls - Fm. #1	Assessment - POC	NC	Antimony, Cobalt, Nickel, Selenium	None	None	0	17	0
MW-8B (Supplemental)	Glacial Till/Mining Spoils, Fm. #1	Corrective Action - Supplemental	NC	N/A	N/A	N/A	0	0	18
MW-21 (AZPOC)	Glacial Till/Mining Spoils, Fm. #1	Detection - AZPOC	NC	None	None	None	20	0	0
MW-9AR (Supplemental)	Glacial Till/Mining Spoils, Fm. #1	Corrective Action - Supplemental	NC	N/A	N/A	N/A	0	0	13
Tile 1 (AZPOC)	Glacial Till/Mining Spoils, Fm. #1	Corrective Action - AZPOC	NC	Barium, Cobalt, Nickel, 1,4-dichlorobenzene, benzene, chlorobenzene, cis-1,2-DCE, vinyl chloride	Barium, Nickel, 1,4-dichlorobenzene, benzene, chlorobenzene	None	0	0	16
Tile 2 (AZPOC)	Glacial Till/Mining Spoils, Fm. #1	Corrective Action - AZPOC	NC	Barium, Cobalt, 1,4-dichlorobenzene, chlorobenzene, cis-1,2-DCE, vinyl chloride	cis-1,2-DCE, vinyl chloride	None	0	0	11
MW-15R (Supplemental)	Glacial Till/Mining Spoils, Fm. #1	Corrective Action - Supplemental	NC	N/A	N/A	N/A	0	0	9
MW-44 (AZPOC)	Glacial Till/Mining Spoils, Fm. #1	Assessment - AZPOC	NC	Barium	Barium	None	1	0	0
MW-45A	Glacial Till/Mining Spoils, Fm. #1	Detection - POC	NC	2024 Evaluation	2024 Evaluation	2024 Evaluation	0	0	0
Exline									
MW-11C	Exline, Fm. #4	Background	NC	None	None	None	15	0	0
MW-39D	Exline, Fm. #4	Background	NC	None	None	None	8	0	0
MW-41D	Exline, Fm. #4	Background	NC	None	None	None	8	0	0
MW-42D	Exline, Fm. #4	Background	NC	None	None	None	8	0	0
MW-45D	Exline, Fm. #4	Detection - POC	NC	2024 Evaluation	2024 Evaluation	2024 Evaluation	0	0	0
MW-14D	Exline, Fm. #4	Assessment - POC	NC	Antimony, Cobalt, Selenium, cis-1,2-DCE	Cobalt	None	0	1	14
MW-17R	Exline, Fm. #4	Assessment - POC	NC	Barium, Cobalt, Nickel, cis-1,2-DCE, trans-1,2-DCE	Barium, Nickel, cis-1,2-DCE	None	0	17	0
MW-28	Exline, Fm. #4	Assessment - AZPOC*	NC	Arsenic, Barium, Cobalt, Nickel, cis-1,2-dichloroethylene, trans-1,2-dichloroethylene, vinyl chloride	Arsenic, Barium, Cobalt, Nickel, cis-1,2-dichloroethylene, vinyl chloride	Cobalt*	0	9	0
Surface Water									
SW-1	Surface Water, Fm. #5	Background	NC	None	None	None	16	0	0
SW-2B	Surface Water, Fm. #5	Detection	NC	None	None	None	16	0	0
Corrective Action									
MW-31	Glacial Till/Mining Spoils, Fm. #1	CAMP	NC	N/A	N/A	N/A	0	0	13
MW-32	Glacial Till/Mining Spoils, Fm. #1	CAMP	NC	N/A	N/A	N/A	0	0	13
LW-26	Landfill Leachate	CAMP	NC	N/A	N/A	N/A	0	0	12
Vents 1-6	LEL%	CAMP	NC	N/A	N/A	N/A	0	0	19
Passively Engineered Conveyance Structure									
SW-102	PECS	Performance	NC	N/A	N/A	N/A	0	0	16

* Alternate Source is determined for for metals SSI & SSL

Red Text = new monitoring point associated with the Phase 1, Cell A and Cell B Expansion Area

Corrective Action System

Table 2 – Monitoring Program Implementation Schedule

Table 2
Monitoring Program Implementation Schedule
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

Monitoring Well	Recent Sampling Dates & Constituents	Upcoming Sampling Dates and Constituents				Full Appendix II Sample Dates	
		March, 2024	June, 2024	September, 2024	December, 2024	Previously Collected	Next Event
Glacial Till/Mining Spoils							
MW-4 or Replacement		Appendix I		Appendix I			
MW-18		Appendix I		Appendix I			
MW-38A		Appendix I		Appendix I			
GU-1	See following pages	Appendix I		Appendix I			
GU-2		Appendix I		Appendix I			
GU-A		Appendix I		Appendix I			
GU-B		Appendix I		Appendix I			
MW-1R		Appendix I		Appendix I			
MW-6A		Appendix I		Appendix I		3/26/2019, 3/24/2020	2025
MW-8B (Supplemental)		Appendix I + Note 3		Appendix I		1/27/2010, 3/19/2010, 3/4/2016	N/A
MW-21 (AZPOC)		Appendix I		Appendix I			
MW-9AR (Supplemental)		Appendix I + Note 3		Appendix I		6/8/2009, 10/23/2009, 9/14/2010, 3/4/2016	N/A
Tile 1 (AZPOC)		Appendix I		Appendix I		3/8/2021, 3/28/2022	N/A
Tile 2 (AZPOC)		Appendix I		Appendix I		3/8/2021, 3/28/2022	N/A
MW-15R (Supplemental)		Appendix I + Note 3		Appendix I		3/9/2017, 3/13/2018	N/A
MW-44 (AZPOC)		Appendix II		Appendix I			
MW-45A		Appendix I		Appendix I			
Exline							
MW-11C		Appendix I		Appendix I			
MW-39D		Appendix I Metals		Appendix I Metals			
MW-41D		Appendix I Metals		Appendix I Metals			
MW-42D		Appendix I Metals		Appendix I Metals			
MW-45D		Appendix I		Appendix I			
MW-14D		Appendix II		Appendix I		9/14/2017, 3/13/2018	2024
MW-17R		Appendix I		Appendix I		3/4/2016, 3/9/2017, 3/28/2022	2027
MW-28		Appendix I		Appendix I		3/8/2021, 3/28/2022	2027
Surface Water							
SW-1		Appendix I - VOC		Appendix I - VOC			
SW-2B		Appendix I - VOC		Appendix I - VOC			
Corrective Action							
MW-31 (spoils)		Appendix I - VOC		None		N/A	N/A
MW-32 (spoils)		Appendix I - VOC + arsenic		None		N/A	N/A
LW-26		Appendix I - VOC + Note 2 + Note 3		None		N/A	N/A
Vents 1-6		%LEL	%LEL	%LEL	%LEL	N/A	N/A
Passive Engineered Conveyance Structure (PECS)							
SW-102		Appendix I - VOC		Appendix I - VOC		N/A	N/A
QA/QC							
Blind Duplicate		Appendix I		Appendix I		N/A	N/A

Note 1 = bis(2-ethylhexyl)phthalate
Note 2 = Arsenic (total), Cobalt (total), ammonia (N), sulfate, chloride, TDS, BOD5
Note 3 = dissolved methane, ethane, ethene and **alkalinity and pH**

Key
Red Text = New Monitoring Point related to Phase 1, Cell A and Cell B

Table 2A – Summary of Monitoring to Date

Table 2A -- Itemized Summary of Hydrologic Monitoring (to date)

WELL	3/24/08	5/30/08	7/17/08	9/11/08	12/20/08
MW-4A(b)	Appendix I	Appendix I	Appendix I	Appendix I	Appendix I
MW-18 (b)					
MW-19					
MW-14					
MW-9A	Appendix I	Appendix I	Appendix I	Appendix I	Appendix I
MW-15					
MW-8B		Appendix I	Appendix I	Appendix I	Appendix I
MW-16					
MW-17					
SW-1				Appendix I	Appendix I
SW-2A-1	Appendix I	Appendix I	Appendix I	Appendix I	Appendix I
SW-2A-2			Appendix I	Appendix I	Appendix I
SW-2B			Appendix I	Appendix I	Appendix I
Duplicate	N/A	N/A	N/A	At MW-9A	At MW-9A

WELL	4/22/09	6/8/09	8/13/09	10/30/09	1/27/10	3/19/10
MW-4A(b)	Appendix I	Appendix I		Appendix I		Appendix I
MW-18 (b)				Appendix I	Appendix I	Appendix I
MW-19				Appendix I	Appendix I	Appendix I
MW-14				Appendix I	Appendix II	Appendix II
MW-9A	Appendix I	Appendix II		Appendix II		Appendix I
MW-15			Appendix I	Appendix I	Appendix II	Appendix II
MW-8B	Appendix I			Appendix I	Appendix II	Appendix II
MW-16				Dry		Dry
MW-17		Appendix I	Appendix I	Appendix I		Appendix I
SW-1	Appendix I	Appendix I	Appendix I	Appendix I		Appendix I
SW-2A-1	Appendix I	Appendix II		Appendix II		Appendix I
SW-2A-2	Appendix I			Appendix I		Appendix I
SW-2B	Appendix I	Appendix I	Appendix I	Appendix I	Appendix I	Appendix I
Duplicate	At SW-2A-2	At MW-17	N/A	At MW-4A	N/A	At SW-2A-2

WELL	6/17/10	9/14/10	3/4/11	4/29/11	9/26/11
MW-4A(b)		Appendix I	Appendix I		Appendix I
MW-18 (b)	Appendix I	Appendix I	Appendix I		Appendix I
MW-19	Appendix I	Appendix II	Appendix II	cobalt	Appendix I
MW-14	Appendix I	Appendix I	Appendix I	cobalt	Appendix I
MW-9A		Appendix II	Appendix I+		Appendix I+
MW-15	Appendix I	Appendix I	Appendix I		Appendix I
MW-8B		Appendix I	Dry		Dry
MW-16		Dry	Dry		Dry
MW-17	Appendix II	Appendix II	Appendix I		Appendix I
SW-1		Appendix I	Appendix I		Appendix I
SW-2A-1		Appendix II	Appendix I		Appendix I
SW-2A-2		Appendix I	Appendix II		Appendix II
SW-2B		Appendix I	Appendix I		Appendix I
Duplicate	At MW-15	At MW-1	At SW-2A-2		At MW-14

WELL	3/13/12	6/27/12	9/19/12	3/25/13	5/8/13
MW-4A(b)	Appendix I		Appendix I	Appendix I	
MW-18 (b)	Appendix I		Appendix I	Appendix I	
MW-19	Appendix I		Appendix I	Appendix I	
MW-14	Appendix I		Appendix I	Appendix I	
MW-9A	Appendix I+		Appendix I+	Appendix I+	
MW-15	Appendix I		Appendix I	Appendix I	
MW-8B	Dry		Dry	Dry	
MW-16	Dry		Removed	Removed	
MW-17	Appendix I		Appendix I	Appendix I	
MW-20	Appendix I-		Appendix I-	Appendix I-	Appendix I-
MW-21	N/A		Appendix I++	Appendix I	
SW-1	Appendix I		Appendix I	Appendix I	
SW-2A-2	Appendix I	Selenium	Appendix I	Appendix I	
SW-2A-1	Appendix I	Selenium	Appendix I	Appendix I	
SW-2B	Appendix I		Appendix I	Appendix I	
Duplicate	At MW-14		At MW-4A	At MW-17	

WELL	7/17/13	9/19/13	3/28/14	7/8/14	9/23/14	12/2/14
MW-4A(b)		Appendix I	Appendix I		Appendix I	Appendix I
MW-18 (b)		Appendix I	Appendix I		Appendix I	Appendix I
MW-19		Appendix I	Appendix I		Appendix I	
MW-14		Appendix I	Appendix I		plugged	
MW-9A	VOC	Appendix I+	Appendix I+		Appendix I+	
MW-15		Appendix I	Appendix I		Appendix I	
MW-8B		Appendix I	Appendix I		Appendix I	
MW-17		Appendix I	Appendix I		Appendix I	
MW-20	VOC	Appendix I-	Appendix I-		Appendix I-	
MW-21		Appendix I	Appendix I		Appendix I	
MW-1/1R			Broken		Dry	
GU-1			Dry	Dry	Dry	
SW-1		Dry	Appendix I		Appendix I	
SW-101		Dry	Appendix I	Appendix I	Appendix I	
SW-102		Appendix I	Appendix I		Appendix I	
SW-2B		Dry	Appendix I		Appendix I	
Duplicate		At MW-22	At MW-17		At SW-1	
MW-4B						Appendix I
MW-4C						Appendix I
MW-33						Appendix I
MW-28						VOC
MW-24D						VOC
MW-14D						VOC
SW-103						VOC
Duplicate		At MW-22	At MW-17		At SW-1	

(+) = Appendix I plus bis(2-ethylhexyl)phthalate
 (++)=Appendix I plus Appendix I metals, dissolved phase
 (VOC) = Appendix I VOC compounds only

WELL	3/19/15	6/17/15	8/27/15	10/26/15	12/10/15
MW-4A(b)	Appendix I	Appendix I	Appendix I		
MW-18 (b)	Appendix I	Appendix I	Appendix I		
MW-6A	Appendix I		Appendix I		
MW-7B	Appendix I		Appendix I		
MW-8B	Appendix I		Appendix I		
MW-9A	Appendix I+		Appendix I+		
MW-15	Appendix I		Appendix I	Resample-zn	
MW-21	Appendix I		Appendix I		
MW-17R	VOC		VOC		
GU-1	Dry		Dry		
MW-4C (b)	Appendix I	Appendix I	Appendix I		
MW-19 (b)	Appendix I	Appendix I	Appendix I		
MW-22B (b)	Appendix I	Appendix I	Appendix I		
MW-13	Appendix I		Appendix I		
MW-23B	Appendix I		Appendix I		
MW-11B	Dry		Dry		
SW-1 (b)	Appendix I		Appendix I		
SW-2B	Appendix I		Appendix I		
SW-101	Dry		Appendix I	Resample-cd & se	
SW-102	Appendix I		Appendix I		
SW-103	VOC		Appendix I		
MW-14B	NT		NT		
MW-14D	VOC		VOC		
MW-24A	NT		VOC		
MW-24D	VOC		VOC		
TMW-25	NT		NT		
TMW-26	NT		NT		
MW-28	VOC		VOC	VOC	VOC
MW-29	NT		NT		
MW-31	Appendix I		NT		
MW-32	Appendix I		NT		
SW-106	VOC		VOC		
Duplicate	At MW-4A		At MW-13		

(+) = Appendix I plus bis(2-ethylhexyl)phthalate

(VOC) = Appendix I VOC compounds only

WELL	2/11/16	3/4/16	5/10/16	9/20/16	11/9/16
MW-4A(b)		Appendix I		Appendix I	
MW-18 (b)		Appendix I		Appendix I	
MW-6A		Appendix I		Appendix I	
MW-7B		Appendix I		Appendix I	
MW-8B		Appendix II		Appendix I	
MW-9A		Appendix II		Appendix I+	
MW-15		Appendix I	Ba-resample	Appendix I	Zn-resample
MW-21		Appendix I		Appendix I	
MW-17R		Appendix II		Appendix I	
GU-1		Dry		Dry	
MW-1R		Dry		Dry	
MW-4C (b)		Appendix I			
MW-19 (b)		Appendix I			
MW-22B (b)		Appendix I			
MW-13		Appendix I		Appendix I	
MW-23B		Appendix II		Appendix I	
MW-11B		Dry			
SW-1 (b)		Appendix I		Appendix I	
SW-2B		Appendix I		Appendix I	
SW-101		Appendix II		Appendix I	
SW-102		Appendix I	Se – resample	VOC	
SW-103		Appendix II	VOC	VOC	
MW-14B		VOC			
MW-14D		VOC		Appendix I	
MW-24A		VOC			
MW-24D		VOC		VOC	
TMW-26		VOC		VOC	
MW-28	VOC	VOC	VOC	VOC	
SW-109	VOC		VOC	VOC	
Tile 1				VOC	VOC
MW-29		VOC		VOC	
MW-31		VOC		VOC	
MW-32		VOC		VOC	
SW-106		VOC	VOC	VOC	
Duplicate		At MW-28		At MW-9A	

(+) = Appendix I plus bis(2-ethylhexyl)phthalate

(VOC) = Appendix I VOC compounds only

WELL	3/9/17	6/6/17	7/12/17	9/14/17	12/13/17
SW-1	Appendix I			Dry	
SW-2B	Appendix I			Dry	
MW-4A	Appendix I			Appendix I	
MW-18	Appendix I		Arsenic	Appendix I	Arsenic
GU-1	Dry			Dry	
MW-9A/9AR	Appendix I+			Destroyed	Appendix I
MW-15	Appendix II	Resample		Appendix I	Resample
MW-8B	Appendix I			Appendix I	
MW-21	Appendix I			Appendix I	
MW-6A	Appendix I			Appendix I	Resample
MW-1R	Dry				
MW-11C	Appendix I			Appendix I	
MW-7B	Appendix I			Appendix I	
MW-14D	Appendix I			Appendix II	
MW-17R	Appendix II			Appendix I	Resample
MW-13	Appendix I			Appendix I	
MW-23B	Appendix I			Appendix I	
MW-24D	VOC			VOC	
MW-28	VOC			VOC	
SW/Pond-109	VOC			VOC	
Tile 1	VOC			VOC	
MW-31	VOC			VOC	
MW-32	VOC			VOC	
SW-101	Appendix II			VOC	
SW-102	VOC			VOC	
SW-103	VOC			VOC	
Duplicate	At MW-11C			At MW-21	

(+) = Appendix I plus bis(2-ethylhexyl)phthalate

(VOC) = Appendix I VOC compounds only

WELL	3/13/18	6/6/18	6/11/18	9/10/18	11/14/18
SW-1	Appendix I			Appendix I	
SW-2B	Appendix I			Appendix I	
MW-4A	Appendix I			Appendix I	
MW-18	Appendix I			Appendix I	
GU-1	Dry			Dry	
MW-9A/9AR	Appendix I	Appendix I		Appendix I	
MW-15	Appendix II			Destroyed	
MW-8B	Appendix I			Appendix I	
MW-21	Appendix I			Appendix I	
MW-6A	Appendix I			Appendix I	R – Ni
MW-1R	Dry			Dry	
MW-11C	Appendix I			Appendix I	
MW-7B	Appendix I			Appendix I	
MW-14D	Appendix II		R – Sb, Se	Appendix I	
MW-17R	Appendix I			Appendix I	
MW-13	Appendix I			Appendix I	
MW-23B	Appendix I			Appendix I	
MW-24D	VOC			VOC	
MW-28	VOC			VOC	
SW/Pond-109	VOC			VOC	
Tile 1	VOC			VOC	
Tile 2	DNE			VOC	
MW-31	VOC			VOC	
MW-32	VOC			VOC	
SW-101	VOC			VOC	
SW-102	VOC			VOC	
SW-103	VOC			Now Tile 2	
Duplicate	At MW-6A			At MW-21	

DNE = Did Not Exist

(R) = Resample

(VOC) = Appendix I VOC compounds only

WELL	3/26/19	6/5/19	9/16/19	11/20/2019	12/2/2019
SW-1	Appendix I		Appendix I	(R) cis-1,2-DCE	
SW-2B	Appendix I	(R) Se	Appendix I		
MW-4A	Appendix I		Appendix I		
MW-18	Appendix I		Appendix I		
MW-8B	Appendix I		Appendix I		
MW-9AR	Appendix I		Appendix I		
MW-15R	---	Appendix I	Appendix I		(R) Ba
MW-21	Appendix I		Appendix I		
MW-6A	Appendix II	(R) Bis(2EH)P	Appendix I		
GU-1	Dry		Dry		
MW-11C	Appendix I		Appendix I		
MW-14D	Appendix I		Appendix I		
MW-17R	Appendix I		Appendix I		
MW-28	VOC		VOC+Se		
MW-31	VOC		VOC+Co		
MW-32	VOC		VOC+Co		
Tile 1	VOC	Appendix I	Appendix I		
Tile 2	VOC	Appendix I	Appendix I		
SW-102	VOC		VOC		
Duplicate	At MW-6A		A MW-8B		

(R) = Resample

(VOC) = Appendix I VOC compounds only

WELL	3/24/20	4/14/20	6/3/20	7/20/20	9/2/20	12/28/20
Glacial Till/Mining Spoil POC						
MW-4A	Appendix I	---	---	---	Appendix I	---
MW-18	Appendix I	---	---	---	Appendix I	---
GU-1	Dry	---	---	---	Dry	---
MW-1R	Dry	---	---	---	Dry	---
MW-15R	Appendix I	---	---	---	Appendix I	---
MW-6A	Appendix II	---	---	---	Appendix I	---
MW-21	Appendix I	---	---	---	Appendix I	---
Tile 1	Appendix I	---	---	---	Appendix I	---
Tile 2	Appendix I	---	---	---	Appendix I	---
Exline Formation POC						
MW-11C	Appendix I	---	---	---	Appendix I	---
MW-39D	---	---	---	---	metals	---
MW-41D	---	---	---	---	metals	---
MW-42D	---	---	---	---	metals	---
MW-17R	Appendix I	---	---	---	Appendix I	---
MW-28	Appendix I	---	---	---	Appendix I	---
Supplemental Wells						
MW-8B	Appendix I + Note 3	---	---	---	Appendix I + Note 3	---
MW-9AR	Appendix I + Note 3	---	---	---	Appendix I + Note 3	---
MW-14D	Appendix I + Note 3	---	---	Se	Appendix I + Note 3	---
Surface Water						
SW-1	Appendix I	---	---	---	Appendix I	---
SW-2B	Appendix I	---	Se	---	Appendix I	---
Corrective Action						
MW-31	Dry	---	---	---	VOC	---
MW-32	VOC	---	---	---	VOC	---
LW-26	---	Note 2	---	---	VOC+Note2+Note3	---
Vents 1-6	---	---	---	---	%LEL	%LEL
Passive Engineered Conveyance Structure						
SW-102	VOC	---	---	---	VOC	---
QA/QC						
Duplicate	At MW-32	---	---	---	At MW-8B	---

Note 1 – bis(2-ethylhexyl)phthalate

Note 2 – cobalt (T), ammonia (N), sulfate, chloride, TDS, BOD5

Note 3 – dissolved methane, ethane, ethene and alkalinity and pH

(R) = Resample

(VOC) = Appendix I VOC compounds only

(metals) = Appendix I metal compounds only

(%LEL) = % Lower Explosive Limit

WELL	3/8/2021	6/4/2021	9/14/2021	12/1/2021
Glacial Till/Mining Spoil POC				
MW-4A	Appendix I	---	Appendix I	---
MW-18	Appendix I	---	Appendix I	---
GU-1	Dry	---	Dry	---
MW-1R	Dry	---	Dry	---
MW-15R	Appendix I	---	Appendix I	---
MW-6A	Appendix I + Note 1	---	Appendix I + Note 1	---
MW-21	Appendix I	---	Appendix I	---
Tile 1	Appendix II	---	Appendix I	---
Tile 2	Appendix II	---	Appendix I	---
Exline Formation POC				
MW-11C	Appendix I	---	Appendix I	---
MW-39D	metals	---	metals	---
MW-41D	metals	---	metals	---
MW-42D	metals	---	metals	---
MW-17R	Appendix I	---	Appendix I	---
MW-28	Appendix II	---	Appendix I	---
Supplemental Wells				
MW-8B	Appendix I + Note 3	---	Appendix I	---
MW-9AR	Appendix I + Note 3	---	Appendix I	---
MW-14D	Appendix I + Note 3	---	Appendix I	---
Surface Water				
SW-1	Appendix I	---	Appendix I	---
SW-2B	Appendix I	---	Appendix I	---
Corrective Action				
MW-31	VOC	---	---	---
MW-32	VOC	---	---	---
LW-26	VOC+Note2+Note3	---	---	---
Vents 1-6	%LEL	%LEL	%LEL	%LEL
Passive Engineered Conveyance Structure				
SW-102	VOC	---	VOC	---
QA/QC				
Duplicate	At MW-4A	---	At MW-15R	---

Note 1 – bis(2-ethylhexyl)phthalate

Note 2 – cobalt (T), ammonia (N), sulfate, chloride, TDS, BOD5

Note 3 – dissolved methane, ethane, ethene and alkalinity and pH

(R) = Resample

(VOC) = Appendix I VOC compounds only

(metals) = Appendix I metal compounds only

(%LEL) = % Lower Explosive Limit

WELL	3/28/2022	6/20/2022	9/13/2022	12/1/2022
Glacial Till/Mining Spoil POC				
MW-4A	Broken	---	Broken	---
MW-18	Appendix I	---	Appendix I	---
GU-1	Dry	---	Dry	---
MW-1R	Dry	---	Dry	---
MW-15R	Appendix I	---	Appendix I	R-As
MW-6A	Appendix I + Note 1	---	Appendix I	---
MW-21	Appendix I	---	Appendix I	---
Tile 1	Appendix II	---	Appendix I	---
Tile 2	Appendix II	---	Appendix I	---
Exline Formation POC				
MW-11C	Appendix I	---	Appendix I	---
MW-39D	metals	---	metals	---
MW-41D	metals	---	metals	---
MW-42D	metals	---	metals	---
MW-17R	Appendix II	---	Appendix I + Note 1	---
MW-28	Appendix II	---	Appendix I	---
Supplemental Wells				
MW-8B	Appendix I + Note 3	---	Appendix I	---
MW-9AR	Appendix I + Note 3	---	Appendix I	---
MW-14D	Appendix I + Note 3	---	Appendix I	---
Surface Water				
SW-1	Appendix I	---	Dry	---
SW-2B	Appendix I	---	VOC	---
Corrective Action				
MW-31	VOC	---	---	As
MW-32	VOC	---	---	---
LW-26	VOC+Note2+Note3	---	---	---
Vents 1-6	%LEL	%LEL	%LEL	%LEL
Passive Engineered Conveyance Structure				
SW-102	VOC	---	VOC	---
QA/QC				
Duplicate	At MW-41D	---	At MW-15R	---

Note 1 – bis(2-ethylhexyl)phthalate

Note 2 – cobalt (T), ammonia (N), sulfate, chloride, TDS, BOD5

Note 3 – dissolved methane, ethane, ethene and alkalinity and pH

(R) = Resample

(VOC) = Appendix I VOC compounds only

(metals) = Appendix I metal compounds only

(%LEL) = % Lower Explosive Limit

WELL	3/23/23	5/9/23	7/12/23	9/5/23	11/13/23	11/28/23	12/6/23
Glacial Till/Mining Spoil POC							
MW-4A	Broken	---	---	Broken	---	---	---
MW-18	Appendix I	---	---	Appendix I	---	---	---
MW-38	---	---	---	Dry	---	---	---
GU-1	Dry	---	---	Dry	---	---	---
MW-1R	Dry	---	---	Dry	---	---	---
MW-6A	Appendix I	---	---	Appendix I	---	---	---
MW-21	Appendix I	---	---	Appendix I	---	---	---
MW-44	DNE		Appendix I	Appendix I	---	R- Ba +toluene	---
Tile 1	Appendix I	---	---	Appendix I	---	---	---
Tile 2	Appendix I	---	---	Appendix I	---	---	---
GU-2	DNE	DNE	DNE	DNE	metals	---	metals
GU-A	DNE	DNE	DNE	DNE	Dry	---	metals
GU-B	DNE	DNE	DNE	DNE	metals	---	metals
MW-45A	DNE	DNE	DNE	DNE	DNE	DNE	DNE
Exline Formation POC							
MW-11C	Appendix I	---	---	Appendix I	---	---	---
MW-39D	metals	---	---	metals	---	---	---
MW-41D	metals	---	---	metals	---	---	---
MW-42D	metals	---	---	Appendix I	---	---	---
MW-14D	Appendix I + Note 3	---	---	Appendix I	---	R-Co	---
MW-17R	Appendix I	---	---	Appendix I	---	---	---
MW-45D	DNE	DNE	DNE	DNE	DNE	DNE	DNE
MW-28	Appendix I	---	---	Appendix I	---	---	---
Supplemental Wells							
MW-8B	Appendix I + Note 3	R-acetone	---	Appendix I + Note 4	---	---	---
MW-9AR	Appendix I + Note 3	---	---	Appendix I + Note 4	---	---	---
MW-15R	Appendix I + Note 3	---	---	Appendix I + Note 4	---	---	---
Surface Water							
SW-1	Appendix I	---	---	Dry	---	---	---
SW-2B	Appendix I	---	---	Dry	---	---	---
Corrective Action							
MW-31	VOC	---	---	---	---	---	---
MW-32	VOC	---	As	---	---	---	---
LW-26	VOC+Note2+Note3	---	---	---	---	---	---
Vents 1-6	%LEL	%LEL	---	%LEL	---	---	%LEL
Passive Engineered Conveyance Structure							
SW-102	VOC	---	---	Dry	---	---	---
QA/QC							
Duplicate	At MW-39D	---	---	At MW-44	---	---	---

Note 1 – bis(2-ethylhexyl)phthalate

Note 2 – arsenic (T), cobalt (T), ammonia (N), sulfate, chloride, TDS, BOD5

Note 3 – dissolved methane, ethane, ethene and alkalinity and pH

Note 4 - alkalinity and pH

(R) = Resample

(VOC) = Appendix I VOC compounds only

(metals) = Appendix I metal compounds only

(%LEL) = % Lower Explosive Limit

Table 3 – Monitoring Well Maintenance Performance Reevaluation
Schedule

Table 3
Monitoring Well Maintenance and Performance Reevaluation Schedule
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

Compliance with:	Monitoring Calendar Years									
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
567 IAC 113.10(2)"f"(1) high and low water levels (bi-annual)	X	X	X	X	X	X	X	X	X	X
567 IAC 113.10(2)"f"(2) changes in the hydrologic setting and flow paths (historic = 1 per 5 years; current = bi-annual)		X		X		X		X		X
567 IAC 113.10(2)"f"(3) well depths (annual)	X	X	X	X	X	X	X	X	X	X
567 IAC 113.10(2)"f"(4) well recharge rates and chemistry (bi-annual)	X	X	X		X	X		X		X
Waste separation from ground water 113.6(2)"I"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Compliance with:	Monitoring Calendar Years									
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028
567 IAC 113.10(2)"f"(1) high and low water levels (bi-annual)	X	X	X	X	X	P	P	P	P	P
567 IAC 113.10(2)"f"(2) changes in the hydrologic setting and flow paths (bi-annual)		X		X		P		P		P
567 IAC 113.10(2)"f"(3) well depths (annual)	X	X	X	X	X	P	P	P	P	P
567 IAC 113.10(2)"f"(4) well recharge rates and chemistry (bi-annual)		X		X		P		P		P
Waste separation from ground water 113.6(2)"I"	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

X = completed
P = Planned

Table 4 – Monitoring Well Maintenance Performance Reevaluation
Summary

Table 4
Monitoring Well Maintenance and Performance Summary
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

Well	Top of casing	Top of Screen	Total Depth	Date of Measurements		Maximum Depth Discrepancy (ft)	Hydraulic Cond. (cm/sec)/date	Most Recent Recharge Rate		
				3/23/2023	9/5/2023			3/28/2022	Change	
MW-4A	1082.35	1057.65	29.7	Groundwater Level (ft)			29.7	0.000356 March, 2016	Broken	Broken
				Groundwater Elevation (Ft MSL)	1082.35	1082.35				
				Measured Well Depth (ft)						
				Submerged (+) or Exposed screen (-)	24.7	24.7				
MW-18	1062.45	1048.62	23.83	Groundwater Level (ft)	20.3	21.5	0.23	0.00022 March, 2016	Full recovery in 12 hour	None perceived
				Groundwater Elevation (Ft MSL)	1042.15	1040.95				
				Measured Well Depth (ft)	23.6	23.6				
				Submerged (+) or Exposed screen (-)	-6.47	-7.67				
MW-9AR	1057.54	1038.59	28.95	Groundwater Level (ft)	25.59	25.65	0	0.0000417 March, 2016	Full recovery in 8 hour	None perceived
				Groundwater Elevation (Ft MSL)	1031.95	1031.89				
				Measured Well Depth (ft)	28.95	28.95				
				Submerged (+) or Exposed screen (-)	-6.64	-6.7				
MW-15R	1051.77	1035.67	21.6	Groundwater Level (ft)	12.74	14.64	0	0.000495 March, 2016	Full recovery in 6 hour	None perceived
				Groundwater Elevation (Ft MSL)	1039.03	1037.13				
				Measured Well Depth (ft)	21.6	21.6				
				Submerged (+) or Exposed screen (-)	3.36	1.46				
MW-8B	1049.46	1029.86	28.65	Groundwater Level (ft)	22.9	24.63	-0.05	0.0000207 March, 2016	Full recovery in 12 hour	None perceived
				Groundwater Elevation (Ft MSL)	1026.56	1024.83				
				Measured Well Depth (ft)	28.7	28.7				
				Submerged (+) or Exposed screen (-)	-3.3	-5.03				
MW-21	993.9	961.8	42.1	Groundwater Level (ft)	25.96	31.5	0.4	0.00573 March, 2016	Full recovery in 8 hour	None perceived
				Groundwater Elevation (Ft MSL)	967.94	962.4				
				Measured Well Depth (ft)	41.7	41.7				
				Submerged (+) or Exposed screen (-)	6.14	0.6				
MW-6A	1055.48	1043.05	15.43	Groundwater Level (ft)	10.45	NM	-0.32	0.0000196 March, 2016	Full recovery in 24 hour	None perceived
				Groundwater Elevation (Ft MSL)	1045.03	#VALUE!				
				Measured Well Depth (ft)	15.75	15.75				
				Submerged (+) or Exposed screen (-)	1.98	#VALUE!				
MW-38A	1075.92	1053.67	27.25	Groundwater Level (ft)	26.26	26.51	0	pending 2024	pending 2024	pending 2024
				Groundwater Elevation (Ft MSL)	1049.66	1049.41				
				Measured Well Depth (ft)	27.25	27.25				
				Submerged (+) or Exposed screen (-)	-4.01	-4.26				
MW-44	1051.33	1037.71	18.62	Groundwater Level (ft)	DNE	11.26	0.02	pending 2024	pending 2024	pending 2024
				Groundwater Elevation (Ft MSL)	#VALUE!	1040.07				
				Measured Well Depth (ft)	18.62	18.6				
				Submerged (+) or Exposed screen (-)	#VALUE!	2.36				
MW-45A	1033.1	1022.5	13.6	Groundwater Level (ft)	DNE	DNE	0	pending 2024	pending 2024	pending 2024
				Groundwater Elevation (Ft MSL)	#VALUE!	#VALUE!				
				Measured Well Depth (ft)	13.6	13.6				
				Submerged (+) or Exposed screen (-)	#VALUE!	#VALUE!				
MW-45D	1033.44	997.49	38.45	Groundwater Level (ft)	DNE	DNE	0	pending 2024	pending 2024	pending 2024
				Groundwater Elevation (Ft MSL)	#VALUE!	#VALUE!				
				Measured Well Depth (ft)	38.45	38.45				
				Submerged (+) or Exposed screen (-)	#VALUE!	#VALUE!				
MW-31	1054.34	1034.34	25	Groundwater Level (ft)	21.39	21.1	0	0.0000116 March, 2016	Full recovery in 8 hour	None perceived
				Groundwater Elevation (Ft MSL)	1032.95	1033.24				
				Measured Well Depth (ft)	25	25				
				Submerged (+) or Exposed screen (-)	-1.39	-1.1				
MW-32	1056.82	1034.02	27.8	Groundwater Level (ft)	20.33	21.71	0	0.00000057 March, 2016	Full recovery >24 hour	None perceived
				Groundwater Elevation (Ft MSL)	1036.49	1035.11				
				Measured Well Depth (ft)	27.8	27.8				
				Submerged (+) or Exposed screen (-)	2.47	1.09				
MW-28	1002.67	992.87	14.8	Groundwater Level (ft)	7.52	7.91	-0.2	0.000212 March, 2016	Full recovery in 3 hour	None perceived
				Groundwater Elevation (Ft MSL)	995.15	994.76				
				Measured Well Depth (ft)	15	15				
				Submerged (+) or Exposed screen (-)	2.28	1.89				
MW-11C	1054.11	1003.56	51.55	Groundwater Level (ft)	43.14	45.56	0	0.00647 March, 2016	Full recovery in 8 hour	None perceived
				Groundwater Elevation (Ft MSL)	1010.97	1008.55				
				Measured Well Depth (ft)	51.55	51.55				
				Submerged (+) or Exposed screen (-)	7.41	4.99				
MW-14D	1057.28	997.28	65	Groundwater Level (ft)	55.68	59.7	0	0.000000107 June, 2010	Full recovery >24 hour	None perceived
				Groundwater Elevation (Ft MSL)	1001.6	997.58				
				Measured Well Depth (ft)	65	65				
				Submerged (+) or Exposed screen (-)	4.32	0.3				
MW-17R	1058.27	1008.97	52.3	Groundwater Level (ft)	46.88	49.11	0	0.0001 March, 2016	Full recovery in 4 hour	None perceived
				Groundwater Elevation (Ft MSL)	1011.39	1009.16				
				Measured Well Depth (ft)	52.3	52.3				
				Submerged (+) or Exposed screen (-)	2.42	0.19				
MW-39D	1076.19	988.69	90.5	Groundwater Level (ft)	61.34	63.3	0.3	0.0000098 May, 2020	Full recovery in 24 hour	None perceived
				Groundwater Elevation (Ft MSL)	1014.85	1012.89				
				Measured Well Depth (ft)	90.2	90.2				
				Submerged (+) or Exposed screen (-)	26.16	24.2				
MW-41D	1039.09	988.89	53.2	Groundwater Level (ft)	47.48	47.8	0.2	0.00000188 May, 2020	Full recovery in 24 hour	None perceived
				Groundwater Elevation (Ft MSL)	991.61	991.29				
				Measured Well Depth (ft)	53	53				
				Submerged (+) or Exposed screen (-)	2.72	2.4				
MW-42D	1035.79	994.36	43.43	Groundwater Level (ft)	33.85	39.21	0.03	0.00000583 May, 2020	Full recovery in 24 hour	None perceived
				Groundwater Elevation (Ft MSL)	1001.94	996.58				
				Measured Well Depth (ft)	43.4	43.4				
				Submerged (+) or Exposed screen (-)	7.58	2.22				

Table 4A – Summary of Water Elevations Over Time

Water Elevation Data
 South Central Iowa Landfill
 61-SDP-1-78P

Well/TOC	MW-34A 1072.82 1072.74		MW-34B 1072.82		MW-34C 1072.75		MW-35B 1051.00		MW-36A 1063.83		MW-36B 1064.15		MW-37A 1072.27		MW-37B 1073.59	
	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation
09/02/20	18.98	1053.84	19.05	1053.77	30.30	1042.45	11.63	1039.37	21.05	1042.78	22.89	1041.26	20.91	1051.36	36.57	1037.02
03/08/21	19.25	1053.57	19.25	1053.57	29.57	1043.18	11.01	1039.99								
09/14/21	20.02	1052.80	19.75	1053.07	30.04	1042.71	11.60	1039.40	21.39	1042.44	22.90	1041.25	20.95	1051.32	30.86	1042.73
03/28/22	20.35	1052.47	20.41	1052.41	29.73	1043.02	10.90	1040.10	22.30	1041.53	23.05	1041.10	20.95	1051.32	29.78	1043.81
09/13/22	20.82	1052.00	20.67	1052.15	30.34	1042.41	12.25	DRY	21.76	1042.07	23.30	1040.85	21.10	DRY	29.18	1044.41
03/23/23	20.81	1051.93	21.17	1051.65	30.03	1042.72	11.60	1039.40	21.53	1042.30	22.25	1041.90	20.98	1051.29	29.03	1044.56
09/05/23	21.98	1050.76	21.65	1051.17	31.00	1041.75	12.25	DRY	21.74	1042.09	23.63	1040.52	21.10	DRY	28.90	1044.69

Water Elevation Data
 South Central Iowa Landfill
 61-SDP-1-78P

Well/TOC	MW-37C 1073.40		MW-37D 1073.31		MW-38A 1075.92		MW-38B 1076.18		MW-39A 1075.05		MW-39B 1075.29		MW-39C 1075.33		MW-39D 1076.19	
	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation
10/06/93																
09/02/20	41.96	1031.44	79.80	DRY	23.00	1052.92	46.15	1030.03	28.12	1046.93	46.82	1028.47	45.36	1029.97	85.00	991.19
03/08/21															82.83	993.36
09/14/21	41.05	1032.35	79.80	DRY	24.81	1051.11	42.06	1034.12	29.63	1045.42	43.04	1032.25	46.25	1029.08	80.90	995.29
03/28/22	39.74	1033.66	79.80	DRY	25.48	1050.44	41.42	1034.76	30.20	1044.85	43.35	1031.94	46.61	1028.72	73.80	1002.39
09/13/22	40.63	1032.77	79.80	DRY	25.88	1050.04	40.72	1035.46	30.05	1045.00	42.91	1032.38	46.23	1029.10	63.30	1012.89
03/23/23	39.69	1033.71	79.80	DRY	26.26	1049.66	40.60	1035.58	30.62	1044.43	42.89	1032.40	46.34	1028.99	61.34	1014.85
09/05/23	40.78	1032.62	79.80	DRY	26.51	1049.41	40.44	1035.74	30.59	1044.46	42.36	1032.93	45.88	1029.45	59.44	1016.75

Water Elevation Data
 South Central Iowa Landfill
 61-SDP-1-78P

Well/TOC	MW-40A 1074.44		MW-40B 1074.48		MW-41A 1037.51		MW-41C 1038.66		MW-41D 1039.01		MW-42C 1036.56		MW-42D 1035.79		MW-43 989.02	
	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation	Water Depth	Water Elevation
10/06/93																
09/02/20	30.17	1044.27	46.95	1027.53	21.20	DRY	27.57	1011.09	47.82	991.19	20.60	1015.96	36.32	999.47	21.50	DRY
03/08/21									47.85	991.16			33.91	1001.88	21.50	DRY
09/14/21	31.28	1043.16	44.40	1030.08	21.20	DRY	27.65	1011.01	47.84	991.17	19.97	1016.59	34.90	1000.89	21.50	DRY
03/28/22	31.31	1043.13	43.89	1030.59	21.20	DRY	27.65	1011.01	47.83	991.18	18.30	1018.26	35.81	999.98	21.50	DRY
09/13/22	31.30	1043.14	44.17	1030.31	21.20	DRY	27.75	DRY	47.80	991.21	20.25	1016.31	39.21	996.58	21.50	DRY
03/23/23	31.50	1042.94	43.60	1030.88	21.20	DRY	27.61	1011.05	47.48	991.53	18.52	1018.04	33.85	1001.94	21.50	DRY
09/05/23	31.40	1043.04	45.04	1029.44	21.20	DRY	27.60	1011.06	48.02	990.99	20.27	1016.29	38.80	996.99	21.50	DRY

Table 5 – Background and GWPS Summary

Table 5
Background and GWPS Summary
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

Interwell Background Wells (Till/Fill System - MW-4A and MW-18)

Inorganics - Appendix I										
Constituent	Units	Model Type	Samples - N	Detections	Mean	SD	Prediction Limit	Confidence	GWPS	Source
Antimony (Sb)	µg/l	nonparametric	38	4			2.6000	0.99	6	SS
Arsenic (As)	µg/l	normal	38	21	12.6868	14.5718	48.5787		48.5787	PL
Barium (Ba)	µg/l	normal	38	38	396.3684	92.1431	623.3256		2000	SS
Beryllium (Be)	µg/l	nonparametric	38	0			4.0000	0.99	4	SS
Cadmium (Cd)	µg/l	nonparametric	37	4			1.3000	0.99	5	SS
Chromium (Cr)	µg/l	nonparametric	38	1			10.4000	0.99		
Cobalt (Co)	µg/l	lognormal	38	19			4.1400		7.2	PL
Copper (Cu)	µg/l	nonparametric	37	6			12.0000	0.99	1300	SS
Lead (Pb)	µg/l	nonparametric	38	0			4.0000	0.99	15	SS
Nickel (Ni)	µg/l	nonparametric	38	17			23.8000	0.99	100	SS
Selenium (Se)	µg/l	nonparametric	38	5			16.2000	0.99	50	SS
Silver (Ag)	µg/l	nonparametric	38	0			4.0000	0.99	100	SS
Thallium (Tl)	µg/l	nonparametric	38	0			2.0000	0.99	2	SS
Vanadium (V)	µg/l	nonparametric	38	1			30.7000	0.99	35	SS
Zinc (Zn)	µg/l	nonparametric	38	15			53.3000	0.99	2000	SS

VOC - Appendix I										
Constituent	Units	Model Type	Samples - N	Detections	Mean	SD	Prediction Limit	Confidence	GWPS	Source
All	µg/l	DQR	38	0	<1	<1	<1	<1	various	SS

 = Prediction limit exceeds the GWPS. A Site-Specific GWPS is warranted

Interwell Background Wells (Bedrock System MW-11C and MW-39D, MW-41D, MW-42D)

Inorganics - Appendix I										
Constituent	Units	Model Type	Samples - N	Detections	Mean	SD	Prediction Limit	Confidence	GWPS	Source
Antimony (Sb)	µg/l	nonparametric	37	9			10.9000	0.99	10.9	PL
Arsenic (As)	µg/l	nonparametric	37	7			5.8000	0.99	10	SS
Barium (Ba)	µg/l	normal	37	37	55.2405	21.1748	107.4794		2000	SS
Beryllium (Be)	µg/l	nonparametric	37	0			4.0000	0.99	4	SS
Cadmium (Cd)	µg/l	nonparametric	37	0			0.8000	0.99	5	SS
Chromium (Cr)	µg/l	nonparametric	37	1			13.2000	0.99	100	SS
Cobalt (Co)	µg/l	nonparametric	37	10			5.4000	0.99	5.4	PL
Copper (Cu)	µg/l	nonparametric	37	2			6.5000	0.99	1300	SS
Lead (Pb)	µg/l	nonparametric	37	0			4.0000	0.99	15	SS
Nickel (Ni)	µg/l	nonparametric	37	11			11.8000	0.99	100	SS
Selenium (Se)	µg/l	nonparametric	37	0			4.0000	0.99	50	SS
Silver (Ag)	µg/l	nonparametric	37	0			4.0000	0.99	100	SS
Thallium (Tl)	µg/l	nonparametric	37	0			2.0000	0.99	2	SS
Vanadium (V)	µg/l	nonparametric	37	1			20.0000	0.99	35	SS
Zinc (Zn)	µg/l	nonparametric	37	6			34.5000	0.99	2000	SS

VOC - Appendix I										
Constituent	Units	Model Type	Samples - N	Detections	Mean	SD	Prediction Limit	Confidence	GWPS	Source
All	µg/l	DQR	21	0	<1	<1	<1	<1	various	SS

 = Prediction limit exceeds the GWPS. A Site-Specific GWPS is warranted

Interwell Background Points (Surface Water System SW-1)

VOC - Appendix I										
Constituent	Units	Model Type	Samples - N	Detections	Mean	SD	Prediction Limit	Confidence	GWPS	Source
All	µg/l	DQR	28	0	<1	<1	<1	<1	various	SS

 = Prediction limit exceeds the GWPS. A Site-Specific GWPS is warranted

Table 6 – Summary of Detections

Table 6
Summary of Well/Detected Constituent Pairs that Exceed the Prediction Limit
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Well	Compound	Date	Result (ug/L)	Prediction Limit (ug/L)	Monitoring Program
MW-44	barium	7/12/2023	624.0	618.95	AZPOC
MW-44	barium	9/5/2023	708.0	623.33	AZPOC
MW-44	barium	11/28/2023	803.0	623.33	AZPOC
Tile 1	Barium	3/23/2023	953	618.95	AZPOC
Tile 1	Barium	9/5/2023	2510	623.33	AZPOC
Tile 1	Nickel	9/5/2023	43.6	16.1	AZPOC
Tile 1	1,4-dichlorobenzene	3/23/2023	1.6	1.0	AZPOC
Tile 1	1,4-dichlorobenzene	9/5/2023	4.5	1.0	AZPOC
Tile 1	benzene	9/5/2023	3.0	1.0	AZPOC
Tile 1	chlorobenzene	3/23/2023	2.9	1.0	AZPOC
Tile 1	chlorobenzene	9/5/2023	5.6	1.0	AZPOC
Tile2	cis-1,2-DCE	3/23/2023	6.2	1.0	AZPOC
Tile2	cis-1,2-DCE	9/5/2023	2.3	1.0	AZPOC
Tile2	Vinyl Chloride	3/23/2023	1.9	1.0	AZPOC
Tile2	Vinyl Chloride	9/5/2023	1.6	1.0	AZPOC
MW-14D	cobalt	3/23/2023	5.9	5.4	Assessment Monitoring
MW-14D	cobalt	9/5/2023	6.1	5.4	Assessment Monitoring
MW-17R	barium	3/23/2023	446.0	109.31	Assessment Monitoring
MW-17R	barium	9/5/2023	422.0	107.48	Assessment Monitoring
MW-17R	nickel	3/23/2023	22.2	11.8	Assessment Monitoring
MW-17R	nickel	9/5/2023	21.4	11.8	Assessment Monitoring
MW-17R	Cis-1,2-DCE	3/23/2023	2.2	1.0	Assessment Monitoring
MW-17R	Cis-1,2-DCE	9/5/2023	3.7	1.0	Assessment Monitoring
MW-28*	arsenic	3/23/2023	100.0	5.8	Assessment Monitoring
MW-28*	arsenic	9/5/2023	8.8	5.8	Assessment Monitoring
MW-28*	barium	3/23/2023	1570	109.31	Assessment Monitoring
MW-28*	barium	9/5/2023	647.0	107.48	Assessment Monitoring
MW-28*	cobalt	3/23/2023	82.1	5.4	Assessment Monitoring
MW-28*	cobalt	9/5/2023	28.6	5.4	Assessment Monitoring
MW-28*	nickel	3/23/2023	29.8	11.8	Assessment Monitoring
MW-28*	nickel	9/5/2023	19.1	11.8	Assessment Monitoring
MW-28	cis-1,2-DCE	3/23/2023	10.0	1.0	Assessment Monitoring
MW-28	cis-1,2-DCE	9/5/2023	12.2	1.0	Assessment Monitoring
MW-28	Vinyl Chloride	3/23/2023	1.2	1.0	Assessment Monitoring

* an Alternate Source Demonstration applies to MW-28 inorganic compounds.

Table 7 – Summary of Ongoing and Newly Identified SSI

Table 7
 Summary of Ongoing & Newly Identified SSI
 Annual Water Quality Report
 SCILA Sanitary Landfill
 Permit No. 61-SDP-01-78P

KEY:	SSI	SSL LCL>GWPS
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Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	GWPS Limit (ug/L)	SSI		Resamples Due	5th Background Sample
							Initial Exceedance	Resamples Due		
MW-6A	antimony	3/4/2016	<2.0	2.6	---	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	9/20/2016	<2.0	2.6	---	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	3/9/2017	<2.0	2.6	---	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	9/14/2017	<2.0	2.6	---	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	12/13/2017	<2.0	2.6	---	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	3/12/2018	<2.0	2.6	---	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	9/10/2018	<2.0	2.6	---	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	3/26/2019	<2.0	2.6	---	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	9/16/2019	<2.0	2.6	---	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	3/24/2020	<2.0	2.6	---	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	9/2/2020	<2.0	2.6	---	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	3/8/2021	<2.0	2.6	---	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	9/14/2021	<2.0	2.6	---	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	2/28/2022	<2.0	2.6	---	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	9/13/2022	3.0	2.6	0.324	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	3/23/2023	<2.0	2.6	0.324	6.0	9/13/2022	NA	8/27/2015	
MW-6A	antimony	9/5/2023	Dry	2.6	0.324	6.0	9/13/2022	NA	8/27/2015	
MW-6A	cobalt	3/4/2016	<0.8	3.5	---	3.5	NA	NA	8/27/2015	
MW-6A	cobalt	9/20/2016	1.2	3.5	---	3.5	NA	NA	8/27/2015	
MW-6A	cobalt	3/9/2017	<0.8	3.5	---	3.5	NA	NA	8/27/2015	
MW-6A	cobalt	9/14/2017	5.4	3.5	---	3.5	NA	NA	8/27/2015	
MW-6A	cobalt	12/13/2017	1.4	3.5	---	3.5	NA	NA	8/27/2015	
MW-6A	cobalt	3/12/2018	<2.0	3.5	---	3.5	NA	NA	8/27/2015	
MW-6A	cobalt	9/10/2018	2.2	3.5	0.000	3.5	9/14/2017	12/13/2017	8/27/2015	
MW-6A	cobalt	3/26/2019	<0.8	3.5	0.075	3.5	9/14/2017	12/13/2017	8/27/2015	
MW-6A	cobalt	9/16/2019	1.3	3.5	0.061	3.5	9/14/2017	12/13/2017	8/27/2015	
MW-6A	cobalt	3/24/2020	<0.8	3.5	0.061	3.5	9/14/2017	12/13/2017	8/27/2015	
MW-6A	cobalt	9/2/2020	0.7	3.5	0.201	3.5	9/14/2017	12/13/2017	8/27/2015	
MW-6A	cobalt	3/8/2021	17.5	3.5	0.000	3.5	9/14/2017	12/13/2017	8/27/2015	
MW-6A	cobalt	9/14/2021	1.9	3.5	0.000	3.5	9/14/2017	12/13/2017	8/27/2015	
MW-6A	cobalt	2/28/2022	2.8	3.5	0.000	3.5	9/14/2017	12/13/2017	8/27/2015	
MW-6A	cobalt	9/13/2022	0.4	7.2	0.000	7.2	9/14/2017	12/13/2017	8/27/2015	
MW-6A	cobalt	3/23/2023	<0.4	7.2	0.000	7.2	9/14/2017	12/13/2017	8/27/2015	
MW-6A	cobalt	9/5/2023	Dry	7.2	0.000	7.2	9/14/2017	12/13/2017	8/27/2015	
MW-6A	nickel	3/4/2016	4.10	16.1	---	100	NA	NA	8/27/2015	
MW-6A	nickel	9/20/2016	5.50	16.1	---	100	NA	NA	8/27/2015	
MW-6A	nickel	3/9/2017	<4.0	16.1	---	100	NA	NA	8/27/2015	
MW-6A	nickel	9/14/2017	13.20	16.1	---	100	NA	NA	8/27/2015	
MW-6A	nickel	3/12/2018	5.20	16.1	---	100	NA	NA	8/27/2015	
MW-6A	nickel	9/10/2018	22.80	16.1	0.000	100	9/10/2018	12/10/2018	8/27/2015	
MW-6A	nickel	11/14/2018	35.20	16.1	0.000	100	9/10/2018	12/10/2018	8/27/2015	
MW-6A	nickel	3/26/2019	4.60	16.1	0.000	100	9/10/2018	12/10/2018	8/27/2015	
MW-6A	nickel	9/16/2019	11.80	16.1	2.885	100	9/10/2018	12/10/2018	8/27/2015	
MW-6A	nickel	3/24/2020	5.50	16.1	0.000	100	9/10/2018	12/10/2018	8/27/2015	
MW-6A	nickel	9/2/2020	5.10	16.1	2.766	100	9/10/2018	12/10/2018	8/27/2015	
MW-6A	nickel	3/8/2021	28.10	16.1	0.000	100	9/10/2018	12/10/2018	8/27/2015	
MW-6A	nickel	9/14/2021	5.70	16.1	0.000	100	9/10/2018	12/10/2018	8/27/2015	
MW-6A	nickel	3/28/2022	25.90	16.1	9.154	100	9/10/2018	12/10/2018	8/27/2015	
MW-6A	nickel	9/13/2022	28.30	16.1	1.313	100	9/10/2018	12/10/2018	8/27/2015	
MW-6A	nickel	3/23/2023	18.0	28.3	7.497	100	9/10/2018	12/10/2018	8/27/2015	
MW-6A	nickel	9/5/2023	Dry	28.3	7.497	100	9/10/2018	12/10/2018	8/27/2015	
MW-6A	selenium	3/4/2016	<4.0	5.1	---	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	9/20/2016	<4.0	5.1	---	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	3/9/2017	<4.0	5.1	---	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	9/14/2017	<4.0	5.1	---	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	12/13/2017	<4.0	5.1	---	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	3/12/2018	<4.0	5.1	---	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	9/10/2018	<4.0	5.1	---	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	3/26/2019	<4.0	5.1	---	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	9/16/2019	<4.0	5.1	---	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	3/24/2020	<4.0	5.1	---	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	9/2/2020	<4.0	5.1	---	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	3/8/2021	<4.0	5.1	---	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	9/14/2021	<4.0	5.1	---	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	2/28/2022	<4.0	5.1	---	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	9/13/2022	84.70	5.1	0.000	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	2/28/2022	<4.0	16.2	0.000	50	9/13/2022	NA	8/27/2015	
MW-6A	selenium	2/28/2022	Dry	16.2	0.000	50	9/13/2022	NA	8/27/2015	

*BOLD GWPS = A Site Specific GWPS that is equal to the Prediction Limit. All other GWPS are IAC 567-137 Statewide Standards for Protected Groundwater.

Table 7

KEY:	SSI	SSL LCL>GWPS
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Summary of Ongoing & Newly Identified SSI

Note: The absence of shading indicates that the condition does not exist.

Annual Water Quality Report
 SCILA Sanitary Landfill
 Permit No. 61-SDP-01-78P

Monitoring Well	Compound	Sample Date	Each Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	95% UCL (ug/L)	GWPS Limit (ug/L)	SSI	Resamples Due	5th Background Sample
								Initial Exceedance		
MW-21	cobalt	3/4/2016	<0.8	3.92	0.400	0.400	3.92	NA	NA	8/27/2015
MW-21	cobalt	9/20/2016	<0.8	3.92	0.400	0.400	3.92	NA	NA	8/27/2015
MW-21	cobalt	3/9/2017	<0.8	3.92	0.400	0.400	3.92	NA	NA	8/27/2015
MW-21	cobalt	9/14/2017	<0.8	3.92	0.400	0.400	3.92	NA	NA	8/27/2015
MW-21	cobalt	3/12/2018	<2.0	3.92	0.290	0.810	3.5	NA	NA	8/27/2015
MW-21	cobalt	9/10/2018	0.80	3.50	0.390	0.910	3.5	NA	NA	8/27/2015
MW-21	cobalt	3/26/2019	<0.8	3.50	0.390	0.910	3.5	NA	NA	8/27/2015
MW-21	cobalt	9/16/2019	<0.8	3.50	0.390	0.910	3.5	NA	NA	8/27/2015
MW-21	cobalt	3/24/2020	<0.8	3.50	0.327	0.673	3.5	NA	NA	8/27/2015
MW-21	cobalt	9/2/2020	<0.4	3.50	0.263	0.437	3.5	NA	NA	8/27/2015
MW-21	cobalt	9/14/2021	0.70	3.50	0.246	0.603	3.5	NA	NA	8/27/2015
MW-21	cobalt	3/28/2022	0.40	3.50	0.246	0.603	3.5	NA	NA	8/27/2015
MW-21	cobalt	9/13/2022	5.10	7.20	0.000	3.629	7.2	NA	NA	8/27/2015
MW-21	cobalt	3/23/2023	<0.4	7.20	0.000	3.629	7.2	NA	NA	8/27/2015
MW-21	cobalt	9/5/2023	<0.4	4.14	0.000	3.570	7.2	NA	NA	8/27/2015

***BOLD GWPS** = A Site Specific GWPS that is equal to the Prediction Limit. All other GWPS are IAC 567-137 Statewide Standards for Protected Groundwater.

Table 7
Summary of Ongoing & Newly Identified SSI
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SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

KEY:	SSI	SSL LCL>GWPS
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Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	GWPS Limit (ug/L)	SSI	Resamples Due	5th Background Sample
							Initial Exceedance		
MW-44	arsenic	7/12/2023	<4.0	48.28	---	48.28	NA	NA	pending
MW-44	arsenic	9/5/2023	<4.0	48.58	---	48.58	NA	NA	pending
MW-44	barium	7/12/2023	624.00	618.95	---	2000	7/12/2023	9/5/2023	pending
MW-44	barium	9/5/2023	708.00	623.33	---	2000	7/12/2023	9/5/2023	pending
MW-44	barium	11/28/2023	803.00	623.33	---	2000	7/12/2023	9/5/2023	pending

***BOLD GWPS** = A Site Specific GWPS that is equal to the Prediction Limit. All other GWPS are IAC 567-137 Statewide Standards for Protected Groundwater.

Table 7
Summary of Ongoing & Newly Identified SSI
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KEY:	SSI	SSL LCL>GWPS
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Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	GWPS Limit (ug/L)	SSI Initial Exceedance	Resamples Due	5th Background Sample
Tile2	Barium	6/5/2019	504	564.26	---	2000	9/16/2019	NA	NA
Tile2	Barium	9/16/2019	618	564.26	---	2000	9/16/2019	NA	NA
Tile2	Barium	3/24/2020	459	561.21	---	2000	9/16/2019	NA	NA
Tile2	Barium	9/2/2020	1060	563.15	337.038	2000	9/16/2019	NA	NA
Tile2	Barium	3/8/2021	500	563.97	335.138	2000	9/16/2019	NA	NA
Tile2	Barium	9/14/2021	568	568.12	318.397	2000	9/16/2019	NA	NA
Tile2	Barium	3/28/2022	504	586.70	340.632	2000	9/16/2019	NA	NA
Tile2	Barium	9/13/2022	860	572.52	407.014	2000	9/16/2019	NA	NA
Tile2	Barium	3/23/2023	481	618.95	397.306	2000	9/16/2019	NA	NA
Tile2	Barium	9/5/2023	590	623.33	404.140	2000	9/16/2019	NA	NA
Tile2	cobalt	6/5/2019	1.8	3.50	---	3.5	NA	NA	NA
Tile2	cobalt	9/16/2019	2.9	3.50	---	3.5	NA	NA	NA
Tile2	cobalt	3/24/2020	1.1	3.50	---	3.5	NA	NA	NA
Tile2	cobalt	9/2/2020	3.9	3.50	0.977	3.5	NA	NA	NA
Tile2	cobalt	3/8/2021	1.0	3.50	0.558	3.5	NA	NA	NA
Tile2	cobalt	9/14/2021	2.3	3.50	0.484	3.5	NA	NA	NA
Tile2	cobalt	3/28/2022	1.2	3.50	0.537	3.5	NA	NA	NA
Tile2	cobalt	9/13/2022	6.1	7.20	0.000	7.2	NA	NA	NA
Tile2	cobalt	3/23/2023	0.6	7.20	0.000	7.2	NA	NA	NA
Tile2	cobalt	9/5/2023	1.5	4.14	0.000	7.2	NA	NA	NA
Tile2	1,1-dichloroethane	9/10/2018	<1.0	1.0	---	140	NA	NA	NA
Tile2	1,1-dichloroethane	3/26/2019	<1.0	1.0	---	140	NA	NA	NA
Tile2	1,1-dichloroethane	6/5/2019	<1.0	1.0	---	140	NA	NA	NA
Tile2	1,1-dichloroethane	9/16/2019	<1.0	1.0	0.500	140	NA	NA	NA
Tile2	1,1-dichloroethane	3/24/2020	<1.0	1.0	0.500	140	NA	NA	NA
Tile2	1,1-dichloroethane	9/2/2020	<1.0	1.0	0.500	140	NA	NA	NA
Tile2	1,1-dichloroethane	3/8/2021	<1.0	1.0	0.500	140	NA	NA	NA
Tile2	1,1-dichloroethane	9/14/2021	<1.0	1.0	0.500	140	NA	NA	NA
Tile2	1,1-dichloroethane	3/28/2022	<1.0	1.0	0.500	140	NA	NA	NA
Tile2	1,1-dichloroethane	9/13/2022	<1.0	1.0	0.500	140	NA	NA	NA
Tile2	1,1-dichloroethane	3/23/2023	<1.0	1.0	0.500	140	NA	NA	NA
Tile2	1,1-dichloroethane	9/5/2023	<1.0	1.0	0.500	140	NA	NA	NA
Tile2	1,2-dichloropropane	9/10/2018	<1.0	1.0	---	5	NA	NA	NA
Tile2	1,2-dichloropropane	3/26/2019	<1.0	1.0	---	5	NA	NA	NA
Tile2	1,2-dichloropropane	6/5/2019	<1.0	1.0	---	5	NA	NA	NA
Tile2	1,2-dichloropropane	9/16/2019	<1.0	1.0	0.500	5	NA	NA	NA
Tile2	1,2-dichloropropane	3/24/2020	<1.0	1.0	0.500	5	NA	NA	NA
Tile2	1,2-dichloropropane	9/2/2020	<1.0	1.0	0.500	5	NA	NA	NA
Tile2	1,2-dichloropropane	3/8/2021	<1.0	1.0	0.500	5	NA	NA	NA
Tile2	1,2-dichloropropane	9/14/2021	<1.0	1.0	0.500	5	NA	NA	NA
Tile2	1,2-dichloropropane	3/28/2022	<1.0	1.0	0.500	5	NA	NA	NA
Tile2	1,2-dichloropropane	9/13/2022	<1.0	1.0	0.500	5	NA	NA	NA
Tile2	1,2-dichloropropane	3/23/2023	<1.0	1.0	0.500	5	NA	NA	NA
Tile2	1,2-dichloropropane	9/5/2023	<1.0	1.0	0.500	5	NA	NA	NA
Tile2	1,4-dichlorobenzene	9/10/2018	<1.0	1.0	---	75	3/26/2019	NA	Mar-20
Tile2	1,4-dichlorobenzene	3/26/2019	1.00	1.0	---	75	3/26/2019	NA	Mar-20
Tile2	1,4-dichlorobenzene	6/5/2019	<1.0	1.0	---	75	3/26/2019	NA	Mar-20
Tile2	1,4-dichlorobenzene	9/16/2019	<1.0	1.0	0.331	75	3/26/2019	NA	Mar-20
Tile2	1,4-dichlorobenzene	3/24/2020	<1.0	1.0	0.331	75	3/26/2019	NA	Mar-20
Tile2	1,4-dichlorobenzene	9/2/2020	<1.0	1.0	0.500	75	3/26/2019	NA	Mar-20
Tile2	1,4-dichlorobenzene	3/8/2021	<1.0	1.0	0.500	75	3/26/2019	NA	Mar-20
Tile2	1,4-dichlorobenzene	9/14/2021	<1.0	1.0	0.500	75	3/26/2019	NA	Mar-20
Tile2	1,4-dichlorobenzene	3/28/2022	<1.0	1.0	0.500	75	3/26/2019	NA	Mar-20
Tile2	1,4-dichlorobenzene	9/13/2022	<1.0	1.0	0.500	75	3/26/2019	NA	Mar-20
Tile2	1,4-dichlorobenzene	3/23/2023	<1.0	1.0	0.500	75	3/26/2019	NA	Mar-20
Tile2	1,4-dichlorobenzene	9/5/2023	<1.0	1.0	0.500	75	3/26/2019	NA	Mar-20
Tile2	benzene	9/10/2018	<1.0	1.0	---	5	NA	NA	Mar-20
Tile2	benzene	3/26/2019	<1.0	1.0	---	5	NA	NA	Mar-20
Tile2	benzene	6/5/2019	<1.0	1.0	---	5	NA	NA	Mar-20
Tile2	benzene	9/16/2019	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	benzene	3/24/2020	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	benzene	9/2/2020	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	benzene	3/8/2021	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	benzene	9/14/2021	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	benzene	3/28/2022	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	benzene	9/13/2022	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	benzene	3/23/2023	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	benzene	9/5/2023	<1.0	1.0	0.500	5	NA	NA	Mar-20

Table 7
Summary of Ongoing & Newly Identified SSI
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

KEY:	SSI	SSL LCL>GWPS
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Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	GWPS Limit (ug/L)	SSI Initial Exceedance	Resamples Due	5th Background Sample
Tile2	chlorobenzene	9/10/2018	<1.0	1.0	---	100	3/26/2019	NA	Mar-20
Tile2	chlorobenzene	3/26/2019	2.00	1.0	---	100	3/26/2019	NA	Mar-20
Tile2	chlorobenzene	6/5/2019	1.20	1.0	---	100	3/26/2019	NA	Mar-20
Tile2	chlorobenzene	9/16/2019	2.20	1.0	0.557	100	3/26/2019	NA	Mar-20
Tile2	chlorobenzene	3/24/2020	1.00	1.0	0.907	100	3/26/2019	NA	Mar-20
Tile2	chlorobenzene	9/2/2020	1.10	1.0	0.721	100	3/26/2019	NA	Mar-20
Tile2	chlorobenzene	3/8/2021	<1.0	1.0	0.357	100	3/26/2019	NA	Mar-20
Tile2	chlorobenzene	9/14/2021	<1.0	1.0	0.398	100	3/26/2019	NA	Mar-20
Tile2	chlorobenzene	3/28/2022	<1.0	1.0	0.398	100	3/26/2019	NA	Mar-20
Tile2	chlorobenzene	9/13/2022	<1.0	1.0	0.500	100	3/26/2019	NA	Mar-20
Tile2	chlorobenzene	3/23/2023	<1.0	1.0	0.500	100	3/26/2019	NA	Mar-20
Tile2	chlorobenzene	9/5/2023	<1.0	1.0	0.500	100	3/26/2019	NA	Mar-20
Tile2	cis-1,2-DCE	9/10/2018	6.60	1.0	---	70	9/10/2018	NA	Mar-20
Tile2	cis-1,2-DCE	3/26/2019	19.90	1.0	---	70	9/10/2018	NA	Mar-20
Tile2	cis-1,2-DCE	6/5/2019	18.20	1.0	---	70	9/10/2018	NA	Mar-20
Tile2	cis-1,2-DCE	9/16/2019	5.60	1.0	3.729	70	9/10/2018	NA	Mar-20
Tile2	cis-1,2-DCE	3/24/2020	10.60	1.0	5.718	70	9/10/2018	NA	Mar-20
Tile2	cis-1,2-DCE	9/2/2020	1.30	1.0	0.388	70	9/10/2018	NA	Mar-20
Tile2	cis-1,2-DCE	3/8/2021	8.10	1.0	1.735	70	9/10/2018	NA	Mar-20
Tile2	cis-1,2-DCE	9/14/2021	3.80	1.0	1.030	70	9/10/2018	NA	Mar-20
Tile2	cis-1,2-DCE	3/28/2022	2.70	1.0	0.524	70	9/10/2018	NA	Mar-20
Tile2	cis-1,2-DCE	9/13/2022	4.10	1.0	1.897	70	9/10/2018	NA	Mar-20
Tile2	cis-1,2-DCE	3/23/2023	6.20	1.0	2.479	70	9/10/2018	NA	Mar-20
Tile2	cis-1,2-DCE	9/5/2023	2.30	1.0	1.753	70	9/10/2018	NA	Mar-20
Tile2	trans-1,2-DCE	9/10/2018	<1.0	1.0	---	100	NA	NA	Mar-20
Tile2	trans-1,2-DCE	3/26/2019	<1.0	1.0	---	100	NA	NA	Mar-20
Tile2	trans-1,2-DCE	6/5/2019	<1.0	1.0	---	100	NA	NA	Mar-20
Tile2	trans-1,2-DCE	9/16/2019	<1.0	1.0	0.500	100	NA	NA	Mar-20
Tile2	trans-1,2-DCE	3/24/2020	<1.0	1.0	0.500	100	NA	NA	Mar-20
Tile2	trans-1,2-DCE	9/2/2020	<1.0	1.0	0.500	100	NA	NA	Mar-20
Tile2	trans-1,2-DCE	3/8/2021	<1.0	1.0	0.500	100	NA	NA	Mar-20
Tile2	trans-1,2-DCE	9/14/2021	<1.0	1.0	0.500	100	NA	NA	Mar-20
Tile2	trans-1,2-DCE	3/28/2022	<1.0	1.0	0.500	100	NA	NA	Mar-20
Tile2	trans-1,2-DCE	9/13/2022	<1.0	1.0	0.500	100	NA	NA	Mar-20
Tile2	trans-1,2-DCE	3/23/2023	<1.0	1.0	0.500	100	NA	NA	Mar-20
Tile2	trans-1,2-DCE	9/5/2023	<1.0	1.0	0.500	100	NA	NA	Mar-20
Tile2	TCE	9/10/2018	<1.0	1.0	---	5	NA	NA	Mar-20
Tile2	TCE	3/26/2019	<1.0	1.0	---	5	NA	NA	Mar-20
Tile2	TCE	6/5/2019	<1.0	1.0	---	5	NA	NA	Mar-20
Tile2	TCE	9/16/2019	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	TCE	3/24/2020	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	TCE	9/2/2020	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	TCE	3/8/2021	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	TCE	9/14/2021	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	TCE	3/28/2022	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	TCE	9/13/2022	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	TCE	3/23/2023	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	TCE	9/5/2023	<1.0	1.0	0.500	5	NA	NA	Mar-20
Tile2	Vinyl Chloride	9/10/2018	<1.0	1.0	---	2	3/26/2019	NA	Mar-20
Tile2	Vinyl Chloride	3/26/2019	6.20	1.0	---	2	3/26/2019	NA	Mar-20
Tile2	Vinyl Chloride	6/5/2019	<1.0	1.0	---	2	3/26/2019	NA	Mar-20
Tile2	Vinyl Chloride	9/16/2019	8.30	1.0	0.000	2	3/26/2019	NA	Mar-20
Tile2	Vinyl Chloride	3/24/2020	3.50	1.0	0.649	2	3/26/2019	NA	Mar-20
Tile2	Vinyl Chloride	9/2/2020	4.70	1.0	0.455	2	3/26/2019	NA	Mar-20
Tile2	Vinyl Chloride	3/8/2021	2.40	1.0	1.712	2	3/26/2019	NA	Mar-20
Tile2	Vinyl Chloride	9/14/2021	3.30	1.0	2.362	2	3/26/2019	NA	Mar-20
Tile2	Vinyl Chloride	3/28/2022	1.30	1.0	1.233	2	3/26/2019	NA	Mar-20
Tile2	Vinyl Chloride	9/13/2022	1.60	1.0	1.096	2	3/26/2019	NA	Mar-20
Tile2	Vinyl Chloride	3/23/2023	1.90	1.0	0.984	2	3/26/2019	NA	Mar-20
Tile2	Vinyl Chloride	9/5/2023	1.60	1.0	1.312	2	3/26/2019	NA	Mar-20

***BOLD GWPS** = A Site Specific GWPS that is equal to the Prediction Limit. All other GWPS are IAC 567-137 Statewide Standards for Protected Groundwater.

MW-28	chlorobenzene	9/20/2016	<1.0	1.0	---	---	100	NA	NA	NA
MW-28	chlorobenzene	3/9/2017	<1.0	1.0	---	---	100	NA	NA	NA
MW-28	chlorobenzene	9/14/2017	<1.0	1.0	---	---	100	NA	NA	NA
MW-28	chlorobenzene	3/12/2018	<1.0	1.0	0.500	0.500	100	NA	NA	NA
MW-28	chlorobenzene	9/10/2018	<1.0	1.0	0.500	0.500	100	NA	NA	NA
MW-28	chlorobenzene	3/26/2019	<1.0	1.0	0.500	0.500	100	NA	NA	NA
MW-28	chlorobenzene	9/16/2019	<1.0	1.0	0.500	0.500	100	NA	NA	NA
MW-28	chlorobenzene	3/24/2020	<1.0	1.0	0.500	0.500	100	NA	NA	NA
MW-28	chlorobenzene	9/2/2020	<1.0	1.0	0.500	0.500	100	NA	NA	NA
MW-28	chlorobenzene	3/8/2021	<1.0	1.0	0.500	0.500	100	NA	NA	NA
MW-28	chlorobenzene	10/15/2021	<1.0	1.0	0.500	0.500	100	NA	NA	NA
MW-28	chlorobenzene	3/28/2022	<1.0	1.0	0.500	0.500	100	NA	NA	NA
MW-28	chlorobenzene	9/13/2022	<1.0	1.0	0.500	0.500	100	NA	NA	NA
MW-28	chlorobenzene	3/23/2023	<1.0	1.0	0.500	0.500	100	NA	NA	NA
MW-28	chlorobenzene	9/5/2023	<1.0	1.0	0.500	0.500	100	NA	NA	NA
MW-28	cis-1,2-DCE	9/20/2016	5.00	1.0	---	---	70	9/20/2016	NA	9/10/2018
MW-28	cis-1,2-DCE	3/9/2017	15.30	1.0	---	---	70	9/20/2016	NA	9/10/2018
MW-28	cis-1,2-DCE	9/14/2017	15.20	1.0	---	---	70	9/20/2016	NA	9/10/2018
MW-28	cis-1,2-DCE	3/12/2018	21.60	1.0	6.194	22.356	70	9/20/2016	NA	9/10/2018
MW-28	cis-1,2-DCE	9/10/2018	12.20	1.0	11.424	20.726	70	9/20/2016	NA	9/10/2018
MW-28	cis-1,2-DCE	3/26/2019	17.70	1.0	11.994	21.356	70	9/20/2016	NA	9/10/2018
MW-28	cis-1,2-DCE	9/16/2019	13.40	1.0	11.177	21.273	70	9/20/2016	NA	9/10/2018
MW-28	cis-1,2-DCE	3/24/2020	15.60	1.0	11.864	17.586	70	9/20/2016	NA	9/10/2018
MW-28	cis-1,2-DCE	9/2/2020	17.10	1.0	13.697	18.203	70	9/20/2016	NA	9/10/2018
MW-28	cis-1,2-DCE	3/8/2021	10.30	1.0	10.625	17.575	70	9/20/2016	NA	9/10/2018
MW-28	cis-1,2-DCE	10/15/2021	21.00	1.0	10.790	21.210	70	9/20/2016	NA	9/10/2018
MW-28	cis-1,2-DCE	3/28/2022	15.70	1.0	10.818	21.232	70	9/20/2016	NA	9/10/2018
MW-28	cis-1,2-DCE	9/13/2022	14.10	1.0	10.055	20.495	70	9/20/2016	NA	9/10/2018
MW-28	cis-1,2-DCE	3/23/2023	10.00	1.0	9.846	20.554	70	9/20/2016	NA	9/10/2018
MW-28	cis-1,2-DCE	9/5/2023	12.20	1.0	10.108	15.892	70	9/20/2016	NA	9/10/2018
MW-28	trans-1,2-DCE	9/20/2016	<1.0	1.0	---	---	100	NA	NA	NA
MW-28	trans-1,2-DCE	3/9/2017	<1.0	1.0	---	---	100	NA	NA	NA
MW-28	trans-1,2-DCE	9/14/2017	<1.0	1.0	---	---	100	NA	NA	NA
MW-28	trans-1,2-DCE	3/12/2018	20.20	1.0	0.500	0.500	100	3/12/2018	NA	9/10/2018
MW-28	trans-1,2-DCE	9/10/2018	<1.0	1.0	0.500	0.500	100	3/12/2018	NA	9/10/2018
MW-28	trans-1,2-DCE	3/26/2019	<1.0	1.0	0.500	0.500	100	3/12/2018	NA	9/10/2018
MW-28	trans-1,2-DCE	9/16/2019	<1.0	1.0	0.500	0.500	100	3/12/2018	NA	9/10/2018
MW-28	trans-1,2-DCE	3/24/2020	<1.0	1.0	0.500	0.500	100	3/12/2018	NA	9/10/2018
MW-28	trans-1,2-DCE	9/2/2020	1.10	1.0	0.297	1.003	100	3/12/2018	NA	9/10/2018
MW-28	trans-1,2-DCE	3/8/2021	<1.0	1.0	0.297	1.003	100	3/12/2018	NA	9/10/2018
MW-28	trans-1,2-DCE	10/15/2021	<1.0	1.0	0.297	1.003	100	3/12/2018	NA	9/10/2018
MW-28	trans-1,2-DCE	3/28/2022	<1.0	1.0	0.297	1.003	100	3/12/2018	NA	9/10/2018
MW-28	trans-1,2-DCE	9/13/2022	<1.0	1.0	0.500	0.500	100	3/12/2018	NA	9/10/2018
MW-28	trans-1,2-DCE	3/23/2023	<1.0	1.0	0.500	0.500	100	3/12/2018	NA	9/10/2018
MW-28	trans-1,2-DCE	9/5/2023	<1.0	1.0	0.500	0.500	100	3/12/2018	NA	9/10/2018
MW-28	TCE	9/20/2016	<1.0	1.0	---	---	5	3/12/2018	NA	9/10/2018
MW-28	TCE	3/9/2017	<1.0	1.0	---	---	5	3/12/2018	NA	9/10/2018
MW-28	TCE	9/14/2017	<1.0	1.0	---	---	5	3/12/2018	NA	9/10/2018
MW-28	TCE	3/12/2018	<1.0	1.0	---	---	5	3/12/2018	NA	9/10/2018
MW-28	TCE	9/10/2018	<1.0	1.0	---	---	5	3/12/2018	NA	9/10/2018
MW-28	TCE	3/26/2019	<1.0	1.0	---	---	5	3/12/2018	NA	9/10/2018
MW-28	TCE	9/16/2019	<1.0	1.0	---	---	5	3/12/2018	NA	9/10/2018
MW-28	TCE	3/24/2020	<1.0	1.0	---	---	5	3/12/2018	NA	9/10/2018
MW-28	TCE	9/2/2020	<1.0	1.0	---	---	5	3/12/2018	NA	9/10/2018
MW-28	TCE	3/8/2021	<1.0	1.0	---	---	5	3/12/2018	NA	9/10/2018
MW-28	TCE	10/15/2021	<1.0	1.0	---	---	5	3/12/2018	NA	9/10/2018
MW-28	TCE	3/28/2022	<1.0	1.0	---	---	5	3/12/2018	NA	9/10/2018
MW-28	TCE	9/13/2022	<1.0	1.0	---	---	5	3/12/2018	NA	9/10/2018
MW-28	TCE	3/23/2023	<1.0	1.0	---	---	5	3/12/2018	NA	9/10/2018
MW-28	TCE	9/5/2023	<1.0	1.0	---	---	5	3/12/2018	NA	9/10/2018
MW-28	Vinyl Chloride	9/20/2016	<1.0	1.0	---	---	2	NA	NA	NA
MW-28	Vinyl Chloride	3/9/2017	1.80	1.0	---	---	2	3/9/2017	NA	9/10/2018
MW-28	Vinyl Chloride	9/14/2017	1.10	1.0	---	---	2	3/9/2017	NA	9/10/2018
MW-28	Vinyl Chloride	3/12/2018	2.00	1.0	0.544	2.156	2	3/9/2017	NA	9/10/2018
MW-28	Vinyl Chloride	9/10/2018	<1.0	1.0	0.544	2.156	2	3/9/2017	NA	9/10/2018
MW-28	Vinyl Chloride	3/26/2019	1.40	1.0	0.515	1.985	2	3/9/2017	NA	9/10/2018
MW-28	Vinyl Chloride	9/16/2019	<1.0	1.0	0.236	1.964	2	3/9/2017	NA	9/10/2018
MW-28	Vinyl Chloride	3/24/2020	<1.0	1.0	0.196	1.254	2	3/9/2017	NA	9/10/2018
MW-28	Vinyl Chloride	9/2/2020	1.50	1.0	0.328	1.622	2	3/9/2017	NA	9/10/2018
MW-28	Vinyl Chloride	3/8/2021	<1.0	1.0	0.162	1.338	2	3/9/2017	NA	9/10/2018
MW-28	Vinyl Chloride	10/15/2021	1.60	1.0	0.310	1.740	2	3/9/2017	NA	9/10/2018
MW-28	Vinyl Chloride	3/28/2022	1.50	1.0	0.665	1.885	2	3/9/2017	NA	9/10/2018
MW-28	Vinyl Chloride	9/13/2022	<1.0	1.0	0.310	1.740	2	3/9/2017	NA	9/10/2018
MW-28	Vinyl Chloride	3/23/2023	1.20	1.0	0.616	1.784	2	3/9/2017	NA	9/10/2018
MW-28	Vinyl Chloride	9/5/2023	<1.0	1.0	0.330	1.520	2	3/9/2017	NA	9/10/2018

***BOLD GWPS** = A Site Specific GWPS that is equal to the Prediction Limit. All other GWPS are IAC 567-137 Statewide Standards for Protected Groundwater.

cobalt = An Alternate Source Study has been completed for metals at MW-28.

Table 8 - Summary of Ongoing and Newly Identified SSL

Table 8
Summary of Ongoing & Newly Identified SSL
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

KEY:	SSI	SSL LCL>GWPS	SSL UCL>GWPS
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Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result (ug/L)	95% UCL (ug/L)	GWPS Limit (ug/L)	SSL Initial Exceedance	Compliance Date	Compliance Date	Compliance Date
							1st Occurrence	Most Recent	Duration (years)
Tile2	Barium	6/5/2019	504	---	2000	NA	NA	NA	NA
Tile2	Barium	9/16/2019	618	---	2000	NA	NA	NA	NA
Tile2	Barium	3/24/2020	459	---	2000	NA	NA	NA	NA
Tile2	Barium	9/2/2020	1060	983.462	2000	NA	NA	NA	NA
Tile2	Barium	3/8/2021	500	983.362	2000	NA	NA	NA	NA
Tile2	Barium	9/14/2021	568	975.103	2000	NA	NA	NA	NA
Tile2	Barium	3/28/2022	504	975.368	2000	NA	NA	NA	NA
Tile2	Barium	9/13/2022	860	808.986	2000	NA	NA	NA	NA
Tile2	Barium	3/23/2023	481	809.194	2000	NA	NA	NA	NA
Tile2	Barium	9/5/2023	590	813.360	2000	NA	NA	NA	NA
Tile2	cobalt	6/5/2019	1.8	---	3.5	NA	NA	NA	NA
Tile2	cobalt	9/16/2019	2.9	---	3.5	NA	NA	NA	NA
Tile2	cobalt	3/24/2020	1.1	---	3.5	NA	NA	NA	NA
Tile2	cobalt	9/2/2020	3.9	3.873	3.5	NA	NA	NA	NA
Tile2	cobalt	3/8/2021	1.0	3.892	3.5	NA	NA	NA	NA
Tile2	cobalt	9/14/2021	2.3	3.666	3.5	NA	NA	NA	NA
Tile2	cobalt	3/28/2022	1.2	3.663	3.5	NA	NA	NA	NA
Tile2	cobalt	9/13/2022	6.1	5.438	7.2	NA	NA	NA	NA
Tile2	cobalt	3/23/2023	0.6	5.454	7.2	NA	NA	NA	NA
Tile2	cobalt	9/5/2023	1.5	5.323	7.2	NA	NA	NA	NA
Tile2	1,1-dichloroethane	9/10/2018	<1.0	---	140	NA	NA	NA	NA
Tile2	1,1-dichloroethane	3/26/2019	<1.0	---	140	NA	NA	NA	NA
Tile2	1,1-dichloroethane	6/5/2019	<1.0	---	140	NA	NA	NA	NA
Tile2	1,1-dichloroethane	9/16/2019	<1.0	0.500	140	NA	NA	NA	NA
Tile2	1,1-dichloroethane	3/24/2020	<1.0	0.500	140	NA	NA	NA	NA
Tile2	1,1-dichloroethane	9/2/2020	<1.0	0.500	140	NA	NA	NA	NA
Tile2	1,1-dichloroethane	3/8/2021	<1.0	0.500	140	NA	NA	NA	NA
Tile2	1,1-dichloroethane	9/14/2021	<1.0	0.500	140	NA	NA	NA	NA
Tile2	1,1-dichloroethane	3/28/2022	<1.0	0.500	140	NA	NA	NA	NA
Tile2	1,1-dichloroethane	9/13/2022	<1.0	0.500	140	NA	NA	NA	NA
Tile2	1,1-dichloroethane	3/23/2023	<1.0	0.500	140	NA	NA	NA	NA
Tile2	1,1-dichloroethane	9/5/2023	<1.0	0.500	140	NA	NA	NA	NA
Tile2	1,2-dichloropropane	9/10/2018	<1.0	---	5	NA	NA	NA	NA
Tile2	1,2-dichloropropane	3/26/2019	<1.0	---	5	NA	NA	NA	NA
Tile2	1,2-dichloropropane	6/5/2019	<1.0	---	5	NA	NA	NA	NA
Tile2	1,2-dichloropropane	9/16/2019	<1.0	0.500	5	NA	NA	NA	NA
Tile2	1,2-dichloropropane	3/24/2020	<1.0	0.500	5	NA	NA	NA	NA
Tile2	1,2-dichloropropane	9/2/2020	<1.0	0.500	5	NA	NA	NA	NA
Tile2	1,2-dichloropropane	3/8/2021	<1.0	0.500	5	NA	NA	NA	NA
Tile2	1,2-dichloropropane	9/14/2021	<1.0	0.500	5	NA	NA	NA	NA
Tile2	1,2-dichloropropane	3/28/2022	<1.0	0.500	5	NA	NA	NA	NA
Tile2	1,2-dichloropropane	9/13/2022	<1.0	0.500	5	NA	NA	NA	NA
Tile2	1,2-dichloropropane	3/23/2023	<1.0	0.500	5	NA	NA	NA	NA
Tile2	1,2-dichloropropane	9/5/2023	<1.0	0.500	5	NA	NA	NA	NA
Tile2	1,4-dichlorobenzene	9/10/2018	<1.0	---	75	NA	NA	NA	NA
Tile2	1,4-dichlorobenzene	3/26/2019	1.00	---	75	NA	NA	NA	NA
Tile2	1,4-dichlorobenzene	6/5/2019	<1.0	---	75	NA	NA	NA	NA
Tile2	1,4-dichlorobenzene	9/16/2019	<1.0	0.919	75	NA	NA	NA	NA
Tile2	1,4-dichlorobenzene	3/24/2020	<1.0	0.919	75	NA	NA	NA	NA
Tile2	1,4-dichlorobenzene	9/2/2020	<1.0	0.500	75	NA	NA	NA	NA
Tile2	1,4-dichlorobenzene	3/8/2021	<1.0	0.500	75	NA	NA	NA	NA
Tile2	1,4-dichlorobenzene	9/14/2021	<1.0	0.500	75	NA	NA	NA	NA
Tile2	1,4-dichlorobenzene	3/28/2022	<1.0	0.500	75	NA	NA	NA	NA
Tile2	1,4-dichlorobenzene	9/13/2022	<1.0	0.500	75	NA	NA	NA	NA
Tile2	1,4-dichlorobenzene	3/23/2023	<1.0	0.500	75	NA	NA	NA	NA
Tile2	1,4-dichlorobenzene	9/5/2023	<1.0	0.500	75	NA	NA	NA	NA
Tile2	benzene	9/10/2018	<1.0	---	5	NA	NA	NA	NA
Tile2	benzene	3/26/2019	<1.0	---	5	NA	NA	NA	NA
Tile2	benzene	6/5/2019	<1.0	---	5	NA	NA	NA	NA
Tile2	benzene	9/16/2019	<1.0	0.500	5	NA	NA	NA	NA
Tile2	benzene	3/24/2020	<1.0	0.500	5	NA	NA	NA	NA
Tile2	benzene	9/2/2020	<1.0	0.500	5	NA	NA	NA	NA
Tile2	benzene	3/8/2021	<1.0	0.500	5	NA	NA	NA	NA
Tile2	benzene	9/14/2021	<1.0	0.500	5	NA	NA	NA	NA
Tile2	benzene	3/28/2022	<1.0	0.500	5	NA	NA	NA	NA
Tile2	benzene	9/13/2022	<1.0	0.500	5	NA	NA	NA	NA
Tile2	benzene	3/23/2023	<1.0	0.500	5	NA	NA	NA	NA
Tile2	benzene	9/5/2023	<1.0	0.500	5	NA	NA	NA	NA

Table 8
Summary of Ongoing & Newly Identified SSL
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

KEY:	SSI	SSL LCL>GWPS	SSL UCL>GWPS
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Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result (ug/L)	95% UCL (ug/L)	GWPS Limit (ug/L)	SSL Initial Exceedance	Compliance Date	Compliance Date	Compliance Date
							1st Occurrence	Most Recent	Duration (years)
Tile2	chlorobenzene	9/10/2018	<1.0	---	100	NA	NA	NA	NA
Tile2	chlorobenzene	3/26/2019	2.00	---	100	NA	NA	NA	NA
Tile2	chlorobenzene	6/5/2019	1.20	---	100	NA	NA	NA	NA
Tile2	chlorobenzene	9/16/2019	2.20	2.393	100	NA	NA	NA	NA
Tile2	chlorobenzene	3/24/2020	1.00	2.293	100	NA	NA	NA	NA
Tile2	chlorobenzene	9/2/2020	1.10	2.029	100	NA	NA	NA	NA
Tile2	chlorobenzene	3/8/2021	<1.0	2.043	100	NA	NA	NA	NA
Tile2	chlorobenzene	9/14/2021	<1.0	1.152	100	NA	NA	NA	NA
Tile2	chlorobenzene	3/28/2022	<1.0	1.152	100	NA	NA	NA	NA
Tile2	chlorobenzene	9/13/2022	<1.0	0.500	100	NA	NA	NA	NA
Tile2	chlorobenzene	3/23/2023	<1.0	0.500	100	NA	NA	NA	NA
Tile2	chlorobenzene	9/5/2023	<1.0	0.500	100	NA	NA	NA	NA
Tile2	cis-1,2-DCE	9/10/2018	6.60	---	70	NA	NA	NA	NA
Tile2	cis-1,2-DCE	3/26/2019	19.90	---	70	NA	NA	NA	NA
Tile2	cis-1,2-DCE	6/5/2019	18.20	---	70	NA	NA	NA	NA
Tile2	cis-1,2-DCE	9/16/2019	5.60	21.421	70	NA	NA	NA	NA
Tile2	cis-1,2-DCE	3/24/2020	10.60	21.432	70	NA	NA	NA	NA
Tile2	cis-1,2-DCE	9/2/2020	1.30	17.462	70	NA	NA	NA	NA
Tile2	cis-1,2-DCE	3/8/2021	8.10	11.065	70	NA	NA	NA	NA
Tile2	cis-1,2-DCE	9/14/2021	3.80	10.870	70	NA	NA	NA	NA
Tile2	cis-1,2-DCE	3/28/2022	2.70	7.426	70	NA	NA	NA	NA
Tile2	cis-1,2-DCE	9/13/2022	4.10	7.453	70	NA	NA	NA	NA
Tile2	cis-1,2-DCE	3/23/2023	6.20	5.921	70	NA	NA	NA	NA
Tile2	cis-1,2-DCE	9/5/2023	2.30	5.897	70	NA	NA	NA	NA
Tile2	trans-1,2-DCE	9/10/2018	<1.0	---	100	NA	NA	NA	NA
Tile2	trans-1,2-DCE	3/26/2019	<1.0	---	100	NA	NA	NA	NA
Tile2	trans-1,2-DCE	6/5/2019	<1.0	---	100	NA	NA	NA	NA
Tile2	trans-1,2-DCE	9/16/2019	<1.0	0.500	100	NA	NA	NA	NA
Tile2	trans-1,2-DCE	3/24/2020	<1.0	0.500	100	NA	NA	NA	NA
Tile2	trans-1,2-DCE	9/2/2020	<1.0	0.500	100	NA	NA	NA	NA
Tile2	trans-1,2-DCE	3/8/2021	<1.0	0.500	100	NA	NA	NA	NA
Tile2	trans-1,2-DCE	9/14/2021	<1.0	0.500	100	NA	NA	NA	NA
Tile2	trans-1,2-DCE	3/28/2022	<1.0	0.500	100	NA	NA	NA	NA
Tile2	trans-1,2-DCE	9/13/2022	<1.0	0.500	100	NA	NA	NA	NA
Tile2	trans-1,2-DCE	3/23/2023	<1.0	0.500	100	NA	NA	NA	NA
Tile2	trans-1,2-DCE	9/5/2023	<1.0	0.500	100	NA	NA	NA	NA
Tile2	TCE	9/10/2018	<1.0	---	5	NA	NA	NA	NA
Tile2	TCE	3/26/2019	<1.0	---	5	NA	NA	NA	NA
Tile2	TCE	6/5/2019	<1.0	---	5	NA	NA	NA	NA
Tile2	TCE	9/16/2019	<1.0	0.500	5	NA	NA	NA	NA
Tile2	TCE	3/24/2020	<1.0	0.500	5	NA	NA	NA	NA
Tile2	TCE	9/2/2020	<1.0	0.500	5	NA	NA	NA	NA
Tile2	TCE	3/8/2021	<1.0	0.500	5	NA	NA	NA	NA
Tile2	TCE	9/14/2021	<1.0	0.500	5	NA	NA	NA	NA
Tile2	TCE	3/28/2022	<1.0	0.500	5	NA	NA	NA	NA
Tile2	TCE	9/13/2022	<1.0	0.500	5	NA	NA	NA	NA
Tile2	TCE	3/23/2023	<1.0	0.500	5	NA	NA	NA	NA
Tile2	TCE	9/5/2023	<1.0	0.500	5	NA	NA	NA	NA
Tile2	Vinyl Chloride	9/10/2018	<1.0	---	2	NA	NA	NA	NA
Tile2	Vinyl Chloride	3/26/2019	6.20	---	2	NA	NA	NA	NA
Tile2	Vinyl Chloride	6/5/2019	<1.0	---	2	NA	NA	NA	NA
Tile2	Vinyl Chloride	9/16/2019	8.30	8.569	2	NA	NA	NA	NA
Tile2	Vinyl Chloride	3/24/2020	3.50	8.601	2	NA	NA	NA	NA
Tile2	Vinyl Chloride	9/2/2020	4.70	8.045	2	NA	NA	NA	NA
Tile2	Vinyl Chloride	3/8/2021	2.40	7.738	2	NA	NA	NA	NA
Tile2	Vinyl Chloride	9/14/2021	3.30	4.588	2	NA	NA	NA	NA
Tile2	Vinyl Chloride	3/28/2022	1.30	4.617	2	NA	NA	NA	NA
Tile2	Vinyl Chloride	9/13/2022	1.60	3.204	2	NA	NA	NA	NA
Tile2	Vinyl Chloride	3/23/2023	1.90	3.066	2	NA	NA	NA	NA
Tile2	Vinyl Chloride	9/5/2023	1.60	1.888	2	NA	NA	NA	NA

***BOLD GWPS** = A Site Specific GWPS that is equal to the Prediction Limit. All other GWPS are IAC 567-137 Statewide Standards for Protected Groundwater.

Table 9 – Analytical Data Summary

Table 10 – Historic SSI and SSL

Table 10
Historic SSI & SSL
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

KEY: SSI

SSL LCL>GWPS SSL UCL>GWPS

Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	95% UCL (ug/L)	GWPS Limit (ug/L)
Tile2	Barium	6/5/2019	504	564.26	---	---	2000
Tile2	Barium	9/16/2019	618	564.26	---	---	2000
Tile2	Barium	3/24/2020	459	561.21	---	---	2000
Tile2	Barium	9/2/2020	1060	563.15	337.038	983.462	2000
Tile2	Barium	3/8/2021	500	563.97	335.138	983.362	2000
Tile2	Barium	9/14/2021	568	568.12	318.397	975.103	2000
Tile2	Barium	3/28/2022	504	586.70	340.632	975.368	2000
Tile2	Barium	9/13/2022	860	572.52	407.014	808.986	2000
Tile2	Barium	3/23/2023	481	618.95	397.306	809.194	2000
Tile2	Barium	9/5/2023	590	623.33	404.140	813.360	2000
Tile2	cobalt	6/5/2019	1.8	3.50	---	---	3.5
Tile2	cobalt	9/16/2019	2.9	3.50	---	---	3.5
Tile2	cobalt	3/24/2020	1.1	3.50	---	---	3.5
Tile2	cobalt	9/2/2020	3.9	3.50	0.977	3.873	3.5
Tile2	cobalt	3/8/2021	1.0	3.50	0.558	3.892	3.5
Tile2	cobalt	9/14/2021	2.3	3.50	0.484	3.666	3.5
Tile2	cobalt	3/28/2022	1.2	3.50	0.537	3.663	3.5
Tile2	cobalt	9/13/2022	6.1	7.20	0.000	5.438	7.2
Tile2	cobalt	3/23/2023	0.6	7.20	0.000	5.454	7.2
Tile2	cobalt	9/5/2023	1.5	4.14	0.000	5.323	7.2
Tile2	1,1-dichloroethane	9/10/2018	<1.0	1.0	---	---	140
Tile2	1,1-dichloroethane	3/26/2019	<1.0	1.0	---	---	140
Tile2	1,1-dichloroethane	6/5/2019	<1.0	1.0	---	---	140
Tile2	1,1-dichloroethane	9/16/2019	<1.0	1.0	0.500	0.500	140
Tile2	1,1-dichloroethane	3/24/2020	<1.0	1.0	0.500	0.500	140
Tile2	1,1-dichloroethane	9/2/2020	<1.0	1.0	0.500	0.500	140
Tile2	1,1-dichloroethane	3/8/2021	<1.0	1.0	0.500	0.500	140
Tile2	1,1-dichloroethane	9/14/2021	<1.0	1.0	0.500	0.500	140
Tile2	1,1-dichloroethane	3/28/2022	<1.0	1.0	0.500	0.500	140
Tile2	1,1-dichloroethane	9/13/2022	<1.0	1.0	0.500	0.500	140
Tile2	1,1-dichloroethane	3/23/2023	<1.0	1.0	0.500	0.500	140
Tile2	1,1-dichloroethane	9/5/2023	<1.0	1.0	0.500	0.500	140
Tile2	1,2-dichloropropane	9/10/2018	<1.0	1.0	---	---	5
Tile2	1,2-dichloropropane	3/26/2019	<1.0	1.0	---	---	5
Tile2	1,2-dichloropropane	6/5/2019	<1.0	1.0	---	---	5
Tile2	1,2-dichloropropane	9/16/2019	<1.0	1.0	0.500	0.500	5
Tile2	1,2-dichloropropane	3/24/2020	<1.0	1.0	0.500	0.500	5
Tile2	1,2-dichloropropane	9/2/2020	<1.0	1.0	0.500	0.500	5
Tile2	1,2-dichloropropane	3/8/2021	<1.0	1.0	0.500	0.500	5
Tile2	1,2-dichloropropane	9/14/2021	<1.0	1.0	0.500	0.500	5
Tile2	1,2-dichloropropane	3/28/2022	<1.0	1.0	0.500	0.500	5
Tile2	1,2-dichloropropane	9/13/2022	<1.0	1.0	0.500	0.500	5
Tile2	1,2-dichloropropane	3/23/2023	<1.0	1.0	0.500	0.500	5
Tile2	1,2-dichloropropane	9/5/2023	<1.0	1.0	0.500	0.500	5
Tile2	1,4-dichlorobenzene	9/10/2018	<1.0	1.0	---	---	75
Tile2	1,4-dichlorobenzene	3/26/2019	1.00	1.0	---	---	75
Tile2	1,4-dichlorobenzene	6/5/2019	<1.0	1.0	---	---	75
Tile2	1,4-dichlorobenzene	9/16/2019	<1.0	1.0	0.331	0.919	75
Tile2	1,4-dichlorobenzene	3/24/2020	<1.0	1.0	0.331	0.919	75
Tile2	1,4-dichlorobenzene	9/2/2020	<1.0	1.0	0.500	0.500	75
Tile2	1,4-dichlorobenzene	3/8/2021	<1.0	1.0	0.500	0.500	75
Tile2	1,4-dichlorobenzene	9/14/2021	<1.0	1.0	0.500	0.500	75
Tile2	1,4-dichlorobenzene	3/28/2022	<1.0	1.0	0.500	0.500	75
Tile2	1,4-dichlorobenzene	9/13/2022	<1.0	1.0	0.500	0.500	75
Tile2	1,4-dichlorobenzene	3/23/2023	<1.0	1.0	0.500	0.500	75
Tile2	1,4-dichlorobenzene	9/5/2023	<1.0	1.0	0.500	0.500	75
Tile2	benzene	9/10/2018	<1.0	1.0	---	---	5
Tile2	benzene	3/26/2019	<1.0	1.0	---	---	5
Tile2	benzene	6/5/2019	<1.0	1.0	---	---	5
Tile2	benzene	9/16/2019	<1.0	1.0	0.500	0.500	5
Tile2	benzene	3/24/2020	<1.0	1.0	0.500	0.500	5
Tile2	benzene	9/2/2020	<1.0	1.0	0.500	0.500	5
Tile2	benzene	3/8/2021	<1.0	1.0	0.500	0.500	5
Tile2	benzene	9/14/2021	<1.0	1.0	0.500	0.500	5
Tile2	benzene	3/28/2022	<1.0	1.0	0.500	0.500	5
Tile2	benzene	9/13/2022	<1.0	1.0	0.500	0.500	5
Tile2	benzene	3/23/2023	<1.0	1.0	0.500	0.500	5
Tile2	benzene	9/5/2023	<1.0	1.0	0.500	0.500	5

Table 10
Historic SSI & SSL
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

KEY: SSI

SSL LCL>GWPS SSL UCL>GWPS

Note: The absence of shading indicates that the condition does not exist.

Monitoring Well	Compound	Sample Date	Each Result (ug/L)	Prediction Limit (ug/L)	95% LCL (ug/L)	95% UCL (ug/L)	GWPS Limit (ug/L)
Tile2	chlorobenzene	9/10/2018	<1.0	1.0	---	---	100
Tile2	chlorobenzene	3/26/2019	2.00	1.0	---	---	100
Tile2	chlorobenzene	6/5/2019	1.20	1.0	---	---	100
Tile2	chlorobenzene	9/16/2019	2.20	1.0	0.557	2.393	100
Tile2	chlorobenzene	3/24/2020	1.00	1.0	0.907	2.293	100
Tile2	chlorobenzene	9/2/2020	1.10	1.0	0.721	2.029	100
Tile2	chlorobenzene	3/8/2021	<1.0	1.0	0.357	2.043	100
Tile2	chlorobenzene	9/14/2021	<1.0	1.0	0.398	1.152	100
Tile2	chlorobenzene	3/28/2022	<1.0	1.0	0.398	1.152	100
Tile2	chlorobenzene	9/13/2022	<1.0	1.0	0.500	0.500	100
Tile2	chlorobenzene	3/23/2023	<1.0	1.0	0.500	0.500	100
Tile2	chlorobenzene	9/5/2023	<1.0	1.0	0.500	0.500	100
Tile2	cis-1,2-DCE	9/10/2018	6.60	1.0	---	---	70
Tile2	cis-1,2-DCE	3/26/2019	19.90	1.0	---	---	70
Tile2	cis-1,2-DCE	6/5/2019	18.20	1.0	---	---	70
Tile2	cis-1,2-DCE	9/16/2019	5.60	1.0	3.729	21.421	70
Tile2	cis-1,2-DCE	3/24/2020	10.60	1.0	5.718	21.432	70
Tile2	cis-1,2-DCE	9/2/2020	1.30	1.0	0.388	17.462	70
Tile2	cis-1,2-DCE	3/8/2021	8.10	1.0	1.735	11.065	70
Tile2	cis-1,2-DCE	9/14/2021	3.80	1.0	1.030	10.870	70
Tile2	cis-1,2-DCE	3/28/2022	2.70	1.0	0.524	7.426	70
Tile2	cis-1,2-DCE	9/13/2022	4.10	1.0	1.897	7.453	70
Tile2	cis-1,2-DCE	3/23/2023	6.20	1.0	2.479	5.921	70
Tile2	cis-1,2-DCE	9/5/2023	2.30	1.0	1.753	5.897	70
Tile2	trans-1,2-DCE	9/10/2018	<1.0	1.0	---	---	100
Tile2	trans-1,2-DCE	3/26/2019	<1.0	1.0	---	---	100
Tile2	trans-1,2-DCE	6/5/2019	<1.0	1.0	---	---	100
Tile2	trans-1,2-DCE	9/16/2019	<1.0	1.0	0.500	0.500	100
Tile2	trans-1,2-DCE	3/24/2020	<1.0	1.0	0.500	0.500	100
Tile2	trans-1,2-DCE	9/2/2020	<1.0	1.0	0.500	0.500	100
Tile2	trans-1,2-DCE	3/8/2021	<1.0	1.0	0.500	0.500	100
Tile2	trans-1,2-DCE	9/14/2021	<1.0	1.0	0.500	0.500	100
Tile2	trans-1,2-DCE	3/28/2022	<1.0	1.0	0.500	0.500	100
Tile2	trans-1,2-DCE	9/13/2022	<1.0	1.0	0.500	0.500	100
Tile2	trans-1,2-DCE	3/23/2023	<1.0	1.0	0.500	0.500	100
Tile2	trans-1,2-DCE	9/5/2023	<1.0	1.0	0.500	0.500	100
Tile2	TCE	9/10/2018	<1.0	1.0	---	---	5
Tile2	TCE	3/26/2019	<1.0	1.0	---	---	5
Tile2	TCE	6/5/2019	<1.0	1.0	---	---	5
Tile2	TCE	9/16/2019	<1.0	1.0	0.500	0.500	5
Tile2	TCE	3/24/2020	<1.0	1.0	0.500	0.500	5
Tile2	TCE	9/2/2020	<1.0	1.0	0.500	0.500	5
Tile2	TCE	3/8/2021	<1.0	1.0	0.500	0.500	5
Tile2	TCE	9/14/2021	<1.0	1.0	0.500	0.500	5
Tile2	TCE	3/28/2022	<1.0	1.0	0.500	0.500	5
Tile2	TCE	9/13/2022	<1.0	1.0	0.500	0.500	5
Tile2	TCE	3/23/2023	<1.0	1.0	0.500	0.500	5
Tile2	TCE	9/5/2023	<1.0	1.0	0.500	0.500	5
Tile2	Vinyl Chloride	9/10/2018	<1.0	1.0	---	---	2
Tile2	Vinyl Chloride	3/26/2019	6.20	1.0	---	---	2
Tile2	Vinyl Chloride	6/5/2019	<1.0	1.0	---	---	2
Tile2	Vinyl Chloride	9/16/2019	8.30	1.0	0.000	8.569	2
Tile2	Vinyl Chloride	3/24/2020	3.50	1.0	0.649	8.601	2
Tile2	Vinyl Chloride	9/2/2020	4.70	1.0	0.455	8.045	2
Tile2	Vinyl Chloride	3/8/2021	2.40	1.0	1.712	7.738	2
Tile2	Vinyl Chloride	9/14/2021	3.30	1.0	2.362	4.588	2
Tile2	Vinyl Chloride	3/28/2022	1.30	1.0	1.233	4.617	2
Tile2	Vinyl Chloride	9/13/2022	1.60	1.0	1.096	3.204	2
Tile2	Vinyl Chloride	3/23/2023	1.90	1.0	0.984	3.066	2
Tile2	Vinyl Chloride	9/5/2023	1.60	1.0	1.312	1.888	2

***BOLD GWPS** = A Site Specific GWPS that is equal to the Prediction Limit. All other GWPS are IAC 567-137 Statewide Standards for Protected Groundwater.

Table 11 – Corrective Action Trend Analysis

Table 11
Corrective Action Trend Analysis
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

Monitoring Well	Compound	Sample Date	Current Condition	Trend	N	Projected Year to Completion (IAC 113.10(9)"e"
Tile2	Barium	6/5/2019	No-SSI	NA	NA	NA
Tile2	Barium	9/16/2019	SSI	NA	NA	NA
Tile2	Barium	3/24/2020	No-SSI	NA	NA	NA
Tile2	Barium	9/2/2020	SSI	NA	NA	NA
Tile2	Barium	3/8/2021	No-SSI	NA	NA	NA
Tile2	Barium	9/14/2021	No-SSI	NA	NA	NA
Tile2	Barium	3/28/2022	No-SSI	NA	NA	NA
Tile2	Barium	9/13/2022	SSI	NA	NA	NA
Tile2	Barium	3/23/2023	No-SSI	NA	NA	NA
Tile2	Barium	9/5/2023	No-SSI	NA	NA	NA
Tile2	cobalt	6/5/2019	No-SSI	NA	NA	NA
Tile2	cobalt	9/16/2019	No-SSI	NA	NA	NA
Tile2	cobalt	3/24/2020	No-SSI	NA	NA	NA
Tile2	cobalt	9/2/2020	SSI	NA	NA	NA
Tile2	cobalt	3/8/2021	No-SSI	NA	NA	NA
Tile2	cobalt	9/14/2021	No-SSI	NA	NA	NA
Tile2	cobalt	3/28/2022	No-SSI	NA	NA	NA
Tile2	cobalt	9/13/2022	No-SSI	NA	NA	NA
Tile2	cobalt	3/23/2023	No-SSI	NA	NA	NA
Tile2	cobalt	9/5/2023	No-SSI	NA	NA	NA
Tile2	1,1-dichloroethane	9/10/2018	No-SSI	NA	NA	NA
Tile2	1,1-dichloroethane	3/26/2019	No-SSI	NA	NA	NA
Tile2	1,1-dichloroethane	6/5/2019	No-SSI	NA	NA	NA
Tile2	1,1-dichloroethane	9/16/2019	No-SSI	NA	NA	NA
Tile2	1,1-dichloroethane	3/24/2020	No-SSI	NA	NA	NA
Tile2	1,1-dichloroethane	9/2/2020	No-SSI	NA	NA	NA
Tile2	1,1-dichloroethane	3/8/2021	No-SSI	NA	NA	NA
Tile2	1,1-dichloroethane	9/14/2021	No-SSI	NA	NA	NA
Tile2	1,1-dichloroethane	3/28/2022	No-SSI	NA	NA	NA
Tile2	1,1-dichloroethane	9/13/2022	No-SSI	NA	NA	NA
Tile2	1,1-dichloroethane	3/23/2023	No-SSI	NA	NA	NA
Tile2	1,1-dichloroethane	9/5/2023	No-SSI	NA	NA	NA
Tile2	1,2-dichloropropane	9/10/2018	No-SSI	NA	NA	NA
Tile2	1,2-dichloropropane	3/26/2019	No-SSI	NA	NA	NA
Tile2	1,2-dichloropropane	6/5/2019	No-SSI	NA	NA	NA
Tile2	1,2-dichloropropane	9/16/2019	No-SSI	NA	NA	NA
Tile2	1,2-dichloropropane	3/24/2020	No-SSI	NA	NA	NA
Tile2	1,2-dichloropropane	9/2/2020	No-SSI	NA	NA	NA
Tile2	1,2-dichloropropane	3/8/2021	No-SSI	NA	NA	NA
Tile2	1,2-dichloropropane	9/14/2021	No-SSI	NA	NA	NA
Tile2	1,2-dichloropropane	3/28/2022	No-SSI	NA	NA	NA
Tile2	1,2-dichloropropane	9/13/2022	No-SSI	NA	NA	NA
Tile2	1,2-dichloropropane	3/23/2023	No-SSI	NA	NA	NA
Tile2	1,2-dichloropropane	9/5/2023	No-SSI	NA	NA	NA
Tile2	1,4-dichlorobenzene	9/10/2018	No-SSI	NA	NA	NA
Tile2	1,4-dichlorobenzene	3/26/2019	SSI	NA	NA	NA
Tile2	1,4-dichlorobenzene	6/5/2019	No-SSI	NA	NA	NA
Tile2	1,4-dichlorobenzene	9/16/2019	No-SSI	NA	NA	NA
Tile2	1,4-dichlorobenzene	3/24/2020	No-SSI	NA	NA	NA
Tile2	1,4-dichlorobenzene	9/2/2020	No-SSI	NA	NA	NA
Tile2	1,4-dichlorobenzene	3/8/2021	No-SSI	NA	NA	NA
Tile2	1,4-dichlorobenzene	9/14/2021	No-SSI	NA	NA	NA
Tile2	1,4-dichlorobenzene	3/28/2022	No-SSI	NA	NA	NA
Tile2	1,4-dichlorobenzene	9/13/2022	No-SSI	NA	NA	NA
Tile2	1,4-dichlorobenzene	3/23/2023	No-SSI	NA	NA	NA
Tile2	1,4-dichlorobenzene	9/5/2023	No-SSI	NA	NA	NA
Tile2	benzene	9/10/2018	No-SSI	NA	NA	NA
Tile2	benzene	3/26/2019	No-SSI	NA	NA	NA
Tile2	benzene	6/5/2019	No-SSI	NA	NA	NA
Tile2	benzene	9/16/2019	No-SSI	NA	NA	NA
Tile2	benzene	3/24/2020	No-SSI	NA	NA	NA
Tile2	benzene	9/2/2020	No-SSI	NA	NA	NA
Tile2	benzene	3/8/2021	No-SSI	NA	NA	NA
Tile2	benzene	9/14/2021	No-SSI	NA	NA	NA
Tile2	benzene	3/28/2022	No-SSI	NA	NA	NA
Tile2	benzene	9/13/2022	No-SSI	NA	NA	NA
Tile2	benzene	3/23/2023	No-SSI	NA	NA	NA
Tile2	benzene	9/5/2023	No-SSI	NA	NA	NA

Table 11
Corrective Action Trend Analysis
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

Monitoring Well	Compound	Sample Date	Current Condition	Trend	N	Projected Year to Completion (IAC 113.10(9)"e"
Tile2	chlorobenzene	9/10/2018	No-SSI	NA	NA	NA
Tile2	chlorobenzene	3/26/2019	SSI	NA	NA	NA
Tile2	chlorobenzene	6/5/2019	SSI	NA	NA	NA
Tile2	chlorobenzene	9/16/2019	SSI	NA	NA	NA
Tile2	chlorobenzene	3/24/2020	No-SSI	NA	NA	NA
Tile2	chlorobenzene	9/2/2020	SSI	NA	NA	NA
Tile2	chlorobenzene	3/8/2021	No-SSI	NA	NA	NA
Tile2	chlorobenzene	9/14/2021	No-SSI	NA	NA	NA
Tile2	chlorobenzene	3/28/2022	No-SSI	NA	NA	NA
Tile2	chlorobenzene	9/13/2022	No-SSI	NA	NA	NA
Tile2	chlorobenzene	3/23/2023	No-SSI	NA	NA	NA
Tile2	chlorobenzene	9/5/2023	No-SSI	NA	NA	NA
Tile2	cis-1,2-DCE	9/10/2018	SSI	NA	NA	NA
Tile2	cis-1,2-DCE	3/26/2019	SSI	NA	NA	NA
Tile2	cis-1,2-DCE	6/5/2019	SSI	NA	NA	NA
Tile2	cis-1,2-DCE	9/16/2019	SSI	NA	NA	NA
Tile2	cis-1,2-DCE	3/24/2020	SSI	NA	NA	NA
Tile2	cis-1,2-DCE	9/2/2020	SSI	NA	NA	NA
Tile2	cis-1,2-DCE	3/8/2021	SSI	NA	NA	NA
Tile2	cis-1,2-DCE	9/14/2021	SSI	NA	NA	NA
Tile2	cis-1,2-DCE	3/28/2022	SSI	NA	NA	NA
Tile2	cis-1,2-DCE	9/13/2022	SSI	NA	NA	NA
Tile2	cis-1,2-DCE	3/23/2023	SSI	NA	NA	NA
Tile2	cis-1,2-DCE	9/5/2023	SSI	NA	NA	NA
Tile2	trans-1,2-DCE	9/10/2018	No-SSI	NA	NA	NA
Tile2	trans-1,2-DCE	3/26/2019	No-SSI	NA	NA	NA
Tile2	trans-1,2-DCE	6/5/2019	No-SSI	NA	NA	NA
Tile2	trans-1,2-DCE	9/16/2019	No-SSI	NA	NA	NA
Tile2	trans-1,2-DCE	3/24/2020	No-SSI	NA	NA	NA
Tile2	trans-1,2-DCE	9/2/2020	No-SSI	NA	NA	NA
Tile2	trans-1,2-DCE	3/8/2021	No-SSI	NA	NA	NA
Tile2	trans-1,2-DCE	9/14/2021	No-SSI	NA	NA	NA
Tile2	trans-1,2-DCE	3/28/2022	No-SSI	NA	NA	NA
Tile2	trans-1,2-DCE	9/13/2022	No-SSI	NA	NA	NA
Tile2	trans-1,2-DCE	3/23/2023	No-SSI	NA	NA	NA
Tile2	trans-1,2-DCE	9/5/2023	No-SSI	NA	NA	NA
Tile2	TCE	9/10/2018	No-SSI	NA	NA	NA
Tile2	TCE	3/26/2019	No-SSI	NA	NA	NA
Tile2	TCE	6/5/2019	No-SSI	NA	NA	NA
Tile2	TCE	9/16/2019	No-SSI	NA	NA	NA
Tile2	TCE	3/24/2020	No-SSI	NA	NA	NA
Tile2	TCE	9/2/2020	No-SSI	NA	NA	NA
Tile2	TCE	3/8/2021	No-SSI	NA	NA	NA
Tile2	TCE	9/14/2021	No-SSI	NA	NA	NA
Tile2	TCE	3/28/2022	No-SSI	NA	NA	NA
Tile2	TCE	9/13/2022	No-SSI	NA	NA	NA
Tile2	TCE	3/23/2023	No-SSI	NA	NA	NA
Tile2	TCE	9/5/2023	No-SSI	NA	NA	NA
Tile2	Vinyl Chloride	9/10/2018	No-SSI	NA	1	Complete - Treated in PECS
Tile2	Vinyl Chloride	3/26/2019	SSI	NA	2	Complete - Treated in PECS
Tile2	Vinyl Chloride	6/5/2019	No-SSI	NA	3	Complete - Treated in PECS
Tile2	Vinyl Chloride	9/16/2019	SSI	NA	4	Complete - Treated in PECS
Tile2	Vinyl Chloride	3/24/2020	SSI	NA	5	Complete - Treated in PECS
Tile2	Vinyl Chloride	9/2/2020	SSI	NA	6	Complete - Treated in PECS
Tile2	Vinyl Chloride	3/8/2021	SSI	NA	7	Complete - Treated in PECS
Tile2	Vinyl Chloride	9/14/2021	SSI	NA	8	Complete - Treated in PECS
Tile2	Vinyl Chloride	3/28/2022	SSI	NA	9	Complete - Treated in PECS
Tile2	Vinyl Chloride	9/13/2022	SSI	NA	10	Complete - Treated in PECS
Tile2	Vinyl Chloride	3/23/2023	SSI	NA	11	Complete - Treated in PECS
Tile2	Vinyl Chloride	9/5/2023	SSI	NA	12	Complete - Treated in PECS

****BOLD GWPS** = A Site Specific GWPS that is equal to the Prediction Limit. All other GWPS are IAC 567-137 Statewide Standards for Protected Groundwater.*

Table 12 – Passive Engineered Conveyance Structure Monitoring
Results (SW-102)

Key

Exceeds GWPS

Table 12 - PECS Testing Results
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

PECS Monitoring Point	Compound	Date	Result (ug/L)	GWPS Limit (ug/L)
SW-102	1,1-dichloroethane	9/20/2016	<1.0	140
SW-102	1,1-dichloroethane	3/9/2017	<1.0	140
SW-102	1,1-dichloroethane	9/14/2017	<1.0	140
SW-102	1,1-dichloroethane	3/12/2018	<1.0	140
SW-102	1,1-dichloroethane	9/10/2018	<1.0	140
SW-102	1,1-dichloroethane	3/26/2019	<1.0	140
SW-102	1,1-dichloroethane	9/16/2019	<1.0	140
SW-102	1,1-dichloroethane	3/24/2020	<1.0	140
SW-102	1,1-dichloroethane	9/2/2020	<1.0	140
SW-102	1,1-dichloroethane	3/8/2021	<1.0	140
SW-102	1,1-dichloroethane	9/14/2021	<1.0	140
SW-102	1,1-dichloroethane	3/28/2022	<1.0	140
SW-102	1,1-dichloroethane	9/13/2022	<1.0	140
SW-102	1,1-dichloroethane	3/23/2023	<1.0	140
SW-102	1,1-dichloroethane	9/5/2023	Dry	140
SW-102	1,2-dichloropropane	9/20/2016	<1.0	5
SW-102	1,2-dichloropropane	3/9/2017	<1.0	5
SW-102	1,2-dichloropropane	9/14/2017	<1.0	5
SW-102	1,2-dichloropropane	3/12/2018	<1.0	5
SW-102	1,2-dichloropropane	9/10/2018	<1.0	5
SW-102	1,2-dichloropropane	3/26/2019	<1.0	5
SW-102	1,2-dichloropropane	9/16/2019	<1.0	5
SW-102	1,2-dichloropropane	3/24/2020	<1.0	5
SW-102	1,2-dichloropropane	9/2/2020	<1.0	5
SW-102	1,2-dichloropropane	3/8/2021	<1.0	5
SW-102	1,2-dichloropropane	9/14/2021	<1.0	5
SW-102	1,2-dichloropropane	3/28/2022	<1.0	5
SW-102	1,2-dichloropropane	9/13/2022	<1.0	5
SW-102	1,2-dichloropropane	3/23/2023	<1.0	5
SW-102	1,2-dichloropropane	9/5/2023	Dry	5
SW-102	1,4-dichlorobenzene	9/20/2016	<1.0	75
SW-102	1,4-dichlorobenzene	3/9/2017	<1.0	75
SW-102	1,4-dichlorobenzene	9/14/2017	<1.0	75
SW-102	1,4-dichlorobenzene	3/12/2018	<1.0	75
SW-102	1,4-dichlorobenzene	9/10/2018	<1.0	75
SW-102	1,4-dichlorobenzene	3/26/2019	<1.0	75
SW-102	1,4-dichlorobenzene	9/16/2019	<1.0	75
SW-102	1,4-dichlorobenzene	3/24/2020	<1.0	75
SW-102	1,4-dichlorobenzene	9/2/2020	<1.0	75
SW-102	1,4-dichlorobenzene	3/8/2021	<1.0	75
SW-102	1,4-dichlorobenzene	9/14/2021	<1.0	75
SW-102	1,4-dichlorobenzene	3/28/2022	<1.0	75
SW-102	1,4-dichlorobenzene	9/13/2022	<1.0	75
SW-102	1,4-dichlorobenzene	3/23/2023	<1.0	75
SW-102	1,4-dichlorobenzene	9/5/2023	Dry	75

Key

Exceeds GWPS

Table 12 - PECS Testing Results
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

PECS Monitoring Point	Compound	Date	Result (ug/L)	GWPS Limit (ug/L)
SW-102	benzene	9/20/2016	<1.0	5
SW-102	benzene	3/9/2017	<1.0	5
SW-102	benzene	9/14/2017	<1.0	5
SW-102	benzene	3/12/2018	<1.0	5
SW-102	benzene	9/10/2018	<1.0	5
SW-102	benzene	3/26/2019	<1.0	5
SW-102	benzene	9/16/2019	<1.0	5
SW-102	benzene	3/24/2020	<1.0	5
SW-102	benzene	9/2/2020	<1.0	5
SW-102	benzene	3/8/2021	<1.0	5
SW-102	benzene	9/14/2021	<1.0	5
SW-102	benzene	3/28/2022	<1.0	5
SW-102	benzene	9/13/2022	<1.0	5
SW-102	benzene	3/23/2023	<1.0	5
SW-102	benzene	9/5/2023	Dry	5
SW-102	chlorobenzene	9/20/2016	<1.0	100
SW-102	chlorobenzene	3/9/2017	<1.0	100
SW-102	chlorobenzene	9/14/2017	<1.0	100
SW-102	chlorobenzene	3/12/2018	<1.0	100
SW-102	chlorobenzene	9/10/2018	<1.0	100
SW-102	chlorobenzene	3/26/2019	<1.0	100
SW-102	chlorobenzene	9/16/2019	<1.0	100
SW-102	chlorobenzene	3/24/2020	<1.0	100
SW-102	chlorobenzene	9/2/2020	<1.0	100
SW-102	chlorobenzene	3/8/2021	<1.0	100
SW-102	chlorobenzene	9/14/2021	<1.0	100
SW-102	chlorobenzene	3/28/2022	<1.0	100
SW-102	chlorobenzene	9/13/2022	<1.0	100
SW-102	chlorobenzene	3/23/2023	<1.0	100
SW-102	chlorobenzene	9/5/2023	Dry	100
SW-102	cis-1,2-DCE	9/20/2016	<1.0	70
SW-102	cis-1,2-DCE	3/9/2017	<1.0	70
SW-102	cis-1,2-DCE	9/14/2017	<1.0	70
SW-102	cis-1,2-DCE	3/12/2018	<1.0	70
SW-102	cis-1,2-DCE	9/10/2018	<1.0	70
SW-102	cis-1,2-DCE	3/26/2019	<1.0	70
SW-102	cis-1,2-DCE	9/16/2019	<1.0	70
SW-102	cis-1,2-DCE	3/24/2020	<1.0	70
SW-102	cis-1,2-DCE	9/2/2020	<1.0	70
SW-102	cis-1,2-DCE	3/8/2021	<1.0	70
SW-102	cis-1,2-DCE	9/14/2021	<1.0	70
SW-102	cis-1,2-DCE	3/28/2022	<1.0	70
SW-102	cis-1,2-DCE	9/13/2022	<1.0	70
SW-102	cis-1,2-DCE	3/23/2023	<1.0	70
SW-102	cis-1,2-DCE	9/5/2023	Dry	70

Key

Exceeds GWPS

Table 12 - PECS Testing Results
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

PECS Monitoring Point	Compound	Date	Result (ug/L)	GWPS Limit (ug/L)
SW-102	trans-1,2-DCE	9/20/2016	<1.0	100
SW-102	trans-1,2-DCE	3/9/2017	<1.0	100
SW-102	trans-1,2-DCE	9/14/2017	<1.0	100
SW-102	trans-1,2-DCE	3/12/2018	<1.0	100
SW-102	trans-1,2-DCE	9/10/2018	<1.0	100
SW-102	trans-1,2-DCE	3/26/2019	<1.0	100
SW-102	trans-1,2-DCE	9/16/2019	<1.0	100
SW-102	trans-1,2-DCE	3/24/2020	<1.0	100
SW-102	trans-1,2-DCE	9/2/2020	<1.0	100
SW-102	trans-1,2-DCE	3/8/2021	<1.0	100
SW-102	trans-1,2-DCE	9/14/2021	<1.0	100
SW-102	trans-1,2-DCE	3/28/2022	<1.0	100
SW-102	trans-1,2-DCE	9/13/2022	<1.0	100
SW-102	trans-1,2-DCE	3/23/2023	<1.0	100
SW-102	trans-1,2-DCE	9/5/2023	Dry	100
SW-102	TCE	9/20/2016	<1.0	5
SW-102	TCE	3/9/2017	<1.0	5
SW-102	TCE	9/14/2017	<1.0	5
SW-102	TCE	3/12/2018	<1.0	5
SW-102	TCE	9/10/2018	<1.0	5
SW-102	TCE	3/26/2019	<1.0	5
SW-102	TCE	9/16/2019	<1.0	5
SW-102	TCE	3/24/2020	<1.0	5
SW-102	TCE	9/2/2020	<1.0	5
SW-102	TCE	3/8/2021	<1.0	5
SW-102	TCE	9/14/2021	<1.0	5
SW-102	TCE	3/28/2022	<1.0	5
SW-102	TCE	9/13/2022	<1.0	5
SW-102	TCE	3/23/2023	<1.0	5
SW-102	TCE	9/5/2023	Dry	5
SW-102	Vinyl Chloride	9/20/2016	<1.0	2
SW-102	Vinyl Chloride	3/9/2017	<1.0	2
SW-102	Vinyl Chloride	9/14/2017	<1.0	2
SW-102	Vinyl Chloride	3/12/2018	<1.0	2
SW-102	Vinyl Chloride	9/10/2018	<1.0	2
SW-102	Vinyl Chloride	3/26/2019	<1.0	2
SW-102	Vinyl Chloride	9/16/2019	<1.0	2
SW-102	Vinyl Chloride	3/24/2020	<1.0	2
SW-102	Vinyl Chloride	9/2/2020	<1.0	2
SW-102	Vinyl Chloride	3/8/2021	<1.0	2
SW-102	Vinyl Chloride	9/14/2021	<1.0	2
SW-102	Vinyl Chloride	3/28/2022	<1.0	2
SW-102	Vinyl Chloride	9/13/2022	<1.0	2
SW-102	Vinyl Chloride	3/23/2023	<1.0	2
SW-102	Vinyl Chloride	9/5/2023	Dry	2

Table 13 – CAMP Wells MW-31 and MW-32

Key

Exceeds GWPS

Table 13 (CAMP)
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

Monitoring Well	Compound	Date	Result (ug/L)	GWPS Limit (ug/L)
MW-31	1,4-dichlorobenzene	9/20/2016	5.20	75
MW-31	1,4-dichlorobenzene	3/9/2017	6.20	75
MW-31	1,4-dichlorobenzene	9/14/2017	6.10	75
MW-31	1,4-dichlorobenzene	3/12/2018	6.30	75
MW-31	1,4-dichlorobenzene	9/10/2018	3.80	75
MW-31	1,4-dichlorobenzene	3/26/2019	6.00	75
MW-31	1,4-dichlorobenzene	9/16/2019	5.00	75
MW-31	1,4-dichlorobenzene	3/24/2020	Dry	75
MW-31	1,4-dichlorobenzene	9/2/2020	4.80	75
MW-31	1,4-dichlorobenzene	3/8/2021	4.60	75
MW-31	1,4-dichlorobenzene	3/28/2022	4.80	75
MW-31	1,4-dichlorobenzene	3/23/2023	3.50	75
MW-31	benzene	9/20/2016	3.30	5
MW-31	benzene	3/9/2017	5.00	5
MW-31	benzene	9/14/2017	4.00	5
MW-31	benzene	3/12/2018	5.00	5
MW-31	benzene	9/10/2018	2.10	5
MW-31	benzene	3/26/2019	1.50	5
MW-31	benzene	9/16/2019	1.50	5
MW-31	benzene	3/24/2020	Dry	5
MW-31	benzene	9/2/2020	1.30	5
MW-31	benzene	3/8/2021	1.20	5
MW-31	benzene	3/28/2022	1.40	5
MW-31	benzene	3/23/2023	1.40	5
MW-31	chlorobenzene	9/20/2016	7.00	100
MW-31	chlorobenzene	3/9/2017	8.40	100
MW-31	chlorobenzene	9/14/2017	8.60	100
MW-31	chlorobenzene	3/12/2018	8.60	100
MW-31	chlorobenzene	9/10/2018	6.20	100
MW-31	chlorobenzene	3/26/2019	5.90	100
MW-31	chlorobenzene	9/16/2019	4.50	100
MW-31	chlorobenzene	3/24/2020	Dry	100
MW-31	chlorobenzene	9/2/2020	2.70	100
MW-31	chlorobenzene	3/8/2021	3.00	100
MW-31	chlorobenzene	3/28/2022	2.90	100
MW-31	chlorobenzene	3/23/2023	1.90	100
MW-31	cis-1,2-DCE	9/20/2016	<1.0	70
MW-31	cis-1,2-DCE	3/9/2017	<1.0	70
MW-31	cis-1,2-DCE	9/14/2017	<1.0	70
MW-31	cis-1,2-DCE	3/12/2018	2.50	70
MW-31	cis-1,2-DCE	9/10/2018	<1.0	70
MW-31	cis-1,2-DCE	3/26/2019	4.10	70
MW-31	cis-1,2-DCE	9/16/2019	2.30	70
MW-31	cis-1,2-DCE	3/24/2020	Dry	70
MW-31	cis-1,2-DCE	9/2/2020	<1.0	70
MW-31	cis-1,2-DCE	3/8/2021	1.70	70
MW-31	cis-1,2-DCE	3/28/2022	<1.0	70
MW-31	cis-1,2-DCE	3/23/2023	<1.0	70
MW-31	Vinyl Chloride	9/20/2016	<1.0	2
MW-31	Vinyl Chloride	3/9/2017	<1.0	2
MW-31	Vinyl Chloride	9/14/2017	1.60	2
MW-31	Vinyl Chloride	3/12/2018	2.20	2
MW-31	Vinyl Chloride	9/10/2018	<1.0	2
MW-31	Vinyl Chloride	3/26/2019	2.10	2
MW-31	Vinyl Chloride	9/16/2019	1.00	2
MW-31	Vinyl Chloride	3/24/2020	Dry	2
MW-31	Vinyl Chloride	9/2/2020	<1.0	2
MW-31	Vinyl Chloride	3/8/2021	1.90	2
MW-31	Vinyl Chloride	3/28/2022	<1.0	2
MW-31	Vinyl Chloride	3/23/2023	<1.0	2
MW-31	Xylenes	9/20/2016	<1.0	10000
MW-31	Xylenes	3/9/2017	3.00	10000
MW-31	Xylenes	9/14/2017	<1.0	10000
MW-31	Xylenes	3/12/2018	<1.0	10000
MW-31	Xylenes	9/10/2018	<1.0	10000
MW-31	Xylenes	3/26/2019	2.00	10000
MW-31	Xylenes	9/16/2019	<1.0	10000
MW-31	Xylenes	3/24/2020	Dry	10000
MW-31	Xylenes	9/2/2020	<2.0	10000
MW-31	Xylenes	3/8/2021	<2.0	10000
MW-31	Xylenes	3/28/2022	<2.0	10000

Key

Exceeds GWPS

Table 13 (CAMP)
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

Monitoring Well	Compound	Date	Result (ug/L)	GWPS Limit (ug/L)
MW-32	chlorobenzene	9/20/2016	1.60	100
MW-32	chlorobenzene	3/9/2017	2.70	100
MW-32	chlorobenzene	9/14/2017	2.70	100
MW-32	chlorobenzene	3/12/2018	3.90	100
MW-32	chlorobenzene	9/10/2018	1.70	100
MW-32	chlorobenzene	3/26/2019	1.10	100
MW-32	chlorobenzene	9/16/2019	3.00	100
MW-32	chlorobenzene	3/24/2020	2.80	100
MW-32	chlorobenzene	9/2/2020	2.00	100
MW-32	chlorobenzene	3/8/2021	1.20	100
MW-32	chlorobenzene	3/28/2022	2.50	100
MW-32	chlorobenzene	3/23/2023	<1.0	100
MW-32	cis-1,2-DCE	9/20/2016	1.90	70
MW-32	cis-1,2-DCE	3/9/2017	2.40	70
MW-32	cis-1,2-DCE	9/14/2017	1.00	70
MW-32	cis-1,2-DCE	3/12/2018	<1.0	70
MW-32	cis-1,2-DCE	9/10/2018	<1.0	70
MW-32	cis-1,2-DCE	3/26/2019	1.60	70
MW-32	cis-1,2-DCE	9/16/2019	2.90	70
MW-32	cis-1,2-DCE	3/24/2020	1.50	70
MW-32	cis-1,2-DCE	9/2/2020	<1.0	70
MW-32	cis-1,2-DCE	3/8/2021	<1.0	70
MW-32	cis-1,2-DCE	3/28/2022	1.00	70
MW-32	cis-1,2-DCE	3/23/2023	<1.0	70
MW-32	Vinyl Chloride	9/20/2016	<1.0	2
MW-32	Vinyl Chloride	3/9/2017	1.20	2
MW-32	Vinyl Chloride	9/14/2017	<1.0	2
MW-32	Vinyl Chloride	3/12/2018	<1.0	2
MW-32	Vinyl Chloride	9/10/2018	<1.0	2
MW-32	Vinyl Chloride	3/26/2019	<1.0	2
MW-32	Vinyl Chloride	9/16/2019	<1.0	2
MW-32	Vinyl Chloride	3/24/2020	<1.0	2
MW-32	Vinyl Chloride	9/2/2020	<1.0	2
MW-32	Vinyl Chloride	3/8/2021	<1.0	2
MW-32	Vinyl Chloride	3/28/2022	<1.0	2

Table 14 – CAMP Leachate Well LW-26 Leachate Quality Over Time

Table 14
Leachate Well LW-26 - Leachate Quality over Time
 Annual Water Quality Report
 SCILA Sanitary Landfill
 Permit No. 61-SDP-01-78P

Sample Date	BOD		Alkalinity		Nitrogen (NH3)		pH	Low GWPS	High GWPS	TDS	chloride	Sulfate		Benzene		Ethyl Benzene	Xylene		1,4-dichlorobenzene		2-Butanone (MEK)		Chlorobenzene		Cobalt		Methane		
	Concentration mg/L	GWPS	Concentration mg/L	GWPS	Concentration mg/L	GWPS						Concentration mg/L	GWPS	Concentration mg/L	GWPS		Concentration mg/L	GWPS	Concentration mg/L	GWPS	Concentration ug/L	GWPS	Concentration ug/L	GWPS	Concentration ug/L	GWPS	Concentration ug/L	GWPS	Concentration ug/L
4/14/2020	23	none	1410	none	164	30	7	5	9	2300	none	867	none	147	250	5	700	10000	75	75	4000	100	2.1	none	none	none	none	none	
9/2/2020	46	none	1890	none	235	30	7	5	9	3080	none	1040	none	140	250	4.1	700	3.7	10000	14	75	9.4	4000	23.9	100	14.6	2.1	6.96	none
3/11/2021	31	none	1160	none	123	30	6.9	5	9	1990	none	678	none	67.4	250	3.3	700	2.6	10000	8.2	75	2.5	4000	13.3	100	15	2.1	5.04	none
3/28/2022	8	none	240	none	11.4	30	6.3	5	9	350	none	75.4	none	34.8	250	2.3	700	1	10000	7.1	75	2.5	4000	11.5	100	1	2.1	2.71	none
3/23/2023	24	none	473	none	38.2	30	6.7	5	9	732	none	259	none	4	250	2.4	700	2.8	10000	5.6	75	5	4000	9.2	100	5.6	2.1	1.93	none

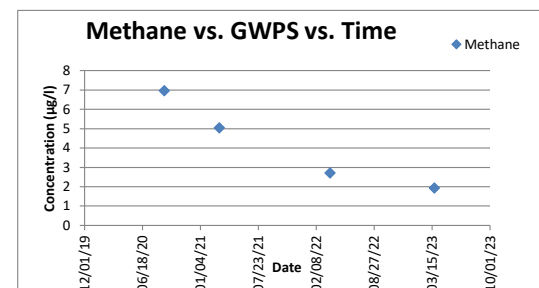
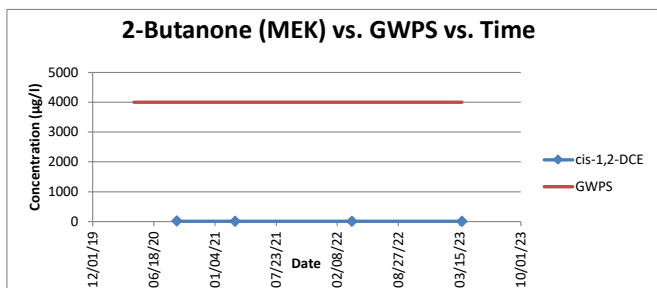
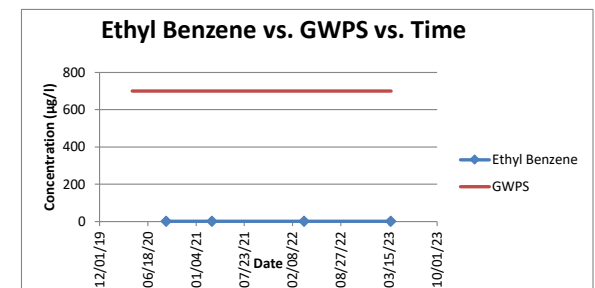
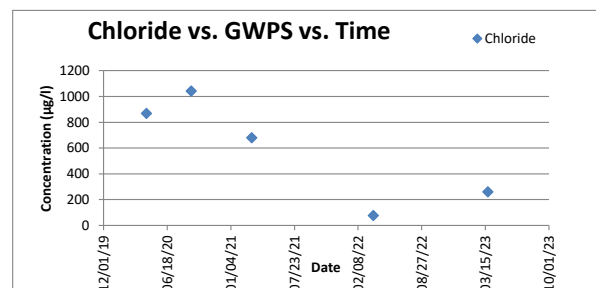
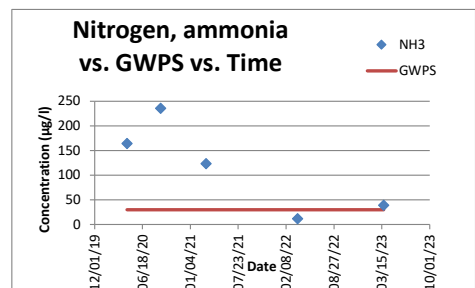
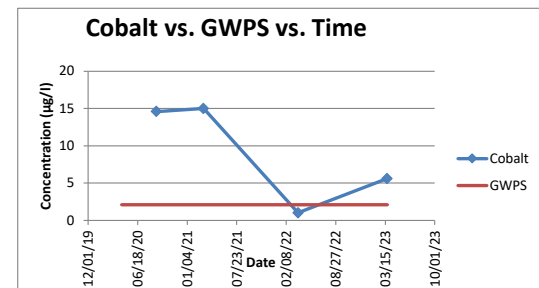
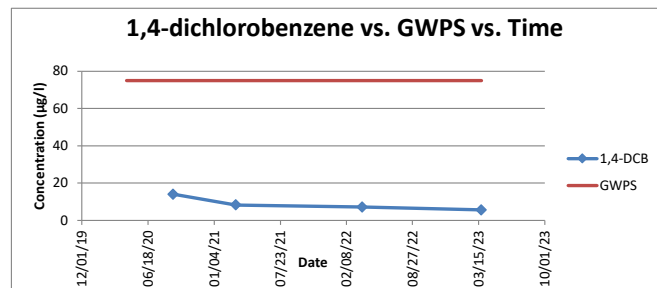
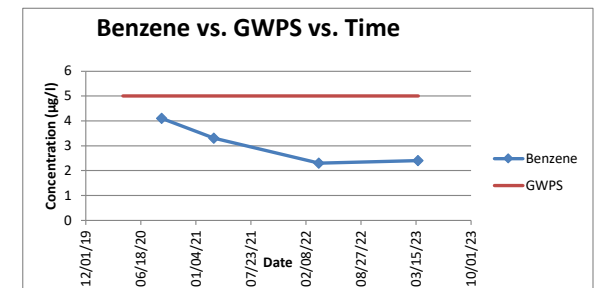
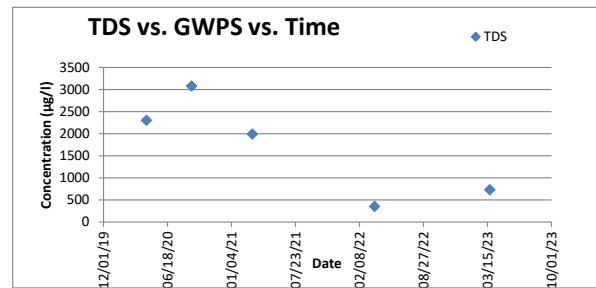
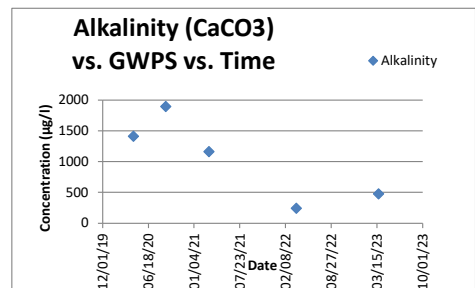
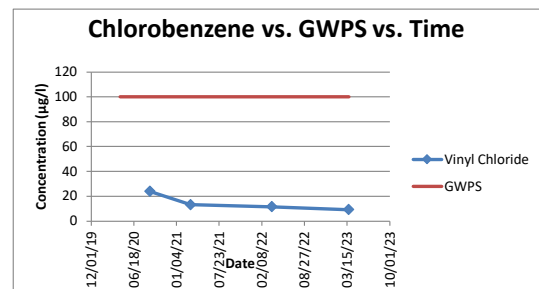
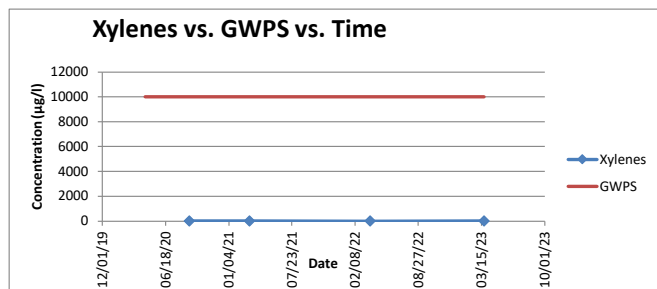
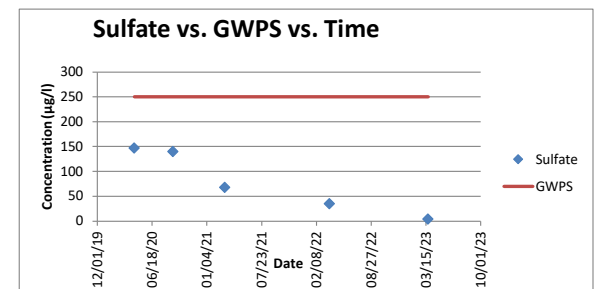
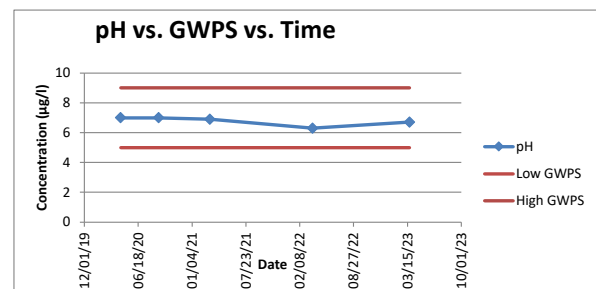
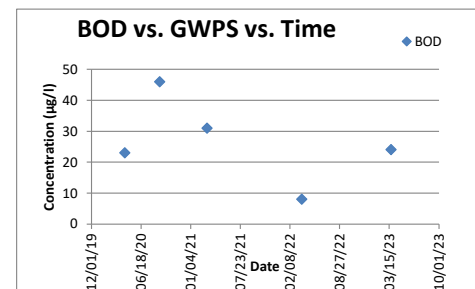


Table 15 – CAMP Vent Gas Evaluation Over Time

Table 15
SRAMP Vent Gas Evaluation
Annual Water Quality Report
 SCILA Sanitary Landfill
 Permit No. 61-SDP-01-78P

Date	Vent 1	Vent 2	Vent 3	Vent 4	Vent 5	Vent 6
8/18/2020	43.0	62.0	38.0	12.0	13.0	65.0
9/2/2020	18.0	26.0	7.0	18.0	18.0	56.0
12/28/2020	6.0	17.0	0.0	5.0	4.0	61.0
3/8/2021	0.0	0.0	3.0	3.0	0.0	79.0
6/4/2021	44.0	86.0	0.0	50.0	50.0	87.0
9/14/2021	31.4	44.0	0.0	37.1	20.1	101
12/1/2021	78.9	37.2	6.6	38.4	40.5	99.9
3/28/2022	101	101	4.4	92.6	97.3	101
6/20/2022	0.0	94	0.0	57.2	38.0	101
9/13/2022	7.8	101	31.1	80.7	50.0	101
12/1/2022	8.6	44.7	5.8	44.0	39.6	101
3/23/2023	0.0	35.1	14.2	38.6	41.9	32.3
6/7/2023	0.0	101	31.0	61.1	101	101
9/5/2023	2.8	38.8	0.0	35.7	41.2	101
12/14/2023	2.0	34.7	5.5	61.3	45.1	101

KEY: **101** = a value that exceeds 100% of the LEL

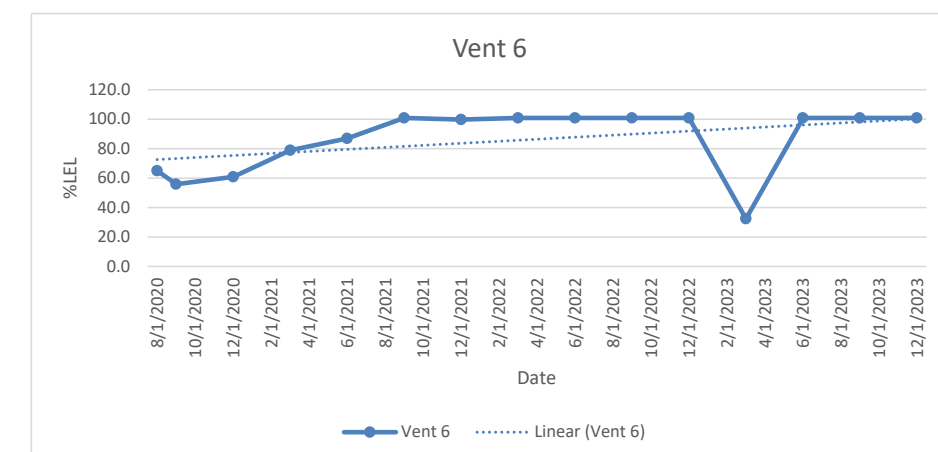
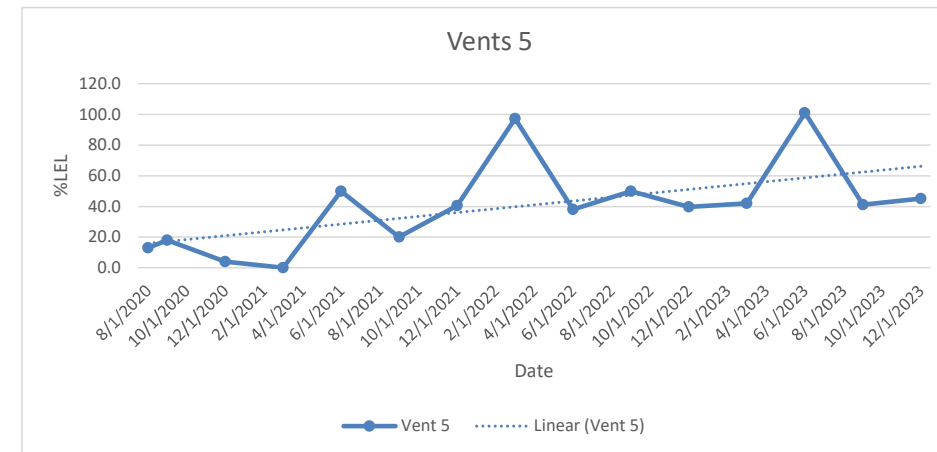
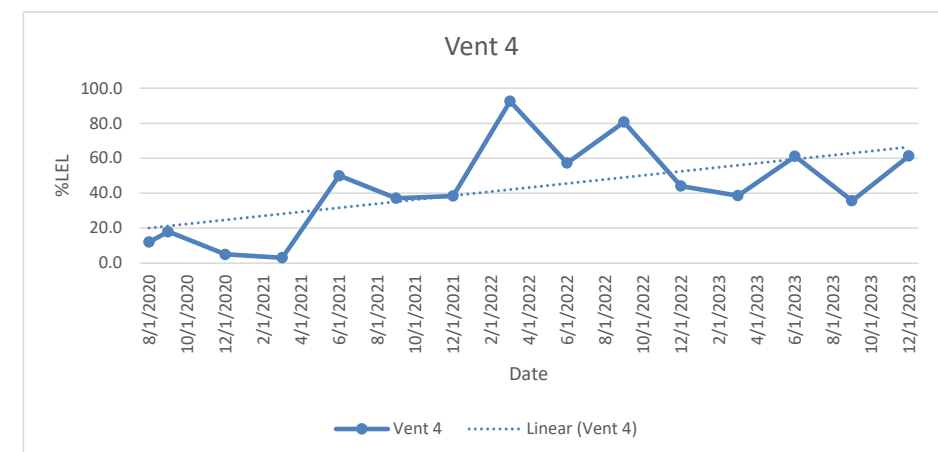
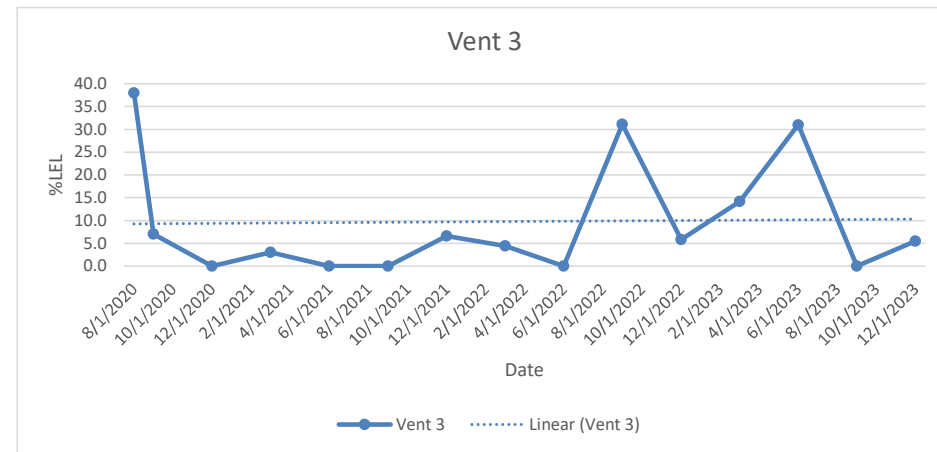
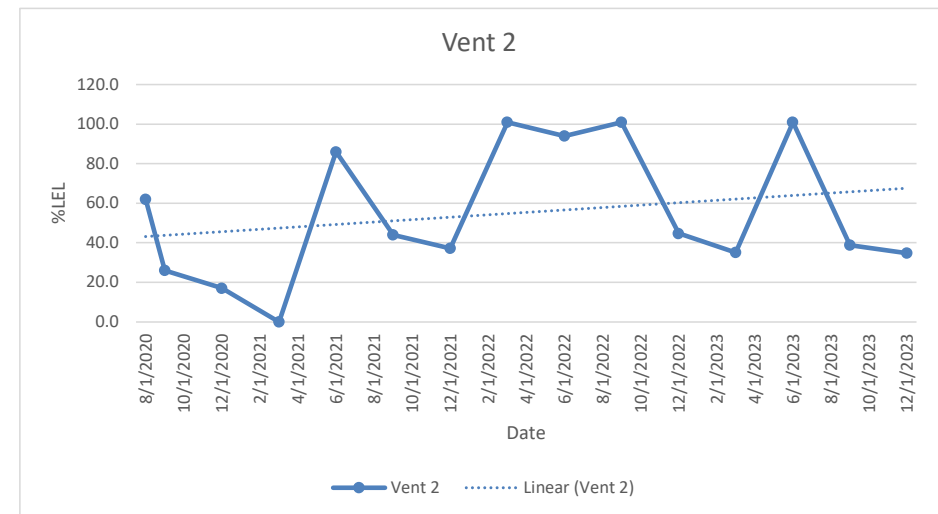
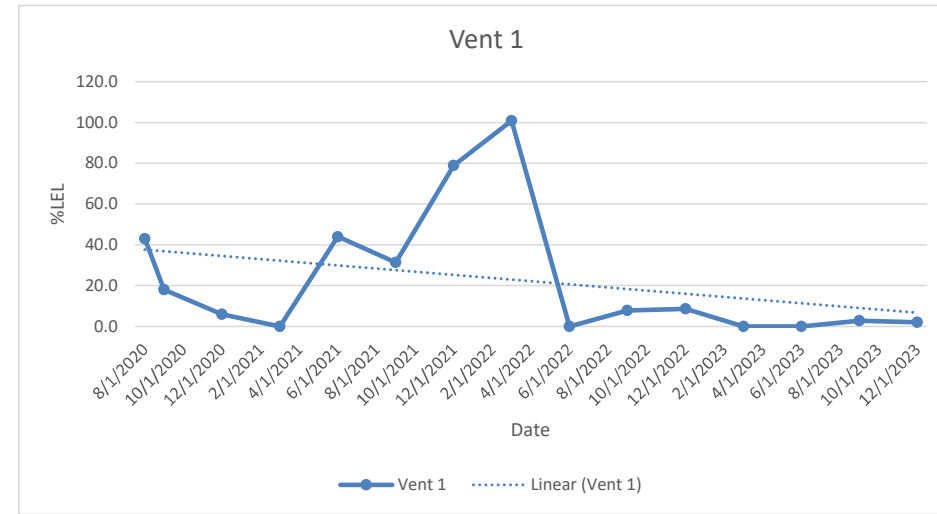


Table 16 – CAMP Evaluation of Methane, Ethane, Ethene,
Alkalinity and pH Over Time

Table 16
Methane, Ethane, Ethene, Alkalinity, and pH over Time
 Annual Water Quality Report
 SCILA Sanitary Landfill
 Permit No. 61-SDP-01-78P

Note: Alkalinity and pH were analyzed at MW-8B, MW-9AR, and MW-15R on 9/5/2023, rather than 3/23/23.

Sample Date	Methane					Ethane					Ethene					Alkalinity					pH				
	LW-26 Concentration mg/L	MW-8B Concentration mg/L	MW-9AR Concentration mg/L	MW-14D Concentration mg/L	MW-15R Concentration mg/L	LW-26 Concentration mg/L	MW-8B Concentration mg/L	MW-9AR Concentration mg/L	MW-14D Concentration mg/L	MW-15R Concentration mg/L	LW-26 GWPS mg/L	MW-8B GWPS mg/L	MW-9AR Concentration mg/L	MW-14D GWPS mg/L	MW-15R Concentration mg/L	LW-26 Concentration ug/L	MW-8B Concentration ug/L	MW-9AR GWPS ug/L	MW-14D Concentration ug/L	MW-15R Concentration mg/L	LW-26 GWPS	MW-8B GWPS	MW-9AR Concentration	MW-14D GWPS	MW-15R Concentration
3/24/2020		1.61	1.94	<0.009			<0.015	<0.010	<0.013			<0.015	<0.010	<0.013		1410	652	758	766		7	6.8	6.8	8.2	
4/14/2020																									
9/2/2020	6.96	0.213	1.18	<0.007		<0.010	<0.013	<0.010	<0.010		<0.010	<0.013	<0.010	<0.010		1890	792	822	812		7	6.8	6.7	8.1	
3/8/2021	5.04	0.15	0.582	<0.007		<0.010	<0.010	<0.008	<0.010		<0.010	<0.010	<0.010	<0.010		1160	777	796	806		6.9	6.6	6.6	7.6	
3/28/2022	2.71	0.0835	0.00601	0.00974		<0.00773	<0.00773	<0.00773	<0.00773		<0.00828	<0.00828	<0.00828	<0.00828		240	718	365	889		6.3	6.7	6.9	7.5	
3/23/2023	1.93	0.161	0.0565	<0.004	2.18	<0.007	<0.007	<0.007	<0.007	<0.007	<0.010	<0.010	<0.010	<0.010	<0.010	473	698	690		620	6.7	7.0	6.6	6.6	

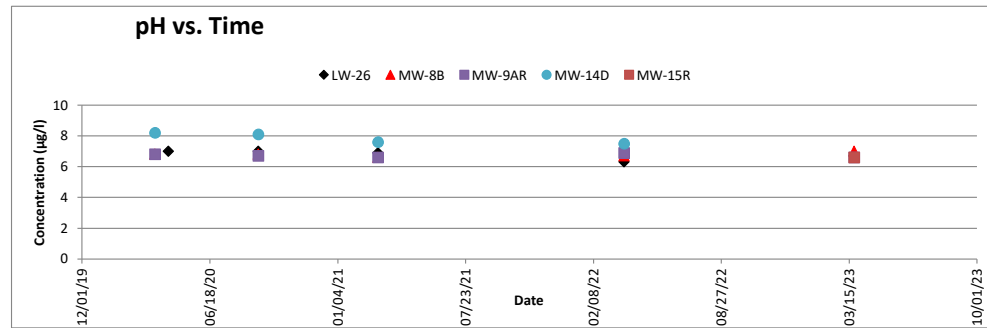
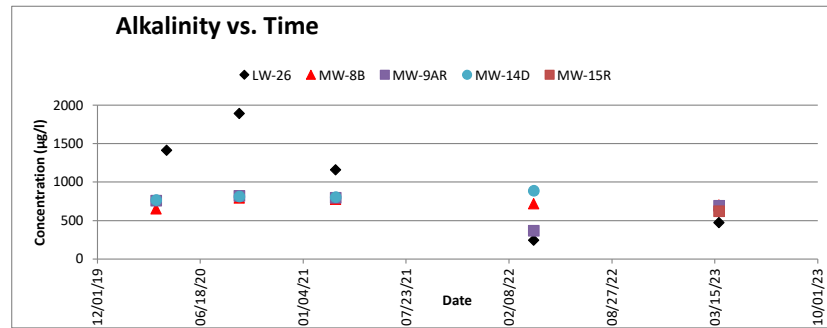
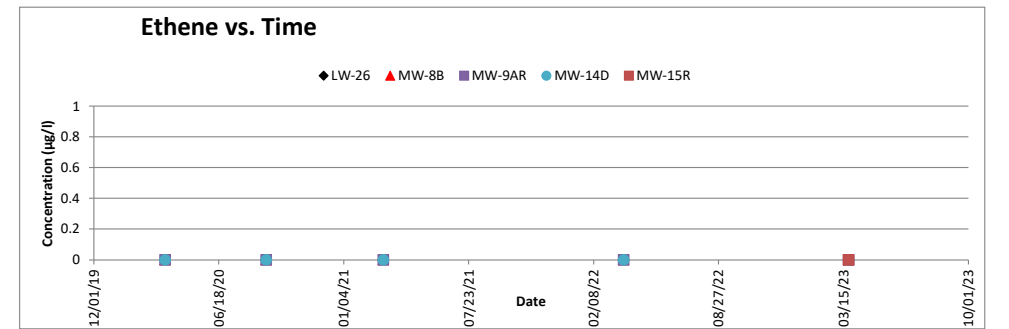
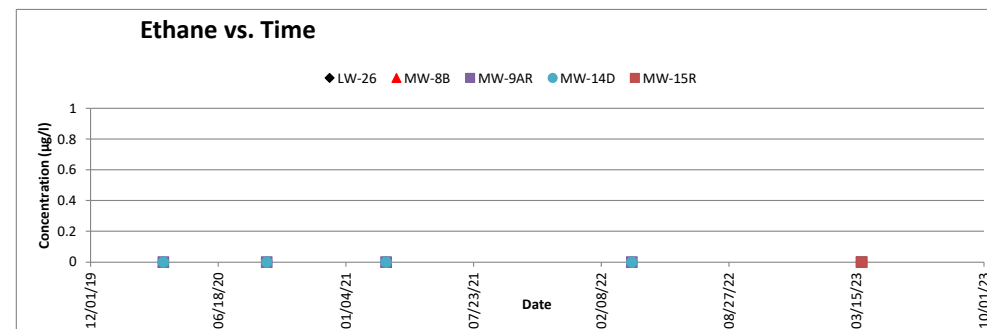
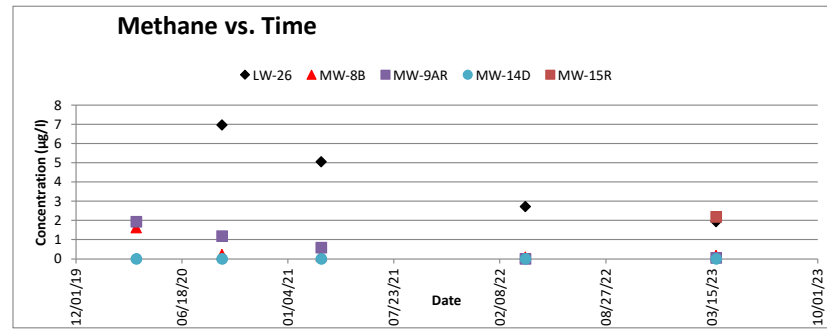


Table 17 – Leachate Levels

Table 17
Leachate Elevation and Thickness Data - Closed Landfilling Areas
Annual Water Quality Report
SCILA Sanitary Landfill
IDNR Permit No. 61-SDP-01-78P

Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/10/2011	LW-21	1120.98	54.1	1066.88	1041.6	79.38	25.28
2/24/2011	LW-21	1120.98	53.6	1067.38	1041.6	79.38	25.78
3/4/2011	LW-21	1120.98	53.6	1067.38	1041.6	79.38	25.78
4/29/2011	LW-21	1120.98	53	1067.98	1041.6	79.38	26.38
5/17/2011	LW-21	1120.98	49	1071.98	1041.6	79.38	30.38
6/7/2011	LW-21	1120.98	54	1066.98	1041.6	79.38	25.38
7/6/2011	LW-21	1120.98	53.2	1067.78	1041.6	79.38	26.18
8/9/2011	LW-21	1120.98	52.5	1068.48	1041.6	79.38	26.88
9/22/2011	LW-21	1120.98	53	1067.98	1041.6	79.38	26.38
10/4/2011	LW-21	1120.98	52.5	1068.48	1041.6	79.38	26.88
12/9/2011	LW-21	1120.98	51.4	1069.58	1041.6	79.38	27.98
1/18/2012	LW-21	1120.98	51.35	1069.63	1041.6	79.38	28.03
2/27/2012	LW-21	1120.98	51.2	1069.78	1041.6	79.38	28.18
3/13/2012	LW-21	1120.98	51.2	1069.78	1041.6	79.38	28.18
4/17/2012	LW-21	1120.98	52.4	1068.58	1041.6	79.38	26.98
5/16/2012	LW-21	1120.98	51.9	1069.08	1041.6	79.38	27.48
6/26/2012	LW-21	1120.98	52.6	1068.38	1041.6	79.38	26.78
7/18/2012	LW-21	1120.98	52.1	1068.88	1041.6	79.38	27.28
9/19/2012	LW-21	1120.98	59.4	1061.58	1041.6	79.38	19.98
10/24/2012	LW-21	1120.98	55.3	1065.68	1041.6	79.38	24.08
11/21/2012	LW-21	1120.98	55.2	1065.78	1041.6	79.38	24.18
12/11/2012	LW-21	1120.98	53.8	1067.18	1041.6	79.38	25.58

Table 17
Leachate Elevation and Thickness Data - Closed Landfilling Areas
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/10/2013	LW-21	1120.98	53.4	1067.58	1041.6	79.38	25.98
2/28/2013	LW-21	1120.98	52.4	1068.58	1041.6	79.38	26.98
3/25/2013	LW-21	1120.98	52.2	1068.78	1041.6	79.38	27.18
4/1/2013	LW-21	1120.98	52.4	1068.58	1041.6	79.38	26.98
5/13/2013	LW-21	1120.98	52.4	1068.58	1041.6	79.38	26.98
6/10/2013	LW-21	1120.98	51.75	1069.23	1041.6	79.38	27.63
7/17/2013	LW-21	1120.98	Pump is Blocking		1041.6	79.38	
8/15/2013	LW-21	1120.98	61.7	1059.28	1041.6	79.38	17.68
9/19/2013	LW-21	1120.98	77.4	1043.58	1041.6	79.38	1.98
10/10/2013	LW-21	1120.98	77.5	1043.48	1041.6	79.38	1.88
11/12/2013	LW-21	1120.98	79	1041.98	1041.6	79.38	0.38
12/4/2013	LW-21	1120.98	64.6	1056.38	1041.6	79.38	14.78
1/15/2014	LW-21	1120.98	56.6	1064.38	1041.6	79.38	22.78
2/10/2014	LW-21	1120.98	55.6	1065.38	1041.6	79.38	23.78
3/27/2014	LW-21	1120.98	78.9	1042.08	1041.6	79.38	0.48
4/15/2014	LW-21	1120.98	78.8	1042.18	1041.6	79.38	0.58
5/8/2014	LW-21	1120.98	78.9	1042.08	1041.6	79.38	0.48
6/9/2014	LW-21	1120.98	78.8	1042.18	1041.6	79.38	0.58
7/8/2014	LW-21	1120.98	78.75	1042.23	1041.6	79.38	0.63
8/18/2014	LW-21	1120.98	78.9	1042.08	1041.6	79.38	0.48
9/24/2014	LW-21	1120.98	78.9	1042.08	1041.6	79.38	0.48
10/10/2014	LW-21	1120.98	78.85	1042.13	1041.6	79.38	0.53
11/19/2014	LW-21	1120.98	71.5	1049.48	1041.6	79.38	7.88
12/2/2014	LW-21	1120.98	63.3	1057.68	1041.6	79.38	16.08

Table 17
Leachate Elevation and Thickness Data - Closed Landfilling Areas
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/19/2015	LW-21	1120.98	56.1	1064.88	1041.6	79.38	23.28
2/17/2015	LW-21	1120.98	56.1	1064.88	1041.6	79.38	23.28
3/19/2015	LW-21	1120.98	54.15	1066.83	1041.6	79.38	25.23
4/7/2015	LW-21	1120.98	53.6	1067.38	1041.6	79.38	25.78
5/4/2015	LW-21	1120.98	78.9	1042.08	1041.6	79.38	0.48
6/17/2015	LW-21	1120.98	78.8	1042.18	1041.6	79.38	0.58
7/7/2015	LW-21	1120.98	78.8	1042.18	1041.6	79.38	0.58
8/6/2015	LW-21	1120.98	78.9	1042.08	1041.6	79.38	0.48
9/2/2015	LW-21	1120.98	79	1041.98	1041.6	79.38	0.38
10/1/2015	LW-21	1120.98	73.4	1047.58	1041.6	79.38	5.98
11/10/2015	LW-21	1120.98	77.45	1043.53	1041.6	79.38	1.93
12/10/2015	LW-21	1120.98	78.6	1042.38	1041.6	79.38	0.78
1/19/2016	LW-21	1120.98	77.45	1043.53	1041.6	79.38	1.93
2/11/2016	LW-21	1120.98	76.8	1044.18	1041.6	79.38	2.58
3/3/2016	LW-21	1120.98	77.5	1043.48	1041.6	79.38	1.88
4/18/2016	LW-21	1120.98	61.9	1059.08	1041.6	79.38	17.48
5/10/2016	LW-21	1120.98	59.3	1061.68	1041.6	79.38	20.08
6/21/2016	LW-21	1120.98	56.8	1064.18	1041.6	79.38	22.58
7/6/2016	LW-21	1120.98	56.9	1064.08	1041.6	79.38	22.48
8/15/2016	LW-21	1120.98	55.7	1065.28	1041.6	79.38	23.68
9/21/2016	LW-21	1120.98	55	1065.98	1041.6	79.38	24.38
10/7/2016	LW-21	1120.98	72.3	1048.68	1041.6	79.38	7.08
11/9/2016	LW-21	1120.98	60.25	1060.73	1041.6	79.38	19.13
12/8/2016	LW-21	1120.98	57.6	1063.38	1041.6	79.38	21.78

Table 17
Leachate Elevation and Thickness Data - Closed Landfilling Areas
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/18/2017	LW-21	1120.98	56.6	1064.38	1041.6	79.38	22.78
2/4/2017	LW-21	1120.98	56.2	1064.78	1041.6	79.38	23.18
3/9/2017	LW-21	1120.98	59.35	1061.63	1041.6	79.38	20.03
4/17/2017	LW-21	1120.98	55.45	1065.53	1041.6	79.38	23.93
5/17/2017	LW-21	1120.98	54.2	1066.78	1041.6	79.38	25.18
6/6/2017	LW-21	1120.98	54.2	1066.78	1041.6	79.38	25.18
7/12/2017	LW-21	1120.98	54	1066.98	1041.6	79.38	25.38
8/10/2017	LW-21	1120.98	77.3	1043.68	1041.6	79.38	2.08
9/14/2017	LW-21	1120.98	71.6	1049.38	1041.6	79.38	7.78
10/4/2017	LW-21	1120.98	63.2	1057.78	1041.6	79.38	16.18
11/1/2017	LW-21	1120.98	63.55	1057.43	1041.6	79.38	15.83
12/13/2017	LW-21	1120.98	58.55	1062.43	1041.6	79.38	20.83
1/12/2018	LW-21	1120.98	59.5	1061.48	1041.6	79.38	19.88
2/8/2018	LW-21	1120.98	55.6	1065.38	1041.6	79.38	23.78
3/13/2018	LW-21	1120.98	57.2	1063.78	1041.6	79.38	22.18
4/17/2018	LW-21	1120.98	53.8	1067.18	1041.6	79.38	25.58
5/18/2018	LW-21	1120.98	53.8	1067.18	1041.6	79.38	25.58
6/6/2018	LW-21	1120.98	53.5	1067.48	1041.6	79.38	25.88
7/11/2018	LW-21	1120.98	54.01	1066.97	1041.6	79.38	25.37
8/7/2018	LW-21	1120.98	53.9	1067.08	1041.6	79.38	25.48
9/10/2018	LW-21	1120.98	53.91	1067.07	1041.6	79.38	25.47
10/11/2018	LW-21	1120.98	54.7	1066.28	1041.6	79.38	24.68
11/14/2018	LW-21	1120.98	77.2	1043.78	1041.6	79.38	2.18
12/15/2018	LW-21	1120.98	63.35	1057.63	1041.6	79.38	16.03

Table 17
Leachate Elevation and Thickness Data - Closed Landfilling Areas
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/16/2019	LW-21	1120.98	59.96	1061.02	1041.6	79.38	19.42
2/15/2019	LW-21	1120.98	57.3	1063.68	1041.6	79.38	22.08
3/14/2019	LW-21	1120.98	56.4	1064.58	1041.6	79.38	22.98
4/24/2019	LW-21	1120.98	70.75	1050.23	1041.6	79.38	8.63
5/15/2019	LW-21	1120.98	66.3	1054.68	1041.6	79.38	13.08
6/5/2019	LW-21	1120.98	61.85	1059.13	1041.6	79.38	17.53
7/17/2019	LW-21	1120.98	69.49	1051.49	1041.6	79.38	9.89
8/19/2019	LW-21	1120.98	76.62	1044.36	1041.6	79.38	2.76
9/16/2019	LW-21	1120.98	77.0	1043.98	1041.6	79.38	2.38
10/8/2019	LW-21	1120.98	75.13	1045.85	1041.6	79.38	4.25
11/20/2019	LW-21	1120.98	69.95	1051.03	1041.6	79.38	9.43
12/2/2019	LW-21	1120.98	70.8	1050.18	1041.6	79.38	8.58
1/15/2020	LW-21	1120.98	73.85	1047.13	1041.6	79.38	5.53
2/10/2020	LW-21	1120.98	73.1	1047.88	1041.6	79.38	6.28
3/24/2020	LW-21	1120.98	74.6	1046.38	1041.6	79.38	4.78
4/14/2020	LW-21	1120.98	74.7	1046.28	1041.6	79.38	4.68
5/12/2020	LW-21	1120.98	69.75	1051.23	1041.6	79.38	9.63
6/3/2020	LW-21	1120.98	63.75	1057.23	1041.6	79.38	15.63
7/20/2020	LW-21	1120.98	59.22	1061.76	1041.6	79.38	20.16
8/17/2020	LW-21	1120.98	57.65	1063.33	1041.6	79.38	21.73
9/2/2020	LW-21	1120.98	57.4	1063.58	1041.6	79.38	21.98
10/7/2020	LW-21	1120.98	56.1	1064.88	1041.6	79.38	23.28
11/27/2020	LW-21	1120.98	55.55	1065.43	1041.6	79.38	23.83
12/28/2020	LW-21	1120.98	61.5	1059.48	1041.6	79.38	17.88
1/22/2021	LW-21	1120.98	77.62	1043.36	1041.6	79.38	1.76
2/18/2021	LW-21	1120.98	77.6	1043.38	1041.6	79.38	1.78
3/8/2021	LW-21	1120.98	70.7	1050.28	1041.6	79.38	8.68
4/15/2021	LW-21	1120.98	66.2	1054.78	1041.6	79.38	13.18
5/19/2021	LW-21	1120.98	77.6	1043.38	1041.6	79.38	1.78
6/4/2021	LW-21	1120.98	77.9	1043.08	1041.6	79.38	1.48
7/15/2021	LW-21	1118.48	70.4	1048.08	1041.6	76.88	6.48
8/23/2021	LW-21	1118.48	60.75	1057.73	1041.6	76.88	16.13
9/14/2021	LW-21	1118.48	73.74	1044.74	1041.6	76.88	3.14
10/15/2021	LW-21	1118.48	73.75	1044.73	1041.6	76.88	3.13
11/9/2021	LW-21	1118.48	73.75	1044.73	1041.6	76.88	3.13
12/1/2021	LW-21	1118.48	73.8	1044.68	1041.6	76.88	3.08

Approx 2.5 ft cut off

Table 17
Leachate Elevation and Thickness Data - Closed Landfilling Areas
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness	
1/5/2022	LW-21	1117.16	73.8	1043.36	1041.6	75.56	1.76	
2/8/2022	LW-21	1117.16	73.8	1043.36	1041.6	75.56	1.76	
3/28/2022	LW-21	1117.16	73.8	1043.36	1041.6	75.56	1.76	
4/20/2022	LW-21	1117.16	73.5	1043.66	1041.6	75.56	2.06	
5/9/2022	LW-21	1117.16	73.6	1043.56	1041.6	75.56	1.96	
6/20/2022	LW-21	1117.16	71.58	1045.58	1041.6	75.56	3.98	
7/1/2022	LW-21	1117.16	65.05	1052.11	1041.6	75.56	10.51	
8/4/2022	LW-21	1117.16	60.6	1056.56	1041.6	75.56	14.96	
9/13/2022	LW-21	1117.16	59.76	1057.4	1041.6	75.56	15.8	
10/11/2022	LW-21	1117.16	56.36	1060.8	1041.6	75.56	19.2	
11/10/2022	LW-21	1117.16	54.75	1062.41	1041.6	75.56	20.81	
12/1/2022	LW-21	1117.16	53.75	1063.41	1041.6	75.56	21.81	
1/24/2023	LW-21	1117.16	53.7	1063.46	1041.6	77.0	21.86	
2/6/2023	LW-21	1117.16	52.75	1064.41	1041.6	77.0	22.81	
3/23/2023	LW-21	1117.16	53.3	1063.86	1041.6	77.0	22.26	
4/12/2023	LW-21	1117.16	52.67	1064.49	1041.6	77.0	22.89	
5/9/2023	LW-21	1117.16	53.03	1064.13	1041.6	77.0	22.53	
6/7/2023	LW-21	1117.16	52.98	1064.18	1041.6	77.0	22.58	Replaced Pump 6/2023
7/12/2023	LW-21	1117.16	52.7	1064.46	1041.6	77.0	22.86	bad configuration file
8/7/2023	LW-21	1117.16	53.06	1064.1	1041.6	77.0	22.5	
9/5/2023	LW-21	1117.16	53.28	1063.88	1041.6	77.0	22.28	
10/20/2023	LW-21	1117.16	53.25	1063.91	1041.6	77.0	22.31	
11/13/2023	LW-21	1117.16	53.28	1063.88	1041.6	77.0	22.28	
12/14/2023	LW-21	1117.16	53.85	1063.31	1041.6	77.0	21.71	New Configuration file
1/8/2024	LW-21	1117.16	72.85	1044.31	1041.6	77.0	2.71	installed 12/14/23

Table 17
Leachate Elevation and Thickness Data - Closed Landfilling Areas
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/10/2011	LW-22	1118.88	46.35	1072.53	1036.4	82.48	36.13
2/24/2011	LW-22	1118.88	42.1	1076.78	1036.4	82.48	40.38
3/4/2011	LW-22	1118.88	46.1	1072.78	1036.4	82.48	36.38
4/29/2011	LW-22	1118.88	46.3	1072.58	1036.4	82.48	36.18
5/17/2011	LW-22	1118.88	46.3	1072.58	1036.4	82.48	36.18
6/7/2011	LW-22	1118.88	46.3	1072.58	1036.4	82.48	36.18
7/6/2011	LW-22	1118.88	46.3	1072.58	1036.4	82.48	36.18
8/9/2011	LW-22	1118.88	46.4	1072.48	1036.4	82.48	36.08
9/22/2011	LW-22	1118.88	46.6	1072.28	1036.4	82.48	35.88
10/4/2011	LW-22	1118.88	46.6	1072.28	1036.4	82.48	35.88
12/9/2011	LW-22	1118.88	46.5	1072.38	1036.4	82.48	35.98
1/18/2012	LW-22	1118.88	46.5	1072.38	1036.4	82.48	35.98
2/27/2012	LW-22	1118.88	46.6	1072.28	1036.4	82.48	35.88
3/13/2012	LW-22	1118.88	46.5	1072.38	1036.4	82.48	35.98
4/17/2012	LW-22	1118.88	46.5	1072.38	1036.4	82.48	35.98
5/16/2012	LW-22	1118.88	46.7	1072.18	1036.4	82.48	35.78
6/26/2012	LW-22	1118.88	46.9	1071.98	1036.4	82.48	35.58
7/18/2012	LW-22	1118.88	46.9	1071.98	1036.4	82.48	35.58
9/19/2012	LW-22	1118.88	Pump is Blocking		1036.4	82.48	
10/24/2012	LW-22	1118.88	69.1	1049.78	1036.4	82.48	13.38
11/21/2012	LW-22	1118.88	Pump is Blocking		1036.4	82.48	
12/11/2012	LW-22	1118.88	Pump is Blocking		1036.4	82.48	

Table 17
Leachte Elevation and Thickness Data - Closed Landfilling Areas
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SCILA Sanitary Landfill
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/10/2013	LW-22	1118.88	Pump is Blocking		1036.4	82.48	
2/28/2013	LW-22	1118.88	Pump is Blocking		1036.4	82.48	
3/25/2013	LW-22	1118.88	Pump is Blocking		1036.4	82.48	
4/1/2013	LW-22	1118.88	Pump is Blocking		1036.4	82.48	
5/13/2013	LW-22	1118.88	Pump is Blocking		1036.4	82.48	
6/10/2013	LW-22	1118.88	Pump is Blocking		1036.4	82.48	
7/17/2013	LW-22	1118.88	Pump is Blocking		1036.4	82.48	
8/15/2013	LW-22	1118.88	55.5	1063.38	1036.4	82.48	26.98
9/19/2013	LW-22	1118.88	55.1	1063.78	1036.4	82.48	27.38
10/10/2013	LW-22	1118.88	55.2	1063.68	1036.4	82.48	27.28
11/12/2013	LW-22	1118.88	55.5	1063.38	1036.4	82.48	26.98
12/4/2013	LW-22	1118.88	54.3	1064.58	1036.4	82.48	28.18
1/15/2014	LW-22	1118.88	54.3	1064.58	1036.4	82.48	28.18
2/10/2014	LW-22	1118.88	54.9	1063.98	1036.4	82.48	27.58
3/27/2014	LW-22	1118.88	53.8	1065.08	1036.4	82.48	28.68
4/15/2014	LW-22	1118.88	54.2	1064.68	1036.4	82.48	28.28
5/8/2014	LW-22	1118.88	54.1	1064.78	1036.4	82.48	28.38
6/9/2014	LW-22	1118.88	76.3	1042.58	1036.4	82.48	6.18
7/8/2014	LW-22	1118.88	76.1	1042.78	1036.4	82.48	6.38
8/18/2014	LW-22	1118.88	76	1042.88	1036.4	82.48	6.48
9/24/2014	LW-22	1118.88	76.15	1042.73	1036.4	82.48	6.33
10/10/2014	LW-22	1118.88	76.1	1042.78	1036.4	82.48	6.38
11/19/2014	LW-22	1118.88	70.9	1047.98	1036.4	82.48	11.58
12/2/2014	LW-22	1118.88	62.1	1056.78	1036.4	82.48	20.38

Table 17
Leachate Elevation and Thickness Data - Closed Landfilling Areas
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/19/2015	LW-22	1118.88	58.1	1060.78	1036.4	82.48	24.38
2/17/2015	LW-22	1118.88	57.4	1061.48	1036.4	82.48	25.08
3/19/2015	LW-22	1118.88	73.3	1045.58	1036.4	82.48	9.18
4/7/2015	LW-22	1118.88	56.2	1062.68	1036.4	82.48	26.28
5/4/2015	LW-22	1118.88	76.15	1042.73	1036.4	82.48	6.33
6/17/2015	LW-22	1118.88	76.1	1042.78	1036.4	82.48	6.38
7/7/2015	LW-22	1118.88	76	1042.88	1036.4	82.48	6.48
8/6/2015	LW-22	1118.88	75.95	1042.93	1036.4	82.48	6.53
9/2/2015	LW-22	1118.88	76.3	1042.58	1036.4	82.48	6.18
10/1/2015	LW-22	1118.88	78.85	1040.03	1036.4	82.48	3.63
11/10/2015	LW-22	1118.88	77.65	1041.23	1036.4	82.48	4.83
12/10/2015	LW-22	1118.88	77.7	1041.18	1036.4	82.48	4.78
1/19/2016	LW-22	1118.88	77.8	1041.08	1036.4	82.48	4.68
2/11/2016	LW-22	1118.88	78.1	1040.78	1036.4	82.48	4.38
3/3/2016	LW-22	1118.88	77.65	1041.23	1036.4	82.48	4.83
4/18/2016	LW-22	1118.88	61.7	1057.18	1036.4	82.48	20.78
5/10/2016	LW-22	1118.88	67.7	1051.18	1036.4	82.48	14.78
6/21/2016	LW-22	1118.88	59.6	1059.28	1036.4	82.48	22.88
7/6/2016	LW-22	1118.88	59.2	1059.68	1036.4	82.48	23.28
8/15/2016	LW-22	1118.88	58.92	1059.96	1036.4	82.48	23.56
9/21/2016	LW-22	1118.88	58.5	1060.38	1036.4	82.48	23.98
10/7/2016	LW-22	1118.88	71.8	1047.08	1036.4	82.48	10.68
11/9/2016	LW-22	1118.88	61.25	1057.63	1036.4	82.48	21.23
12/8/2016	LW-22	1118.88	65.7	1053.18	1036.4	82.48	16.78

Table 17
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/18/2017	LW-22	1118.88	67	1051.88	1036.4	82.48	15.48
2/4/2017	LW-22	1118.88	59.45	1059.43	1036.4	82.48	23.03
3/9/2017	LW-22	1118.88	60.72	1058.16	1036.4	82.48	21.76
4/17/2017	LW-22	1118.88	57.9	1060.98	1036.4	82.48	24.58
5/17/2017	LW-22	1118.88	55.4	1063.48	1036.4	82.48	27.08
6/6/2017	LW-22	1118.88	55.5	1063.38	1036.4	82.48	26.98
7/12/2017	LW-22	1118.88	77.75	1041.13	1036.4	82.48	4.73
8/10/2017	LW-22	1118.88	77.8	1041.08	1036.4	82.48	4.68
9/14/2017	LW-22	1118.88	78.8	1040.08	1036.4	82.48	3.68
10/4/2017	LW-22	1118.88	70.3	1048.58	1036.4	82.48	12.18
11/1/2017	LW-22	1118.88	65.65	1053.23	1036.4	82.48	16.83
12/13/2017	LW-22	1118.88	60	1058.88	1036.4	82.48	22.48
1/12/2018	LW-22	1118.88	67.3	1051.58	1036.4	82.48	15.18
2/8/2018	LW-22	1118.88	60.3	1058.58	1036.4	82.48	22.18
3/13/2018	LW-22	1118.88	77.3	1041.58	1036.4	82.48	5.18
4/17/2018	LW-22	1118.88	59.1	1059.78	1036.4	82.48	23.38
5/18/2018	LW-22	1118.88	57.4	1061.48	1036.4	82.48	25.08
6/6/2018	LW-22	1118.88	56.9	1061.98	1036.4	82.48	25.58
7/11/2018	LW-22	1118.88	59.15	1059.73	1036.4	82.48	23.33
8/7/2018	LW-22	1118.88	56	1062.88	1036.4	82.48	26.48
9/10/2018	LW-22	1118.88	55.9	1062.98	1036.4	82.48	26.58
10/11/2018	LW-22	1118.88	57.51	1061.37	1036.4	82.48	24.97
11/14/2018	LW-22	1118.88	77.12	1041.76	1036.4	82.48	5.36
12/15/2018	LW-22	1118.88	77.7	1041.18	1036.4	82.48	4.78

Table 17
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/16/2019	LW-22	1118.88	66.35	1052.53	1036.4	82.48	16.13
2/15/2019	LW-22	1118.88	66.4	1052.48	1036.4	82.48	16.08
3/14/2019	LW-22	1118.88	76.35	1042.53	1036.4	82.48	6.13
4/24/2019	LW-22	1118.88	59.9	1058.98	1036.4	82.48	22.58
5/15/2019	LW-22	1118.88	66.2	1052.68	1036.4	82.48	16.28
6/5/2019	LW-22	1118.88	61.55	1057.33	1036.4	82.48	20.93
7/17/2019	LW-22	1118.88	67.95	1050.93	1036.4	82.48	14.53
8/19/2019	LW-22	1118.88	60.2	1058.68	1036.4	82.48	22.28
9/16/2019	LW-22	1118.88	74.45	1044.43	1036.4	82.48	8.03
10/8/2019	LW-22	1118.88	77.2	1041.68	1036.4	82.48	5.28
11/20/2019	LW-22	1118.88	76.05	1042.83	1036.4	82.48	6.43
12/2/2019	LW-22	1118.88	65.7	1053.18	1036.4	82.48	16.78
1/15/2020	LW-22	1118.88	76.6	1042.28	1036.4	82.48	5.88
2/10/2020	LW-22	1118.88	73.7	1045.18	1036.4	82.48	8.78
3/24/2020	LW-22	1118.88	77.58	1041.3	1036.4	82.48	4.9
4/14/2020	LW-22	1118.88	73.8	1045.08	1036.4	82.48	8.68
5/12/2020	LW-22	1118.88	61.45	1057.43	1036.4	82.48	21.03
6/3/2020	LW-22	1118.88	59.3	1059.58	1036.4	82.48	23.18
7/20/2020	LW-22	1118.88	58.75	1060.13	1036.4	82.48	23.73
8/17/2020	LW-22	1118.88	59.1	1059.78	1036.4	82.48	23.38
9/2/2020	LW-22	1118.88	58.25	1060.63	1036.4	82.48	24.23
10/7/2020	LW-22	1118.88	59.78	1059.1	1036.4	82.48	22.7
11/27/2020	LW-22	1118.88	44.08	1074.8	1036.4	82.48	38.4
12/28/2020	LW-22	1118.88	NR		1036.4	82.48	
1/22/2021	LW-22	1116.88	73.45	1043.43	1036.4	80.48	7.03
2/18/2021	LW-22	1116.88	73.6	1043.28	1036.4	80.48	6.88
3/8/2021	LW-22	1116.88	73.42	1043.46	1036.4	80.48	7.06
4/15/2021	LW-22	1116.88	73.4	1043.48	1036.4	80.48	7.08
5/19/2021	LW-22	1116.88	73.75	1043.13	1036.4	80.48	6.73
6/4/2021	LW-22	1116.88	73.6	1043.28	1036.4	80.48	6.88
7/15/2021	LW-22	1116.88	69.3	1047.58	1036.4	80.48	11.18
8/23/2021	LW-22	1116.88	59.55	1057.33	1036.4	80.48	20.93
9/14/2021	LW-22	1116.88	74.4	1042.48	1036.4	80.48	6.08
10/15/2021	LW-22	1116.88	75.23	1041.65	1036.4	80.48	5.25
11/9/2021	LW-22	1116.88	75.1	1041.78	1036.4	80.48	5.38
12/1/2021	LW-22	1116.88	75.25	1041.63	1036.4	80.48	5.23

Approx 2ft cut off

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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness	
1/5/2022	LW-22	1115.05	75.15	1039.9	1036.4	78.65	3.5	
2/8/2022	LW-22	1115.05	75.3	1039.75	1036.4	78.65	3.35	
3/28/2022	LW-22	1115.05	75.35	1039.7	1036.4	78.65	3.3	
4/20/2022	LW-22	1115.05	70.05	1045	1036.4	78.65	8.6	
5/9/2022	LW-22	1115.05	74.95	1040.1	1036.4	78.65	3.7	
6/20/2022	LW-22	1115.05	75.35	1039.7	1036.4	78.65	3.3	
7/1/2022	LW-22	1115.05	75.28	1039.77	1036.4	78.65	3.37	
8/4/2022	LW-22	1115.05	75.22	1039.83	1036.4	78.65	3.43	
9/13/2022	LW-22	1115.05	75.2	1039.85	1036.4	78.65	3.45	
10/11/2022	LW-22	1115.05	75.25	1039.8	1036.4	78.65	3.4	
11/10/2022	LW-22	1115.05	75.15	1039.9	1036.4	78.65	3.5	
12/1/2022	LW-22	1115.05	75.11	1039.94	1036.4	78.65	3.54	
1/24/2023	LW-22	1115.05	75.00	1040.05	1036.4	78.65	3.65	
2/6/2023	LW-22	1115.05	74.96	1040.09	1036.4	78.65	3.69	
3/23/2023	LW-22	1115.05	75.42	1039.63	1036.4	78.65	3.23	
4/12/2023	LW-22	1115.05	75.25	1039.8	1036.4	78.65	3.4	
5/9/2023	LW-22	1115.05	75.15	1039.9	1036.4	78.65	3.5	
6/7/2023	LW-22	1115.05	75.05	1040	1036.4	78.65	3.6	Replaced Pump 6/2023
7/12/2023	LW-22	1115.05	72.9	1042.15	1036.4	78.65	5.75	
8/7/2023	LW-22	1115.05	72.95	1042.1	1036.4	78.65	5.7	
9/5/2023	LW-22	1115.05	73.35	1041.7	1036.4	78.65	5.3	
10/20/2023	LW-22	1115.05	73.25	1041.8	1036.4	78.65	5.4	
11/13/2023	LW-22	1115.05	72.9	1042.15	1036.4	78.65	5.75	
12/14/2023	LW-22	1115.05	73.83	1041.22	1036.4	78.65	4.82	
1/8/2024	LW-22	1115.05	74.1	1040.95	1036.4	78.65	4.55	

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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/10/2011	LW-23	1121.22	36.5	1084.72	1036.9	84.32	47.82
2/24/2011	LW-23	1121.22	37.1	1084.12	1036.9	84.32	47.22
3/4/2011	LW-23	1121.22	37.3	1083.92	1036.9	84.32	47.02
4/29/2011	LW-23	1121.22	37.9	1083.32	1036.9	84.32	46.42
5/17/2011	LW-23	1121.22	38.4	1082.82	1036.9	84.32	45.92
6/7/2011	LW-23	1121.22	38.4	1082.82	1036.9	84.32	45.92
7/6/2011	LW-23	1121.22	38.4	1082.82	1036.9	84.32	45.92
8/9/2011	LW-23	1121.22	38	1083.22	1036.9	84.32	46.32
9/22/2011	LW-23	1121.22	40.8	1080.42	1036.9	84.32	43.52
10/4/2011	LW-23	1121.22	40.7	1080.52	1036.9	84.32	43.62
12/9/2011	LW-23	1121.22	40.3	1080.92	1036.9	84.32	44.02
1/18/2012	LW-23	1121.22	40	1081.22	1036.9	84.32	44.32
2/27/2012	LW-23	1121.22	39.9	1081.32	1036.9	84.32	44.42
3/13/2012	LW-23	1121.22	40.1	1081.12	1036.9	84.32	44.22
4/17/2012	LW-23	1121.22	40.5	1080.72	1036.9	84.32	43.82
5/16/2012	LW-23	1121.22	40.5	1080.72	1036.9	84.32	43.82
6/26/2012	LW-23	1121.22	43.2	1078.02	1036.9	84.32	41.12
7/18/2012	LW-23	1121.22	42	1079.22	1036.9	84.32	42.32
9/19/2012	LW-23	1121.22	61	1060.22	1036.9	84.32	23.32
10/24/2012	LW-23	1121.22	47.7	1073.52	1036.9	84.32	36.62
11/21/2012	LW-23	1121.22	Pump is Blocking		1036.9	84.32	
12/11/2012	LW-23	1121.22	Pump is Blocking		1036.9	84.32	

Table 17
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/10/2013	LW-23	1121.22	Pump is Blocking		1036.9	84.32	
2/28/2013	LW-23	1121.22	Pump is Blocking		1036.9	84.32	
3/25/2013	LW-23	1121.22	Pump is Blocking		1036.9	84.32	
4/1/2013	LW-23	1121.22	44.6	1076.62	1036.9	84.32	39.72
5/13/2013	LW-23	1121.22	Pump is Blocking		1036.9	84.32	
6/10/2013	LW-23	1121.22	Pump is Blocking		1036.9	84.32	
7/17/2013	LW-23	1121.22	Pump is Blocking		1036.9	84.32	
8/15/2013	LW-23	1121.22	46.65	1074.57	1036.9	84.32	37.67
9/19/2013	LW-23	1121.22	47.5	1073.72	1036.9	84.32	36.82
10/10/2013	LW-23	1121.22	Broken Tube		1036.9	84.32	
11/12/2013	LW-23	1121.22	Broken Tube		1036.9	84.32	
12/4/2013	LW-23	1121.22	Broken Tube		1036.9	84.32	
1/15/2014	LW-23	1121.22	Broken Tube		1036.9	84.32	
2/10/2014	LW-23	1121.22	Broken Tube		1036.9	84.32	
3/27/2014	LW-23	1121.22	56.6	1064.62	1036.9	84.32	27.72
4/15/2014	LW-23	1121.22	73.4	1047.82	1036.9	84.32	10.92
5/8/2014	LW-23	1121.22	73.4	1047.82	1036.9	84.32	10.92
6/9/2014	LW-23	1121.22	74.6	1046.62	1036.9	84.32	9.72
7/8/2014	LW-23	1121.22	65.4	1055.82	1036.9	84.32	18.92
8/18/2014	LW-23	1121.22	73.1	1048.12	1036.9	84.32	11.22
9/24/2014	LW-23	1121.22	74.8	1046.42	1036.9	84.32	9.52
10/10/2014	LW-23	1121.22	74.95	1046.27	1036.9	84.32	9.37
11/19/2014	LW-23	1121.22	61.6	1059.62	1036.9	84.32	22.72
12/2/2014	LW-23	1121.22	57.3	1063.92	1036.9	84.32	27.02

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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/19/2015	LW-23	1121.22	52.8	1068.42	1036.9	84.32	31.52
2/17/2015	LW-23	1121.22	51.7	1069.52	1036.9	84.32	32.62
3/19/2015	LW-23	1121.22	51.3	1069.92	1036.9	84.32	33.02
4/7/2015	LW-23	1121.22	50.4	1070.82	1036.9	84.32	33.92
5/4/2015	LW-23	1121.22	71.8	1049.42	1036.9	84.32	12.52
6/17/2015	LW-23	1121.22	75.3	1045.92	1036.9	84.32	9.02
7/7/2015	LW-23	1121.22	74.3	1046.92	1036.9	84.32	10.02
8/6/2015	LW-23	1121.22	75.4	1045.82	1036.9	84.32	8.92
9/2/2015	LW-23	1121.22	75.7	1045.52	1036.9	84.32	8.62
10/1/2015	LW-23	1121.22	69.4	1051.82	1036.9	84.32	14.92
11/10/2015	LW-23	1121.22	73.9	1047.32	1036.9	84.32	10.42
12/10/2015	LW-23	1121.22	73.9	1047.32	1036.9	84.32	10.42
1/19/2016	LW-23	1121.22	58.17	1063.05	1036.9	84.32	26.15
2/11/2016	LW-23	1121.22	57.2	1064.02	1036.9	84.32	27.12
3/3/2016	LW-23	1121.22	53.45	1067.77	1036.9	84.32	30.87
4/18/2016	LW-23	1121.22	52	1069.22	1036.9	84.32	32.32
5/10/2016	LW-23	1121.22	52.4	1068.82	1036.9	84.32	31.92
6/21/2016	LW-23	1121.22	50.6	1070.62	1036.9	84.32	33.72
7/6/2016	LW-23	1121.22	49.95	1071.27	1036.9	84.32	34.37
8/15/2016	LW-23	1121.22	49.77	1071.45	1036.9	84.32	34.55
9/21/2016	LW-23	1121.22	49.2	1072.02	1036.9	84.32	35.12
10/7/2016	LW-23	1121.22	49.3	1071.92	1036.9	84.32	35.02
11/9/2016	LW-23	1121.22	50.2	1071.02	1036.9	84.32	34.12
12/8/2016	LW-23	1121.22	50.25	1070.97	1036.9	84.32	34.07

Table 17
Leachte Elevation and Thickness Data - Closed Landfilling Areas
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/18/2017	LW-23	1121.22	49.6	1071.62	1036.9	84.32	34.72
2/4/2017	LW-23	1121.22	49.95	1071.27	1036.9	84.32	34.37
3/9/2017	LW-23	1121.22	49.5	1071.72	1036.9	84.32	34.82
4/17/2017	LW-23	1121.22	49.5	1071.72	1036.9	84.32	34.82
5/17/2017	LW-23	1121.22	48.7	1072.52	1036.9	84.32	35.62
6/6/2017	LW-23	1121.22	49.2	1072.02	1036.9	84.32	35.12
7/12/2017	LW-23	1121.22	49.15	1072.07	1036.9	84.32	35.17
8/10/2017	LW-23	1121.22	73.5	1047.72	1036.9	84.32	10.82
9/14/2017	LW-23	1121.22	74.8	1046.42	1036.9	84.32	9.52
10/4/2017	LW-23	1121.22	74.8	1046.42	1036.9	84.32	9.52
11/1/2017	LW-23	1121.22	57.55	1063.67	1036.9	84.32	26.77
12/13/2017	LW-23	1121.22	52.35	1068.87	1036.9	84.32	31.97
1/12/2018	LW-23	1121.22	74.7	1046.52	1036.9	84.32	9.62
2/8/2018	LW-23	1121.22	56.3	1064.92	1036.9	84.32	28.02
3/13/2018	LW-23	1121.22	74.9	1046.32	1036.9	84.32	9.42
4/17/2018	LW-23	1121.22	74.8	1046.42	1036.9	84.32	9.52
5/18/2018	LW-23	1121.22	73.7	1047.52	1036.9	84.32	10.62
6/6/2018	LW-23	1121.22	74.6	1046.62	1036.9	84.32	9.72
7/11/2018	LW-23	1121.22	74.8	1046.42	1036.9	84.32	9.52
8/7/2018	LW-23	1121.22	73.65	1047.57	1036.9	84.32	10.67
9/10/2018	LW-23	1121.22	74.76	1046.46	1036.9	84.32	9.56
10/11/2018	LW-23	1121.22	74.6	1046.62	1036.9	84.32	9.72
11/14/2018	LW-23	1121.22	74.8	1046.42	1036.9	84.32	9.52
12/15/2018	LW-23	1121.22	74.7	1046.52	1036.9	84.32	9.62

Table 17
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/16/2019	LW-23	1121.22	74.6	1046.62	1036.9	84.32	9.72
2/15/2019	LW-23	1121.22	74.75	1046.47	1036.9	84.32	9.57
3/14/2019	LW-23	1121.22	74.7	1046.52	1036.9	84.32	9.62
4/24/2019	LW-23	1121.22	73.8	1047.42	1036.9	84.32	10.52
5/15/2019	LW-23	1121.22	74.55	1046.67	1036.9	84.32	9.77
6/5/2019	LW-23	1121.22	58.62	1062.6	1036.9	84.32	25.7
7/17/2019	LW-23	1121.22	74.79	1046.43	1036.9	84.32	9.53
8/19/2019	LW-23	1121.22	72.5	1048.72	1036.9	84.32	11.82
9/16/2019	LW-23	1121.22	71.88	1049.34	1036.9	84.32	12.44
10/8/2019	LW-23	1121.22	74.3	1046.92	1036.9	84.32	10.02
11/20/2019	LW-23	1121.22	74.75	1046.47	1036.9	84.32	9.57
12/2/2019	LW-23	1121.22	74.83	1046.39	1036.9	84.32	9.49
1/15/2020	LW-23	1121.22	72.93	1048.29	1036.9	84.32	11.39
2/10/2020	LW-23	1121.22	74.4	1046.82	1036.9	84.32	9.92
3/24/2020	LW-23	1121.22	74.42	1046.8	1036.9	84.32	9.9
4/14/2020	LW-23	1121.22	72.25	1048.97	1036.9	84.32	12.07
5/12/2020	LW-23	1121.22	71.65	1049.57	1036.9	84.32	12.67
6/3/2020	LW-23	1121.22	69.95	1051.27	1036.9	84.32	14.37
7/20/2020	LW-23	1121.22	72.1	1049.12	1036.9	84.32	12.22
8/17/2020	LW-23	1121.22	72.9	1048.32	1036.9	84.32	11.42
9/2/2020	LW-23	1121.22	59.9	1061.32	1036.9	84.32	24.42
10/7/2020	LW-23	1121.22	55.2	1066.02	1036.9	84.32	29.12
11/27/2020	LW-23	1121.22	68.8	1052.42	1036.9	84.32	15.52
12/28/2020	LW-23	1121.22	55.6	1065.62	1036.9	84.32	28.72
1/22/2021	LW-23	1119.22	52.8	1066.42	1036.9	82.32	29.52
2/18/2021	LW-23	1119.22	52.1	1067.12	1036.9	82.32	30.22
3/8/2021	LW-23	1119.22	51.59	1067.63	1036.9	82.32	30.73
4/15/2021	LW-23	1119.22	50.58	1068.64	1036.9	82.32	31.74
5/19/2021	LW-23	1119.22	50.5	1068.72	1036.9	82.32	31.82
6/4/2021	LW-23	1119.22	50.6	1068.62	1036.9	82.32	31.72
7/15/2021	LW-23	1119.22	58.3	1060.92	1036.9	82.32	24.02
8/23/2021	LW-23	1119.22	52.55	1066.67	1036.9	82.32	29.77
9/14/2021	LW-23	1119.22	72.62	1046.6	1036.9	82.32	9.7
10/15/2021	LW-23	1119.22	55.05	1064.17	1036.9	82.32	27.27
11/9/2021	LW-23	1119.22	53.5	1065.72	1036.9	82.32	28.82
12/1/2021	LW-23	1119.22	52.35	1066.87	1036.9	82.32	29.97

Approx 2ft cut off

Table 17
Leachate Elevation and Thickness Data - Closed Landfilling Areas
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SCILA Sanitary Landfill
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/5/2022	LW-23	1118.23	51.71	1066.52	1036.9	81.33	29.62
2/8/2022	LW-23	1118.23	51.25	1066.98	1036.9	81.33	30.08
3/28/2022	LW-23	1118.23	51.22	1067.01	1036.9	81.33	30.11
4/20/2022	LW-23	1118.23	50.5	1067.73	1036.9	81.33	30.83
5/9/2022	LW-23	1118.23	49.95	1068.28	1036.9	81.33	31.38
6/20/2022	LW-23	1118.23	55.95	1062.28	1036.9	81.33	25.38
7/1/2022	LW-23	1118.23	50.93	1067.3	1036.9	81.33	30.4
8/4/2022	LW-23	1118.23	50.91	1067.32	1036.9	81.33	30.42
9/13/2022	LW-23	1118.23	50.95	1067.28	1036.9	81.33	30.38
10/11/2022	LW-23	1118.23	72.3	1045.93	1036.9	81.33	9.03
11/10/2022	LW-23	1118.23	72.31	1045.92	1036.9	81.33	9.02
12/1/2022	LW-23	1118.23	72.05	1046.18	1036.9	81.33	9.28
1/24/2023	LW-23	1118.23	53.85	1064.38	1036.9	81.33	27.48
2/6/2023	LW-23	1118.23	53.12	1065.11	1036.9	81.33	28.21
3/23/2023	LW-23	1118.23	51.85	1066.38	1036.9	81.33	29.48
4/12/2023	LW-23	1118.23	52.1	1066.13	1036.9	81.33	29.23
5/9/2023	LW-23	1118.23	52.01	1066.22	1036.9	81.33	29.32
6/7/2023	LW-23	1118.23	51.85	1066.38	1036.9	81.33	29.48
7/12/2023	LW-23	1118.23	68.8	1049.43	1036.9	81.33	12.53
8/7/2023	LW-23	1118.23	70	1048.23	1036.9	81.33	11.33
9/5/2023	LW-23	1118.23	70.01	1048.22	1036.9	81.33	11.32
10/20/2023	LW-23	1118.23	70.4	1047.83	1036.9	81.33	10.93
11/13/2023	LW-23	1118.23	70.19	1048.04	1036.9	81.33	11.14
12/14/2023	LW-23	1118.23	70.05	1048.18	1036.9	81.33	11.28
1/8/2024	LW-23	1118.23	66.65	1051.58	1036.9	81.33	14.68

Replaced Pump 6/2023

Table 17
Leachate Elevation and Thickness Data - Closed Landfilling Areas
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/10/2011	LW-24	1113.08	72.3	1040.78	1032.9	80.18	7.88
2/24/2011	LW-24	1113.08	72.3	1040.78	1032.9	80.18	7.88
3/4/2011	LW-24	1113.08	72.8	1040.28	1032.9	80.18	7.38
4/29/2011	LW-24	1113.08	72.7	1040.38	1032.9	80.18	7.48
5/17/2011	LW-24	1113.08	72.8	1040.28	1032.9	80.18	7.38
6/7/2011	LW-24	1113.08	72.6	1040.48	1032.9	80.18	7.58
7/6/2011	LW-24	1113.08	72.4	1040.68	1032.9	80.18	7.78
8/9/2011	LW-24	1113.08	60.9	1052.18	1032.9	80.18	19.28
9/22/2011	LW-24	1113.08	72.9	1040.18	1032.9	80.18	7.28
10/4/2011	LW-24	1113.08	72.5	1040.58	1032.9	80.18	7.68
12/9/2011	LW-24	1113.08	72.5	1040.58	1032.9	80.18	7.68
1/18/2012	LW-24	1113.08	72.3	1040.78	1032.9	80.18	7.88
2/27/2012	LW-24	1113.08	72.5	1040.58	1032.9	80.18	7.68
3/13/2012	LW-24	1113.08	72.5	1040.58	1032.9	80.18	7.68
4/17/2012	LW-24	1113.08	72	1041.08	1032.9	80.18	8.18
5/16/2012	LW-24	1113.08	72.3	1040.78	1032.9	80.18	7.88
6/26/2012	LW-24	1113.08	Pump is Blocking		1032.9	80.18	
7/18/2012	LW-24	1113.08	Pump is Blocking		1032.9	80.18	
9/19/2012	LW-24	1113.08	72.4	1040.68	1032.9	80.18	7.78
10/24/2012	LW-24	1113.08	72.1	1040.98	1032.9	80.18	8.08
11/21/2012	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28
12/11/2012	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28

Table 17
Leachate Elevation and Thickness Data - Closed Landfilling Areas
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/10/2013	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28
2/28/2013	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28
3/25/2013	LW-24	1113.08	71.8	1041.28	1032.9	80.18	8.38
4/1/2013	LW-24	1113.08	72	1041.08	1032.9	80.18	8.18
5/13/2013	LW-24	1113.08	71.5	1041.58	1032.9	80.18	8.68
6/10/2013	LW-24	1113.08	71.8	1041.28	1032.9	80.18	8.38
7/17/2013	LW-24	1113.08	Pump is Blocking		1032.9	80.18	
8/15/2013	LW-24	1113.08	75.5	1037.58	1032.9	80.18	4.68
9/19/2013	LW-24	1113.08	74.85	1038.23	1032.9	80.18	5.33
10/10/2013	LW-24	1113.08	74.5	1038.58	1032.9	80.18	5.68
11/12/2013	LW-24	1113.08	73.5	1039.58	1032.9	80.18	6.68
12/4/2013	LW-24	1113.08	72.5	1040.58	1032.9	80.18	7.68
1/15/2014	LW-24	1113.08	72.2	1040.88	1032.9	80.18	7.98
2/10/2014	LW-24	1113.08	72.2	1040.88	1032.9	80.18	7.98
3/27/2014	LW-24	1113.08	71.6	1041.48	1032.9	80.18	8.58
4/15/2014	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28
5/8/2014	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28
6/9/2014	LW-24	1113.08	71.1	1041.98	1032.9	80.18	9.08
7/8/2014	LW-24	1113.08	71.7	1041.38	1032.9	80.18	8.48
8/18/2014	LW-24	1113.08	71.7	1041.38	1032.9	80.18	8.48
9/24/2014	LW-24	1113.08	71.7	1041.38	1032.9	80.18	8.48
10/10/2014	LW-24	1113.08	71.8	1041.28	1032.9	80.18	8.38
11/19/2014	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28
12/2/2014	LW-24	1113.08	71.5	1041.58	1032.9	80.18	8.68

Table 17
Leachate Elevation and Thickness Data - Closed Landfilling Areas
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/19/2015	LW-24	1113.08	71.7	1041.38	1032.9	80.18	8.48
2/17/2015	LW-24	1113.08	71.6	1041.48	1032.9	80.18	8.58
3/19/2015	LW-24	1113.08	71.8	1041.28	1032.9	80.18	8.38
4/7/2015	LW-24	1113.08	71.1	1041.98	1032.9	80.18	9.08
5/4/2015	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28
6/17/2015	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28
7/7/2015	LW-24	1113.08	72	1041.08	1032.9	80.18	8.18
8/6/2015	LW-24	1113.08	73	1040.08	1032.9	80.18	7.18
9/2/2015	LW-24	1113.08	74	1039.08	1032.9	80.18	6.18
10/1/2015	LW-24	1113.08	74.15	1038.93	1032.9	80.18	6.03
11/10/2015	LW-24	1113.08	72.4	1040.68	1032.9	80.18	7.78
12/10/2015	LW-24	1113.08	73.6	1039.48	1032.9	80.18	6.58
1/19/2016	LW-24	1113.08	72.05	1041.03	1032.9	80.18	8.13
2/11/2016	LW-24	1113.08	75.35	1037.73	1032.9	80.18	4.83
3/3/2016	LW-24	1113.08	71.85	1041.23	1032.9	80.18	8.33
4/18/2016	LW-24	1113.08	71.8	1041.28	1032.9	80.18	8.38
5/10/2016	LW-24	1113.08	74.8	1038.28	1032.9	80.18	5.38
6/21/2016	LW-24	1113.08	71.75	1041.33	1032.9	80.18	8.43
7/6/2016	LW-24	1113.08	71.75	1041.33	1032.9	80.18	8.43
8/15/2016	LW-24	1113.08	71.85	1041.23	1032.9	80.18	8.33
9/21/2016	LW-24	1113.08	71.95	1041.13	1032.9	80.18	8.23
10/7/2016	LW-24	1113.08	72	1041.08	1032.9	80.18	8.18
11/9/2016	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28
12/8/2016	LW-24	1113.08	72.1	1040.98	1032.9	80.18	8.08

Table 17
Leachate Elevation and Thickness Data - Closed Landfilling Areas
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/18/2017	LW-24	1113.08	71.93	1041.15	1032.9	80.18	8.25
2/4/2017	LW-24	1113.08	72	1041.08	1032.9	80.18	8.18
3/9/2017	LW-24	1113.08	71.97	1041.11	1032.9	80.18	8.21
4/17/2017	LW-24	1113.08	71.75	1041.33	1032.9	80.18	8.43
5/17/2017	LW-24	1113.08	71.5	1041.58	1032.9	80.18	8.68
6/6/2017	LW-24	1113.08	71.8	1041.28	1032.9	80.18	8.38
7/12/2017	LW-24	1113.08	71.7	1041.38	1032.9	80.18	8.48
8/10/2017	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28
9/14/2017	LW-24	1113.08	72	1041.08	1032.9	80.18	8.18
10/4/2017	LW-24	1113.08	72.4	1040.68	1032.9	80.18	7.78
11/1/2017	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28
12/13/2017	LW-24	1113.08	71.95	1041.13	1032.9	80.18	8.23
1/12/2018	LW-24	1113.08	72.3	1040.78	1032.9	80.18	7.88
2/8/2018	LW-24	1113.08	72.1	1040.98	1032.9	80.18	8.08
3/13/2018	LW-24	1113.08	72.3	1040.78	1032.9	80.18	7.88
4/17/2018	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28
5/18/2018	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28
6/6/2018	LW-24	1113.08	71.88	1041.2	1032.9	80.18	8.3
7/11/2018	LW-24	1113.08	71.75	1041.33	1032.9	80.18	8.43
8/7/2018	LW-24	1113.08	71.8	1041.28	1032.9	80.18	8.38
9/10/2018	LW-24	1113.08	71.75	1041.33	1032.9	80.18	8.43
10/11/2018	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28
11/14/2018	LW-24	1113.08	71.88	1041.2	1032.9	80.18	8.3
12/15/2018	LW-24	1113.08	71.9	1041.18	1032.9	80.18	8.28

Table 17
Leachate Elevation and Thickness Data - Closed Landfilling Areas
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness	
1/16/2019	LW-24	1113.08	71.95	1041.13	1032.9	80.18	8.23	
2/15/2019	LW-24	1113.08	72.13	1040.95	1032.9	80.18	8.05	
3/14/2019	LW-24	1113.08	71.92	1041.16	1032.9	80.18	8.26	
4/24/2019	LW-24	1113.08	72	1041.08	1032.9	80.18	8.18	
5/15/2019	LW-24	1113.08	72.05	1041.03	1032.9	80.18	8.13	
6/5/2019	LW-24	1113.08	71.91	1041.17	1032.9	80.18	8.27	
7/17/2019	LW-24	1113.08	71.8	1041.28	1032.9	80.18	8.38	
8/19/2019	LW-24	1113.08	72.1	1040.98	1032.9	80.18	8.08	
9/16/2019	LW-24	1113.08	72.22	1040.86	1032.9	80.18	7.96	
10/8/2019	LW-24	1113.08	72.1	1040.98	1032.9	80.18	8.08	
11/20/2019	LW-24	1113.08	72.0	1041.08	1032.9	80.18	8.18	
12/2/2019	LW-24	1113.08	NR	NR	1032.9	80.18	NR	
1/15/2020	LW-24	1113.08	71.1	1041.98	1032.9	80.18	9.08	obstruction at 71.1
2/10/2020	LW-24	1113.08	71.1	1041.98	1032.9	80.18	9.08	obstruction at 71.1
3/24/2020	LW-24	1113.08	71.1	1041.98	1032.9	80.18	9.08	obstruction at 71.1
4/14/2020	LW-24	1113.08	71.1	1041.98	1032.9	80.18	9.08	obstruction at 71.1
5/12/2020	LW-24	1113.08	71.1	1041.98	1032.9	80.18	9.08	obstruction at 71.1
6/3/2020	LW-24	1113.08	71.1	1041.98	1032.9	80.18	9.08	obstruction at 71.1
7/20/2020	LW-24	1113.08	71.1	1041.98	1032.9	80.18	9.08	obstruction at 71.1
8/17/2020	LW-24	1113.08	71.1	1041.98	1032.9	80.18	9.08	obstruction at 71.1
9/2/2020	LW-24	1113.08	71.1	1041.98	1032.9	80.18	9.08	obstruction at 71.1
10/7/2020	LW-24	1113.08	NR		1032.9	80.18		
11/27/2020	LW-24	1113.08	NR		1032.9	80.18		
12/28/2020	LW-24	1111.08	71.00	1040.08	1032.9	78.18	7.18	Approx 2ft cut off
1/22/2021	LW-24	1111.08	71.00	1040.08	1032.9	78.18	7.18	
2/18/2021	LW-24	1111.08	71.00	1040.08	1032.9	78.18	7.18	
3/8/2021	LW-24	1111.08	70.92	1040.16	1032.9	78.18	7.26	
4/15/2021	LW-24	1111.08	70.70	1040.38	1032.9	78.18	7.48	
5/19/2021	LW-24	1111.08	70.58	1040.5	1032.9	78.18	7.6	
6/4/2021	LW-24	1111.08	70.55	1040.53	1032.9	78.18	7.63	
7/15/2021	LW-24	1111.08	70.70	1040.38	1032.9	78.18	7.48	
8/23/2021	LW-24	1111.08	70.65	1040.43	1032.9	78.18	7.53	
9/14/2021	LW-24	1111.08	70.69	1040.39	1032.9	78.18	7.49	
10/15/2021	LW-24	1111.08	70.90	1040.18	1032.9	78.18	7.28	
11/9/2021	LW-24	1111.08	70.85	1040.23	1032.9	78.18	7.33	
12/1/2021	LW-24	1111.08	70.65	1040.43	1032.9	78.18	7.53	

Table 17
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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/5/2022	LW-24	1110.33	70.87	1039.46	1032.9	77.43	6.56
2/8/2022	LW-24	1110.33	70.64	1039.69	1032.9	77.43	6.79
3/28/2022	LW-24	1110.33	70.73	1039.6	1032.9	77.43	6.7
4/20/2022	LW-24	1110.33	70.40	1039.93	1032.9	77.43	7.03
5/9/2022	LW-24	1110.33	70.60	1039.73	1032.9	77.43	6.83
6/20/2022	LW-24	1110.33	70.53	1039.8	1032.9	77.43	6.9
7/1/2022	LW-24	1110.33	70.60	1039.73	1032.9	77.43	6.83
8/4/2022	LW-24	1110.33	70.65	1039.68	1032.9	77.43	6.78
9/13/2022	LW-24	1110.33	70.53	1039.8	1032.9	77.43	6.9
10/11/2022	LW-24	1110.33	70.60	1039.73	1032.9	77.43	6.83
11/10/2022	LW-24	1110.33	70.68	1039.65	1032.9	77.43	6.75
12/1/2022	LW-24	1110.33	70.86	1039.47	1032.9	77.43	6.57
1/24/2023	LW-24	1110.33	70.95	1039.38	1032.9	77.43	6.48
2/6/2023	LW-24	1110.33	70.53	1039.8	1032.9	77.43	6.9
3/23/2023	LW-24	1110.33	70.68	1039.65	1032.9	77.43	6.75
4/12/2023	LW-24	1110.33	70.48	1039.85	1032.9	77.43	6.95
5/9/2023	LW-24	1110.33	70.69	1039.64	1032.9	77.43	6.74
6/7/2023	LW-24	1110.33	70.50	1039.83	1032.9	77.43	6.93
7/12/2023	LW-24	1110.33	70.72	1039.61	1032.9	77.43	6.71
8/7/2023	LW-24	1110.33	70.89	1039.44	1032.9	77.43	6.54
9/5/2023	LW-24	1110.33	70.83	1039.5	1032.9	77.43	6.6
10/20/2023	LW-24	1110.33	71.10	1039.23	1032.9	77.43	6.33
11/13/2023	LW-24	1110.33	71.35	1038.98	1032.9	77.43	6.08
12/14/2023	LW-24	1110.33	71.45	1038.88	1032.9	77.43	5.98
1/8/2024	LW-24	1110.33	71.18	1039.15	1032.9	77.43	6.25

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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/10/2011	LW-25	1118.95	42.1	1076.85	1046.3	72.65	30.55
2/24/2011	LW-25	1118.95	42.1	1076.85	1046.3	72.65	30.55
3/4/2011	LW-25	1118.95	42.5	1076.45	1046.3	72.65	30.15
4/29/2011	LW-25	1118.95	43.1	1075.85	1046.3	72.65	29.55
5/17/2011	LW-25	1118.95	43.5	1075.45	1046.3	72.65	29.15
6/7/2011	LW-25	1118.95	43.3	1075.65	1046.3	72.65	29.35
7/6/2011	LW-25	1118.95	43.1	1075.85	1046.3	72.65	29.55
8/9/2011	LW-25	1118.95	42.7	1076.25	1046.3	72.65	29.95
9/22/2011	LW-25	1118.95	43	1075.95	1046.3	72.65	29.65
10/4/2011	LW-25	1118.95	43	1075.95	1046.3	72.65	29.65
12/9/2011	LW-25	1118.95	43.1	1075.85	1046.3	72.65	29.55
1/18/2012	LW-25	1118.95	42.8	1076.15	1046.3	72.65	29.85
2/27/2012	LW-25	1118.95	43.2	1075.75	1046.3	72.65	29.45
3/13/2012	LW-25	1118.95	42.9	1076.05	1046.3	72.65	29.75
4/17/2012	LW-25	1118.95	42.9	1076.05	1046.3	72.65	29.75
5/16/2012	LW-25	1118.95	43.3	1075.65	1046.3	72.65	29.35
6/26/2012	LW-25	1118.95	45.2	1073.75	1046.3	72.65	27.45
7/18/2012	LW-25	1118.95	Pump is Blocking		1046.3	72.65	
9/19/2012	LW-25	1118.95	Pump is Blocking		1046.3	72.65	
10/24/2012	LW-25	1118.95	Pump is Blocking		1046.3	72.65	
11/21/2012	LW-25	1118.95	Pump is Blocking		1046.3	72.65	
12/11/2012	LW-25	1118.95	Pump is Blocking		1046.3	72.65	

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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/10/2013	LW-25	1118.95	Pump is Blocking		1046.3	72.65	
2/28/2013	LW-25	1118.95	Pump is Blocking		1046.3	72.65	
3/25/2013	LW-25	1118.95	Pump is Blocking		1046.3	72.65	
4/1/2013	LW-25	1118.95	Pump is Blocking		1046.3	72.65	
5/13/2013	LW-25	1118.95	Pump is Blocking		1046.3	72.65	
6/10/2013	LW-25	1118.95	Pump is Blocking		1046.3	72.65	
7/17/2013	LW-25	1118.95	Pump is Blocking		1046.3	72.65	
8/15/2013	LW-25	1118.95	55.2	1063.75	1046.3	72.65	17.45
9/19/2013	LW-25	1118.95	69.1	1049.85	1046.3	72.65	3.55
10/10/2013	LW-25	1118.95	69.1	1049.85	1046.3	72.65	3.55
11/12/2013	LW-25	1118.95	69.2	1049.75	1046.3	72.65	3.45
12/4/2013	LW-25	1118.95	55.2	1063.75	1046.3	72.65	17.45
1/15/2014	LW-25	1118.95	52.5	1066.45	1046.3	72.65	20.15
2/10/2014	LW-25	1118.95	51.2	1067.75	1046.3	72.65	21.45
3/27/2014	LW-25	1118.95	68.45	1050.5	1046.3	72.65	4.2
4/15/2014	LW-25	1118.95	69	1049.95	1046.3	72.65	3.65
5/8/2014	LW-25	1118.95	69	1049.95	1046.3	72.65	3.65
6/9/2014	LW-25	1118.95	71.1	1047.85	1046.3	72.65	1.55
7/8/2014	LW-25	1118.95	69.05	1049.9	1046.3	72.65	3.6
8/18/2014	LW-25	1118.95	69.1	1049.85	1046.3	72.65	3.55
9/24/2014	LW-25	1118.95	69.2	1049.75	1046.3	72.65	3.45
10/10/2014	LW-25	1118.95	69.05	1049.9	1046.3	72.65	3.6
11/19/2014	LW-25	1118.95	59.5	1059.45	1046.3	72.65	13.15
12/2/2014	LW-25	1118.95	55.2	1063.75	1046.3	72.65	17.45

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1/19/2015	LW-25	1118.95	52.3	1066.65	1046.3	72.65	20.35
2/17/2015	LW-25	1118.95	51.4	1067.55	1046.3	72.65	21.25
3/19/2015	LW-25	1118.95	50.5	1068.45	1046.3	72.65	22.15
4/7/2015	LW-25	1118.95	49.8	1069.15	1046.3	72.65	22.85
5/4/2015	LW-25	1118.95	50.2	1068.75	1046.3	72.65	22.45
6/17/2015	LW-25	1118.95	49.25	1069.7	1046.3	72.65	23.4
7/7/2015	LW-25	1118.95	49.1	1069.85	1046.3	72.65	23.55
8/6/2015	LW-25	1118.95	49.5	1069.45	1046.3	72.65	23.15
9/2/2015	LW-25	1118.95	48.6	1070.35	1046.3	72.65	24.05
10/1/2015	LW-25	1118.95	48.5	1070.45	1046.3	72.65	24.15
11/10/2015	LW-25	1118.95	68.45	1050.5	1046.3	72.65	4.2
12/10/2015	LW-25	1118.95	68.2	1050.75	1046.3	72.65	4.45
1/19/2016	LW-25	1118.95	68.57	1050.38	1046.3	72.65	4.08
2/11/2016	LW-25	1118.95	70.4	1048.55	1046.3	72.65	2.25
3/3/2016	LW-25	1118.95	68.6	1050.35	1046.3	72.65	4.05
4/18/2016	LW-25	1118.95	68.55	1050.4	1046.3	72.65	4.1
5/10/2016	LW-25	1118.95	69.9	1049.05	1046.3	72.65	2.75
6/21/2016	LW-25	1118.95	68.55	1050.4	1046.3	72.65	4.1
7/6/2016	LW-25	1118.95	68.55	1050.4	1046.3	72.65	4.1
8/15/2016	LW-25	1118.95	68.6	1050.35	1046.3	72.65	4.05
9/21/2016	LW-25	1118.95	68.6	1050.35	1046.3	72.65	4.05
10/7/2016	LW-25	1118.95	68.65	1050.3	1046.3	72.65	4
11/9/2016	LW-25	1118.95	68.5	1050.45	1046.3	72.65	4.15
12/8/2016	LW-25	1118.95	68.6	1050.35	1046.3	72.65	4.05

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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/18/2017	LW-25	1118.95	67.9	1051.05	1046.3	72.65	4.75
2/4/2017	LW-25	1118.95	68.65	1050.3	1046.3	72.65	4
3/9/2017	LW-25	1118.95	68.6	1050.35	1046.3	72.65	4.05
4/17/2017	LW-25	1118.95	68	1050.95	1046.3	72.65	4.65
5/17/2017	LW-25	1118.95	68.5	1050.45	1046.3	72.65	4.15
6/6/2017	LW-25	1118.95	68.8	1050.15	1046.3	72.65	3.85
7/12/2017	LW-25	1118.95	68.6	1050.35	1046.3	72.65	4.05
8/10/2017	LW-25	1118.95	68.6	1050.35	1046.3	72.65	4.05
9/14/2017	LW-25	1118.95	69.25	1049.7	1046.3	72.65	3.4
10/4/2017	LW-25	1118.95	68.8	1050.15	1046.3	72.65	3.85
11/1/2017	LW-25	1118.95	57.9	1061.05	1046.3	72.65	14.75
12/13/2017	LW-25	1118.95	53.85	1065.1	1046.3	72.65	18.8
1/12/2018	LW-25	1118.95	68.8	1050.15	1046.3	72.65	3.85
2/8/2018	LW-25	1118.95	68.6	1050.35	1046.3	72.65	4.05
3/13/2018	LW-25	1118.95	68.7	1050.25	1046.3	72.65	3.95
4/17/2018	LW-25	1118.95	68.6	1050.35	1046.3	72.65	4.05
5/18/2018	LW-25	1118.95	68.6	1050.35	1046.3	72.65	4.05
6/6/2018	LW-25	1118.95	68.6	1050.35	1046.3	72.65	4.05
7/11/2018	LW-25	1118.95	68.85	1050.1	1046.3	72.65	3.8
8/7/2018	LW-25	1118.95	68.65	1050.3	1046.3	72.65	4
9/10/2018	LW-25	1118.95	69.51	1049.44	1046.3	72.65	3.14
10/11/2018	LW-25	1118.95	68.62	1050.33	1046.3	72.65	4.03
11/14/2018	LW-25	1118.95	68.6	1050.35	1046.3	72.65	4.05
12/15/2018	LW-25	1118.95	71.25	1047.7	1046.3	72.65	1.4

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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/16/2019	LW-25	1118.95	68.55	1050.4	1046.3	72.65	4.1
2/15/2019	LW-25	1118.95	68.6	1050.35	1046.3	72.65	4.05
3/14/2019	LW-25	1118.95	68.71	1050.24	1046.3	72.65	3.94
4/24/2019	LW-25	1118.95	68.7	1050.25	1046.3	72.65	3.95
5/15/2019	LW-25	1118.95	68.55	1050.4	1046.3	72.65	4.1
6/5/2019	LW-25	1118.95	56.82	1062.13	1046.3	72.65	15.83
7/17/2019	LW-25	1118.95	56.28	1062.67	1046.3	72.65	16.37
8/19/2019	LW-25	1118.95	54.4	1064.55	1046.3	72.65	18.25
9/16/2019	LW-25	1115.95	63.5	1052.45	1046.3	69.65	6.15
10/8/2019	LW-25	1115.95	66.3	1049.65	1046.3	69.65	3.35
11/20/2019	LW-25	1115.95	65	1050.95	1046.3	69.65	4.65
12/2/2019	LW-25	1115.95	65.05	1050.9	1046.3	69.65	4.6
1/15/2020	LW-25	1115.95	65.4	1050.55	1046.3	69.65	4.25
2/10/2020	LW-25	1115.95	65.42	1050.53	1046.3	69.65	4.23
3/24/2020	LW-25	1115.95	65.22	1050.73	1046.3	69.65	4.43
4/14/2020	LW-25	1115.95	65.22	1050.73	1046.3	69.65	4.43
5/12/2020	LW-25	1115.95	64.9	1051.05	1046.3	69.65	4.75
6/3/2020	LW-25	1115.95	64.65	1051.3	1046.3	69.65	5
7/20/2020	LW-25	1115.95	65.05	1050.9	1046.3	69.65	4.6
8/17/2020	LW-25	1115.95	55.4	1060.55	1046.3	69.65	14.25
9/2/2020	LW-25	1115.95	53.2	1062.75	1046.3	69.65	16.45
10/7/2020	LW-25	1115.95	52.05	1063.9	1046.3	69.65	17.6
11/27/2020	LW-25	1115.95	51.2	1064.75	1046.3	69.65	18.45
12/28/2020	LW-25	1115.95	65.75	1050.2	1046.3	69.65	3.9
1/22/2021	LW-25	1115.95	65.7	1050.25	1046.3	69.65	3.95
2/18/2021	LW-25	1115.95	65.7	1050.25	1046.3	69.65	3.95
3/8/2021	LW-25	1115.95	65.95	1050	1046.3	69.65	3.7
4/15/2021	LW-25	1115.95	65.7	1050.25	1046.3	69.65	3.95
5/19/2021	LW-25	1115.95	59.22	1056.73	1046.3	69.65	10.43
6/4/2021	LW-25	1115.95	55.05	1060.9	1046.3	69.65	14.6
7/15/2021	LW-25	1115.95	59.3	1056.65	1046.3	69.65	10.35
8/23/2021	LW-25	1115.95	52.7	1063.25	1046.3	69.65	16.95
9/14/2021	LW-25	1115.95	53.78	1062.17	1046.3	69.65	15.87
10/15/2021	LW-25	1115.95	64.9	1051.05	1046.3	69.65	4.75
11/9/2021	LW-25	1115.95	65.05	1050.9	1046.3	69.65	4.6
12/1/2021	LW-25	1115.95	65.15	1050.8	1046.3	69.65	4.5

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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness	
1/5/2022	LW-25	1115.71	65.38	1050.33	1046.3	69.41	4.03	
2/8/2022	LW-25	1115.71	65.55	1050.16	1046.3	69.41	3.86	
3/28/2022	LW-25	1115.71	65.52	1050.19	1046.3	69.41	3.89	
4/20/2022	LW-25	1115.71	65.05	1050.66	1046.3	69.41	4.36	
5/9/2022	LW-25	1115.71	65.05	1050.66	1046.3	69.41	4.36	
6/20/2022	LW-25	1115.71	65.45	1050.26	1046.3	69.41	3.96	
7/1/2022	LW-25	1115.71	65.5	1050.21	1046.3	69.41	3.91	
8/4/2022	LW-25	1115.71	56.15	1059.56	1046.3	69.41	13.26	
9/13/2022	LW-25	1115.71	52.7	1063.01	1046.3	69.41	16.71	
10/11/2022	LW-25	1115.71	52.43	1063.28	1046.3	69.41	16.98	
11/10/2022	LW-25	1115.71	51.8	1063.91	1046.3	69.41	17.61	
12/1/2022	LW-25	1115.71	51.55	1064.16	1046.3	69.41	17.86	
1/24/2023	LW-25	1115.71	50.9	1064.81	1046.3	69.41	18.51	
2/6/2023	LW-25	1115.71	50.7	1065.01	1046.3	69.41	18.71	
3/23/2023	LW-25	1115.71	50.3	1065.41	1046.3	69.41	19.11	
4/12/2023	LW-25	1115.71	50.2	1065.51	1046.3	69.41	19.21	
5/9/2023	LW-25	1115.71	49.96	1065.75	1046.3	69.41	19.45	
6/7/2023	LW-25	1115.71	49.99	1065.72	1046.3	69.41	19.42	Replaced Pump 6/2023
7/12/2023	LW-25	1115.71	62.2	1053.51	1046.3	69.41	7.21	
8/7/2023	LW-25	1115.71	63.45	1052.26	1046.3	69.41	5.96	
9/5/2023	LW-25	1115.71	64.1	1051.61	1046.3	69.41	5.31	
10/20/2023	LW-25	1115.71	64.4	1051.31	1046.3	69.41	5.01	
11/13/2023	LW-25	1115.71	64.25	1051.46	1046.3	69.41	5.16	
12/14/2023	LW-25	1115.71	64.34	1051.37	1046.3	69.41	5.07	
1/8/2024	LW-25	1115.71	64.3	1051.41	1046.3	69.41	5.11	

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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
11/10/2015	LW-26	1108.21	51.6	1056.61	1042.3	65.91	14.31
12/10/2015	LW-26	1108.21	50.2	1058.01	1042.3	65.91	15.71
1/19/2016	LW-26	1108.21	54.4	1053.81	1042.3	65.91	11.51
2/11/2016	LW-26	1108.21	54.4	1053.81	1042.3	65.91	11.51
3/3/2016	LW-26	1108.21	54.17	1054.04	1042.3	65.91	11.74
4/18/2016	LW-26	1108.21	53.5	1054.71	1042.3	65.91	12.41
5/10/2016	LW-26	1108.21	53.3	1054.91	1042.3	65.91	12.61
6/21/2016	LW-26	1108.21	54	1054.21	1042.3	65.91	11.91
7/6/2016	LW-26	1108.21	54.1	1054.11	1042.3	65.91	11.81
8/15/2016	LW-26	1108.21	54	1054.21	1042.3	65.91	11.91
9/21/2016	LW-26	1108.21	54.2	1054.01	1042.3	65.91	11.71
10/7/2016	LW-26	1108.21	54.05	1054.16	1042.3	65.91	11.86
11/9/2016	LW-26	1108.21	54.8	1053.41	1042.3	65.91	11.11
12/8/2016	LW-26	1108.21	54.8	1053.41	1042.3	65.91	11.11

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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/18/2017	LW-26	1108.21	54.5	1053.71	1042.3	65.91	11.41
2/4/2017	LW-26	1108.21	54.6	1053.61	1042.3	65.91	11.31
3/9/2017	LW-26	1108.21	54.55	1053.66	1042.3	65.91	11.36
4/17/2017	LW-26	1108.21	53.9	1054.31	1042.3	65.91	12.01
5/17/2017	LW-26	1108.21	54.6	1053.61	1042.3	65.91	11.31
6/6/2017	LW-26	1108.21	54.5	1053.71	1042.3	65.91	11.41
7/12/2017	LW-26	1108.21	54.72	1053.49	1042.3	65.91	11.19
8/10/2017	LW-26	1108.21	54.55	1053.66	1042.3	65.91	11.36
9/14/2017	LW-26	1108.21	54.65	1053.56	1042.3	65.91	11.26
10/4/2017	LW-26	1108.21	54.5	1053.71	1042.3	65.91	11.41
11/1/2017	LW-26	1108.21	54.6	1053.61	1042.3	65.91	11.31
12/13/2017	LW-26	1108.21	54.3	1053.91	1042.3	65.91	11.61
1/12/2018	LW-26	1108.21	54.15	1054.06	1042.3	65.91	11.76
2/8/2018	LW-26	1108.21	53.38	1054.83	1042.3	65.91	12.53
3/13/2018	LW-26	1108.21	54.3	1053.91	1042.3	65.91	11.61
4/17/2018	LW-26	1108.21	54.47	1053.74	1042.3	65.91	11.44
5/18/2018	LW-26	1108.21	54.65	1053.56	1042.3	65.91	11.26
6/6/2018	LW-26	1108.21	54.2	1054.01	1042.3	65.91	11.71
7/11/2018	LW-26	1108.21	54.66	1053.55	1042.3	65.91	11.25
8/7/2018	LW-26	1108.21	53.95	1054.26	1042.3	65.91	11.96
9/10/2018	LW-26	1108.21	54.64	1053.57	1042.3	65.91	11.27
10/11/2018	LW-26	1108.21	54.9	1053.31	1042.3	65.91	11.01
11/14/2018	LW-26	1108.21	54.66	1053.55	1042.3	65.91	11.25
12/15/2018	LW-26	1108.21	54.46	1053.75	1042.3	65.91	11.45

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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/16/2019	LW-26	1108.21	57.9	1050.31	1042.3	65.91	8.01
2/15/2019	LW-26	1108.21	57.57	1050.64	1042.3	65.91	8.34
3/14/2019	LW-26	1108.21	56.9	1051.31	1042.3	65.91	9.01
4/24/2019	LW-26	1108.21	56	1052.21	1042.3	65.91	9.91
5/15/2019	LW-26	1108.21	56.2	1052.01	1042.3	65.91	9.71
6/5/2019	LW-26	1108.21	55.35	1052.86	1042.3	65.91	10.56
7/17/2019	LW-26	1108.21	54.65	1053.56	1042.3	65.91	11.26
8/19/2019	LW-26	1108.21	54.8	1053.41	1042.3	65.91	11.11
9/16/2019	LW-26	1108.21	54.51	1053.7	1042.3	65.91	11.4
10/8/2019	LW-26	1108.21	54.75	1053.46	1042.3	65.91	11.16
11/20/2019	LW-26	1108.21	54.7	1053.51	1042.3	65.91	11.21
12/2/2019	LW-26	1108.21	54.7	1053.51	1042.3	65.91	11.21
1/15/2020	LW-26	1108.21	54.8	1053.41	1042.3	65.91	11.11
2/10/2020	LW-26	1108.21	54.8	1053.41	1042.3	65.91	11.11
3/24/2020	LW-26	1108.21	54.9	1053.31	1042.3	65.91	11.01
4/14/2020	LW-26	1108.21	54.7	1053.51	1042.3	65.91	11.21
5/12/2020	LW-26	1108.21	54.8	1053.41	1042.3	65.91	11.11
6/3/2020	LW-26	1108.21	53.9	1054.31	1042.3	65.91	12.01
7/20/2020	LW-26	1108.21	54.71	1053.5	1042.3	65.91	11.2
8/17/2020	LW-26	1108.21	54.55	1053.66	1042.3	65.91	11.36
9/2/2020	LW-26	1108.21	54.55	1053.66	1042.3	65.91	11.36
10/7/2020	LW-26	1108.21	53.95	1054.26	1042.3	65.91	11.96
11/27/2020	LW-26	1108.21	53.9	1054.31	1042.3	65.91	12.01
12/28/2020	LW-26	1108.21	54.45	1053.76	1042.3	65.91	11.46
1/22/2021	LW-26	1108.21	54.5	1053.71	1042.3	65.91	11.41
2/18/2021	LW-26	1108.21	54.47	1053.74	1042.3	65.91	11.44
3/8/2021	LW-26	1108.21	54.3	1053.91	1042.3	65.91	11.61
4/15/2021	LW-26	1108.21	52.85	1055.36	1042.3	65.91	13.06
5/19/2021	LW-26	1108.21	52.06	1056.15	1042.3	65.91	13.85
6/4/2021	LW-26	1108.21	54.3	1053.91	1042.3	65.91	11.61
7/15/2021	LW-26	1108.21	50.65	1057.56	1042.3	65.91	15.26
8/23/2021	LW-26	1108.21	52.65	1055.56	1042.3	65.91	13.26
9/14/2021	LW-26	1108.21	53.01	1055.2	1042.3	65.91	12.9
10/15/2021	LW-26	1108.21	52.6	1055.61	1042.3	65.91	13.31
11/9/2021	LW-26	1108.21	52	1056.21	1042.3	65.91	13.91
12/1/2021	LW-26	1108.21	50.75	1057.46	1042.3	65.91	15.16

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1/5/2022	LW-26	1107.98	54.4	1053.58	1042.3	65.68	11.28	
2/8/2022	LW-26	1107.98	52.33	1055.65	1042.3	65.68	13.35	
3/28/2022	LW-26	1107.98	50.1	1057.88	1042.3	65.68	15.58	
4/20/2022	LW-26	1107.98	53.1	1054.88	1042.3	65.68	12.58	
5/9/2022	LW-26	1107.98	48.5	1059.48	1042.3	65.68	17.18	
6/20/2022	LW-26	1107.98	50.5	1057.48	1042.3	65.68	15.18	
7/1/2022	LW-26	1107.98	51.27	1056.71	1042.3	65.68	14.41	
8/4/2022	LW-26	1107.98	52.05	1055.93	1042.3	65.68	13.63	
9/13/2022	LW-26	1107.98	53.53	1054.45	1042.3	65.68	12.15	
10/11/2022	LW-26	1107.98	53.87	1054.11	1042.3	65.68	11.81	
11/10/2022	LW-26	1107.98	53.73	1054.25	1042.3	65.68	11.95	
12/1/2022	LW-26	1107.98	52.41	1055.57	1042.3	65.68	13.27	
1/24/2023	LW-26	1107.98	49.57	1058.41	1042.3	65.68	16.11	
2/6/2023	LW-26	1107.98	47.45	1060.53	1042.3	65.68	18.23	
3/23/2023	LW-26	1107.98	48	1059.98	1042.3	65.68	17.68	
4/12/2023	LW-26	1107.98	49.46	1058.52	1042.3	65.68	16.22	
5/9/2023	LW-26	1107.98	49.95	1058.03	1042.3	65.68	15.73	
6/7/2023	LW-26	1107.98	54.95	1053.03	1042.3	65.68	10.73	Replaced Pump 6/2023 bad configuration file
7/12/2023	LW-26	1107.98	51.7	1056.28	1042.3	65.68	13.98	
8/7/2023	LW-26	1107.98	52.56	1055.42	1042.3	65.68	13.12	
9/5/2023	LW-26	1107.98	52.44	1055.54	1042.3	65.68	13.24	
10/20/2023	LW-26	1107.98	51.45	1056.53	1042.3	65.68	14.23	
11/13/2023	LW-26	1107.98	51.55	1056.43	1042.3	65.68	14.13	
12/14/2023	LW-26	1107.98	51.95	1056.03	1042.3	65.68	13.73	New Configuration file installed 12/14/23
1/8/2024	LW-26	1107.98	54.48	1053.5	1042.3	65.68	11.2	

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Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/10/2011	LPZ-101	1070.35	20.1	1050.25	1049.8	20.55	0.45
2/24/2011	LPZ-101	1066.25	16.45	1049.8	1049.8	16.45	0
3/4/2011	LPZ-101	1066.25	16.45	1049.8	1049.8	16.45	0
4/29/2011	LPZ-101	1066.25	16.35	1049.9	1049.8	16.45	0.1
5/17/2011	LPZ-101	1066.25	16.45	1049.8	1049.8	16.45	0
6/7/2011	LPZ-101	1066.25	16.45	1049.8	1049.8	16.45	0
7/6/2011	LPZ-101	1066.25	16.45	1049.8	1049.8	16.45	0
8/9/2011	LPZ-101	1066.25	16.45	1049.8	1049.8	16.45	0
9/22/2011	LPZ-101	1066.25	16.45	1049.8	1049.8	16.45	0
10/4/2011	LPZ-101	1066.25	16.45	1049.8	1049.8	16.45	0
12/9/2011	LPZ-101	1066.25	16.35	1049.9	1049.8	16.45	0.1
1/18/2012	LPZ-101	1066.25	16	1050.25	1049.8	16.45	0.45
2/27/2012	LPZ-101	1066.25	16.2	1050.05	1049.8	16.45	0.25
3/13/2012	LPZ-101	1066.25	16.1	1050.15	1049.8	16.45	0.35
4/17/2012	LPZ-101	1066.25	16.4	1049.85	1049.8	16.45	0.05
5/16/2012	LPZ-101	1066.25	16.43	1049.82	1049.8	16.45	0.02
6/26/2012	LPZ-101	1066.25	16.3	1049.95	1049.8	16.45	0.15
7/18/2012	LPZ-101	1066.25	16.45	1049.8	1049.8	16.45	0
9/19/2012	LPZ-101	1066.6	16.8	1049.8	1049.8	16.8	0
10/24/2012	LPZ-101	1066.6	16.8	1049.8	1049.8	16.8	0
11/21/2012	LPZ-101	1066.6	16.8	1049.8	1049.8	16.8	0
12/11/2012	LPZ-101	1066.6	16.8	1049.8	1049.8	16.8	0

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1/10/2013	LPZ-101	1072.7	22.9	1049.8	1049.8	22.9	0
2/28/2013	LPZ-101	1072.7	22.9	1049.8	1049.8	22.9	0
3/25/2013	LPZ-101	1072.7	22.9	1049.8	1049.8	22.9	0
4/1/2013	LPZ-101	1072.7	22.9	1049.8	1049.8	22.9	0
5/13/2013	LPZ-101	1072.7	22.9	1049.8	1049.8	22.9	0
6/10/2013	LPZ-101	1072.7	22.9	1049.8	1049.8	22.9	0
7/17/2013	LPZ-101	1072.7	22.9	1049.8	1049.8	22.9	0
8/15/2013	LPZ-101	1072.7	22.9	1049.8	1049.8	22.9	0
9/19/2013	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
10/10/2013	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
11/12/2013	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
12/4/2013	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
1/15/2014	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
2/10/2014	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
3/27/2014	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
4/15/2014	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
5/8/2014	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
6/9/2014	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
7/8/2014	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
8/18/2014	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
9/24/2014	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
10/10/2014	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
11/19/2014	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
12/2/2014	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0

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1/19/2015	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
2/17/2015	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
3/19/2015	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
4/7/2015	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
5/4/2015	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
6/17/2015	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
7/7/2015	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
8/6/2015	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
9/2/2015	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
10/1/2015	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
11/10/2015	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
12/10/2015	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
1/19/2016	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
2/11/2016	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
3/3/2016	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
4/18/2016	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
5/10/2016	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
6/21/2016	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
7/6/2016	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
8/15/2016	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
9/21/2016	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
10/7/2016	LPZ-101	1073	22.45	1050.55	1049.8	23.2	0.75
11/9/2016	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
12/8/2016	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0

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1/18/2017	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
2/4/2017	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
3/9/2017	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
4/17/2017	LPZ-101	1073	20.75	1052.25	1049.8	23.2	2.45
5/17/2017	LPZ-101	1073	20.3	1052.7	1049.8	23.2	2.9
6/6/2017	LPZ-101	1073	20.65	1052.35	1049.8	23.2	2.55
7/12/2017	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
8/10/2017	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
9/14/2017	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
10/4/2017	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
11/1/2017	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
12/13/2017	LPZ-101	1073	23.2	1049.8	1049.8	23.2	0
1/12/2018	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
2/8/2018	LPZ-101	1073.2	23.2	1050	1049.8	23.4	0.2
3/13/2018	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
4/17/2018	LPZ-101	1073.2	23.3	1049.9	1049.8	23.4	0.1
5/18/2018	LPZ-101	1073.2	23.05	1050.15	1049.8	23.4	0.35
6/6/2018	LPZ-101	1073.2	23.05	1050.15	1049.8	23.4	0.35
7/11/2018	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
7/18/2018	LPZ-101	1073.2	23.2	1050	1049.8	23.4	0.2
8/2/2018	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
8/7/2018	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
8/16/2018	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
8/22/2018	LPZ-101	1073.2	23.2	1050	1049.8	23.4	0.2
8/29/2018	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
9/10/2018	LPZ-101	1073.35	19.2	1054.15	1049.8	23.55	4.35
10/11/2008	LPZ-101	1073.35	20.2	1053.15	1049.8	23.55	3.35
11/14/2018	LPZ-101	1073.35	19.2	1054.15	1049.8	23.55	4.35
11/23/2018	LPZ-101	1073.35	21.0	1052.35	1049.8	23.55	2.55
12/15/2018	LPZ-101	1073.35	22.7	1050.65	1049.8	23.55	0.85

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1/16/2019	LPZ-101	1073.2	21.2	1052	1049.8	23.4	2.2
2/15/2019	LPZ-101	1073.2	19.6	1053.6	1049.8	23.4	3.8
3/14/2019	LPZ-101	1073.2	18.4	1054.8	1049.8	23.4	5
4/24/2019	LPZ-101	1073.2	19.25	1053.95	1049.8	23.4	4.15
5/15/2019	LPZ-101	1073.2	21.4	1051.8	1049.8	23.4	2
5/20/2019	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
6/5/2019	LPZ-101	1073.2	20.35	1052.85	1049.8	23.4	3.05
6/10/2019	LPZ-101	1073.2	23.2	1050	1049.8	23.4	0.2
6/12/2019	LPZ-101	1073.2	23.1	1050.1	1049.8	23.4	0.3
6/14/2019	LPZ-101	1073.2	23.3	1049.9	1049.8	23.4	0.1
6/28/2019	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
7/3/2019	LPZ-101	1073.2	23.1	1050.1	1049.8	23.4	0.3
7/10/2019	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
7/16/2019	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
7/17/2019	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
7/24/2019	LPZ-101	1073.2	23.2	1050	1049.8	23.4	0.2
7/31/2019	LPZ-101	1073.2	23.3	1049.9	1049.8	23.4	0.1
8/7/2019	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
8/15/2019	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
8/19/2019	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
8/28/2019	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
9/6/2019	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
9/16/2019	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
9/18/2019	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
10/8/2019	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
11/20/2019	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
12/2/2019	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0

Time period when leachate recirculation was ongoing.

Table 17
Leachate Elevation and Thickness Data - Subtitle D Expansion Areas
Annual Water Quality Report
SCILA Sanitary Landfill
IDNR Permit No. 61-SDP-01-78P

Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/15/2020	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
2/10/2020	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
3/24/2020	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
4/14/2020	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
5/12/2020	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
6/3/2020	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
7/20/2020	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
8/17/2020	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
9/2/2020	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
10/7/2020	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
11/27/2020	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
12/28/2020	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
1/22/2021	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
2/18/2021	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
3/8/2021	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
4/15/2021	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
5/19/2021	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
6/4/2021	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
7/15/2021	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
8/23/2021	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
9/14/2021	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
10/15/2021	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
11/9/2021	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0
12/1/2021	LPZ-101	1073.2	23.4	1049.8	1049.8	23.4	0

Time period when leachate recirculation was ongoing. *See Weekly Recirculation Logs in Appendix H.1.*

Table 17
Leachate Elevation and Thickness Data - Subtitle D Expansion Areas
Annual Water Quality Report
SCILA Sanitary Landfill
IDNR Permit No. 61-SDP-01-78P

Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/5/2022	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
2/8/2022	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
3/28/2022	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
4/20/2022	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
5/9/2022	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
6/20/2022	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
7/1/2022	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
8/4/2022	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
9/13/2022	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
10/11/2022	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
11/10/2022	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
12/1/2022	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0

Time period when leachate recirculation was ongoing. *See Weekly Recirculation Logs in Appendix H.1.*

Table 17
Leachate Elevation and Thickness Data - Subtitle D Expansion Areas
Annual Water Quality Report
SCILA Sanitary Landfill
IDNR Permit No. 61-SDP-01-78P

Date	Leachate Well	Top PVC Elevation	Depth to Liquid	Elevation Liquid	Elevation SLF Base	Depth Well	Leachate Thickness
1/24/2023	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
2/6/2023	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
3/23/2023	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
4/11/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
4/12/2023	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
4/12/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
4/13/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
4/17/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
4/18/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
5/3/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
5/8/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
5/9/2023	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
5/11/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
5/17/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
5/19/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
5/23/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
6/5/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
6/7/2023	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
6/7/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
6/9/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
6/13/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
6/15/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
6/19/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
6/21/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
6/23/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
7/5/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
7/10/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
7/12/2023	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
7/14/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
7/24/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
7/26/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
7/28/2023	LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
8/7/2023	LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0

Table 17
Leachate Elevation and Thickness Data - Subtitle D Expansion Areas
Annual Water Quality Report
SCILA Sanitary Landfill
IDNR Permit No. 61-SDP-01-78P

8/15/2023 LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
8/16/2023 LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
8/17/2023 LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
8/18/2023 LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
8/21/2023 LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
8/22/2023 LPZ-101*	1074.09	23.3	1050.79	1050.79	23.3	0
9/5/2023 LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
10/20/2023 LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
11/13/2023 LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
12/14/2023 LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0
1/8/2024 LPZ-101	1074.09	23.3	1050.79	1050.79	23.3	0

Time period when leachate recirculation was ongoing. *See Weekly Recirculation Logs in Appendix H.1.*

LPZ-101* = measurement by landfill staff

Table 18 – Gas Monitoring Summary

Table 18
Gas Monitoring
Annual Water Quality Report
SCILA Sanitary Landfill
Permit No. 61-SDP-01-78P

2023

Monitoring Point	3/23/2023	6/7/2023	9/5/2023	12/14/2023	
	% LEL	% LEL	% LEL	% LEL	
GP-1	0	0	0	0	destroyed 3/2022
GP-2	0	0	0	0	
GP-3	0	0	0	0	
GP-4	0	0	0	0	
GP-5	0	0	0	0	
GP-6	0	0	0	0	
GP-7	0	0	0	0	
GP-8	0	0	0	0	
Office (Temp. Trailer)	0	0	0	0	
Shop #1	0	0	0	0	destroyed 3/2022
Shop #2	0	0	0	0	destroyed 3/2022
Leachate Building	0	0	0	0	
GU #1 (Lagoon 1)	0	0	0	0	
GU-#2 Lagoon 2)	DNE	DNE	DNE	0	installed 11/2023
GU-A	DNE	DNE	DNE	0	installed 11/2023
GU-B	DNE	DNE	DNE	0	installed 11/2023
Office (2520 Hwy 92)	DNE	DNE	DNE	0	installed 11/2023
Shop (2520 Hwy 92)	DNE	DNE	DNE	0	installed 11/2023
Remedial Performance	3/23/2023	6/7/2023	9/5/2023	12/14/2023	
Monitoring Point	% LEL	% LEL	% LEL	% LEL	
TILE 1 - Cleanout South End	4.2	0	0	0	
TILE 2 - Cleanout East End	37.6	0	4.0	10.0	
TILE 1 - Discharge at Tile 1	0	7.6	50.0	9.2	
TILE 2 - Discharge at Tile 2	0	0	0	0	
Corrective Action Plan	3/23/2023	6/7/2023	9/5/2023	12/14/2023	
	% LEL	% LEL	% LEL	% LEL	
Vent 1	0	0	2.8	2.0	
Vent 2	35.1	O.L.	38.8	34.7	
Vent 3	14.2	31.0	0	5.5	
Vent 4	38.6	61.1	35.7	61.3	
Vent 5	41.9	O.L.	41.2	45.1	
Vent 6	32.3	O.L.	O.L.	O.L.	

O.L. = Over the Limit of the meter (>100 % LEL or >5% methane)
DNE = Did not exist

Appendix A

Listing of Existing Site Monitoring Wells

Point	Status	Groundwater System	System #	Condition
GU-1	HMSP	Till(fill)/bedrock	#1	Dry
GU-2	HMSP	Till(fill)/bedrock	#1	
GU-A	HMSP	Till(fill)/bedrock	#1	
GU-B	HMSP	Till(fill)/bedrock	#1	
MW-1R	Water level	Till(fill)/bedrock	#1	Dry
MW-4A	HMSP	Till(fill)/bedrock	#1	
MW-4B	Water level	Middle Creek	#2	
MW-4C	HMSP	Hertha	#3	
MW-6A	HMSP	Bethany Falls	#1	
MW-6B	Water level	Bethany Falls	#1	
MW-6C	Water level	Middle Creek	#2	Dry
MW-7A	Water level	Bethany Falls	#1	Dry
MW-7B	HMSP	Deep shale	#4	
MW-7C	Water level	Middle Creek	#2	Dry
MW-8A	Water level	Till(fill)/bedrock	#1	Dry
MW-8B	HMSP	Till(fill)/bedrock	#1	
MW-9AR	HMSP	Till(fill)/bedrock	#1	
MW-11A	Water level	Middle Creek	#2	Dry
MW-11B	Water level	Hertha	#3	Dry
MW-11C	HMSP	Exline	#4	
MW-13	Water level	Hertha	#3	
MW-14A	Water level	Till(fill)/bedrock	#1	Dry
MW-14B	Water level	Middle Creek	#2	
MW-14C	Water level	Hertha	#3	
MW-14D	HMSP	Exline	#4	
MW-15R	HMSP	Till(fill)/bedrock	#1	
MW-17	Water level	Exline	#4	
MW-17R	HMSP	Exline	#4	
MW-18	HMSP	Till(fill)/bedrock	#1	
MW-19	HMSP	Hertha	#3	
MW-21	HMSP	Till(fill)/bedrock	#1	
MW-22B	Water level	Hertha	#3	
MW-23	Water level	Bethany Falls	#1	Dry
MW-23B	Water level	Hertha	#3	
MW-24B	Water level	Middle Creek	#2	
MW-24C	Water level	Hertha	#3	
MW-24D	Water level	Exline	#4	
MW-27	Water level	Till(fill)/bedrock	#1	Dry
MW-28	HMSP	Till(fill)/Exline bedrock	#4	
MW-30	Water level	Till(fill)/bedrock	#1	Dry
MW-31	HMSP	Till(fill)/bedrock	#1	
MW-32	HMSP	Till(fill)/bedrock	#1	
MW-33	Water level	Hertha	#3	
SW-1	HMSP	Surface water	Surface water	
SW-2B	HMSP	Surface water	Surface water	
SW-102	PECS	PECS	PECS	
Tile 1	HMSP	Collector Trench Outflow	#1	
Tile 2	HMSP	Collector Trench Outflow	#1	
MW-34A	Water level	Till(fill)/bedrock	#1	
MW-34B	Water level	Middle Creek	#2	
MW-34C	Water level	Hertha	#3	
MW-35B	Water level	Middle Creek	#2	
MW-36A	Water level	Till(fill)/bedrock	#1	
MW-36B	Water level	Middle Creek	#2	
MW-37A	Water level	Till(fill)/bedrock	#1	
MW-37B	Water level	Middle Creek	#2	
MW-37C	Water level	Hertha	#3	
MW-37D	HMSP	Exline	#4	Dry
MW-38A	Water level	Till(fill)/bedrock	#1	
MW-38B	Water level	Middle Creek	#2	
MW-39A	Water level	Till(fill)/bedrock	#1	
MW-39B	Water level	Middle Creek	#2	
MW-39C	Water level	Hertha	#3	
MW-39D	HMSP	Exline	#4	

MW-40A	Water level	Till(fill)/bedrock	#1	
MW-40B	Water level	Middle Creek	#2	
MW-41A	Water level	Till(fill)/bedrock	#1	Dry
MW-41C	Water level	Hertha	#3	
MW-41D	HMSP	Exline	#4	
MW-42C	Water level	Hertha	#3	
MW-42D	HMSP	Exline	#4	
MW-43	Water level	Deep shale	#4	Dry
MW-44	HMSP	Till(fill)/bedrock	#1	
MW-45A	HMSP	Ladore Shale	#1	
MW-45D	HMSP	Exline	#4	

Red text = Installed in 2023

Appendix B

Field Sampling Forms

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-1R

Primary Sampling Method: No-Purge for Appendix I
Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1044.51
Well Depth	39.50
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1044.51
Well Depth	39.50
Top Screen	1011.04
Bottom Screen	1005.01
Bottom Well	1005.01
Sampler Length (ft)	
Sampler Volume (mL)	0.00
Feet cordage	0.00
Top sample	1044.51
Bottom sample	1044.51
Turbidity(NTU)	

Date	Time	Water Level	Water Elevation	Notes
3/23/2023		39.75	1004.76	Dry

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	0	
Appendix I	Metals	150	0	
Appendix I	VOC	240	0	
Full Appendix II	10 more containers	5620	0	
TSS	TSS	1000	0	
Supplemental			0	
Supplemental			0	
Total			0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1044.51	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	39.50	Before purging	9/2/2020		39.75	1004.76		0.0	
		After purging				1044.51			
		Top of Screen 2014				1011.04			
						-6.28			feet above (+) or below (-) top screen
		Bottom of Well 2014				1005.01			
		Bottom of Well	9/2/2020		39.50	1005.01			
						0.00			feet sedimentation
		Before Sampling				1044.51			
		Recovery				1044.51			
		Recovery				1044.51			
		Recovery				1044.51			
		Recovery				1044.51			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-4A

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1082.35
Well Depth	29.70
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1082.35
Well Depth	29.70
Top Screen	1057.65
Bottom Screen	1052.65
Bottom Well	1052.65
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	
Top sample	1082.35
Bottom sample	1078.35
Turbidity(NTU)	

Date	Time	Water Level	Water Elevation	Notes
3/23/2023			1082.35	Broken

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10		
Appendix I	Metals	150		
Appendix I	VOC	240		
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		0	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1082.35	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	29.70	Before purging				1082.35		0.0	No
		After purging				1082.35			
		Top of Screen 1985				1057.65			
						24.70			feet above (+) or below (-) top screen
		Bottom of Well 1985				1052.65			
		Bottom of Well			29.60	1052.75			
						0.10			feet sedimentation
		Before Sampling				1082.35			
		Recovery				1082.35			
		Recovery				1082.35			
		Recovery				1082.35			
		Recovery				1082.35			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-6A

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1055.48
Well Depth	15.43
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1055.48
Well Depth	15.43
Top Screen	1043.05
Bottom Screen	1040.05
Bottom Well	1040.05
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	10.50
Top sample	1044.98
Bottom sample	1040.98
Turbidity(NTU)	1.36

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	12:33	10.45	1045.03	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	1.36
Appendix I	Metals	150	150	1.36
Appendix I	VOC	240	240	1.36
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1055.48	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	15.43	Before purging	3/23/2023	12:33	10.45	1045.03	0	0.0	dry
Capped	YES	After purging				1055.48			
Standing Water	NO	Top of Screen 1990				1043.05			
Litter	NO					1.98			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1040.05			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		15.75	1039.73			
						-0.32			feet sedimentation
		Before Sampling				1055.48			App I
		Before Sampling				1082.35			App II
		Recovery				1082.35			
		Recovery				1082.35			
		Recovery				1055.48			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-8B

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1049.46
Well Depth	28.65
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1049.46
Well Depth	28.65
Top Screen	1029.86
Bottom Screen	1020.81
Bottom Well	1020.81
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	23.00
Top sample	1026.46
Bottom sample	1022.46
Turbidity(NTU)	7.06

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	13:30	22.9	1026.56	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	7.06
Appendix I	Metals	150	150	7.06
Appendix I	VOC	240	240	7.06
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1049.46	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	28.65	Before purging	3/23/2023	13:30	22.90	1026.56	0	0.0	Yes
Capped	YES	After purging				1049.46			
Standing Water	NO	Top of Screen 1990				1029.86			
Litter	NO					-3.30			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1020.81			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		28.70	1020.76			
						-0.05			feet sedimentation
		Before Sampling				1049.46			
		Before Sampling				1049.46			
		Recovery				1049.46			
		Recovery				1049.46			
		Recovery				1049.46			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-9AR

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1057.54
Well Depth	28.95
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1057.54
Well Depth	28.95
Top Screen	1038.59
Bottom Screen	1028.59
Bottom Well	1028.59
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	25.00
Top sample	1032.54
Bottom sample	1028.54
Turbidity(NTU)	6.19

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	15:07	25.59	1031.95	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	6.19
Appendix I	Metals	150	150	6.19
Appendix I	VOC	240	240	6.19
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1057.54	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	28.95	Before purging	3/23/2023	15:07	25.59	1031.95	0	0.0	yes
Capped	YES	After purging				1057.54			
Standing Water	NO	Top of Screen 1990				1038.59			
Litter	NO					-6.64			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1028.59			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		28.95	1028.59			
						0.00			feet sedimentation
		Before Sampling				1057.54			
		Before Sampling				1057.54			
		Recovery				1057.54			
		Recovery				1057.54			
		Recovery				1057.54			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-11C

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1054.11
Well Depth	51.55
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1054.11
Well Depth	51.55
Top Screen	1003.56
Bottom Screen	1002.56
Bottom Well	1002.56
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	45.00
Top sample	1009.11
Bottom sample	1005.11
Turbidity(NTU)	0.98

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	12:06	43.14	1010.97	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	0.98
Appendix I	Metals	150	150	0.98
Appendix I	VOC	240	240	0.98
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1054.11	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	51.55	Before purging	3/23/2023	12:06	43.14	1010.97	0	0.0	
Capped	YES	After purging				1054.11			
Standing Water	NO	Top of Screen 1990				1003.56			
Litter	NO					7.41			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1002.56			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		51.55	1002.56			
						0.00			feet sedimentation
		Before Sampling				1054.11			
		Before Sampling				1054.11			
		Recovery				1054.11			
		Recovery				1054.11			
		Recovery				1054.11			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-14D

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1057.28
Well Depth	65.00
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1057.28
Well Depth	65.00
Top Screen	997.28
Bottom Screen	992.28
Bottom Well	992.28
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	58.00
Top sample	999.28
Bottom sample	995.28
Turbidity(NTU)	1.13

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	15:40	55.68	1001.6	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	1.13
Appendix I	Metals	150	150	1.13
Appendix I	VOC	240	240	1.13
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1057.28	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	65.00	Before purging	3/23/2023	15:40	55.68	1001.60	0	0.0	yes
Capped	YES	After purging				1057.28			
Standing Water	NO	Top of Screen 1990				997.28			
Litter	NO					4.32			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				992.28			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		65.00	992.28			
						0.00			feet sedimentation
		Before Sampling				1057.28			App I Metals
		Before Sampling				1057.28			Supplemental
		Recovery				1057.28			
		Recovery				1057.28			
		Recovery				1057.28			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-15R

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1051.77
Well Depth	21.60
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1051.77
Well Depth	21.60
Top Screen	1035.67
Bottom Screen	1030.67
Bottom Well	1030.17
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	15.00
Top sample	1036.77
Bottom sample	1032.77
Turbidity(NTU)	11.14

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	14:35	12.74	1039.03	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	11.14
Appendix I	Metals	150	150	11.14
Appendix I	VOC	240	240	11.14
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1051.77	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	21.60	Before purging	3/23/2023	14:35	12.74	1039.03	0	0.0	Yes
Capped	YES	After purging				1051.77			
Standing Water	NO	Top of Screen 1990				1035.67			
Litter	NO					3.36			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1030.17			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		21.60	1030.17			
						0.00			feet sedimentation
		Before Sampling				1051.77			App I Metals
		Before Sampling				1051.77			App II
		Recovery				1051.77			
		Recovery				1051.77			
		Recovery				1051.77			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-17R

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1058.27
Well Depth	52.30
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1058.27
Well Depth	52.30
Top Screen	1008.97
Bottom Screen	1005.97
Bottom Well	1005.97
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	47.00
Top sample	1011.27
Bottom sample	1007.27
Turbidity(NTU)	1.35

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	13:10	46.88	1011.39	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	1.35
Appendix I	Metals	150	150	1.35
Appendix I	VOC	240	240	1.35
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1058.27	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	52.30	Before purging	3/23/2023	13:10	46.88	1011.39	0	0.0	yes
Capped	YES	After purging				1058.27			
Standing Water	NO	Top of Screen 1990				1008.97			
Litter	NO					2.42			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1005.97			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		52.30	1005.97			
						0.00			feet sedimentation
		Before Sampling				1058.27			
		Before Sampling				1058.27			
		Recovery				1058.27			
		Recovery				1058.27			
		Recovery				1058.27			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-18

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1062.45
Well Depth	23.83
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1062.45
Well Depth	23.83
Top Screen	1048.62
Bottom Screen	1038.62
Bottom Well	1038.62
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	18.60
Top sample	1043.85
Bottom sample	1039.85
Turbidity(NTU)	32.20

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	9:39	20.3	1042.15	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	32.20
Appendix I	Metals	150	150	32.20
Appendix I	VOC	240	240	32.20
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1062.45	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	23.83	Before purging	3/23/2023	9:39	20.3	1042.15	0	0.0	yes
Capped	YES	After purging				1062.45			
Standing Water	NO	Top of Screen 1990				1048.62			
Litter	NO					-6.47			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1038.62			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		23.60	1038.85			
						0.23			feet sedimentation
		Before Sampling				1062.45			
		Before Sampling				1062.45			
		Recovery				1062.45			
		Recovery				1062.45			
		Recovery				1062.45			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-21

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	993.9
Well Depth	42.10
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	993.9
Well Depth	42.10
Top Screen	961.80
Bottom Screen	951.80
Bottom Well	951.80
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	36.00
Top sample	957.90
Bottom sample	953.90
Turbidity(NTU)	0.91

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	13:51	25.96	967.94	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	0.91
Appendix I	Metals	150	150	0.91
Appendix I	VOC	240	240	0.91
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	993.9	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	42.10	Before purging	3/23/2023	13:51	25.96	967.94	0	0.0	no
Capped	YES	After purging				993.90			
Standing Water	NO	Top of Screen 1990				961.80			
Litter	NO					6.14			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				951.80			
Equipment	Waterra & Bailer	Bottom of Well	3/23/2023		41.70	952.20			
						0.40			feet sedimentation
		Before Sampling				993.90			
		Before Sampling				993.90			
		Recovery				993.90			
		Recovery				993.90			
		Recovery				993.90			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-28

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1002.67
Well Depth	14.80
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1002.67
Well Depth	14.80
Top Screen	992.87
Bottom Screen	987.87
Bottom Well	987.87
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	10.00
Top sample	992.67
Bottom sample	988.67
Turbidity(NTU)	437.40

Red

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	14:13	7.52	995.15	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	437.4
Appendix I	Metals	150	150	437.4
Appendix I	VOC	240	240	437.40
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1002.67	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	14.80	Before purging	3/23/2023	14:13	7.52	995.15	0	0.0	no
Capped	YES	After purging				1002.67			
Standing Water	NO	Top of Screen 1990				992.87			
Litter	NO					2.28			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				987.87			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		15.00	987.67			
						-0.20			feet sedimentation
		Before Sampling				1002.67			
		Before Sampling				1002.67			
		Recovery				1002.67			
		Recovery				1002.67			
		Recovery				1002.67			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-31

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1054.34
Well Depth	25.00
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1054.34
Well Depth	25.00
Top Screen	1034.34
Bottom Screen	1029.34
Bottom Well	1029.34
Sampler Length (ft)	
Sampler Volume (mL)	0.00
Feet cordage	
Top sample	1054.34
Bottom sample	1054.34
Turbidity(NTU)	

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	15:27	21.9	1032.44	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	0.00
Appendix I	Metals	150	150	0.00
Appendix I	VOC	240	240	0.00
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1054.34	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	25.00	Before purging	3/23/2023	15:27	21.90	1032.44	0	0.0	yes
Capped	YES	After purging				1054.34			
Standing Water	NO	Top of Screen 1990				1034.34			
Litter	NO					-1.90			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1029.34			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		25.00	1029.34			
						0.00			feet sedimentation
		Before Sampling				1054.34			
		Before Sampling				1054.34			
		Recovery				1054.34			
		Recovery				1054.34			
		Recovery				1054.34			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-32

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1056.82
Well Depth	27.80
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1056.82
Well Depth	27.80
Top Screen	1034.02
Bottom Screen	1029.02
Bottom Well	1029.02
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	22.00
Top sample	1034.82
Bottom sample	1030.82
Turbidity(NTU)	1.43

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	14:51	20.33	1036.49	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	1.43
Appendix I	Metals	150	150	1.43
Appendix I	VOC	240	240	1.43
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1056.82	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	27.80	Before purging	3/23/2023	14:51	20.33	1036.49	0	0.0	No
Capped	YES	After purging				1056.82			
Standing Water	NO	Top of Screen 1990				1034.02			
Litter	NO					2.47			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1029.02			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		27.80	1029.02			
						0.00			feet sedimentation
		Before Sampling				1056.82			
		Before Sampling				1056.82			
		Recovery				1056.82			
		Recovery				1056.82			
		Recovery				1056.82			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-37D

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1073.31
Well Depth	80.10
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1073.31
Well Depth	80.10
Top Screen	994.71
Bottom Screen	993.21
Bottom Well	991.66
Sampler Length (ft)	1.00
Sampler Volume (mL)	110.00
Feet cordage	
Top sample	1073.31
Bottom sample	1072.31
Turbidity(NTU)	

Date	Time	Water Level	Water Elevation	Notes
3/23/2023		79.9	993.41	DRY

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	0
Appendix I	Metals	150	150	0
Appendix I	VOC	240	240	0.00
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1073.31	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	80.10	Before purging	3/23/2023	0:00	79.90	993.41		0.0	
Capped	YES	After purging				1073.31			
Standing Water	NO	Top of Screen	1990			994.71			
Litter	NO					-1.30			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well	1990			993.21			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		79.90	993.41			
						0.20			feet sedimentation
		Before Sampling				1073.31			
		Before Sampling				1073.31			
		Recovery				1073.31			
		Recovery				1073.31			
		Recovery				1073.31			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-39D

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1076.19
Well Depth	90.50
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1076.19
Well Depth	90.50
Top Screen	988.69
Bottom Screen	985.69
Bottom Well	984.67
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	84.00
Top sample	992.19
Bottom sample	988.19
Turbidity(NTU)	2.09

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	10:44	61.34	1014.85	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	2.09
Appendix I	Metals	150	150	2.09
Appendix I	VOC	240	240	2.09
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1076.19	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	90.50	Before purging	3/23/2023	10:44	61.34	1014.85	0	0.0	No
Capped	YES	After purging				1076.19			
Standing Water	NO	Top of Screen 1990				988.69			
Litter	NO					26.16			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				985.69			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		90.20	985.99			
						0.30			feet sedimentation
		Before Sampling				1076.19			
		Before Sampling				1076.19			
		Recovery				1076.19			
		Recovery				1076.19			
		Recovery				1076.19			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-41D

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1039.09
Well Depth	53.20
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1039.09
Well Depth	53.20
Top Screen	988.89
Bottom Screen	985.89
Bottom Well	984.32
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	47.50
Top sample	991.59
Bottom sample	987.59
Turbidity(NTU)	0.58

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	11:09	47.48	991.61	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	0.58
Appendix I	Metals	150	150	0.58
Appendix I	VOC	240	240	0.58
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1039.09	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	53.20	Before purging	3/23/2023	11:09	47.48	991.61	0	0.0	No
Capped	YES	After purging				1039.09			
Standing Water	NO	Top of Screen 1990				988.89			
Litter	NO					2.72			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				985.89			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		53.00	986.09			
						0.20			feet sedimentation
		Before Sampling				1039.09			
		Before Sampling				1039.09			
		Recovery				1039.09			
		Recovery				1039.09			
		Recovery				1039.09			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-42D

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1035.79
Well Depth	43.43
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1035.79
Well Depth	43.43
Top Screen	994.36
Bottom Screen	992.36
Bottom Well	992.36
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	37.00
Top sample	998.79
Bottom sample	994.79
Turbidity(NTU)	1.01

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	11:33	33.85	1001.94	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	1.01
Appendix I	Metals	150	150	1.01
Appendix I	VOC	240	240	1.01
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1035.79	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	43.43	Before purging	3/23/2023	11:33	33.85	1001.94	0	0.0	
Capped	YES	After purging				1035.79			
Standing Water	NO	Top of Screen 1990				994.36			
Litter	NO					7.58			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				992.36			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		43.40	992.39			
						0.03			feet sedimentation
		Before Sampling				1035.79			
		Before Sampling				1035.79			
		Recovery				1035.79			
		Recovery				1035.79			
		Recovery				1035.79			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

3/23/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: **LW-26**

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1108.21
Well Depth	65.00
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1108.21
Well Depth	65.00
Top Screen	1083.21
Bottom Screen	1043.21
Bottom Well	1042.30
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	55.00
Top sample	1053.21
Bottom sample	1049.21
Turbidity(NTU)	

Date	Time	Water Level	Water Elevation	Notes
3/23/2023	16:11	48	1060.21	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	0
Appendix I	Metals	150	150	0
Appendix I	VOC	240	240	0.00
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental	Leachate			
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1108.21	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	65.00	Before purging	3/23/2023	16:11	48.00	1060.21		0.0	
Capped	YES	After purging				1108.21			
Standing Water	NO	Top of Screen 1990				1083.21			
Litter	NO					-23.00			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1043.21			
Equipment	Disposable Bailer	Bottom of Well	3/23/2023		59.10	1049.11			
						5.90			feet sedimentation
		Before Sampling				1108.21			
		Before Sampling				1108.21			
		Recovery				1108.21			
		Recovery				1108.21			
		Recovery				1108.21			

IDNR Form 542-1322

Monitoring Well: MW-8B

Primary Sampling Method: No-Purge for Appendix I
 Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1049.46
Well Depth	28.65
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1049.46
Well Depth	28.65
Top Screen	1029.86
Bottom Screen	1020.81
Bottom Well	1020.81
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	23.50
Top sample	1025.96
Bottom sample	1021.96
Turbidity(NTU)	4.40

Date	Time	Water Level	Water Elevation	Notes
5/9/2023	9:39	23.02	1026.44	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	4.40
Appendix I	Metals	150	0	4.40
Appendix I	VOC	240	120	4.40
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		130	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1049.46	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	28.65	Before purging	5/9/2023	9:39	23.02	1026.44	0	0.0	Yes
Capped	YES	After purging				1049.46			
Standing Water	NO	Top of Screen 1990				1029.86			
Litter	NO					-3.42			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1020.81			
Equipment	Disposable Bailer	Bottom of Well	5/9/2023		28.70	1020.76			
						-0.05			feet sedimentation
		Before Sampling				1049.46			
		Before Sampling				1049.46			
		Recovery				1049.46			
		Recovery				1049.46			
		Recovery				1049.46			

IDNR Form 542-1322

Monitoring Well: MW-32

Primary Sampling Method: No-Purge for Appendix I
 Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1056.82
Well Depth	27.80
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1056.82
Well Depth	27.80
Top Screen	1034.02
Bottom Screen	1029.02
Bottom Well	1029.02
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	22.00
Top sample	1034.82
Bottom sample	1030.82
Turbidity(NTU)	1.36

Date	Time	Water Level	Water Elevation	Notes
7/12/2023	14:30	21.3	1031.04	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	1.36
Appendix I	Metals	150	150	1.36
Appendix I	VOC	240	0	
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		160	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1056.82	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	27.80	Before purging	7/12/2023	14:30	21.30	1035.52	0	0.0	No
Capped	YES	After purging				1056.82			
Standing Water	NO	Top of Screen 1990				1034.02			
Litter	NO					1.50			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1029.02			
Equipment	Disposable Bailer	Bottom of Well	7/12/2023		27.80	1029.02			
						0.00			feet sedimentation
		Before Sampling				1056.82			
		Before Sampling				1056.82			
		Recovery				1056.82			
		Recovery				1056.82			
		Recovery				1056.82			

IDNR Form 542-1322

Monitoring Well: MW-44

Primary Sampling Method: No-Purge for Appendix I
 Secondary Sampling Method: Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1051.33
Well Depth	18.62
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1051.33
Well Depth	18.62
Top Screen	1037.71
Bottom Screen	1032.71
Bottom Well	1032.71
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	13.00
Top sample	1038.33
Bottom sample	1034.33
Turbidity(NTU)	11.67

Date	Time	Water Level	Water Elevation	Notes
7/12/2023	14:18	9.87	1041.46	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	11.67
Appendix I	Metals	150	150	11.67
Appendix I	VOC	240	240	11.67
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1051.33	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	18.62	Before purging	7/12/2023	14:18	9.87	1041.46	0	0.0	
Capped	YES	After purging				1051.33			
Standing Water	NO	Top of Screen	2023			1037.71			
Litter	NO					3.75			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well	2023			1032.71			
Equipment	Disposable Bailer	Bottom of Well	7/12/2023		18.60	1032.73			
						0.02			feet sedimentation
		Before Sampling				1051.33			
		Before Sampling				1051.33			
		Recovery				1051.33			
		Recovery				1051.33			
		Recovery				1051.33			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-1R

Primary Sampling Method:

No-Purge for Appendix I

Secondary Sampling Method:

Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1044.51
Well Depth	39.50
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1044.51
Well Depth	39.50
Top Screen	1011.04
Bottom Screen	1005.01
Bottom Well	1005.01
Sampler Length (ft)	
Sampler Volume (mL)	0.00
Feet cordage	0.00
Top sample	1044.51
Bottom sample	1044.51
Turbidity(NTU)	

Date	Time	Water Level	Water Elevation	Notes
9/5/2023		39.75	1004.76	Dry

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	0	
Appendix I	Metals	150	0	
Appendix I	VOC	240	0	
Full Appendix II	10 more containers	5620	0	
TSS	TSS	1000	0	
Supplemental			0	
Supplemental			0	
Total			0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1044.51	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	39.50	Before purging	9/2/2020		39.75	1004.76		0.0	
		After purging				1044.51			
		Top of Screen 2014				1011.04			
						-6.28			feet above (+) or below (-) top screen
		Bottom of Well 2014				1005.01			
		Bottom of Well	9/2/2020		39.50	1005.01			
						0.00			feet sedimentation
		Before Sampling				1044.51			
		Recovery				1044.51			
		Recovery				1044.51			
		Recovery				1044.51			
		Recovery				1044.51			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-4A

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1082.35
Well Depth	29.70
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1082.35
Well Depth	29.70
Top Screen	1057.65
Bottom Screen	1052.65
Bottom Well	1052.65
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	
Top sample	1082.35
Bottom sample	1078.35
Turbidity(NTU)	

Date	Time	Water Level	Water Elevation	Notes
9/5/2023			1082.35	Broken

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10		
Appendix I	Metals	150		
Appendix I	VOC	240		
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		0	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1082.35	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	29.70	Before purging				1082.35		0.0	No
		After purging				1082.35			
		Top of Screen 1985				1057.65			
						24.70			feet above (+) or below (-) top screen
		Bottom of Well 1985				1052.65			
		Bottom of Well			29.60	1052.75			
						0.10			feet sedimentation
		Before Sampling				1082.35			
		Recovery				1082.35			
		Recovery				1082.35			
		Recovery				1082.35			
		Recovery				1082.35			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-6A

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1055.48
Well Depth	15.43
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1055.48
Well Depth	15.43
Top Screen	1043.05
Bottom Screen	1040.05
Bottom Well	1040.05
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	
Top sample	1055.48
Bottom sample	1051.48
Turbidity(NTU)	

Date	Time	Water Level	Water Elevation	Notes
9/5/2023			1055.48	No access - no sample

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	0.00
Appendix I	Metals	150	150	0.00
Appendix I	VOC	240	240	0.00
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1055.48	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	15.43	Before purging	9/5/2023	0:00	0.00	1055.48	0	0.0	dry
Capped	YES	After purging				1055.48			
Standing Water	NO	Top of Screen 1990				1043.05			
Litter	NO					12.43			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1040.05			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023			1055.48			
						15.43			feet sedimentation
		Before Sampling				1055.48			App I
		Before Sampling				1082.35			App II
		Recovery				1082.35			
		Recovery				1082.35			
		Recovery				1055.48			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-8B

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1049.46
Well Depth	28.65
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1049.46
Well Depth	28.65
Top Screen	1029.86
Bottom Screen	1020.81
Bottom Well	1020.81
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	25.00
Top sample	1024.46
Bottom sample	1020.46
Turbidity(NTU)	1.97

Date	Time	Water Level	Water Elevation	Notes
9/5/2023	8:46	24.63	1024.83	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	1.97
Appendix I	Metals	150	150	1.97
Appendix I	VOC	240	240	1.97
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1049.46	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	28.65	Before purging	9/5/2023	8:46	24.63	1024.83	0	0.0	Yes
Capped	YES	After purging				1049.46			
Standing Water	NO	Top of Screen 1990				1029.86			
Litter	NO					-5.03			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1020.81			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		28.70	1020.76			
						-0.05			feet sedimentation
		Before Sampling				1049.46			
		Before Sampling				1049.46			
		Recovery				1049.46			
		Recovery				1049.46			
		Recovery				1049.46			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-9AR

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1057.54
Well Depth	28.95
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1057.54
Well Depth	28.95
Top Screen	1038.59
Bottom Screen	1028.59
Bottom Well	1028.59
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	25.00
Top sample	1032.54
Bottom sample	1028.54
Turbidity(NTU)	2.57

Date	Time	Water Level	Water Elevation	Notes
9/5/2023	14:17	25.65	1031.89	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	2.57
Appendix I	Metals	150	150	2.57
Appendix I	VOC	240	240	2.57
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1057.54	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	28.95	Before purging	9/5/2023	14:17	25.65	1031.89	0	0.0	yes
Capped	YES	After purging				1057.54			
Standing Water	NO	Top of Screen 1990				1038.59			
Litter	NO					-6.70			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1028.59			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		28.95	1028.59			
						0.00			feet sedimentation
		Before Sampling				1057.54			
		Before Sampling				1057.54			
		Recovery				1057.54			
		Recovery				1057.54			
		Recovery				1057.54			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-11C

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1054.11
Well Depth	51.55
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1054.11
Well Depth	51.55
Top Screen	1003.56
Bottom Screen	1002.56
Bottom Well	1002.56
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	46.50
Top sample	1007.61
Bottom sample	1003.61
Turbidity(NTU)	3.04

Date	Time	Water Level	Water Elevation	Notes
9/5/2023	10:38	46.42	1007.69	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	3.04
Appendix I	Metals	150	150	3.04
Appendix I	VOC	240	240	3.04
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1054.11	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	51.55	Before purging	9/5/2023	10:38	46.42	1007.69	0	0.0	
Capped	YES	After purging				1054.11			
Standing Water	NO	Top of Screen 1990				1003.56			
Litter	NO					4.13			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1002.56			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		51.55	1002.56			
						0.00			feet sedimentation
		Before Sampling				1054.11			
		Before Sampling				1054.11			
		Recovery				1054.11			
		Recovery				1054.11			
		Recovery				1054.11			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-14D

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1057.28
Well Depth	65.00
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1057.28
Well Depth	65.00
Top Screen	997.28
Bottom Screen	992.28
Bottom Well	992.28
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	59.00
Top sample	998.28
Bottom sample	994.28
Turbidity(NTU)	1.46

Date	Time	Water Level	Water Elevation	Notes
9/5/2023	13:48	53.65	1003.63	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	1.46
Appendix I	Metals	150	150	1.46
Appendix I	VOC	240	240	1.46
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1057.28	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	65.00	Before purging	9/5/2023	13:48	53.65	1003.63	0	0.0	yes
Capped	YES	After purging				1057.28			
Standing Water	NO	Top of Screen 1990				997.28			
Litter	NO					6.35			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				992.28			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		65.00	992.28			
						0.00			feet sedimentation
		Before Sampling				1057.28			App I Metals
		Before Sampling				1057.28			Supplemental
		Recovery				1057.28			
		Recovery				1057.28			
		Recovery				1057.28			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-15R

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1051.77
Well Depth	21.60
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1051.77
Well Depth	21.60
Top Screen	1035.67
Bottom Screen	1030.67
Bottom Well	1030.17
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	15.50
Top sample	1036.27
Bottom sample	1032.27
Turbidity(NTU)	3.88

Date	Time	Water Level	Water Elevation	Notes
9/5/2023	8:13	14.64	1037.13	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	3.88
Appendix I	Metals	150	150	3.88
Appendix I	VOC	240	240	3.88
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1051.77	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	21.60	Before purging	9/5/2023	8:13	14.64	1037.13	0	0.0	Yes
Capped	YES	After purging				1051.77			
Standing Water	NO	Top of Screen 1990				1035.67			
Litter	NO					1.46			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1030.17			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		21.60	1030.17			
						0.00			feet sedimentation
		Before Sampling				1051.77			App I Metals
		Before Sampling				1051.77			App II
		Recovery				1051.77			
		Recovery				1051.77			
		Recovery				1051.77			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-17R

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1058.27
Well Depth	52.30
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1058.27
Well Depth	52.30
Top Screen	1008.97
Bottom Screen	1005.97
Bottom Well	1005.97
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	50.00
Top sample	1008.27
Bottom sample	1004.27
Turbidity(NTU)	4.31

Date	Time	Water Level	Water Elevation	Notes
9/5/2023	10:02	50	1008.27	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	4.31
Appendix I	Metals	150	150	4.31
Appendix I	VOC	240	240	4.31
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1058.27	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	52.30	Before purging	9/5/2023	10:02	50	1008.27	0	0.0	yes
Capped	YES	After purging				1058.27			
Standing Water	NO	Top of Screen 1990				1008.97			
Litter	NO					-0.70			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1005.97			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		52.30	1005.97			
						0.00			feet sedimentation
		Before Sampling				1058.27			
		Before Sampling				1058.27			
		Recovery				1058.27			
		Recovery				1058.27			
		Recovery				1058.27			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-18

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1062.45
Well Depth	23.83
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1062.45
Well Depth	23.83
Top Screen	1048.62
Bottom Screen	1038.62
Bottom Well	1038.62
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	20.00
Top sample	1042.45
Bottom sample	1038.45
Turbidity(NTU)	28.50

Date	Time	Water Level	Water Elevation	Notes
9/5/2023	11:38	21.5	1040.95	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	28.50
Appendix I	Metals	150	150	28.50
Appendix I	VOC	240	0	28.50
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		160	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1062.45	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	23.83	Before purging	9/5/2023	11:38	21.5	1040.95	0	0.0	yes
Capped	YES	After purging				1062.45			
Standing Water	NO	Top of Screen 1990				1048.62			
Litter	NO					-7.67			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1038.62			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		23.60	1038.85			
						0.23			feet sedimentation
		Before Sampling				1062.45			
		Before Sampling				1062.45			
		Recovery				1062.45			
		Recovery				1062.45			
		Recovery				1062.45			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-21

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	993.9
Well Depth	42.10
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	993.9
Well Depth	42.10
Top Screen	961.80
Bottom Screen	951.80
Bottom Well	951.80
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	36.00
Top sample	957.90
Bottom sample	953.90
Turbidity(NTU)	2.84

Date	Time	Water Level	Water Elevation	Notes
9/5/2023	9:35	31.5	962.4	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	2.84
Appendix I	Metals	150	150	2.84
Appendix I	VOC	240	240	2.84
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	993.9	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	42.10	Before purging	9/5/2023	9:35	31.50	962.40	0	0.0	no
Capped	YES	After purging				993.90			
Standing Water	NO	Top of Screen	1990			961.80			
Litter	NO					0.60			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well	1990			951.80			
Equipment	Waterra & Bailer	Bottom of Well	9/5/2023		41.70	952.20			
						0.40			feet sedimentation
		Before Sampling				993.90			
		Before Sampling				993.90			
		Recovery				993.90			
		Recovery				993.90			
		Recovery				993.90			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-28

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1002.67
Well Depth	14.80
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1002.67
Well Depth	14.80
Top Screen	992.87
Bottom Screen	987.87
Bottom Well	987.87
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	10.00
Top sample	992.67
Bottom sample	988.67
Turbidity(NTU)	17.78

Date	Time	Water Level	Water Elevation	Notes
9/5/2023	15:15	8.2	994.47	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	17.78
Appendix I	Metals	150	150	17.78
Appendix I	VOC	240	240	17.78
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1002.67	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	14.80	Before purging	9/5/2023	15:15	8.20	994.47	0	0.0	no
Capped	YES	After purging				1002.67			
Standing Water	NO	Top of Screen 1990				992.87			
Litter	NO					1.60			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				987.87			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		15.00	987.67			
						-0.20			feet sedimentation
		Before Sampling				1002.67			
		Before Sampling				1002.67			
		Recovery				1002.67			
		Recovery				1002.67			
		Recovery				1002.67			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: **MW-31**

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1054.34
Well Depth	25.00
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1054.34
Well Depth	25.00
Top Screen	1034.34
Bottom Screen	1029.34
Bottom Well	1029.34
Sampler Length (ft)	
Sampler Volume (mL)	0.00
Feet cordage	
Top sample	1054.34
Bottom sample	1054.34
Turbidity(NTU)	

Date	Time	Water Level	Water Elevation	Notes
9/5/2023		23.3	1031.04	No sample required

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	0.00
Appendix I	Metals	150	150	0.00
Appendix I	VOC	240	240	0.00
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total			400	0

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1054.34	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	25.00	Before purging	9/5/2023	0:00	23.30	1031.04	0	0.0	yes
Capped	YES	After purging				1054.34			
Standing Water	NO	Top of Screen 1990				1034.34			
Litter	NO					-3.30			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1029.34			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		25.00	1029.34			
						0.00			feet sedimentation
		Before Sampling				1054.34			
		Before Sampling				1054.34			
		Recovery				1054.34			
		Recovery				1054.34			
		Recovery				1054.34			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-32

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1056.82
Well Depth	27.80
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1056.82
Well Depth	27.80
Top Screen	1034.02
Bottom Screen	1029.02
Bottom Well	1029.02
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	22.00
Top sample	1034.82
Bottom sample	1030.82
Turbidity(NTU)	1.43

Date	Time	Water Level	Water Elevation	Notes
9/5/2023		20.9	1031.04	No sample required

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	1.43
Appendix I	Metals	150	150	1.43
Appendix I	VOC	240	240	1.43
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1056.82	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	27.80	Before purging	9/5/2023	0:00	20.90	1035.92	0	0.0	No
Capped	YES	After purging				1056.82			
Standing Water	NO	Top of Screen 1990				1034.02			
Litter	NO					1.90			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1029.02			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		27.80	1029.02			
						0.00			feet sedimentation
		Before Sampling				1056.82			
		Before Sampling				1056.82			
		Recovery				1056.82			
		Recovery				1056.82			
		Recovery				1056.82			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-37D

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1073.31
Well Depth	80.10
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1073.31
Well Depth	80.10
Top Screen	994.71
Bottom Screen	993.21
Bottom Well	991.66
Sampler Length (ft)	1.00
Sampler Volume (mL)	110.00
Feet cordage	
Top sample	1073.31
Bottom sample	1072.31
Turbidity(NTU)	

Date	Time	Water Level	Water Elevation	Notes
9/5/2023		79.9	993.41	DRY

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	0
Appendix I	Metals	150	150	0
Appendix I	VOC	240	240	0.00
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1073.31	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	80.10	Before purging	9/5/2023	0:00	79.90	993.41		0.0	
Capped	YES	After purging				1073.31			
Standing Water	NO	Top of Screen	1990			994.71			
Litter	NO					-1.30			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well	1990			993.21			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		79.90	993.41			
						0.20			feet sedimentation
		Before Sampling				1073.31			
		Before Sampling				1073.31			
		Recovery				1073.31			
		Recovery				1073.31			
		Recovery				1073.31			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-38A

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1075.92
Well Depth	27.25
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1075.92
Well Depth	27.25
Top Screen	1053.67
Bottom Screen	1048.67
Bottom Well	1048.67
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	
Top sample	1075.92
Bottom sample	1071.92
Turbidity(NTU)	

Date	Time	Water Level	Water Elevation	Notes
9/5/2023	12:20	26.51	1049.41	too dry no sample

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	0
Appendix I	Metals	150	150	0
Appendix I	VOC	240	240	0.00
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1075.92	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	27.25	Before purging	9/5/2023	12:20	26.51	1049.41	0	0.0	No
Capped	YES	After purging				1075.92			
Standing Water	NO	Top of Screen 2019				1053.67			
Litter	NO					-4.26			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 2019				1048.67			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		27.65	1048.27			
						-0.40			feet sedimentation
		Before Sampling				1075.92			
		Before Sampling				1075.92			
		Recovery				1075.92			
		Recovery				1075.92			
		Recovery				1075.92			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-39D

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1076.19
Well Depth	90.50
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1076.19
Well Depth	90.50
Top Screen	988.69
Bottom Screen	985.69
Bottom Well	984.67
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	83.00
Top sample	993.19
Bottom sample	989.19
Turbidity(NTU)	7.86

Date	Time	Water Level	Water Elevation	Notes
9/5/2023	12:39	59.44	1016.75	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	7.86
Appendix I	Metals	150	150	7.86
Appendix I	VOC	240	240	7.86
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1076.19	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	90.50	Before purging	9/5/2023	12:39	59.44	1016.75	0	0.0	No
Capped	YES	After purging				1076.19			
Standing Water	NO	Top of Screen 1990				988.69			
Litter	NO					28.06			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				985.69			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		90.20	985.99			
						0.30			feet sedimentation
		Before Sampling				1076.19			
		Before Sampling				1076.19			
		Recovery				1076.19			
		Recovery				1076.19			
		Recovery				1076.19			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-41D

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1039.09
Well Depth	53.20
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1039.09
Well Depth	53.20
Top Screen	988.89
Bottom Screen	985.89
Bottom Well	984.32
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	48.00
Top sample	991.09
Bottom sample	987.09
Turbidity(NTU)	2.59

Date	Time	Water Level	Water Elevation	Notes
9/5/2023	13:02	48.02	991.07	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	2.59
Appendix I	Metals	150	150	2.59
Appendix I	VOC	240	240	2.59
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1039.09	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	53.20	Before purging	9/5/2023	13:02	48.02	991.07	0	0.0	No
Capped	YES	After purging				1039.09			
Standing Water	NO	Top of Screen 1990				988.89			
Litter	NO					2.18			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				985.89			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		53.00	986.09			
						0.20			feet sedimentation
		Before Sampling				1039.09			
		Before Sampling				1039.09			
		Recovery				1039.09			
		Recovery				1039.09			
		Recovery				1039.09			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-42D

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1035.79
Well Depth	43.43
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1035.79
Well Depth	43.43
Top Screen	994.36
Bottom Screen	992.36
Bottom Well	992.36
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	39.00
Top sample	996.79
Bottom sample	992.79
Turbidity(NTU)	2.10

Date	Time	Water Level	Water Elevation	Notes
9/5/2023	11:23	38.8	996.99	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	2.1
Appendix I	Metals	150	150	2.1
Appendix I	VOC	240	240	2.10
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1035.79	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	43.43	Before purging	9/5/2023	11:23	38.80	996.99	0	0.0	
Capped	YES	After purging				1035.79			
Standing Water	NO	Top of Screen	1990			994.36			
Litter	NO					2.63			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well	1990			992.36			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		43.40	992.39			
						0.03			feet sedimentation
		Before Sampling				1035.79			
		Before Sampling				1035.79			
		Recovery				1035.79			
		Recovery				1035.79			
		Recovery				1035.79			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: MW-44

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1051.33
Well Depth	18.62
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1051.33
Well Depth	18.62
Top Screen	1037.71
Bottom Screen	1032.71
Bottom Well	1032.71
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	13.00
Top sample	1038.33
Bottom sample	1034.33
Turbidity(NTU)	6.18

Date	Time	Water Level	Water Elevation	Notes
9/5/2023	7:55	11.26	1040.07	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	6.18
Appendix I	Metals	150	150	6.18
Appendix I	VOC	240	240	6.18
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1051.33	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	18.62	Before purging	9/5/2023	7:55	11.26	1040.07	0	0.0	
Capped	YES	After purging				1051.33			
Standing Water	NO	Top of Screen 2023				1037.71			
Litter	NO					2.36			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 2023				1032.71			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		18.60	1032.73			
						0.02			feet sedimentation
		Before Sampling				1051.33			
		Before Sampling				1051.33			
		Recovery				1051.33			
		Recovery				1051.33			
		Recovery				1051.33			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1322

Monitoring Well: **LW-26**

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1108.21
Well Depth	65.00
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1108.21
Well Depth	65.00
Top Screen	1083.21
Bottom Screen	1043.21
Bottom Well	1042.30
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	55.00
Top sample	1053.21
Bottom sample	1049.21
Turbidity(NTU)	

Date	Time	Water Level	Water Elevation	Notes
9/5/2023			1108.21	No Sample Required

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	0.00
Appendix I	Metals	150	150	0.00
Appendix I	VOC	240	240	0.00
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental	Leachate			
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1108.21	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	65.00	Before purging	9/5/2023	0:00	0.00	1108.21		0.0	
Capped	YES	After purging				1108.21			
Standing Water	NO	Top of Screen 1990				1083.21			
Litter	NO					25.00			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				1043.21			
Equipment	Disposable Bailer	Bottom of Well	9/5/2023		59.10	1049.11			
						5.90			feet sedimentation
		Before Sampling				1108.21			
		Before Sampling				1108.21			
		Recovery				1108.21			
		Recovery				1108.21			
		Recovery				1108.21			

**South Central Iowa Landfill Agency
PERMIT # 61-SDP-01-78P**

9/5/2023

Sampled by: Todd Whipple

Weather conditions: Overcast, slight breeze, 30-42 degrees

IDNR Form 542-1324

Date	Time	Type	Flowing	Quantity	Discolored	Odor	Litter
9/5/2023		Underdrain	DRY		No	No	No
							Turbidity(NTU)

IDNR Form 542-1324

Date	Time	Type	Flowing	Quantity	Discolored	Odor	Litter
9/5/2023		UG Surface Water	Dry	Dry	No	No	No
							Turbidity(NTU)

IDNR Form 542-1324

Date	Time	Type	Flowing	Quantity	Discolored	Odor	Litter
9/5/2023		SRAMP	Dry	Dry	No	No	No
							Turbidity(NTU)

IDNR Form 542-1324

Date	Time	Type	Flowing	Quantity	Discolored	Odor	Litter
9/5/2023	8:05	DG Surface Water	Dry	Dry	No	No	No
							Turbidity(NTU)

IDNR Form 542-1324

Date	Time	Type	Flowing	Quantity	Discolored	Odor	Litter
3/23/2023	14:41	Ground Tile	yes	250 mL per 35 sec	No	No	No
							Turbidity(NTU)

IDNR Form 542-1324

Date	Time	Type	Flowing	Quantity	Discolored	Odor	Litter
3/23/2023	13:33	Ground Tile	yes	250 mL per 20 sec	No	No	No
							Turbidity(NTU)

18.54
red

IDNR Form 542-1322

Monitoring Well: MW-14D

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1057.28
Well Depth	65.00
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1057.28
Well Depth	65.00
Top Screen	997.28
Bottom Screen	992.28
Bottom Well	992.28
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	59.00
Top sample	998.28
Bottom sample	994.28
Turbidity(NTU)	4.24

Date	Time	Water Level	Water Elevation	Notes
11/28/2023	11:14	52.88	1004.4	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	4.24
Appendix I	Metals	150	150	4.24
Appendix I	VOC	240	120	4.24
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		280	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1057.28	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	65.00	Before purging	11/28/2023	11:14	52.88	1004.40	0	0.0	yes
Capped	YES	After purging				1057.28			
Standing Water	NO	Top of Screen 1990				997.28			
Litter	NO					7.12			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 1990				992.28			
Equipment	Disposable Bailer	Bottom of Well	11/28/2023		65.00	992.28			
						0.00			feet sedimentation
		Before Sampling				1057.28			App I Metals
		Before Sampling				1057.28			Supplemental
		Recovery				1057.28			
		Recovery				1057.28			
		Recovery				1057.28			

IDNR Form 542-1322

Monitoring Well: MW-44

Primary Sampling Method:
Secondary Sampling Method:

No-Purge for Appendix I
Purge & Sample for all analytes beyond Appendix I

GENERAL INFORMATION

TOC	1051.33
Well Depth	18.62
Capped	YES
Standing Water	NO
Litter	NO
Level Tape	Solinst 101
NTU Meter	Hach 2100P
No-Purge Equipment -	Solinst 429
Purge Equipment -	Waterra

NO PURGE METHOD

TOC	1051.33
Well Depth	18.62
Top Screen	1037.71
Bottom Screen	1032.71
Bottom Well	1032.71
Sampler Length (ft)	4.00
Sampler Volume (mL)	440.00
Feet cordage	13.00
Top sample	1038.33
Bottom sample	1034.33
Turbidity(NTU)	17.50

Date	Time	Water Level	Water Elevation	Notes
11/28/2023	10:54	13.38	1037.95	

ANALYTES, CONTAINERS, AND VOLUMES

Analyte	Required Volume (mL)	Volume Collected No-Purge (mL)	Volume Collected Purge & Sample (mL)	Turbidity this Container (NTU)
All	Field NTU	10	10	17.50
Appendix I	Metals	150	150	17.50
Appendix I	VOC	240	240	17.50
Full Appendix II	10 more containers	5620		
TSS	TSS	1000		
Supplemental				
Supplemental				
Total		400	0	

PURGE & SAMPLE METHOD - Purge by Waterra Inertial Lift Pump, then well rest, then sample collection

TOC	1051.33	2" dia.	Date	Time	Depth	Elevation	Gallons	# of Vol.	Purged Dry?
Well Depth	18.62	Before purging	11/28/2023	10:54	13.38	1037.95	0	0.0	
Capped	YES	After purging				1051.33			
Standing Water	NO	Top of Screen 2023				1037.71			
Litter	NO					0.24			feet above (+) or below (-) top screen
Level Tape	Solinst	Bottom of Well 2023				1032.71			
Equipment	Disposable Bailer	Bottom of Well	11/28/2023		18.60	1032.73			
						0.02			feet sedimentation
		Before Sampling				1051.33			
		Before Sampling				1051.33			
		Recovery				1051.33			
		Recovery				1051.33			
		Recovery				1051.33			

Appendix C
Statistical Report

Appendix C.1 Spring - Otter Creek Statistical Report

GROUND WATER STATISTICS
FOR THE
SOUTH CENTRAL IOWA LANDFILL

First Semi-Annual Monitoring Event in 2023

Prepared for:
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April 2023

INTRODUCTION

This report summarizes the results of the statistical analysis used to evaluate the ground water quality data obtained during the first semi-annual monitoring event in 2023 at the South Central Iowa Landfill in Winterset, Iowa. The statistical plan was designed to detect a release from the facility at the earliest indication so that it is protective of human health and the environment. The interwell statistical method was applied to the current data. The statistical plan conforms with IAC 567, Chapter 113.10, USEPA Guidance document (“*Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Unified Guidance*”, March 2009), and the American Society for Testing and Materials (ASTM) standard D6312-98, *Developing Appropriate Statistical Approaches for Ground-Water Detection Monitoring Programs*.

Ground Water Monitoring Program

The shallow groundwater monitoring network for the South Central Iowa Landfill includes sample points MW-4A (upgradient), MW-18 (upgradient), GU-1, MW-9AR, MW-15R, MW-8B, MW-21, MW-1R, and MW-6A. The deep groundwater monitoring network for the South Central Iowa Landfill includes sample points MW-11C (upgradient), MW-14D, MW-17R, and MW-28. Additionally, surface water is monitored from a stream on the western edge of the property at sample points SW-1 (upgradient) SW-101, SW-102, SW-103, SW-104, SW-105, SW-106, and SW-2B. Each of the groundwater monitoring wells and surface waters are to be sampled at least semiannually and analyzed for the detection monitoring parameters listed in 113.10(5), which includes 15 inorganic constituents and 47 organic compounds, summarized in Table 1 below.

Table 1: Detection monitoring constituents listed in Appendix I of IAC 567, Chapter 113.

Organic Compounds:

Acetone	<i>trans</i> -1,4-Dichloro-2-butene	Iodomethane
Acrylonitrile	1,1-Dichloroethane	4-Methyl-2-pentanone
Benzene	1,2-Dichloroethane	Styrene
Bromochloromethane	1,1-Dichloroethene	1,1,1,2-Tetrachloroethane
Bromodichloromethane	<i>cis</i> -1,2-Dichloroethene	1,1,2,2-Tetrachloroethane
Bromoform	<i>trans</i> -1,2-Dichloroethene	Tetrachloroethene
Carbon disulfide	1,2-Dichloropropane	Toluene
Carbon tetrachloride	<i>cis</i> -1,3-Dichloropropene	1,1,1-Trichloroethane
Chlorobenzene	<i>trans</i> -1,3-Dichloropropene	1,1,2-Trichloroethane
Chloroethane	Ethylbenzene	Trichloroethene
Chloroform	2-Hexanone	Trichlorofluoromethane
Dibromochloromethane	Bromomethane	1,2,3-Trichloropropane
1,2-Dibromo-3-chloropropane	Chloromethane	Vinyl acetate
1,2-Dibromoethane	Dibromomethane	Vinyl chloride
1,2-Dichlorobenzene	Methylene chloride	Xylenes (Total)
1,4-Dichlorobenzene	2-Butanone	

Inorganic constituents:

Antimony, Total	Chromium, Total	Selenium, Total
Arsenic, Total	Cobalt, Total	Silver, Total
Barium, Total	Copper, Total	Thallium, Total
Beryllium, Total	Lead, Total	Vanadium, Total
Cadmium, Total	Nickel, Total	Zinc, Total

The ground water and surface water data obtained during the first semi-annual monitoring events in 2023

are summarized in Attachment A.

STATISTICAL METHODOLOGIES FOR DETECTION MONITORING

IAC 567, Chapter 113.10(4) provides several options for statistically evaluating the ground water data at those wells that monitor the open cells or contiguous MSWLF units. The preferred methods for comparing ground water data are using either prediction limits or using control charts. The prediction limit method was applied to the South Central Iowa Landfill data using the DUMPStat[®] statistical program. Ground water statistics are to be done on the inorganic constituents listed. The organic constituents are compared to maximum contaminant levels (MCLs) or practical quantitation limits (PQLs), in lieu of statistical comparisons to historical concentrations.

Interwell Statistics: Upgradient versus Downgradient Comparisons

Interwell statistics are appropriate when the upgradient and downgradient wells monitor the same ground water formation and there is similar variability in the upgradient and downgradient zones. Site prediction limits are determined by pooling the historical ground water data from hydraulically upgradient wells. This statistical method compares the current downgradient determinations to site prediction limits and checks for exceedances. The type of prediction limit utilized (e.g., parametric or nonparametric) is based on the detection frequency and the data distribution of each parameter in the background data. The distribution of the background data is tested for normality using the Shapiro-Wilk test (Gibbons, 1994 and USEPA 1992). If the constituent is normally distributed, a normal prediction limit is used. If normality is rejected by the Shapiro-Wilk test, the background data is transformed by taking the natural logarithm. The Shapiro-Wilk test is then reapplied on the transformed data. If it is not rejected, lognormal prediction limits are used. If after transforming the data, normality is still rejected, nonparametric prediction limits are used for that analyte. The nonparametric prediction limit is the largest determination in the background measurements. For constituents where the background detection frequency is greater than 0% but less than 50%, nonparametric prediction limits will be used. If the detection frequency is 0% after thirteen samples have been collected, the practical quantitation limit (PQL) becomes the nonparametric prediction limit.

Since there is limited background, Poisson prediction limits were previously computed for those rarely detected parameters. Poisson prediction limits are appropriate for small data sets. Once twelve rounds of data are available, it was recommended that nonparametric prediction limits be used for parameters detected at a frequency less than 25%. Since the Unified Guidance recommends nonparametric limits over Poisson limits, nonparametric limits were used for the current comparisons.

Results of the Interwell Statistics (Shallow Ground Water Samples)

The background data used in this statistical analysis includes the ground water data collected from ground water wells MW-4A and MW-18 during the period from September 2014 through the current data. A summary of the background data from monitoring wells MW-4A and MW-18, used to determine the site prediction limits, is listed in Attachment B, Table 1 “Upgradient Data”. This statistical method compares the current downgradient determinations to site prediction limits and checks for exceedances.

Table 2 “Most Current Downgradient Monitoring Data”, summarizes the current data from downgradient wells MW-15R, MW-21, MW-6A, Tile 1, and Tile 2, compared to the site prediction limits. Prediction

limit exceedances are flagged with asterisks. For the most current data, the site prediction limit exceedances detected are summarized in the table below.

Trace Metal Prediction Limit Exceedances during the First Semi-Annual Monitoring Event in 2023

Well	Trace Metal Detected	Result, µg/L	Prediction Limit, µg/L	Prediction Limit Type	Verified/ Awaiting verification
MW-15R	Arsenic	51.1	48.2840	Normal	Verified
	Barium	876	618.9496	Normal	Verified
Tile 1	Barium	953	618.9496	Normal	Verified

The detection frequencies of the parameters in the up and down gradient monitoring wells are summarized in Table 3. Table 4 summarizes the results of the Shapiro-Wilk test. Table 5 is a summary of the statistics and prediction limits determined for the metals. Time series graphs of each of the parameters at each well with the corresponding prediction limits are attached.

A statistical power curve indicates the expected false assessments for the site as a whole. The false positive rate for interwell analyses is the percentage of failures when the upgradient versus downgradient true mean difference equals zero. False negative rate indicates the chance of missing contamination at a single well for a single constituent. The statistical power is a function of the number of wells included, the number of constituents compared, the detection frequencies, and the data distributions involved. For interwell analysis, the site-wide false positive rate is 2% and the test becomes sensitive to 3 standard deviation unit increases over background.

The verified trace metal exceedances were evaluated against the ground water protection standards (GWPS) using confidence limits calculated in accordance with the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, USEPA, March 2009 (Attachment C). The analysis was conducted to evaluate whether verified concentrations are significantly above the water quality standard. The 95% lower confidence limit (LCL) for the mean of the historical data was used to evaluate whether the regulated unit is in compliance with the ground-water protection standards under 40 CFR 264 (e.g. whether the verified constituent is detected at a significant level above the GWPS). An exceedance is verified if the LCL is above the Regulatory GWPS.

The 95% LCL for arsenic at MW-15R (41.832 µg/L) exceeds the USEPA MCL of 10 µg/L. The remainder of the calculated 95% LCLs are below GWPS.

Results of the Interwell Statistics (Bedrock Ground Water Samples)

The previous background data used in this statistical analysis included the ground water data collected from ground water wells MW-7B and MW-11C during the period from September 2014 through the current data. The background data used in this statistical analysis includes the ground water data collected from ground water well MW-11C during the period from September 2014 through the current data, and new wells MW-39D, MW-41D, and MW-42D. A summary of the background data from monitoring wells MW-11C, MW-39D, MW-41D, and MW-42D, used to determine the site prediction limits, is listed in Attachment D, Table

1 “Upgradient Data”. This statistical method compares the current downgradient determinations to site prediction limits and checks for exceedances.

Table 2 “Most Current Downgradient Monitoring Data”, summarizes the current data from downgradient wells MW-17R and MW-28 compared to the site prediction limits. Prediction limit exceedances are flagged with asterisks. For the most current data, the site prediction limit exceedances detected are summarized in the table below.

Trace Metal Prediction Limit Exceedances during the First Semi-Annual Monitoring Event in 2023

Well	Trace Metal Detected	Result, µg/L	Prediction Limit, µg/L	Prediction Limit Type	Verified/Awaiting verification
MW-17R	Barium	446	109.3098	Normal	Verified
	Nickel	22.2	11.8000	Nonparametric	Verified
MW-28	Arsenic	100	5.8000	Nonparametric	Verified
	Barium	1570	109.3098	Normal	Verified
	Cobalt	82.1	5.4000	Nonparametric	Verified
	Nickel	29.8	11.8000	Nonparametric	Verified

The detection frequencies of the parameters in the up and down gradient monitoring wells are summarized in Table 3. Table 4 summarizes the results of the Shapiro-Wilk test. Table 5 is a summary of the statistics and prediction limits determined for the metals. Time series graphs of each of the parameters at each well with the corresponding prediction limits are attached. For interwell analysis, the site-wide false positive rate is 2% and the test becomes sensitive to 3 standard deviation unit increases over background.

The verified trace metal exceedances were evaluated against the GWPS (Attachment E). The 95% LCL for cobalt MW-28 (40.543 µg/L) exceeds the GWPS of 2.1 µg/L. The remainder of the calculated 95% LCLs are below GWPS.

Intrawell statistics

Intrawell statistics are appropriate for facilities where the upgradient wells do not accurately characterize the natural ground water conditions downgradient from the facility. This may be due to different hydrogeological conditions where the wells are screened, having too few upgradient wells to account for the spatial variability, or the site exhibiting no definable hydraulic gradient. Intrawell statistics compare new measurements to the historical data at each ground water monitoring well independently. It is recommended that at least eight background samples be obtained prior to performing the statistics.

The most useful technique for intrawell comparisons is the combined Shewhart-CUSUM control chart. This control chart procedure is useful because it will detect releases both in terms of the constituent concentration and cumulative increases. This method is also extremely sensitive to sudden and gradual

releases. A requirement for constructing these control charts is that the parameter is detected at a frequency greater than or equal to 25%, otherwise the data variance is not properly defined.

The combined Shewhart-CUSUM control chart assumes that the data are independent and normally distributed with a fixed mean and a constant variance. Independent data is much more critical than the normality assumption. To achieve independence, it is recommended that data are collected no more frequently than quarterly to account for seasonal variation. The combined Shewhart-CUSUM control chart is extremely robust to deviations from normality. Because the control charts do not use a specific multiplier based on a normal distribution, it is more conservative to assume normality.

It is recommended that at least eight rounds of data be available to provide a reliable estimate of the mean and standard deviation of the parameter concentration, although the control charts will be generated with as few as four data points. Having only four data points may produce greater uncertainty in the mean and standard deviation of the background data, leading to higher control limits, thus having a potentially high false negative rate.

Many groundwater monitoring parameters are not detected at a frequency great enough to generate the combined Shewhart-CUSUM control charts. For constituents that are detected less than 25% of the time at a particular well, the data should be plotted as a time series until a sufficient number of data points are available to provide a 99% confidence nonparametric prediction limit. Thirteen independent measurements (with 1 resample) are necessary to achieve a 99% confidence (1% false positive rate) nonparametric prediction limit. Eight independent measurements (for pass 1 of 2 resamples) are necessary to achieve a 99% confidence nonparametric prediction limit. The nonparametric prediction limit is the largest determination out of the data set collected for that well and parameter. If the detection frequency is 0% after thirteen samples have been collected, the practical quantitation limit (PQL) becomes the nonparametric prediction limit.

In developing the statistical background, the historical data must be thoroughly screened for anomalous data due to sampling error, analytical error, or simply by chance alone. An erroneous data point, if not removed prior to the mean and variance computations, would yield a larger control limit thus increasing the false negative rate. The DUMPStat[®] program screens for outliers using the Dixon test. If the Dixon test indicates an outlier, the value is compared to three times the median value for intrawell analyses. If the value fails both criteria of the two-stage screening, the value is considered a statistical outlier and will not be used in the mean and variance determinations. Anomalous data will still be plotted on the graphs (with a unique symbol) but will not be included in the calculations.

The verification resample plan is an integral function of the statistical plan to reduce the probability that anomalous data obtained after the background has been established, is indicative of a landfill release.

The background data for each well and constituent is tested for existing trends using Sen's nonparametric estimate of trend. If contamination exists prior to completing the background, the control limits could be potentially high and this control chart method would not be able to detect an increasing trend unless the increase is severe.

Results of the Intrawell Statistics

The Appendix I trace metals data from well MW-6A was evaluated using the combined Shewhart-CUSUM control chart method. The background at MW-6A includes the data obtained from September 2013 through 2019. Nonparametric prediction limits are used for parameters detected at a frequency less than 25%. Nonparametric prediction limits are the largest value detected during background at that well for that parameter.

A summary of the intrawell statistics is included in Attachment F, Table 1 “Summary Statistics and Intermediate Computations for Combined Shewhart-CUSUM Control Charts.” The control charts or time series graphs follow the summary table. For the parameters evaluated, there were no control limit exceedances detected.

Supplemental Downgradient Attenuation Zone

Time series plots of the Appendix I trace metals at wells MW-8B, MW-9AR, and MW-14D are provided in Attachment G. No increasing trends were detected.

Volatile Organic Compounds

Volatile Organic Compounds (VOCs) are generally man-made compounds not present in ambient ground water. If VOCs are detected above their statistical limit (i.e., the laboratory PQL or reporting limit), a verification resample will be conducted at the next scheduled sampling event. A statistical exceedance will be indicated if the VOC detection is confirmed by the subsequent monitoring. VOCs detected in the ground water at South Central Iowa Landfill during the first semi-annual monitoring event in 2023 are summarized below. Historical VOC detections are summarized in Attachment H.

VOCs Detected at SCILA during the First Semi-Annual Monitoring Event in 2023

Well	VOC Detected	Result µg/L	Reporting Limit µg/L	Verified/Awaiting Verification	Ground Water Standard, µg/L
MW-17R	<i>cis</i> -1,2-Dichloroethene	2.2	1	Verified	70 ^a
MW-28	<i>cis</i> -1,2-Dichloroethene	10.0	1	Verified	70 ^a
	Vinyl chloride	1.2	1	Verified	2 ^a
MW-31	1,4-Dichlorobenzene	3.5	1	Verified	75 ^a
	Benzene	1.4	1	Verified	5 ^a
	Chlorobenzene	1.9	1	Verified	100 ^a
MW-8B	Acetone	12.2	10	Awaiting Verification	6300 ^b
MW-9AR	1,2-Dichloropropane	1.3	1	Verified	140 ^b
	<i>cis</i> -1,2-Dichloroethene	70.0	1	Verified	70 ^a
	<i>trans</i> -1,2-Dichloroethene	4.4	1	Verified	100 ^a
	Trichloroethene	7.4	1	Verified	5 ^a
	Vinyl chloride	1.2	1	Verified	2 ^a

VOCs Detected at SCILA during the First Semi-Annual Monitoring Event in 2023 (cont.)

Well	VOC Detected	Result µg/L	Reporting Limit µg/L	Verified/Awaiting Verification	Ground Water Standard, µg/L
Tile 1	1,4-Dichlorobenzene	1.6	1	Verified	75 ^a
	Chlorobenzene	2.9	1	Verified	100 ^a
Tile 2	<i>cis</i> -1,2-Dichloroethene	6.2	1	Verified	70 ^a
	Vinyl chloride	1.9	1	Verified	2 ^a

a – USEPA MCL,
b – Iowa Statewide Standard

The past and current verified VOC detections were evaluated against the ground water protection standards (GWPS) using confidence limits calculated in accordance with the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, USEPA, March 2009 (Attachment I). The analysis was conducted to evaluate whether verified concentrations are significantly above the water quality standard. The 95% lower confidence limit (LCL) for the mean of the historical data was used to evaluate whether the regulated unit is in compliance with the ground-water protection standards under 40 CFR 264 (e.g. whether the verified constituent is detected at a significant level above the GWPS). An exceedance is verified if the LCL is above the Regulatory GWPS.

The calculated 95% LCLs are below GWPS.

Surface water sample points SW-1, SW-102, and SW-2B were sampled on March 23, 2023 and analyzed for VOCs. No VOCs were detected above the site-specific reporting limits.

Attachment A

Summary of the Data obtained during the First Semi-Annual Monitoring Event in 2023

Table 1

Analytical Data Summary for 3/23/2023

Constituents	Units	LW26	MW-11C	MW-14D	MW-15R	MW-17R	MW-18	MW-21	MW-28	MW-31	MW-32
1,1,1,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
1,2-dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-dichlorobenzene	ug/L	5.6	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	3.5	<1.0
2-butanone (mek)	ug/L	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
2-hexanone (mbk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
4-methyl-2-pentanone (mibk)	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Acetone	ug/L	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Acrylonitrile	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Antimony, total	ug/L	<2.0	2.1	<2.0	<2.0	<2.0	4.2	<2.0	<2.0	<2.0	<2.0
Arsenic, total	ug/L	<4.0	<4.0	<4.0	51.1	<4.0	79.4	<4.0	100.0	<4.0	<4.0
Barium, total	ug/L		69.2	20.1	876.0	446.0	655.0	168.0	1570.0		
Benzene	ug/L	2.4	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.4	<1.0
Beryllium, total	ug/L		<4	<4	<4	<4	<4	<4	<4		
Bicarbonate, as cacO3	mg/L	473									
Bod (5 day)	mg/L	24									
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cadmium, total	ug/L	<.8	<.8	<.8	<.8	<.8	3.9	<.8	<.8	<.8	<.8
Carbon disulfide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloride	mg/L	259									
Chlorobenzene	ug/L	9.2	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.9	<1.0
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloroform	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Chromium, total	ug/L	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8
Cis-1,2-dichloroethylene	ug/L	<1.0	<1.0	<1.0	<1.0	2.2	<1.0	<1.0	10.0	<1.0	<1.0
Cis-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Cobalt, total	ug/L	5.6	<.4	1.5	1.3	1.6	2.9	<.4	82.1		
Copper, total	ug/L		<4.0	<4.0	<4.0	<4.0	9.9	<4.0	<4.0	<4.0	<4.0
Dibromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Lead, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Methyl iodide	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Nickel, total	ug/L		<4.0	<4.0	6.8	22.2	23.8	<4.0	29.8		
Nitrogen, ammonia	mg/L	38.2									
pH	pH	6.7									
Selenium, total	ug/L		<4.0	<4.0	<4.0	<4.0	16.2	<4.0	<4.0	<4.0	<4.0
Silver, total	ug/L		<4	<4	<4	<4	<4	<4	<4	<4	<4
Solids, total dissolved	mg/L	732									
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Sulfate	mg/L	4									
Tetrachloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Thallium, total	ug/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Toluene	ug/L	1.5	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trans-1,2-dichloroethylene	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trans-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trichlorofluoromethane	ug/L	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Vanadium, total	ug/L		<20	<20	<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	ug/L	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.2	<1.0	<1.0
Xylenes, total	ug/L	2.8	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, total	ug/L		<20.0	<20.0	<20.0	<20.0	51.2	<20.0	<20.0	<20.0	<20.0

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

Table 1

Analytical Data Summary for 3/23/2023

Constituents	MW-39D	MW-41D	MW-42D	MW-6A	MW-8B	MW-9AR	SW-1	SW-102	SW-2B	TILE 1	TILE 2
1,1,1,2-tetrachloroethane				<1	<1	<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane				<1	<1	<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane				<1	<1	<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane				<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethane				<1	<1	<1	<1	<1	<1	<1	<1
1,1-dichloroethylene				<1	<1	<1	<1	<1	<1	<1	<1
1,2,3-trichloropropane				<1	<1	<1	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane				<5	<5	<5	<5	<5	<5	<5	<5
1,2-dibromoethane				<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene				<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloroethane				<1	<1	<1	<1	<1	<1	<1	<1
1,2-dichloropropane				<1.0	<1.0	1.3	<1.0	<1.0	<1.0	<1.0	<1.0
1,4-dichlorobenzene				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	1.6	<1.0
2-butanone (mek)				<10	<10	<10	<10	<10	<10	<10	<10
2-hexanone (mbk)				<5	<5	<5	<5	<5	<5	<5	<5
4-methyl-2-pentanone (mibk)				<5	<5	<5	<5	<5	<5	<5	<5
Acetone				<10.0	12.2	<10.0	<10.0	<10.0	<10.0	<10.0	<10.0
Acrylonitrile				<5	<5	<5	<5	<5	<5	<5	<5
Antimony, total	<2.0	2.8	<2.0	<2.0	<2.0	5.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, total	<4.0	<4.0	<4.0	<4.0	18.2	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Barium, total	34.8	32.2	40.1	119.0	821.0	148.0	191.0		197.0	953.0	481.0
Benzene				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Beryllium, total	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Bicarbonate, as cacO3											
Bod (5 day)											
Bromochloromethane				<1	<1	<1	<1	<1	<1	<1	<1
Bromodichloromethane				<1	<1	<1	<1	<1	<1	<1	<1
Bromoform				<1	<1	<1	<1	<1	<1	<1	<1
Bromomethane				<1	<1	<1	<1	<1	<1	<1	<1
Cadmium, total	<.8	<.8	<.8	<.8	<.8	1.4	<.8	<.8	<.8	<.8	<.8
Carbon disulfide				<1	<1	<1	<1	<1	<1	<1	<1
Carbon tetrachloride				<1	<1	<1	<1	<1	<1	<1	<1
Chloride											
Chlorobenzene				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	2.9	<1.0
Chloroethane				<1	<1	<1	<1	<1	<1	<1	<1
Chloroform				<1	<1	<1	<1	<1	<1	<1	<1
Chloromethane				<1	<1	<1	<1	<1	<1	<1	<1
Chromium, total	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8
Cis-1,2-dichloroethylene				<1.0	<1.0	70.0	<1.0	<1.0	<1.0	<1.0	6.2
Cis-1,3-dichloropropene				<1	<1	<1	<1	<1	<1	<1	<1
Cobalt, total	<.4	1.2	<.4	<.4	9.6	.6	<.4	<.4	<.4	2.4	.6
Copper, total	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Dibromochloromethane				<1	<1	<1	<1	<1	<1	<1	<1
Dibromomethane				<1	<1	<1	<1	<1	<1	<1	<1
Ethylbenzene				<1	<1	<1	<1	<1	<1	<1	<1
Lead, total	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Methyl iodide				<1	<1	<1	<1	<1	<1	<1	<1
Methylene chloride				<5	<5	<5	<5	<5	<5	<5	<5
Nickel, total	<4.0	8.5	<4.0	18.0	6.8	5.3	<4.0		<4.0	13.4	4.3
Nitrogen, ammonia											
pH											
Selenium, total	<4.0	<4.0	<4.0	<4.0	<4.0	19.5	<4.0		4.0	<4.0	<4.0
Silver, total	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Solids, total dissolved											
Styrene				<1	<1	<1	<1	<1	<1	<1	<1
Sulfate											
Tetrachloroethylene				<1	<1	<1	<1	<1	<1	<1	<1
Thallium, total	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Toluene				<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Trans-1,2-dichloroethylene				<1.0	<1.0	4.4	<1.0	<1.0	<1.0	<1.0	<1.0
Trans-1,3-dichloropropene				<1	<1	<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene				<5	<5	<5	<5	<5	<5	<5	<5
Trichloroethylene				<1.0	<1.0	7.4	<1.0	<1.0	<1.0	<1.0	<1.0
Trichlorofluoromethane				<1	<1	<1	<1	<1	<1	<1	<1
Vanadium, total	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Vinyl acetate				<5	<5	<5	<5	<5	<5	<5	<5
Vinyl chloride				<1.0	<1.0	1.2	<1.0	<1.0	<1.0	<1.0	1.9
Xylenes, total				<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Zinc, total	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0

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

Attachment B

Summary Tables and Graphs for the Interwell Comparisons
Shallow Ground Water

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Antimony, total	ug/L	MW-18	09/23/2014	ND	2.0000		
Antimony, total	ug/L	MW-18	12/02/2014	ND	2.0000		
Antimony, total	ug/L	MW-18	03/19/2015	ND	2.0000		
Antimony, total	ug/L	MW-18	06/17/2015	ND	2.0000		
Antimony, total	ug/L	MW-18	08/27/2015	ND	2.0000		
Antimony, total	ug/L	MW-18	03/03/2016		2.6000		
Antimony, total	ug/L	MW-18	09/20/2016	ND	2.0000		
Antimony, total	ug/L	MW-18	03/09/2017	ND	2.0000		
Antimony, total	ug/L	MW-18	09/14/2017	ND	2.0000		
Antimony, total	ug/L	MW-18	03/12/2018	ND	2.0000		
Antimony, total	ug/L	MW-18	09/10/2018	ND	2.0000		
Antimony, total	ug/L	MW-18	03/26/2019	ND	2.0000		
Antimony, total	ug/L	MW-18	09/16/2019	ND	2.0000		
Antimony, total	ug/L	MW-18	03/24/2020	ND	2.0000		
Antimony, total	ug/L	MW-18	09/02/2020	ND	2.0000		
Antimony, total	ug/L	MW-18	03/08/2021	ND	2.0000		
Antimony, total	ug/L	MW-18	09/14/2021	ND	2.0000		
Antimony, total	ug/L	MW-18	03/28/2022		2.1000		
Antimony, total	ug/L	MW-18	09/13/2022	ND	2.0000		
Antimony, total	ug/L	MW-18	03/23/2023		4.2000		
Arsenic, total	ug/L	MW-18	09/23/2014		23.0000		
Arsenic, total	ug/L	MW-18	12/02/2014		38.7000		
Arsenic, total	ug/L	MW-18	03/19/2015		30.7000		
Arsenic, total	ug/L	MW-18	06/17/2015		53.7000		
Arsenic, total	ug/L	MW-18	08/27/2015		26.8000		
Arsenic, total	ug/L	MW-18	03/03/2016		97.7000		*
Arsenic, total	ug/L	MW-18	09/20/2016		33.2000		
Arsenic, total	ug/L	MW-18	03/09/2017		34.0000		
Arsenic, total	ug/L	MW-18	07/12/2017		22.3000		
Arsenic, total	ug/L	MW-18	09/14/2017		8.3000		
Arsenic, total	ug/L	MW-18	12/13/2017		7.2000		
Arsenic, total	ug/L	MW-18	03/12/2018		11.6000		
Arsenic, total	ug/L	MW-18	09/10/2018		11.4000		
Arsenic, total	ug/L	MW-18	03/26/2019		26.1000		
Arsenic, total	ug/L	MW-18	09/16/2019		13.0000		
Arsenic, total	ug/L	MW-18	03/24/2020		10.7000		
Arsenic, total	ug/L	MW-18	09/02/2020		14.3000		
Arsenic, total	ug/L	MW-18	03/08/2021		14.2000		
Arsenic, total	ug/L	MW-18	09/14/2021		15.3000		
Arsenic, total	ug/L	MW-18	03/28/2022		26.8000		
Arsenic, total	ug/L	MW-18	09/13/2022		34.0000		
Arsenic, total	ug/L	MW-18	03/23/2023		79.4000		*
Barium, total	ug/L	MW-18	09/23/2014		407.0000		
Barium, total	ug/L	MW-18	12/02/2014		459.0000		
Barium, total	ug/L	MW-18	03/19/2015		436.0000		
Barium, total	ug/L	MW-18	06/17/2015		377.0000		
Barium, total	ug/L	MW-18	08/27/2015		392.0000		
Barium, total	ug/L	MW-18	03/03/2016		486.0000		
Barium, total	ug/L	MW-18	09/20/2016		320.0000		
Barium, total	ug/L	MW-18	03/09/2017		465.0000		
Barium, total	ug/L	MW-18	09/14/2017		452.0000		
Barium, total	ug/L	MW-18	03/12/2018		410.0000		
Barium, total	ug/L	MW-18	09/10/2018		374.0000		
Barium, total	ug/L	MW-18	03/26/2019		352.0000		
Barium, total	ug/L	MW-18	09/16/2019		559.0000		
Barium, total	ug/L	MW-18	03/24/2020		330.0000		
Barium, total	ug/L	MW-18	09/02/2020		478.0000		
Barium, total	ug/L	MW-18	03/08/2021		463.0000		
Barium, total	ug/L	MW-18	09/14/2021		499.0000		
Barium, total	ug/L	MW-18	03/28/2022		479.0000		
Barium, total	ug/L	MW-18	09/13/2022		551.0000		
Barium, total	ug/L	MW-18	03/23/2023		655.0000		
Beryllium, total	ug/L	MW-18	09/23/2014	ND	4.0000		
Beryllium, total	ug/L	MW-18	12/02/2014	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/19/2015	ND	4.0000		
Beryllium, total	ug/L	MW-18	06/17/2015	ND	4.0000		
Beryllium, total	ug/L	MW-18	08/27/2015	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/03/2016	ND	4.0000		
Beryllium, total	ug/L	MW-18	09/20/2016	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/09/2017	ND	4.0000		
Beryllium, total	ug/L	MW-18	09/14/2017	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/12/2018	ND	4.0000		
Beryllium, total	ug/L	MW-18	09/10/2018	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/26/2019	ND	4.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Beryllium, total	ug/L	MW-18	09/16/2019	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/24/2020	ND	4.0000		
Beryllium, total	ug/L	MW-18	09/02/2020	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/08/2021	ND	4.0000		
Beryllium, total	ug/L	MW-18	09/14/2021	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/28/2022	ND	4.0000		
Beryllium, total	ug/L	MW-18	09/13/2022	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/23/2023	ND	4.0000		
Cadmium, total	ug/L	MW-18	09/23/2014	ND	0.8000		
Cadmium, total	ug/L	MW-18	12/02/2014	ND	0.8000		
Cadmium, total	ug/L	MW-18	03/19/2015	ND	0.8000		
Cadmium, total	ug/L	MW-18	06/17/2015	ND	0.8000		
Cadmium, total	ug/L	MW-18	08/27/2015	ND	0.8000		
Cadmium, total	ug/L	MW-18	03/03/2016	ND	0.8000		
Cadmium, total	ug/L	MW-18	09/20/2016	ND	0.8000		
Cadmium, total	ug/L	MW-18	03/09/2017	ND	0.8000		
Cadmium, total	ug/L	MW-18	09/14/2017		1.3000		
Cadmium, total	ug/L	MW-18	03/12/2018	ND	0.8000		
Cadmium, total	ug/L	MW-18	09/10/2018	ND	0.8000		
Cadmium, total	ug/L	MW-18	03/26/2019	ND	0.8000		
Cadmium, total	ug/L	MW-18	09/16/2019	ND	0.8000		
Cadmium, total	ug/L	MW-18	03/24/2020	ND	0.8000		
Cadmium, total	ug/L	MW-18	09/02/2020	ND	0.8000		
Cadmium, total	ug/L	MW-18	03/08/2021	ND	0.8000		
Cadmium, total	ug/L	MW-18	09/14/2021	ND	0.8000		
Cadmium, total	ug/L	MW-18	03/28/2022		1.3000		
Cadmium, total	ug/L	MW-18	09/13/2022		1.1000		
Cadmium, total	ug/L	MW-18	03/23/2023		3.9000		
Chromium, total	ug/L	MW-18	09/23/2014	ND	8.0000		
Chromium, total	ug/L	MW-18	12/02/2014	ND	8.0000		
Chromium, total	ug/L	MW-18	03/19/2015	ND	8.0000		
Chromium, total	ug/L	MW-18	06/17/2015	ND	8.0000		
Chromium, total	ug/L	MW-18	08/27/2015	ND	8.0000		
Chromium, total	ug/L	MW-18	03/03/2016	ND	8.0000		
Chromium, total	ug/L	MW-18	09/20/2016	ND	8.0000		
Chromium, total	ug/L	MW-18	03/09/2017	ND	8.0000		
Chromium, total	ug/L	MW-18	09/14/2017		10.4000		
Chromium, total	ug/L	MW-18	03/12/2018	ND	8.0000		
Chromium, total	ug/L	MW-18	09/10/2018	ND	8.0000		
Chromium, total	ug/L	MW-18	03/26/2019	ND	8.0000		
Chromium, total	ug/L	MW-18	09/16/2019	ND	8.0000		
Chromium, total	ug/L	MW-18	03/24/2020	ND	8.0000		
Chromium, total	ug/L	MW-18	09/02/2020	ND	8.0000		
Chromium, total	ug/L	MW-18	03/08/2021	ND	8.0000		
Chromium, total	ug/L	MW-18	09/14/2021	ND	8.0000		
Chromium, total	ug/L	MW-18	03/28/2022	ND	8.0000		
Chromium, total	ug/L	MW-18	09/13/2022	ND	8.0000		
Chromium, total	ug/L	MW-18	03/23/2023	ND	8.0000		
Cobalt, total	ug/L	MW-18	09/23/2014		0.8000		
Cobalt, total	ug/L	MW-18	12/02/2014		1.2000		
Cobalt, total	ug/L	MW-18	03/19/2015		1.3000		
Cobalt, total	ug/L	MW-18	06/17/2015		1.4000		
Cobalt, total	ug/L	MW-18	08/27/2015		0.9000		
Cobalt, total	ug/L	MW-18	03/03/2016		2.1000		
Cobalt, total	ug/L	MW-18	09/20/2016		3.5000		
Cobalt, total	ug/L	MW-18	03/09/2017		1.9000		
Cobalt, total	ug/L	MW-18	09/14/2017		3.1000		
Cobalt, total	ug/L	MW-18	03/12/2018	ND	2.0000	0.8000	**
Cobalt, total	ug/L	MW-18	09/10/2018		0.9000		
Cobalt, total	ug/L	MW-18	03/26/2019		1.6000		
Cobalt, total	ug/L	MW-18	09/16/2019		1.0000		
Cobalt, total	ug/L	MW-18	03/24/2020	ND	0.8000		
Cobalt, total	ug/L	MW-18	09/02/2020		0.8000		
Cobalt, total	ug/L	MW-18	03/08/2021		1.1000		
Cobalt, total	ug/L	MW-18	09/14/2021		1.7000		
Cobalt, total	ug/L	MW-18	03/28/2022		0.7000		
Cobalt, total	ug/L	MW-18	09/13/2022		7.2000		
Cobalt, total	ug/L	MW-18	03/23/2023		2.9000		
Copper, total	ug/L	MW-18	09/23/2014	ND	4.0000		
Copper, total	ug/L	MW-18	12/02/2014	ND	4.0000		
Copper, total	ug/L	MW-18	03/19/2015	ND	4.0000		
Copper, total	ug/L	MW-18	06/17/2015	ND	4.0000		
Copper, total	ug/L	MW-18	08/27/2015	ND	4.0000		
Copper, total	ug/L	MW-18	03/03/2016	ND	4.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted
Copper, total	ug/L	MW-18	09/20/2016	ND	4.0000	
Copper, total	ug/L	MW-18	03/09/2017	ND	4.0000	
Copper, total	ug/L	MW-18	09/14/2017		6.3000	
Copper, total	ug/L	MW-18	03/12/2018	ND	4.0000	
Copper, total	ug/L	MW-18	09/10/2018		5.2000	
Copper, total	ug/L	MW-18	03/26/2019	ND	4.0000	
Copper, total	ug/L	MW-18	09/16/2019	ND	4.0000	
Copper, total	ug/L	MW-18	03/24/2020	ND	4.0000	
Copper, total	ug/L	MW-18	09/02/2020	ND	4.0000	
Copper, total	ug/L	MW-18	03/08/2021	ND	4.0000	
Copper, total	ug/L	MW-18	09/14/2021	ND	4.0000	
Copper, total	ug/L	MW-18	03/28/2022		6.7000	
Copper, total	ug/L	MW-18	09/13/2022		12.0000	
Copper, total	ug/L	MW-18	03/23/2023		9.9000	
Lead, total	ug/L	MW-18	09/23/2014	ND	4.0000	
Lead, total	ug/L	MW-18	12/02/2014	ND	4.0000	
Lead, total	ug/L	MW-18	03/19/2015	ND	4.0000	
Lead, total	ug/L	MW-18	06/17/2015	ND	4.0000	
Lead, total	ug/L	MW-18	08/27/2015	ND	4.0000	
Lead, total	ug/L	MW-18	03/03/2016	ND	4.0000	
Lead, total	ug/L	MW-18	09/20/2016	ND	4.0000	
Lead, total	ug/L	MW-18	03/09/2017	ND	4.0000	
Lead, total	ug/L	MW-18	09/14/2017	ND	4.0000	
Lead, total	ug/L	MW-18	03/12/2018	ND	4.0000	
Lead, total	ug/L	MW-18	09/10/2018	ND	4.0000	
Lead, total	ug/L	MW-18	03/26/2019	ND	4.0000	
Lead, total	ug/L	MW-18	09/16/2019	ND	4.0000	
Lead, total	ug/L	MW-18	03/24/2020	ND	4.0000	
Lead, total	ug/L	MW-18	09/02/2020	ND	4.0000	
Lead, total	ug/L	MW-18	03/08/2021	ND	4.0000	
Lead, total	ug/L	MW-18	09/14/2021	ND	4.0000	
Lead, total	ug/L	MW-18	03/28/2022	ND	4.0000	
Lead, total	ug/L	MW-18	09/13/2022	ND	4.0000	
Lead, total	ug/L	MW-18	03/23/2023	ND	4.0000	
Nickel, total	ug/L	MW-18	09/23/2014		5.0000	
Nickel, total	ug/L	MW-18	12/02/2014		5.4000	
Nickel, total	ug/L	MW-18	03/19/2015		6.3000	
Nickel, total	ug/L	MW-18	06/17/2015		10.3000	
Nickel, total	ug/L	MW-18	08/27/2015		6.8000	
Nickel, total	ug/L	MW-18	03/03/2016		12.7000	
Nickel, total	ug/L	MW-18	09/20/2016	ND	4.0000	
Nickel, total	ug/L	MW-18	03/09/2017		5.3000	
Nickel, total	ug/L	MW-18	09/14/2017		16.1000	
Nickel, total	ug/L	MW-18	03/12/2018	ND	4.0000	
Nickel, total	ug/L	MW-18	09/10/2018		4.4000	
Nickel, total	ug/L	MW-18	03/26/2019		7.2000	
Nickel, total	ug/L	MW-18	09/16/2019		4.7000	
Nickel, total	ug/L	MW-18	03/24/2020		4.4000	
Nickel, total	ug/L	MW-18	09/02/2020	ND	4.0000	
Nickel, total	ug/L	MW-18	03/08/2021	ND	4.0000	
Nickel, total	ug/L	MW-18	09/14/2021		10.7000	
Nickel, total	ug/L	MW-18	03/28/2022		8.4000	
Nickel, total	ug/L	MW-18	09/13/2022		11.3000	
Nickel, total	ug/L	MW-18	03/23/2023		23.8000	
Selenium, total	ug/L	MW-18	09/23/2014	ND	4.0000	
Selenium, total	ug/L	MW-18	12/02/2014	ND	4.0000	
Selenium, total	ug/L	MW-18	03/19/2015	ND	4.0000	
Selenium, total	ug/L	MW-18	06/17/2015	ND	4.0000	
Selenium, total	ug/L	MW-18	08/27/2015	ND	4.0000	
Selenium, total	ug/L	MW-18	03/03/2016	ND	4.0000	
Selenium, total	ug/L	MW-18	09/20/2016	ND	4.0000	
Selenium, total	ug/L	MW-18	03/09/2017	ND	4.0000	
Selenium, total	ug/L	MW-18	09/14/2017	ND	4.0000	
Selenium, total	ug/L	MW-18	03/12/2018	ND	4.0000	
Selenium, total	ug/L	MW-18	09/10/2018	ND	4.0000	
Selenium, total	ug/L	MW-18	03/26/2019	ND	4.0000	
Selenium, total	ug/L	MW-18	09/16/2019	ND	4.0000	
Selenium, total	ug/L	MW-18	03/24/2020	ND	4.0000	
Selenium, total	ug/L	MW-18	09/02/2020	ND	4.0000	
Selenium, total	ug/L	MW-18	03/08/2021	ND	4.0000	
Selenium, total	ug/L	MW-18	09/14/2021	ND	4.0000	
Selenium, total	ug/L	MW-18	03/28/2022		5.1000	
Selenium, total	ug/L	MW-18	09/13/2022		8.7000	
Selenium, total	ug/L	MW-18	03/23/2023		16.2000	

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Silver, total	ug/L	MW-18	09/23/2014	ND	4.0000		
Silver, total	ug/L	MW-18	12/02/2014	ND	4.0000		
Silver, total	ug/L	MW-18	03/19/2015	ND	4.0000		
Silver, total	ug/L	MW-18	06/17/2015	ND	4.0000		
Silver, total	ug/L	MW-18	08/27/2015	ND	4.0000		
Silver, total	ug/L	MW-18	03/03/2016	ND	4.0000		
Silver, total	ug/L	MW-18	09/20/2016	ND	4.0000		
Silver, total	ug/L	MW-18	03/09/2017	ND	4.0000		
Silver, total	ug/L	MW-18	09/14/2017	ND	4.0000		
Silver, total	ug/L	MW-18	03/12/2018	ND	4.0000		
Silver, total	ug/L	MW-18	09/10/2018	ND	4.0000		
Silver, total	ug/L	MW-18	03/26/2019	ND	4.0000		
Silver, total	ug/L	MW-18	09/16/2019	ND	4.0000		
Silver, total	ug/L	MW-18	03/24/2020	ND	4.0000		
Silver, total	ug/L	MW-18	09/02/2020	ND	4.0000		
Silver, total	ug/L	MW-18	03/08/2021	ND	4.0000		
Silver, total	ug/L	MW-18	09/14/2021	ND	4.0000		
Silver, total	ug/L	MW-18	03/28/2022	ND	4.0000		
Silver, total	ug/L	MW-18	09/13/2022	ND	4.0000		
Silver, total	ug/L	MW-18	03/23/2023	ND	4.0000		
Thallium, total	ug/L	MW-18	09/23/2014	ND	4.0000		
Thallium, total	ug/L	MW-18	12/02/2014	ND	4.0000		
Thallium, total	ug/L	MW-18	03/19/2015	ND	4.0000		
Thallium, total	ug/L	MW-18	06/17/2015	ND	4.0000		
Thallium, total	ug/L	MW-18	08/27/2015	ND	4.0000		
Thallium, total	ug/L	MW-18	03/03/2016	ND	4.0000		
Thallium, total	ug/L	MW-18	09/20/2016	ND	4.0000		
Thallium, total	ug/L	MW-18	03/09/2017	ND	4.0000		
Thallium, total	ug/L	MW-18	09/14/2017	ND	4.0000		
Thallium, total	ug/L	MW-18	03/12/2018	ND	4.0000		
Thallium, total	ug/L	MW-18	09/10/2018	ND	4.0000		
Thallium, total	ug/L	MW-18	03/26/2019	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	09/16/2019	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	03/24/2020	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	09/02/2020	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	03/08/2021	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	09/14/2021	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	03/28/2022	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	09/13/2022	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	03/23/2023	ND	2.0000	4.0000	**
Vanadium, total	ug/L	MW-18	09/23/2014	ND	20.0000		
Vanadium, total	ug/L	MW-18	12/02/2014	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/19/2015	ND	20.0000		
Vanadium, total	ug/L	MW-18	06/17/2015	ND	20.0000		
Vanadium, total	ug/L	MW-18	08/27/2015	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/03/2016	ND	20.0000		
Vanadium, total	ug/L	MW-18	09/20/2016	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/09/2017	ND	20.0000		
Vanadium, total	ug/L	MW-18	09/14/2017	ND	30.7000		
Vanadium, total	ug/L	MW-18	03/12/2018	ND	20.0000		
Vanadium, total	ug/L	MW-18	09/10/2018	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/26/2019	ND	20.0000		
Vanadium, total	ug/L	MW-18	09/16/2019	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/24/2020	ND	20.0000		
Vanadium, total	ug/L	MW-18	09/02/2020	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/08/2021	ND	20.0000		
Vanadium, total	ug/L	MW-18	09/14/2021	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/28/2022	ND	20.0000		
Vanadium, total	ug/L	MW-18	09/13/2022	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/23/2023	ND	20.0000		
Zinc, total	ug/L	MW-18	09/23/2014		11.9000		
Zinc, total	ug/L	MW-18	12/02/2014		11.3000		
Zinc, total	ug/L	MW-18	03/19/2015	ND	8.0000		
Zinc, total	ug/L	MW-18	06/17/2015		23.7000		
Zinc, total	ug/L	MW-18	08/27/2015		13.5000		
Zinc, total	ug/L	MW-18	03/03/2016		18.8000		
Zinc, total	ug/L	MW-18	09/20/2016		8.7000		
Zinc, total	ug/L	MW-18	03/09/2017	ND	8.0000		
Zinc, total	ug/L	MW-18	09/14/2017		53.3000		
Zinc, total	ug/L	MW-18	03/12/2018	ND	8.0000		
Zinc, total	ug/L	MW-18	09/10/2018		27.3000		
Zinc, total	ug/L	MW-18	03/26/2019		13.7000		
Zinc, total	ug/L	MW-18	09/16/2019		20.6000		
Zinc, total	ug/L	MW-18	03/24/2020	ND	20.0000	8.0000	**

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Zinc, total	ug/L	MW-18	09/02/2020	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-18	03/08/2021	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-18	09/14/2021		34.6000		
Zinc, total	ug/L	MW-18	03/28/2022	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-18	09/13/2022	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-18	03/23/2023		51.2000		
Antimony, total	ug/L	MW-4A	09/23/2014	ND	2.0000		
Antimony, total	ug/L	MW-4A	12/02/2014	ND	2.0000		
Antimony, total	ug/L	MW-4A	03/19/2015	ND	2.0000		
Antimony, total	ug/L	MW-4A	06/17/2015	ND	2.0000		
Antimony, total	ug/L	MW-4A	08/27/2015	ND	2.0000		
Antimony, total	ug/L	MW-4A	03/03/2016	ND	2.0000		
Antimony, total	ug/L	MW-4A	09/20/2016	ND	2.0000		
Antimony, total	ug/L	MW-4A	03/09/2017	ND	2.0000		
Antimony, total	ug/L	MW-4A	09/14/2017	ND	2.0000		
Antimony, total	ug/L	MW-4A	03/12/2018	ND	2.0000		
Antimony, total	ug/L	MW-4A	09/10/2018	ND	2.0000		
Antimony, total	ug/L	MW-4A	03/26/2019	ND	2.0000		
Antimony, total	ug/L	MW-4A	09/16/2019	ND	2.0000		
Antimony, total	ug/L	MW-4A	03/24/2020	ND	2.0000		
Antimony, total	ug/L	MW-4A	09/02/2020	ND	2.0000		
Antimony, total	ug/L	MW-4A	03/08/2021	ND	2.0000		
Antimony, total	ug/L	MW-4A	09/14/2021	ND	2.0000		
Arsenic, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Arsenic, total	ug/L	MW-4A	12/02/2014	ND	4.0000		
Arsenic, total	ug/L	MW-4A	03/19/2015	ND	4.0000		
Arsenic, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Arsenic, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Arsenic, total	ug/L	MW-4A	03/03/2016	ND	4.0000		
Arsenic, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Arsenic, total	ug/L	MW-4A	03/09/2017	ND	4.0000		
Arsenic, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Arsenic, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Arsenic, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Arsenic, total	ug/L	MW-4A	03/26/2019	ND	4.0000		
Arsenic, total	ug/L	MW-4A	09/16/2019	ND	4.0000		
Arsenic, total	ug/L	MW-4A	03/24/2020	ND	4.0000		
Arsenic, total	ug/L	MW-4A	09/02/2020	ND	4.0000		
Arsenic, total	ug/L	MW-4A	03/08/2021	ND	4.0000		
Arsenic, total	ug/L	MW-4A	09/14/2021	ND	4.0000		
Barium, total	ug/L	MW-4A	09/23/2014		367.0000		
Barium, total	ug/L	MW-4A	12/02/2014		418.0000		
Barium, total	ug/L	MW-4A	03/19/2015		322.0000		
Barium, total	ug/L	MW-4A	06/17/2015		267.0000		
Barium, total	ug/L	MW-4A	08/27/2015		390.0000		
Barium, total	ug/L	MW-4A	03/03/2016		378.0000		
Barium, total	ug/L	MW-4A	09/20/2016		380.0000		
Barium, total	ug/L	MW-4A	03/09/2017		265.0000		
Barium, total	ug/L	MW-4A	09/14/2017		365.0000		
Barium, total	ug/L	MW-4A	03/12/2018		313.0000		
Barium, total	ug/L	MW-4A	09/10/2018		316.0000		
Barium, total	ug/L	MW-4A	03/26/2019		232.0000		
Barium, total	ug/L	MW-4A	09/16/2019		346.0000		
Barium, total	ug/L	MW-4A	03/24/2020		250.0000		
Barium, total	ug/L	MW-4A	09/02/2020		360.0000		
Barium, total	ug/L	MW-4A	03/08/2021		296.0000		
Barium, total	ug/L	MW-4A	09/14/2021		344.0000		
Beryllium, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Beryllium, total	ug/L	MW-4A	12/02/2014	ND	4.0000		
Beryllium, total	ug/L	MW-4A	03/19/2015	ND	4.0000		
Beryllium, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Beryllium, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Beryllium, total	ug/L	MW-4A	03/03/2016	ND	4.0000		
Beryllium, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Beryllium, total	ug/L	MW-4A	03/09/2017	ND	4.0000		
Beryllium, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Beryllium, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Beryllium, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Beryllium, total	ug/L	MW-4A	03/26/2019	ND	4.0000		
Beryllium, total	ug/L	MW-4A	09/16/2019	ND	4.0000		
Beryllium, total	ug/L	MW-4A	03/24/2020	ND	4.0000		
Beryllium, total	ug/L	MW-4A	09/02/2020	ND	4.0000		
Beryllium, total	ug/L	MW-4A	03/08/2021	ND	4.0000		
Beryllium, total	ug/L	MW-4A	09/14/2021	ND	4.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cadmium, total	ug/L	MW-4A	09/23/2014	ND	0.8000		
Cadmium, total	ug/L	MW-4A	12/02/2014	ND	0.8000		
Cadmium, total	ug/L	MW-4A	03/19/2015	ND	0.8000		
Cadmium, total	ug/L	MW-4A	06/17/2015	ND	0.8000		
Cadmium, total	ug/L	MW-4A	08/27/2015	ND	0.8000		
Cadmium, total	ug/L	MW-4A	03/03/2016	ND	0.8000		
Cadmium, total	ug/L	MW-4A	09/20/2016	ND	0.8000		
Cadmium, total	ug/L	MW-4A	03/09/2017	ND	0.8000		
Cadmium, total	ug/L	MW-4A	09/14/2017	ND	0.8000		
Cadmium, total	ug/L	MW-4A	03/12/2018	ND	0.8000		
Cadmium, total	ug/L	MW-4A	09/10/2018	ND	0.8000		
Cadmium, total	ug/L	MW-4A	03/26/2019	ND	0.8000		
Cadmium, total	ug/L	MW-4A	09/16/2019	ND	0.8000		
Cadmium, total	ug/L	MW-4A	03/24/2020	ND	0.8000		
Cadmium, total	ug/L	MW-4A	09/02/2020	ND	0.8000		
Cadmium, total	ug/L	MW-4A	03/08/2021	ND	0.8000		
Cadmium, total	ug/L	MW-4A	09/14/2021	ND	0.8000		
Chromium, total	ug/L	MW-4A	09/23/2014	ND	8.0000		
Chromium, total	ug/L	MW-4A	12/02/2014	ND	8.0000		
Chromium, total	ug/L	MW-4A	03/19/2015	ND	8.0000		
Chromium, total	ug/L	MW-4A	06/17/2015	ND	8.0000		
Chromium, total	ug/L	MW-4A	08/27/2015	ND	8.0000		
Chromium, total	ug/L	MW-4A	03/03/2016	ND	8.0000		
Chromium, total	ug/L	MW-4A	09/20/2016	ND	8.0000		
Chromium, total	ug/L	MW-4A	03/09/2017	ND	8.0000		
Chromium, total	ug/L	MW-4A	09/14/2017	ND	8.0000		
Chromium, total	ug/L	MW-4A	03/12/2018	ND	8.0000		
Chromium, total	ug/L	MW-4A	09/10/2018	ND	8.0000		
Chromium, total	ug/L	MW-4A	03/26/2019	ND	8.0000		
Chromium, total	ug/L	MW-4A	09/16/2019	ND	8.0000		
Chromium, total	ug/L	MW-4A	03/24/2020	ND	8.0000		
Chromium, total	ug/L	MW-4A	09/02/2020	ND	8.0000		
Chromium, total	ug/L	MW-4A	03/08/2021	ND	8.0000		
Chromium, total	ug/L	MW-4A	09/14/2021	ND	8.0000		
Cobalt, total	ug/L	MW-4A	09/23/2014	ND	0.8000		
Cobalt, total	ug/L	MW-4A	12/02/2014	ND	0.8000		
Cobalt, total	ug/L	MW-4A	03/19/2015	ND	0.8000		
Cobalt, total	ug/L	MW-4A	06/17/2015	ND	0.8000		
Cobalt, total	ug/L	MW-4A	08/27/2015	ND	0.8000		
Cobalt, total	ug/L	MW-4A	03/03/2016	ND	0.8000		
Cobalt, total	ug/L	MW-4A	09/20/2016	ND	0.8000		
Cobalt, total	ug/L	MW-4A	03/09/2017	ND	0.8000		
Cobalt, total	ug/L	MW-4A	09/14/2017	ND	0.8000		
Cobalt, total	ug/L	MW-4A	03/12/2018	ND	2.0000	0.8000	**
Cobalt, total	ug/L	MW-4A	09/10/2018	ND	0.8000		
Cobalt, total	ug/L	MW-4A	03/26/2019	ND	0.8000		
Cobalt, total	ug/L	MW-4A	09/16/2019	ND	0.8000		
Cobalt, total	ug/L	MW-4A	03/24/2020	ND	0.8000		
Cobalt, total	ug/L	MW-4A	09/02/2020	ND	0.4000	0.8000	**
Cobalt, total	ug/L	MW-4A	03/08/2021	ND	0.4000	0.8000	**
Cobalt, total	ug/L	MW-4A	09/14/2021	ND	0.4000	0.8000	**
Copper, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Copper, total	ug/L	MW-4A	12/02/2014	ND	4.0000		
Copper, total	ug/L	MW-4A	03/19/2015		30.1000		
Copper, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Copper, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Copper, total	ug/L	MW-4A	03/03/2016	ND	4.0000		
Copper, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Copper, total	ug/L	MW-4A	03/09/2017	ND	4.0000		
Copper, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Copper, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Copper, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Copper, total	ug/L	MW-4A	03/26/2019	ND	4.0000		
Copper, total	ug/L	MW-4A	09/16/2019	ND	4.0000		
Copper, total	ug/L	MW-4A	03/24/2020	ND	4.0000		
Copper, total	ug/L	MW-4A	09/02/2020	ND	4.0000		
Copper, total	ug/L	MW-4A	03/08/2021	ND	4.0000		
Copper, total	ug/L	MW-4A	09/14/2021	ND	4.0000		
Lead, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Lead, total	ug/L	MW-4A	12/02/2014	ND	4.0000		
Lead, total	ug/L	MW-4A	03/19/2015	ND	4.0000		
Lead, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Lead, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Lead, total	ug/L	MW-4A	03/03/2016	ND	4.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Lead, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Lead, total	ug/L	MW-4A	03/09/2017	ND	4.0000		
Lead, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Lead, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Lead, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Lead, total	ug/L	MW-4A	03/26/2019	ND	4.0000		
Lead, total	ug/L	MW-4A	09/16/2019	ND	4.0000		
Lead, total	ug/L	MW-4A	03/24/2020	ND	4.0000		
Lead, total	ug/L	MW-4A	09/02/2020	ND	4.0000		
Lead, total	ug/L	MW-4A	03/08/2021	ND	4.0000		
Lead, total	ug/L	MW-4A	09/14/2021	ND	4.0000		
Nickel, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Nickel, total	ug/L	MW-4A	12/02/2014	ND	4.0000		
Nickel, total	ug/L	MW-4A	03/19/2015	ND	4.0000		
Nickel, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Nickel, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Nickel, total	ug/L	MW-4A	03/03/2016	ND	4.0000		
Nickel, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Nickel, total	ug/L	MW-4A	03/09/2017	ND	4.0000		
Nickel, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Nickel, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Nickel, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Nickel, total	ug/L	MW-4A	03/26/2019	ND	4.0000		
Nickel, total	ug/L	MW-4A	09/16/2019	ND	4.0000		
Nickel, total	ug/L	MW-4A	03/24/2020	ND	4.0000		
Nickel, total	ug/L	MW-4A	09/02/2020	ND	4.0000		
Nickel, total	ug/L	MW-4A	03/08/2021	ND	4.0000		
Nickel, total	ug/L	MW-4A	09/14/2021	ND	4.0000		
Selenium, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Selenium, total	ug/L	MW-4A	12/02/2014	ND	4.0000		
Selenium, total	ug/L	MW-4A	03/19/2015	ND	4.0000		
Selenium, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Selenium, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Selenium, total	ug/L	MW-4A	03/03/2016	ND	4.0000		
Selenium, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Selenium, total	ug/L	MW-4A	03/09/2017	ND	4.0000		
Selenium, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Selenium, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Selenium, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Selenium, total	ug/L	MW-4A	03/26/2019	ND	4.0000		
Selenium, total	ug/L	MW-4A	09/16/2019	ND	4.0000		
Selenium, total	ug/L	MW-4A	03/24/2020	ND	4.0000		
Selenium, total	ug/L	MW-4A	09/02/2020	ND	4.0000		
Selenium, total	ug/L	MW-4A	03/08/2021	ND	4.0000		
Selenium, total	ug/L	MW-4A	09/14/2021	ND	4.0000		
Silver, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Silver, total	ug/L	MW-4A	12/02/2014	ND	4.0000		
Silver, total	ug/L	MW-4A	03/19/2015	ND	4.0000		
Silver, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Silver, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Silver, total	ug/L	MW-4A	03/03/2016	ND	4.0000		
Silver, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Silver, total	ug/L	MW-4A	03/09/2017	ND	4.0000		
Silver, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Silver, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Silver, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Silver, total	ug/L	MW-4A	03/26/2019	ND	4.0000		
Silver, total	ug/L	MW-4A	09/16/2019	ND	4.0000		
Silver, total	ug/L	MW-4A	03/24/2020	ND	4.0000		
Silver, total	ug/L	MW-4A	09/02/2020	ND	4.0000		
Silver, total	ug/L	MW-4A	03/08/2021	ND	4.0000		
Silver, total	ug/L	MW-4A	09/14/2021	ND	4.0000		
Thallium, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Thallium, total	ug/L	MW-4A	12/02/2014	ND	4.0000		
Thallium, total	ug/L	MW-4A	03/19/2015	ND	4.0000		
Thallium, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Thallium, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Thallium, total	ug/L	MW-4A	03/03/2016	ND	4.0000		
Thallium, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Thallium, total	ug/L	MW-4A	03/09/2017	ND	4.0000		
Thallium, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Thallium, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Thallium, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Thallium, total	ug/L	MW-4A	03/26/2019	ND	4.0000		
Thallium, total	ug/L	MW-4A	03/26/2019	ND	2.0000	4.0000	**

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Thallium, total	ug/L	MW-4A	09/16/2019	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-4A	03/24/2020	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-4A	09/02/2020	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-4A	03/08/2021	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-4A	09/14/2021	ND	2.0000	4.0000	**
Vanadium, total	ug/L	MW-4A	09/23/2014	ND	20.0000		
Vanadium, total	ug/L	MW-4A	12/02/2014	ND	20.0000		
Vanadium, total	ug/L	MW-4A	03/19/2015	ND	20.0000		
Vanadium, total	ug/L	MW-4A	06/17/2015	ND	20.0000		
Vanadium, total	ug/L	MW-4A	08/27/2015	ND	20.0000		
Vanadium, total	ug/L	MW-4A	03/03/2016	ND	20.0000		
Vanadium, total	ug/L	MW-4A	09/20/2016	ND	20.0000		
Vanadium, total	ug/L	MW-4A	03/09/2017	ND	20.0000		
Vanadium, total	ug/L	MW-4A	09/14/2017	ND	20.0000		
Vanadium, total	ug/L	MW-4A	03/12/2018	ND	20.0000		
Vanadium, total	ug/L	MW-4A	09/10/2018	ND	20.0000		
Vanadium, total	ug/L	MW-4A	03/26/2019	ND	20.0000		
Vanadium, total	ug/L	MW-4A	09/16/2019	ND	20.0000		
Vanadium, total	ug/L	MW-4A	03/24/2020	ND	20.0000		
Vanadium, total	ug/L	MW-4A	09/02/2020	ND	20.0000		
Vanadium, total	ug/L	MW-4A	03/08/2021	ND	20.0000		
Vanadium, total	ug/L	MW-4A	09/14/2021	ND	20.0000		
Zinc, total	ug/L	MW-4A	09/23/2014	ND	8.0000		
Zinc, total	ug/L	MW-4A	12/02/2014	ND	8.0000		
Zinc, total	ug/L	MW-4A	03/19/2015		14.7000		
Zinc, total	ug/L	MW-4A	06/17/2015	ND	8.0000		
Zinc, total	ug/L	MW-4A	08/27/2015	ND	8.0000		
Zinc, total	ug/L	MW-4A	03/03/2016	ND	8.0000		
Zinc, total	ug/L	MW-4A	09/20/2016	ND	8.0000		
Zinc, total	ug/L	MW-4A	03/09/2017	ND	8.0000		
Zinc, total	ug/L	MW-4A	09/14/2017	ND	8.0000		
Zinc, total	ug/L	MW-4A	03/12/2018	ND	8.0000		
Zinc, total	ug/L	MW-4A	09/10/2018		14.1000		
Zinc, total	ug/L	MW-4A	03/26/2019	ND	8.0000		
Zinc, total	ug/L	MW-4A	09/16/2019	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-4A	03/24/2020	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-4A	09/02/2020	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-4A	03/08/2021	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-4A	09/14/2021	ND	20.0000	8.0000	**

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Antimony, total	ug/L	MW-15R	03/23/2023	ND	2.0000		4.2000
Arsenic, total	ug/L	MW-15R	03/23/2023		51.1000	*	48.2840
Barium, total	ug/L	MW-15R	03/23/2023		876.0000	***	618.9496
Beryllium, total	ug/L	MW-15R	03/23/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-15R	03/23/2023	ND	0.8000		3.9000
Chromium, total	ug/L	MW-15R	03/23/2023	ND	8.0000		10.4000
Cobalt, total	ug/L	MW-15R	03/23/2023		1.3000		7.2000
Copper, total	ug/L	MW-15R	03/23/2023	ND	4.0000		30.1000
Lead, total	ug/L	MW-15R	03/23/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-15R	03/23/2023		6.8000		23.8000
Selenium, total	ug/L	MW-15R	03/23/2023	ND	4.0000		16.2000
Silver, total	ug/L	MW-15R	03/23/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-15R	03/23/2023	ND	2.0000		4.0000
Vanadium, total	ug/L	MW-15R	03/23/2023	ND	20.0000		30.7000
Zinc, total	ug/L	MW-15R	03/23/2023	ND	20.0000		53.3000
Antimony, total	ug/L	MW-21	03/23/2023	ND	2.0000		4.2000
Arsenic, total	ug/L	MW-21	03/23/2023	ND	4.0000		48.2840
Barium, total	ug/L	MW-21	03/23/2023		168.0000		618.9496
Beryllium, total	ug/L	MW-21	03/23/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-21	03/23/2023	ND	0.8000		3.9000
Chromium, total	ug/L	MW-21	03/23/2023	ND	8.0000		10.4000
Cobalt, total	ug/L	MW-21	03/23/2023	ND	0.4000		7.2000
Copper, total	ug/L	MW-21	03/23/2023	ND	4.0000		30.1000
Lead, total	ug/L	MW-21	03/23/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-21	03/23/2023	ND	4.0000		23.8000
Selenium, total	ug/L	MW-21	03/23/2023	ND	4.0000		16.2000
Silver, total	ug/L	MW-21	03/23/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-21	03/23/2023	ND	2.0000		4.0000
Vanadium, total	ug/L	MW-21	03/23/2023	ND	20.0000		30.7000
Zinc, total	ug/L	MW-21	03/23/2023	ND	20.0000		53.3000
Antimony, total	ug/L	MW-6A	03/23/2023	ND	2.0000		4.2000
Arsenic, total	ug/L	MW-6A	03/23/2023	ND	4.0000		48.2840
Barium, total	ug/L	MW-6A	03/23/2023		119.0000		618.9496
Beryllium, total	ug/L	MW-6A	03/23/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-6A	03/23/2023	ND	0.8000		3.9000
Chromium, total	ug/L	MW-6A	03/23/2023	ND	8.0000		10.4000
Cobalt, total	ug/L	MW-6A	03/23/2023	ND	0.4000		7.2000
Copper, total	ug/L	MW-6A	03/23/2023	ND	4.0000		30.1000
Lead, total	ug/L	MW-6A	03/23/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-6A	03/23/2023		18.0000	**	23.8000
Selenium, total	ug/L	MW-6A	03/23/2023	ND	4.0000		16.2000
Silver, total	ug/L	MW-6A	03/23/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-6A	03/23/2023	ND	2.0000		4.0000
Vanadium, total	ug/L	MW-6A	03/23/2023	ND	20.0000		30.7000
Zinc, total	ug/L	MW-6A	03/23/2023	ND	20.0000		53.3000
Antimony, total	ug/L	TILE 1	03/23/2023	ND	2.0000		4.2000
Arsenic, total	ug/L	TILE 1	03/23/2023	ND	4.0000		48.2840
Barium, total	ug/L	TILE 1	03/23/2023		953.0000	***	618.9496
Beryllium, total	ug/L	TILE 1	03/23/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	TILE 1	03/23/2023	ND	0.8000		3.9000
Chromium, total	ug/L	TILE 1	03/23/2023	ND	8.0000		10.4000
Cobalt, total	ug/L	TILE 1	03/23/2023		2.4000	**	7.2000
Copper, total	ug/L	TILE 1	03/23/2023	ND	4.0000		30.1000
Lead, total	ug/L	TILE 1	03/23/2023	ND	4.0000		4.0000
Nickel, total	ug/L	TILE 1	03/23/2023		13.4000	**	23.8000
Selenium, total	ug/L	TILE 1	03/23/2023	ND	4.0000		16.2000
Silver, total	ug/L	TILE 1	03/23/2023	ND	4.0000		4.0000
Thallium, total	ug/L	TILE 1	03/23/2023	ND	2.0000		4.0000
Vanadium, total	ug/L	TILE 1	03/23/2023	ND	20.0000		30.7000
Zinc, total	ug/L	TILE 1	03/23/2023	ND	20.0000		53.3000
Antimony, total	ug/L	TILE 2	03/23/2023	ND	2.0000		4.2000
Arsenic, total	ug/L	TILE 2	03/23/2023	ND	4.0000		48.2840
Barium, total	ug/L	TILE 2	03/23/2023		481.0000	**	618.9496
Beryllium, total	ug/L	TILE 2	03/23/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	TILE 2	03/23/2023	ND	0.8000		3.9000
Chromium, total	ug/L	TILE 2	03/23/2023	ND	8.0000		10.4000
Cobalt, total	ug/L	TILE 2	03/23/2023		0.6000		7.2000
Copper, total	ug/L	TILE 2	03/23/2023	ND	4.0000		30.1000
Lead, total	ug/L	TILE 2	03/23/2023	ND	4.0000		4.0000
Nickel, total	ug/L	TILE 2	03/23/2023		4.3000		23.8000
Selenium, total	ug/L	TILE 2	03/23/2023	ND	4.0000		16.2000
Silver, total	ug/L	TILE 2	03/23/2023	ND	4.0000		4.0000

* - Current value failed - awaiting verification.
 ** - Current value passed - previous exceedance not verified.
 *** - Current value failed - exceedance verified.
 **** - Current value passed - awaiting one more verification.
 ***** - Insufficient background data to compute prediction limit.
 ND = Not Detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Thallium, total	ug/L	TILE 2	03/23/2023	ND	2.0000		4.0000
Vanadium, total	ug/L	TILE 2	03/23/2023	ND	20.0000		30.7000
Zinc, total	ug/L	TILE 2	03/23/2023	ND	20.0000		53.3000

- * - Current value failed - awaiting verification.
 - ** - Current value passed - previous exceedance not verified.
 - *** - Current value failed - exceedance verified.
 - **** - Current value passed - awaiting one more verification.
 - ***** - Insufficient background data to compute prediction limit.
- ND = Not Detected, Result = detection limit.

Table 3

Detection Frequencies in Upgradient and Downgradient Wells

Constituent	Upgradient			Downgradient		
	Detect	N	Proportion	Detect	N	Proportion
Antimony, total	3	37	0.081	1	68	0.015
Arsenic, total	20	37	0.541	21	69	0.304
Barium, total	37	37	1.000	70	70	1.000
Beryllium, total	0	37	0.000	1	68	0.015
Cadmium, total	4	37	0.108	3	68	0.044
Chromium, total	1	37	0.027	1	68	0.015
Cobalt, total	18	37	0.486	43	69	0.623
Copper, total	6	37	0.162	4	68	0.059
Lead, total	0	37	0.000	3	68	0.044
Nickel, total	16	37	0.432	49	69	0.710
Selenium, total	4	37	0.108	2	68	0.029
Silver, total	0	37	0.000	0	68	0.000
Thallium, total	0	37	0.000	0	68	0.000
Vanadium, total	1	37	0.027	1	68	0.015
Zinc, total	14	37	0.378	14	68	0.206

N = Total number of measurements in all wells.
 Detect = Total number of detections in all wells.
 Proportion = Detect/N.

Table 4

Shapiro-Wilk Multiple Group Test of Normality

Constituent	Detect	N	Detect Freq	G raw	G log	G cbrt	G sqrt	G sqr	G cub	Crit Value	Dist Form	Model Type
Antimony, total	3	37	0.081	0.150	0.209					2.326	normal	nonpar
Arsenic, total	20	37	0.541	1.187	0.109					2.326	normal	normal
Barium, total	37	37	1.000	0.223	0.589					2.326	normal	normal
Beryllium, total	0	37	0.000									nonpar
Cadmium, total	4	37	0.108	2.342	1.823					2.326	lognor	nonpar
Chromium, total	1	37	0.027									nonpar
Cobalt, total	18	37	0.486	4.138	0.930					2.326	lognor	nonpar
Copper, total	6	37	0.162	0.138	0.314					2.326	normal	nonpar
Lead, total	0	37	0.000									nonpar
Nickel, total	16	37	0.432	2.740	0.818					2.326	lognor	nonpar
Selenium, total	4	37	0.108	0.296	1.380					2.326	normal	nonpar
Silver, total	0	37	0.000									nonpar
Thallium, total	0	37	0.000									nonpar
Vanadium, total	1	37	0.027									nonpar
Zinc, total	14	37	0.378	1.812	0.104					2.326	normal	nonpar

* - Distribution override for that constituent.
 Fit to distribution is confirmed if G <= critical value.
 Model type may not match distributional form when detection frequency < 50%.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type	Conf
Antimony, total	ug/L	3	37					4.2000	nonpar	0.99
Arsenic, total	ug/L	20	37	12.3054	14.5838	0.0100	2.4670	48.2840	normal	
Barium, total	ug/L	37	37	393.3243	91.4564	0.0100	2.4670	618.9496	normal	
Beryllium, total	ug/L	0	37					4.0000	nonpar	*** 0.99
Cadmium, total	ug/L	4	37					3.9000	nonpar	0.99
Chromium, total	ug/L	1	37					10.4000	nonpar	0.99
Cobalt, total	ug/L	18	37					7.2000	nonpar	0.99
Copper, total	ug/L	6	37					30.1000	nonpar	0.99
Lead, total	ug/L	0	37					4.0000	nonpar	*** 0.99
Nickel, total	ug/L	16	37					23.8000	nonpar	0.99
Selenium, total	ug/L	4	37					16.2000	nonpar	0.99
Silver, total	ug/L	0	37					4.0000	nonpar	*** 0.99
Thallium, total	ug/L	0	37					4.0000	nonpar	*** 0.99
Vanadium, total	ug/L	1	37					30.7000	nonpar	0.99
Zinc, total	ug/L	14	37					53.3000	nonpar	0.99

Conf = confidence level for passing initial test or one verification resample at all downgradient wells for a single constituent (nonparametric test only).

* - Insufficient Data.

** - Calculated limit raised to Manual Reporting Limit.

*** - Nonparametric limit based on ND value.

For transformed data, mean and SD in transformed units and prediction limit in original units.

All sample sizes and statistics are based on outlier free data.

For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result	Pred. Limit
Arsenic, total	ug/L	MW-15R	06/05/2019		6.8000	48.2840
Arsenic, total	ug/L	MW-15R	09/16/2019		28.2000	48.2840
Arsenic, total	ug/L	MW-15R	03/24/2020		8.9000	48.2840
Arsenic, total	ug/L	MW-15R	09/02/2020		30.0000	48.2840
Arsenic, total	ug/L	MW-15R	03/08/2021		62.1000 *	48.2840
Arsenic, total	ug/L	MW-15R	09/14/2021		54.7000 *	48.2840
Arsenic, total	ug/L	MW-15R	03/28/2022		71.2000 *	48.2840
Arsenic, total	ug/L	MW-15R	09/13/2022		51.1000 *	48.2840
Arsenic, total	ug/L	MW-15R	12/01/2022		46.2000	48.2840
Arsenic, total	ug/L	MW-15R	03/23/2023		51.1000 *	48.2840
Barium, total	ug/L	MW-15R	06/05/2019		412.0000	618.9496
Barium, total	ug/L	MW-15R	09/16/2019		565.0000	618.9496
Barium, total	ug/L	MW-15R	12/02/2019		681.0000 *	618.9496
Barium, total	ug/L	MW-15R	03/24/2020		579.0000	618.9496
Barium, total	ug/L	MW-15R	09/02/2020		626.0000 *	618.9496
Barium, total	ug/L	MW-15R	03/08/2021		715.0000 *	618.9496
Barium, total	ug/L	MW-15R	09/14/2021		619.0000 *	618.9496
Barium, total	ug/L	MW-15R	03/28/2022		1320.0000 *	618.9496
Barium, total	ug/L	MW-15R	09/13/2022		727.0000 *	618.9496
Barium, total	ug/L	MW-15R	03/23/2023		876.0000 *	618.9496
Nickel, total	ug/L	MW-6A	09/20/2013		24.7000 *	23.8000
Nickel, total	ug/L	MW-6A	03/28/2014		25.1000 *	23.8000
Nickel, total	ug/L	MW-6A	09/23/2014		13.7000	23.8000
Nickel, total	ug/L	MW-6A	03/18/2015		9.4000	23.8000
Nickel, total	ug/L	MW-6A	08/27/2015		17.3000	23.8000
Nickel, total	ug/L	MW-6A	03/03/2016		4.1000	23.8000
Nickel, total	ug/L	MW-6A	09/21/2016		5.5000	23.8000
Nickel, total	ug/L	MW-6A	03/09/2017	ND	4.0000	23.8000
Nickel, total	ug/L	MW-6A	09/14/2017		13.2000	23.8000
Nickel, total	ug/L	MW-6A	03/12/2018		5.2000	23.8000
Nickel, total	ug/L	MW-6A	09/10/2018		22.8000	23.8000
Nickel, total	ug/L	MW-6A	11/14/2018		35.2000 *	23.8000
Nickel, total	ug/L	MW-6A	03/26/2019		4.6000	23.8000
Nickel, total	ug/L	MW-6A	09/16/2019		11.8000	23.8000
Nickel, total	ug/L	MW-6A	03/24/2020		5.5000	23.8000
Nickel, total	ug/L	MW-6A	09/02/2020		5.1000	23.8000
Nickel, total	ug/L	MW-6A	03/08/2021		28.1000 *	23.8000
Nickel, total	ug/L	MW-6A	09/14/2021		5.7000	23.8000
Nickel, total	ug/L	MW-6A	03/28/2022		28.3000 *	23.8000
Nickel, total	ug/L	MW-6A	09/13/2022		25.9000 *	23.8000
Nickel, total	ug/L	MW-6A	03/23/2023		18.0000	23.8000
Barium, total	ug/L	TILE 1	06/05/2019		1010.0000 *	618.9496
Barium, total	ug/L	TILE 1	07/17/2019		1580.0000 *	618.9496
Barium, total	ug/L	TILE 1	09/16/2019		1350.0000 *	618.9496
Barium, total	ug/L	TILE 1	03/24/2020		754.0000 *	618.9496
Barium, total	ug/L	TILE 1	09/02/2020		2210.0000 *	618.9496
Barium, total	ug/L	TILE 1	03/08/2021		1060.0000 *	618.9496
Barium, total	ug/L	TILE 1	09/14/2021		1940.0000 *	618.9496
Barium, total	ug/L	TILE 1	03/28/2022		774.0000 *	618.9496
Barium, total	ug/L	TILE 1	09/13/2022		2660.0000 *	618.9496
Barium, total	ug/L	TILE 1	03/23/2023		953.0000 *	618.9496
Cobalt, total	ug/L	TILE 1	06/05/2019		1.8000	7.2000
Cobalt, total	ug/L	TILE 1	09/16/2019		3.6000	7.2000
Cobalt, total	ug/L	TILE 1	03/24/2020		1.8000	7.2000
Cobalt, total	ug/L	TILE 1	09/02/2020		3.1000	7.2000
Cobalt, total	ug/L	TILE 1	03/08/2021		2.9000	7.2000
Cobalt, total	ug/L	TILE 1	09/14/2021		2.8000	7.2000
Cobalt, total	ug/L	TILE 1	03/28/2022		2.2000	7.2000
Cobalt, total	ug/L	TILE 1	09/13/2022		7.6000 *	7.2000
Cobalt, total	ug/L	TILE 1	03/23/2023		2.4000	7.2000
Nickel, total	ug/L	TILE 1	06/05/2019		13.4000	23.8000
Nickel, total	ug/L	TILE 1	09/16/2019		21.2000	23.8000
Nickel, total	ug/L	TILE 1	03/24/2020		9.8000	23.8000
Nickel, total	ug/L	TILE 1	09/02/2020		35.8000 *	23.8000
Nickel, total	ug/L	TILE 1	03/08/2021		20.8000	23.8000
Nickel, total	ug/L	TILE 1	09/14/2021		37.1000 *	23.8000
Nickel, total	ug/L	TILE 1	03/28/2022		14.0000	23.8000
Nickel, total	ug/L	TILE 1	09/13/2022		46.1000 *	23.8000
Nickel, total	ug/L	TILE 1	03/23/2023		13.4000	23.8000
Barium, total	ug/L	TILE 2	06/05/2019		504.0000	618.9496
Barium, total	ug/L	TILE 2	09/16/2019		618.0000	618.9496

* - Significantly increased over background.
 ** - Detect at limit for 100% NDs in background (NPPL only).
 *** - Manual exclusion.
 ND = Not Detected, Result = detection limit.

Table 8

**Historical Downgradient Data for Constituent-Well Combinations
that Failed the Current Statistical Evaluation or
are in Verification Resampling Mode**

Constituent	Units	Well	Date		Result		Pred. Limit
Barium, total	ug/L	TILE 2	03/24/2020		459.0000		618.9496
Barium, total	ug/L	TILE 2	09/02/2020		1060.0000	*	618.9496
Barium, total	ug/L	TILE 2	03/08/2021		500.0000		618.9496
Barium, total	ug/L	TILE 2	09/14/2021		568.0000		618.9496
Barium, total	ug/L	TILE 2	03/28/2022		504.0000		618.9496
Barium, total	ug/L	TILE 2	09/13/2022		860.0000	*	618.9496
Barium, total	ug/L	TILE 2	03/23/2023		481.0000		618.9496

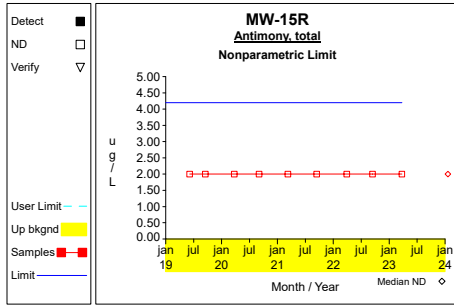
* - Significantly increased over background.

** - Detect at limit for 100% NDs in background (NPPL only).

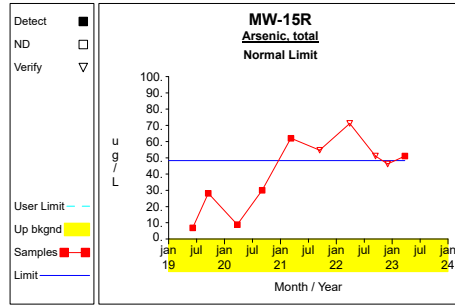
*** - Manual exclusion.

ND = Not Detected, Result = detection limit.

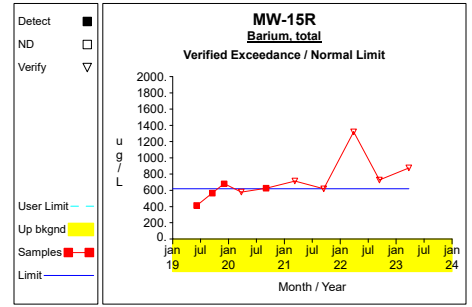
Up vs. Down Prediction Limits



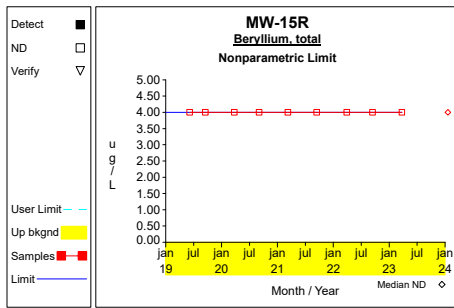
Graph 1



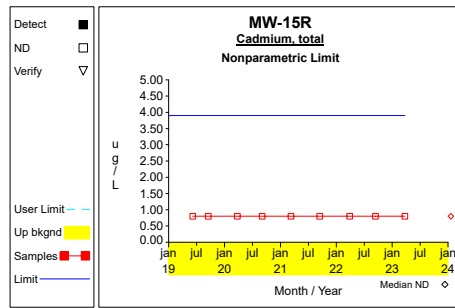
Graph 2



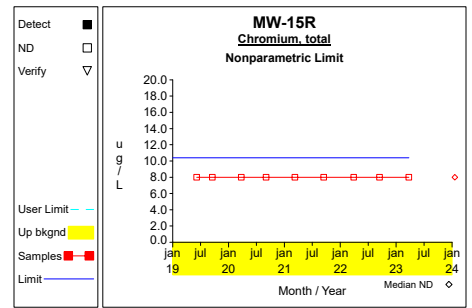
Graph 3



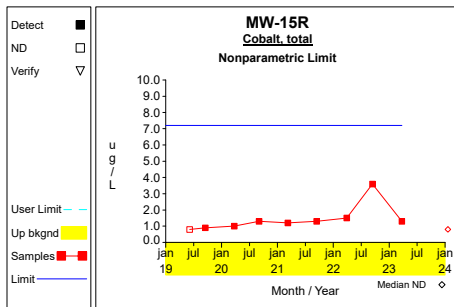
Graph 4



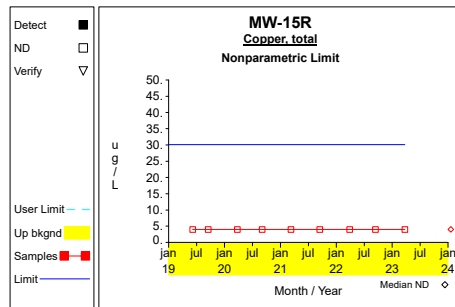
Graph 5



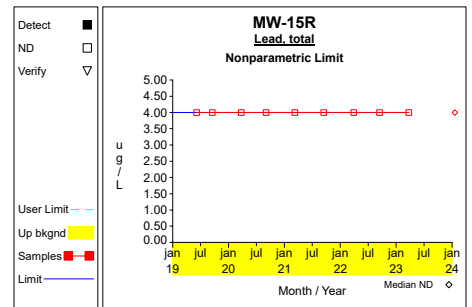
Graph 6



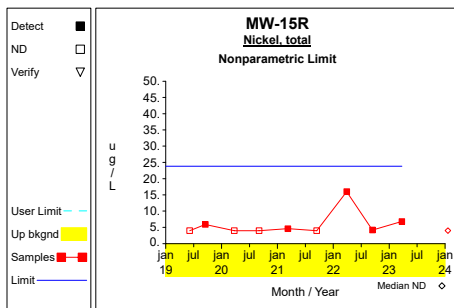
Graph 7



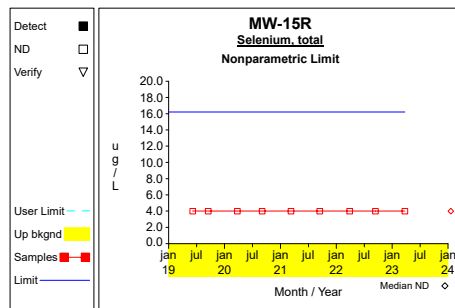
Graph 8



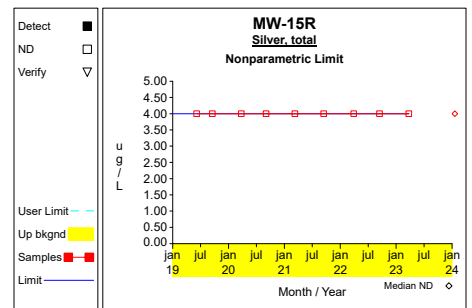
Graph 9



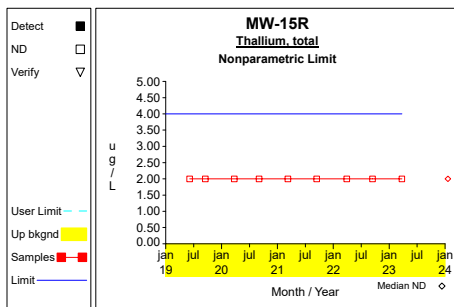
Graph 10



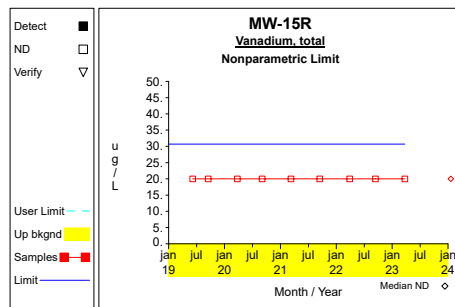
Graph 11



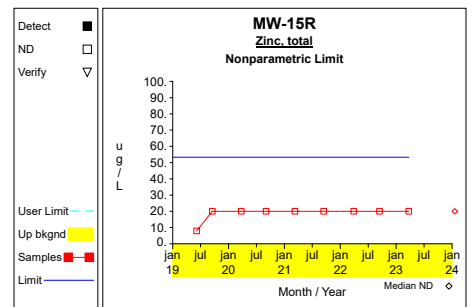
Graph 12



Graph 13

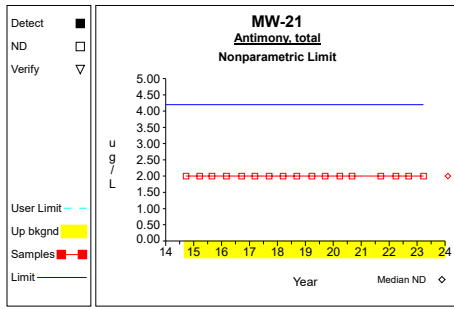


Graph 14

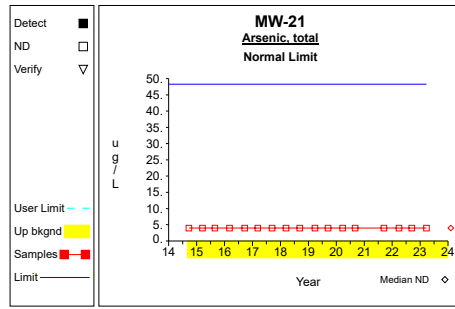


Graph 15

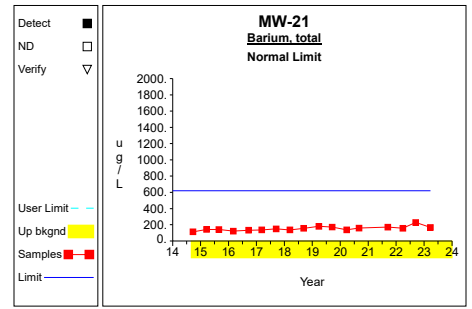
Up vs. Down Prediction Limits



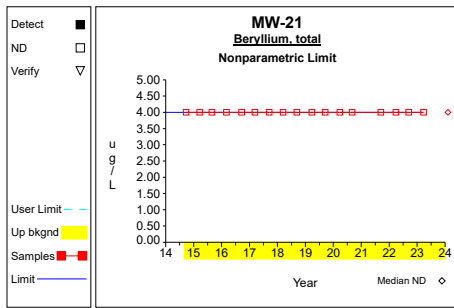
Graph 16



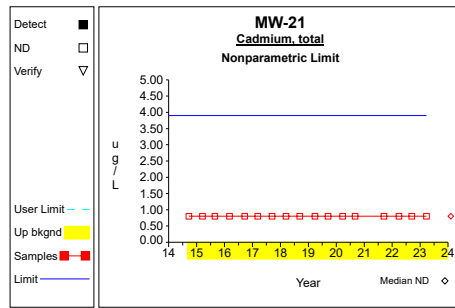
Graph 17



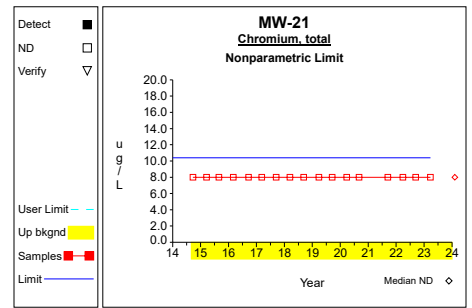
Graph 18



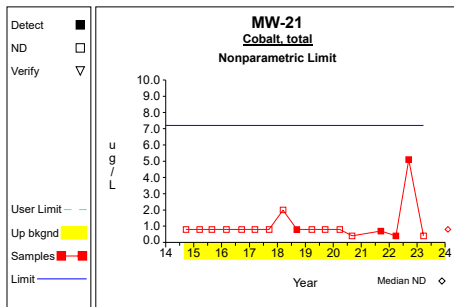
Graph 19



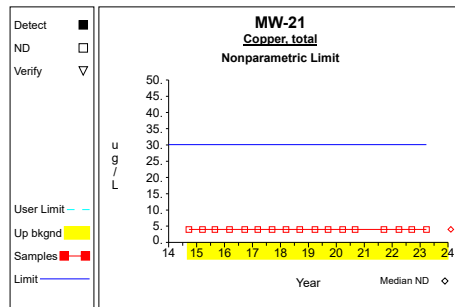
Graph 20



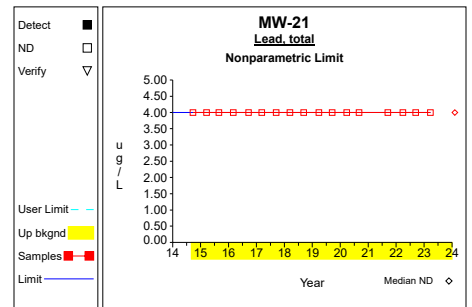
Graph 21



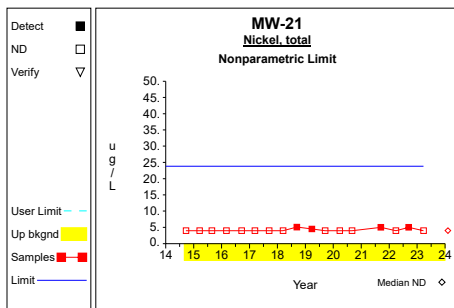
Graph 22



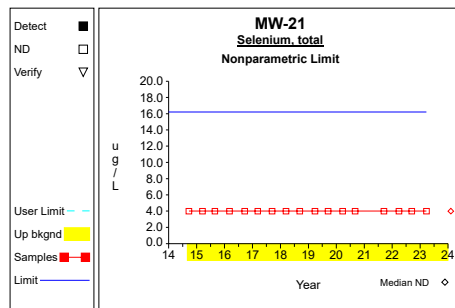
Graph 23



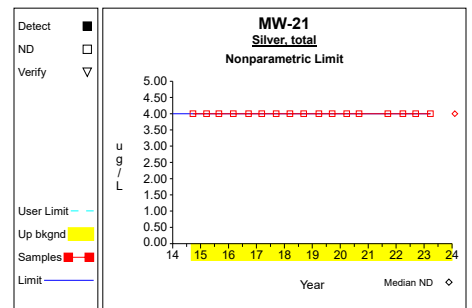
Graph 24



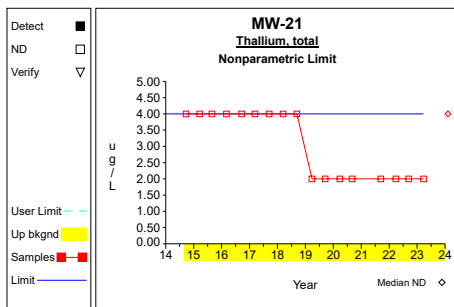
Graph 25



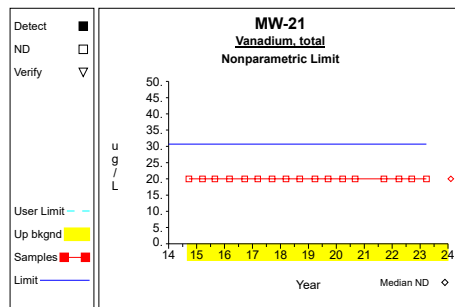
Graph 26



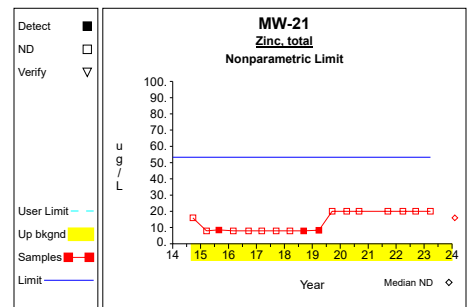
Graph 27



Graph 28

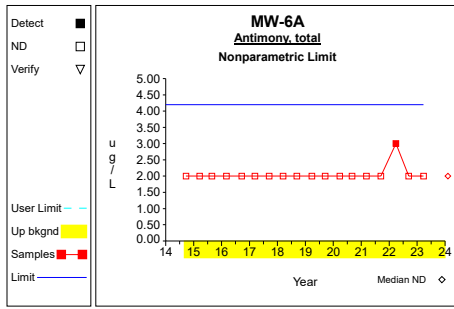


Graph 29

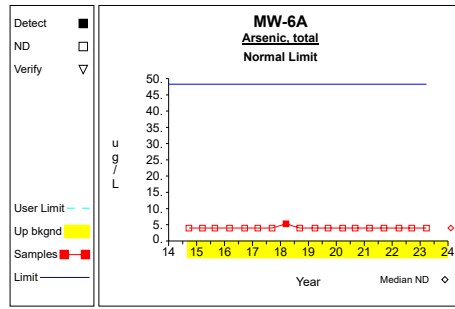


Graph 30

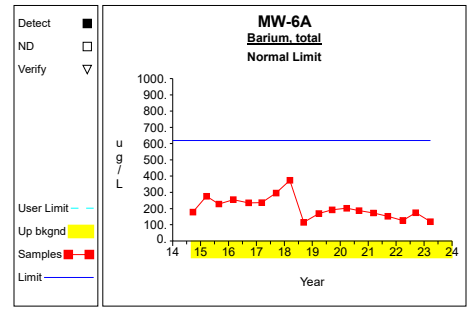
Up vs. Down Prediction Limits



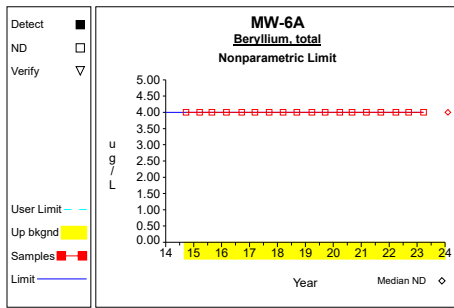
Graph 31



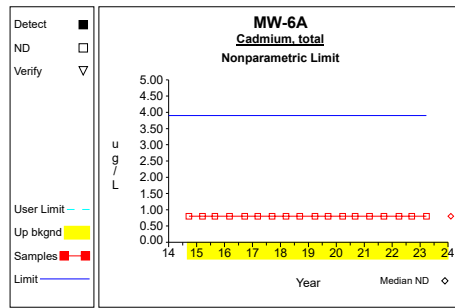
Graph 32



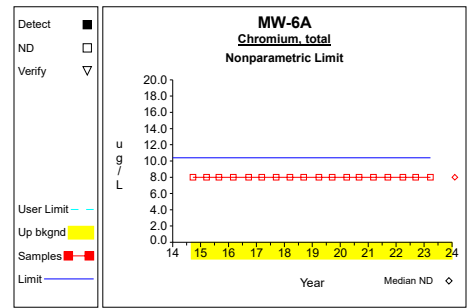
Graph 33



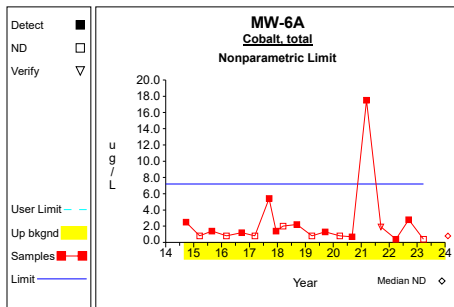
Graph 34



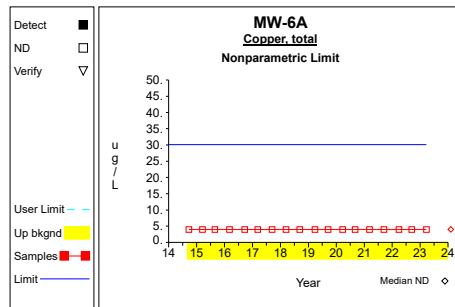
Graph 35



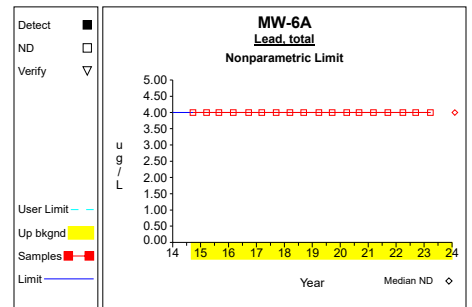
Graph 36



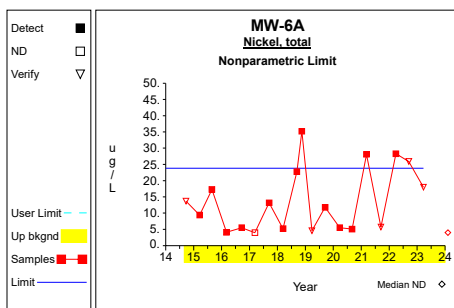
Graph 37



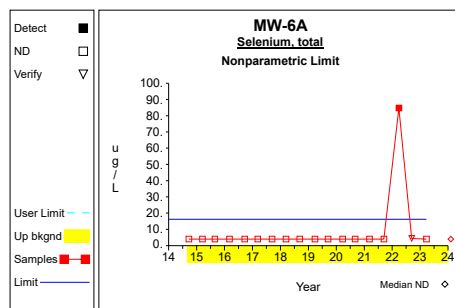
Graph 38



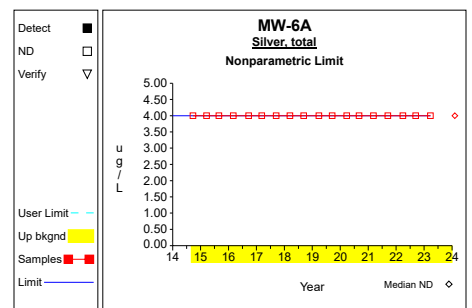
Graph 39



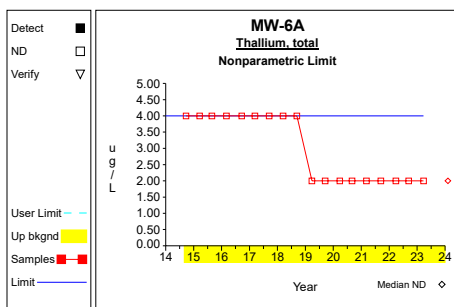
Graph 40



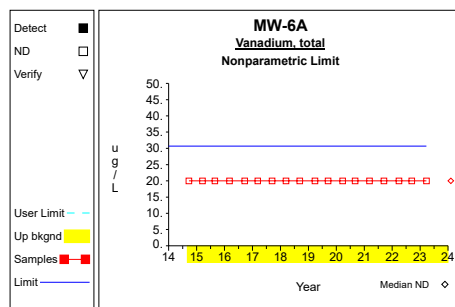
Graph 41



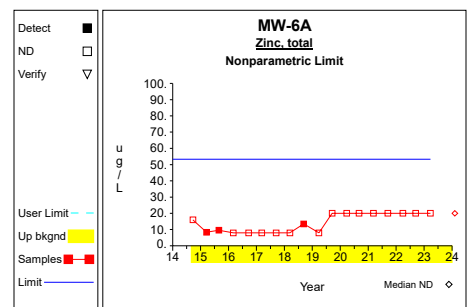
Graph 42



Graph 43

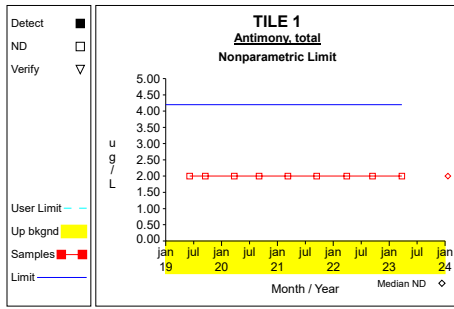


Graph 44

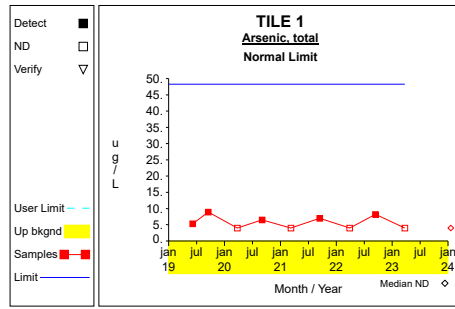


Graph 45

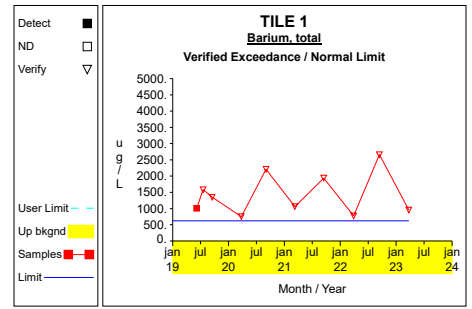
Up vs. Down Prediction Limits



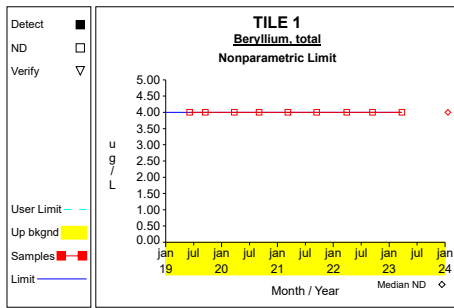
Graph 46



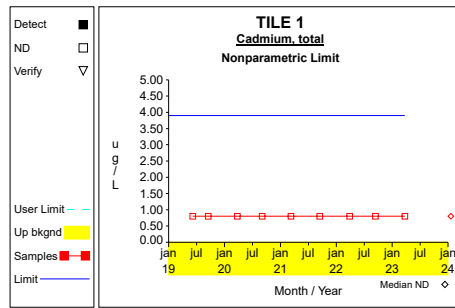
Graph 47



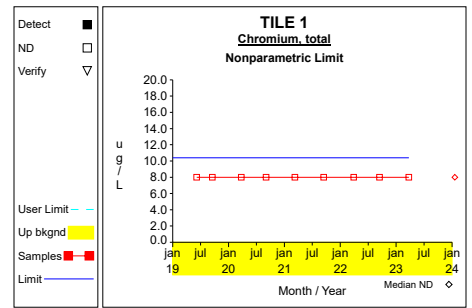
Graph 48



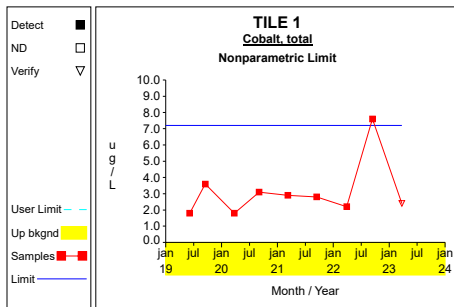
Graph 49



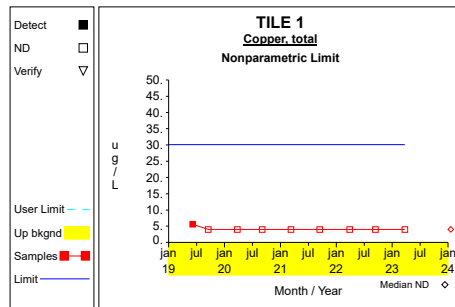
Graph 50



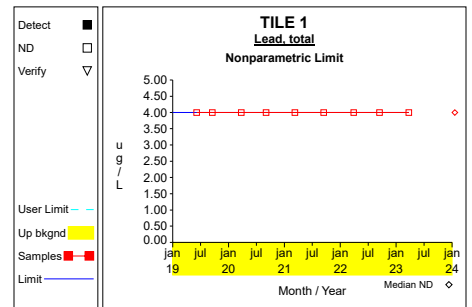
Graph 51



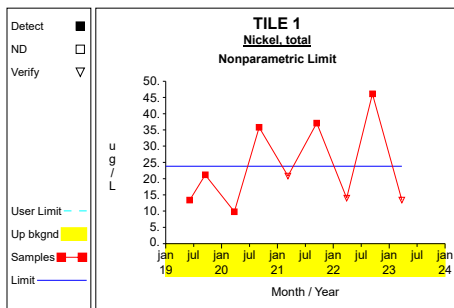
Graph 52



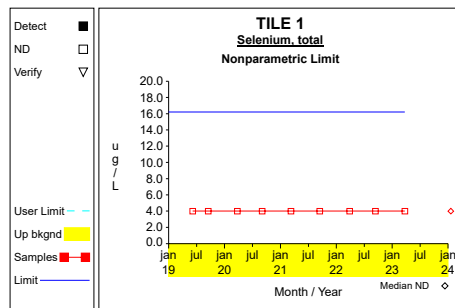
Graph 53



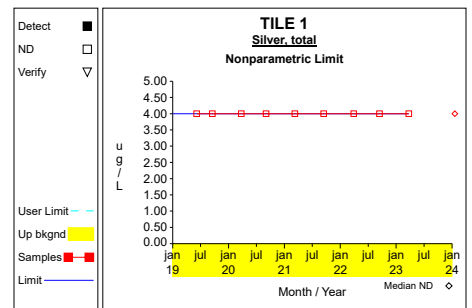
Graph 54



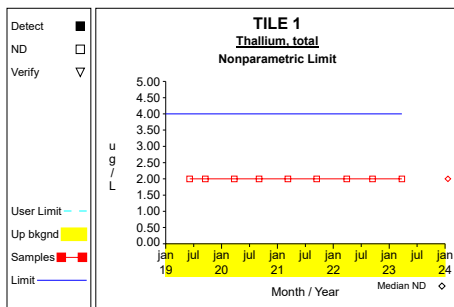
Graph 55



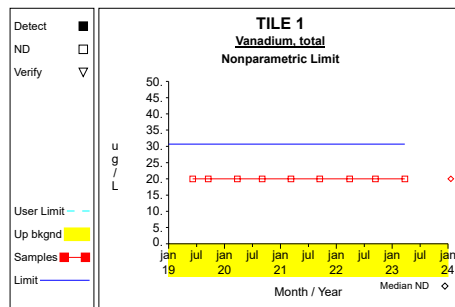
Graph 56



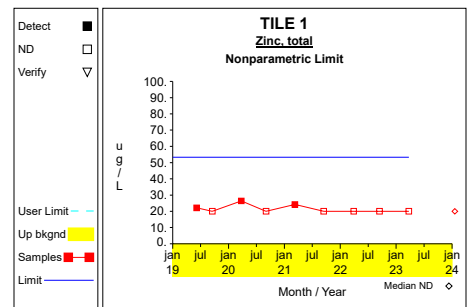
Graph 57



Graph 58

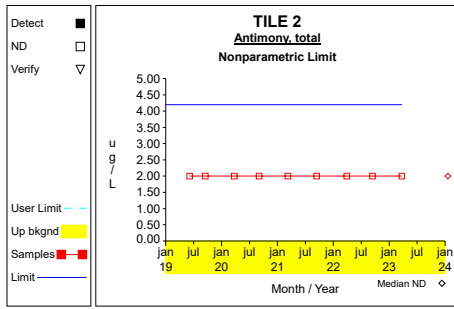


Graph 59

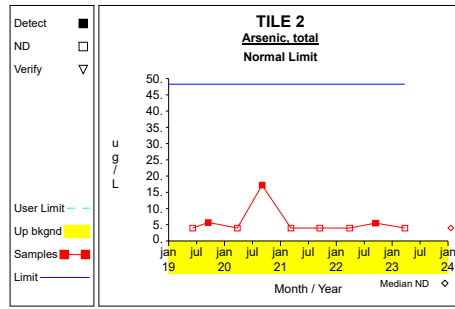


Graph 60

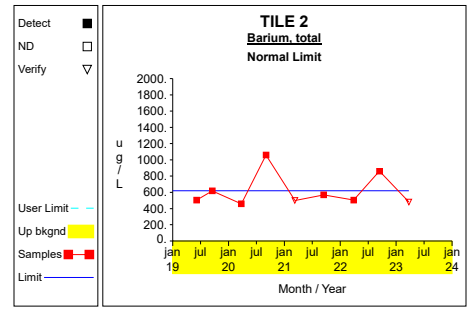
Up vs. Down Prediction Limits



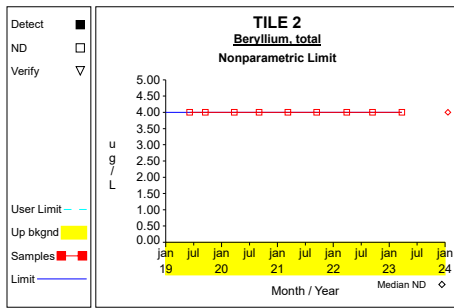
Graph 61



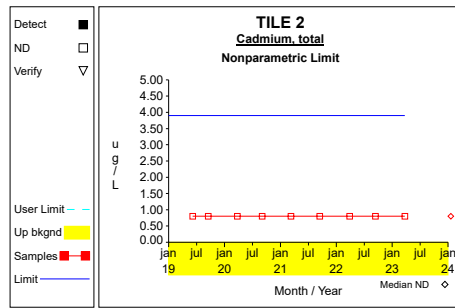
Graph 62



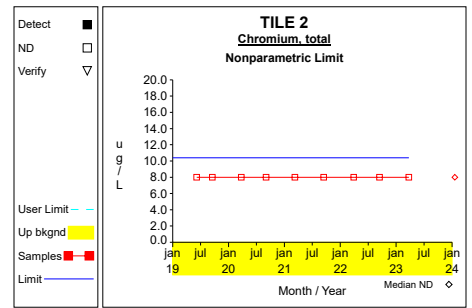
Graph 63



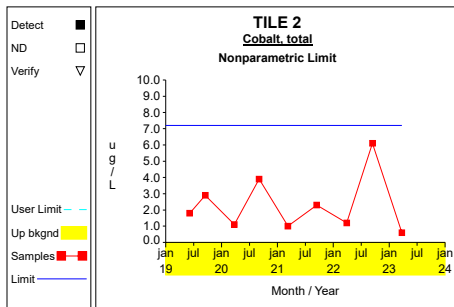
Graph 64



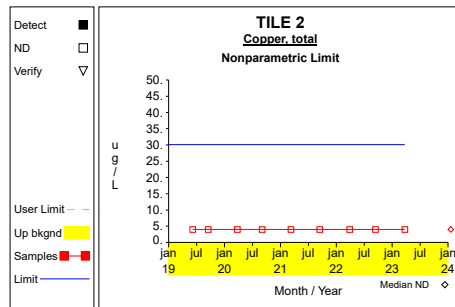
Graph 65



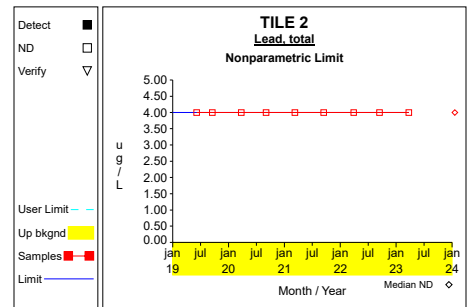
Graph 66



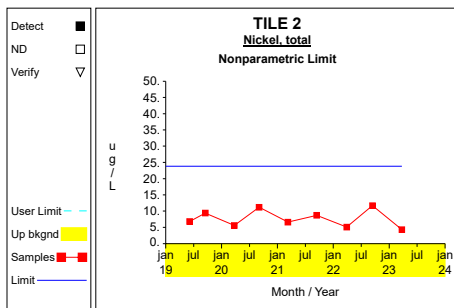
Graph 67



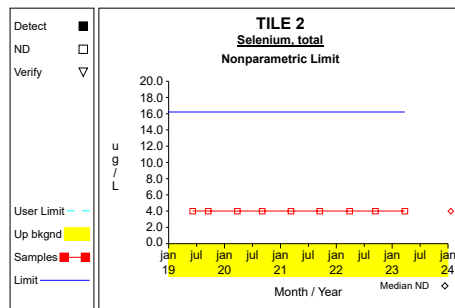
Graph 68



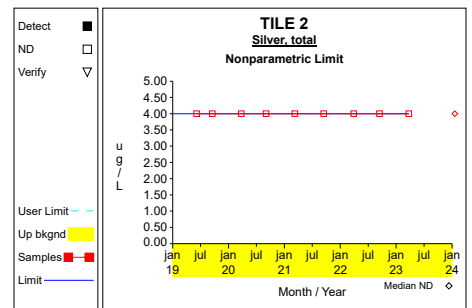
Graph 69



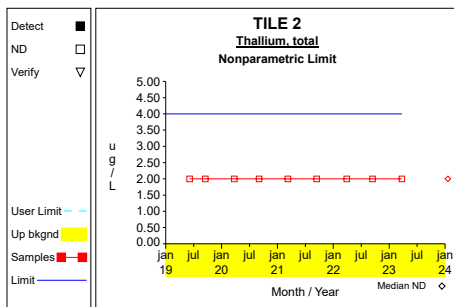
Graph 70



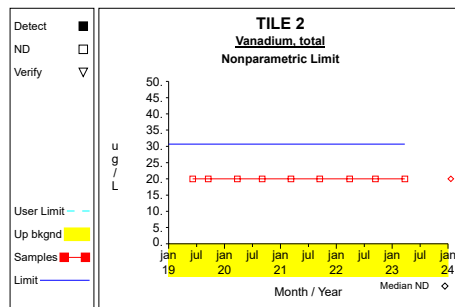
Graph 71



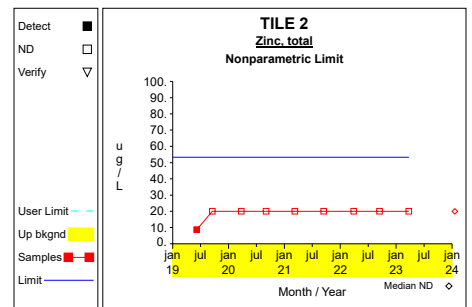
Graph 72



Graph 73

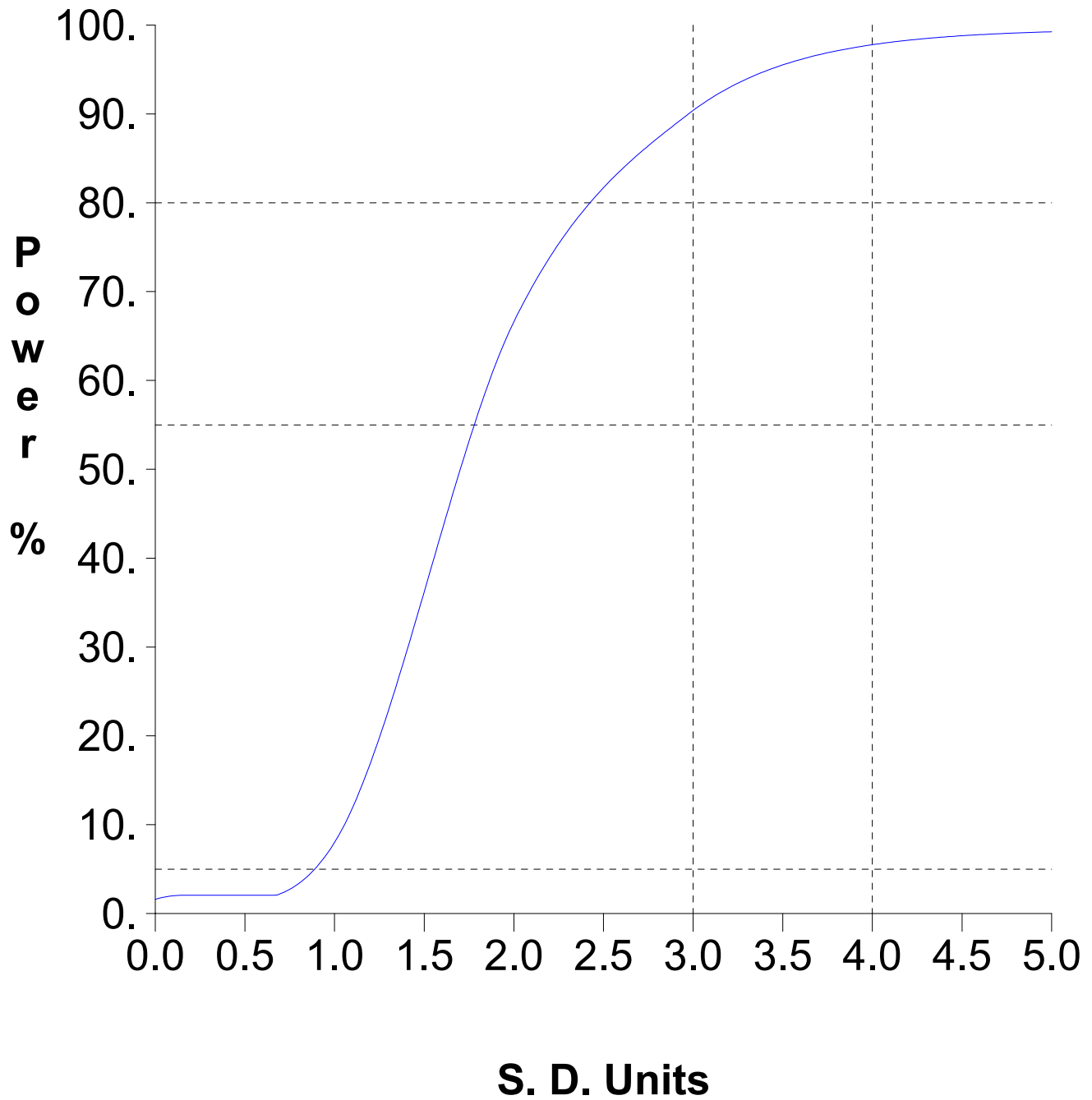


Graph 74



Graph 75

False Positive and False Negative Rates for Current Upgradient vs. Downgradient Monitoring Program



Attachment C

Assessment Statistics for Verified Trace Metals
Shallow Ground Water

Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Arsenic, total	ug/L	MW-15R	4	54.900	11.109	1.176	41.832	67.968	10.000		**
Barium, total	ug/L	MW-15R	4	885.500	308.234	1.176	522.928	1248.072	2000.000	inc	
Cobalt, total	ug/L	MW-15R	4	1.925	1.121	1.176	0.607	3.243	2.100		
Nickel, total	ug/L	MW-15R	4	7.250	6.154	1.176	0.011	14.489	100.000		
Selenium, total	ug/L	MW-15R	4	2.000	0.000	1.176	2.000	2.000	50.000		
Arsenic, total	ug/L	MW-6A	4	2.000	0.000	1.176	2.000	2.000	10.000		
Barium, total	ug/L	MW-6A	4	143.000	24.993	1.176	113.601	172.399	2000.000	dec	
Cobalt, total	ug/L	MW-6A	4	1.375	1.184	1.176	0.000	2.768	2.100		
Nickel, total	ug/L	MW-6A	4	19.475	10.183	1.176	7.497	31.453	100.000		
Selenium, total	ug/L	MW-6A	4	23.275	40.966	1.176	0.000	71.462	50.000		
Arsenic, total	ug/L	TILE 1	4	4.800	3.270	1.176	0.953	8.647	10.000		
Barium, total	ug/L	TILE 1	4	1581.750	882.941	1.176	543.157	2620.343	2000.000		
Cobalt, total	ug/L	TILE 1	4	3.750	2.579	1.176	0.717	6.783	2.100		
Nickel, total	ug/L	TILE 1	4	27.650	16.524	1.176	8.213	47.087	100.000		
Selenium, total	ug/L	TILE 1	4	2.000	0.000	1.176	2.000	2.000	50.000		
Arsenic, total	ug/L	TILE 2	4	2.875	1.750	1.176	0.816	4.934	10.000		
Barium, total	ug/L	TILE 2	4	603.250	175.080	1.176	397.306	809.194	2000.000		
Cobalt, total	ug/L	TILE 2	4	2.550	2.469	1.176	0.000	5.454	2.100		
Nickel, total	ug/L	TILE 2	4	7.450	3.419	1.176	3.428	11.472	100.000		
Selenium, total	ug/L	TILE 2	4	2.000	0.000	1.176	2.000	2.000	50.000		

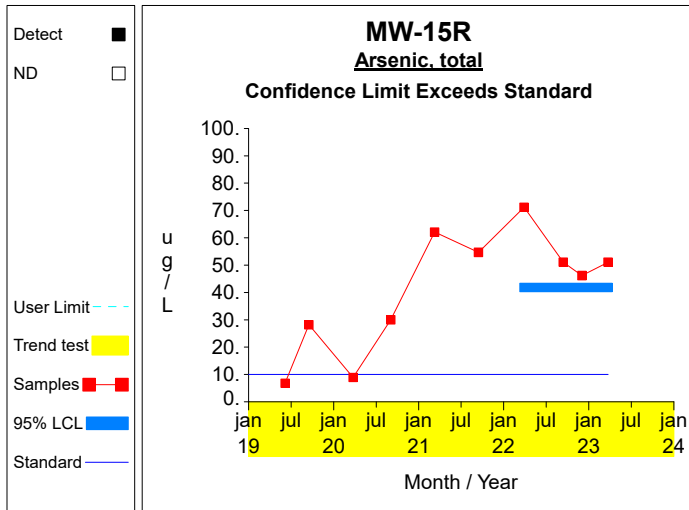
* - Insufficient Data

** - Significant Exceedance

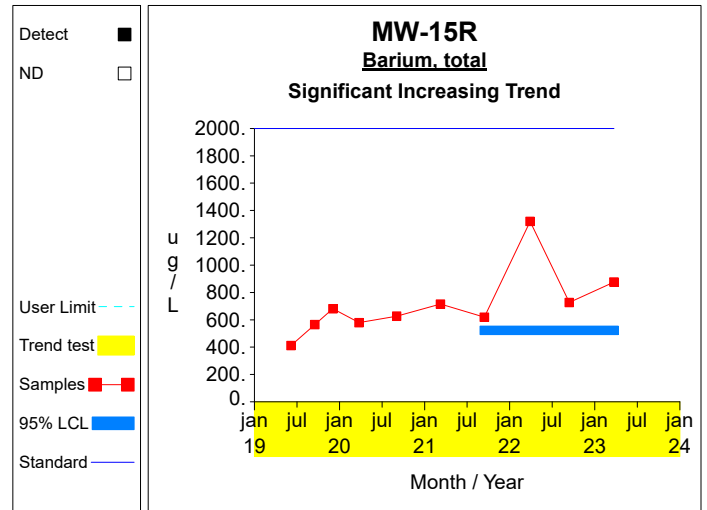
LCL = Lower Confidence Limit

UCL = Upper Confidence Limit

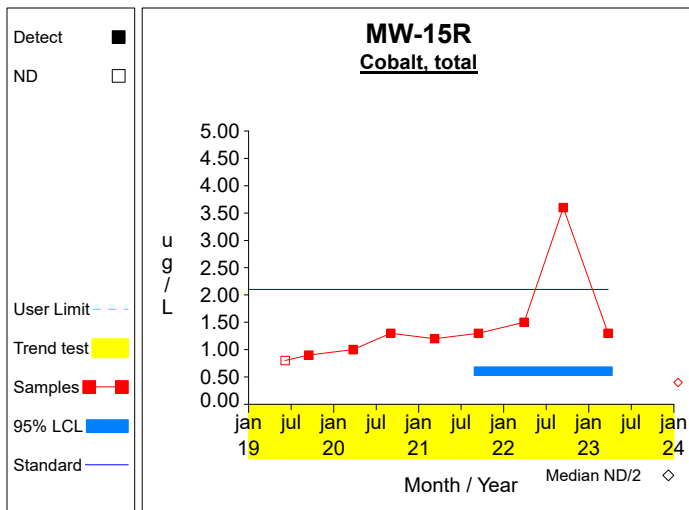
Confidence Limits (Assessment)



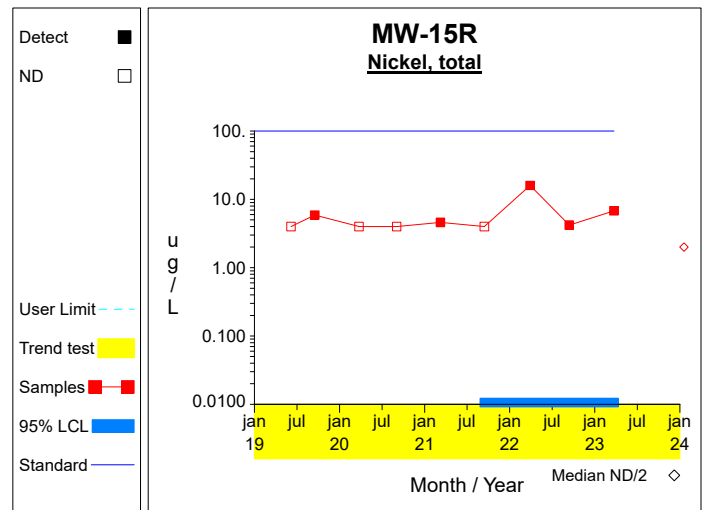
Graph 1



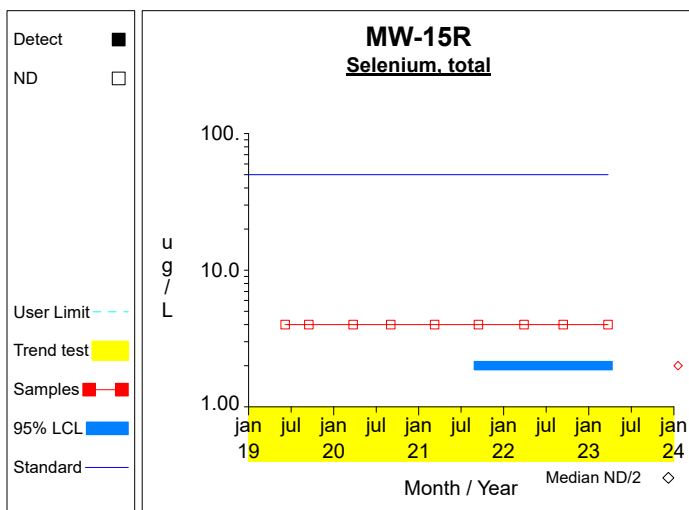
Graph 2



Graph 3

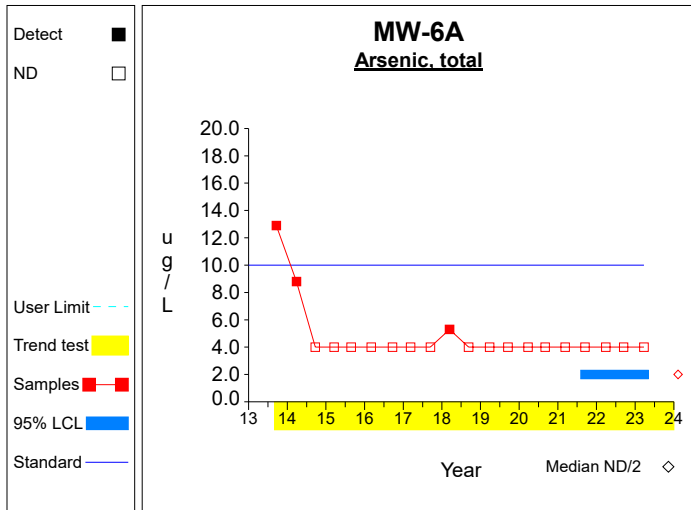


Graph 4

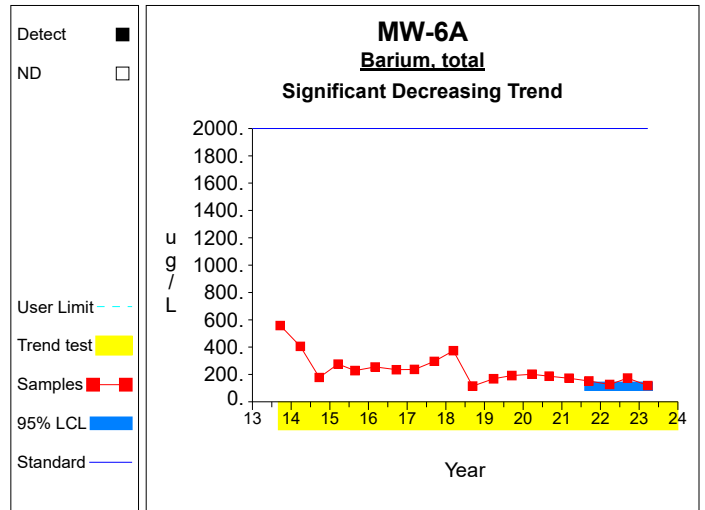


Graph 5

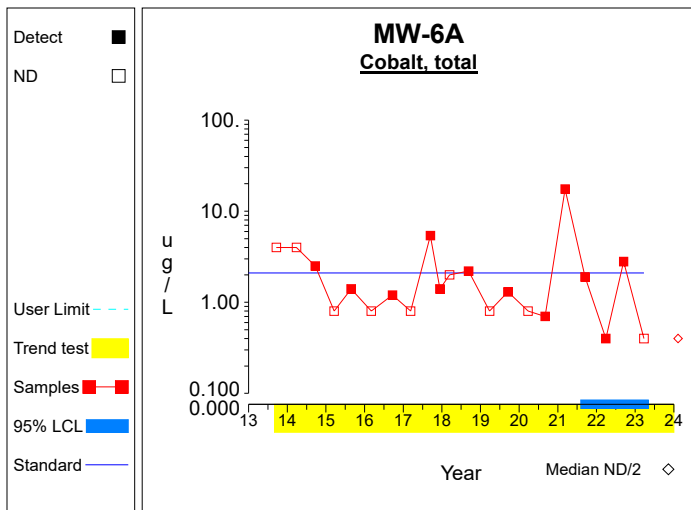
Confidence Limits (Assessment)



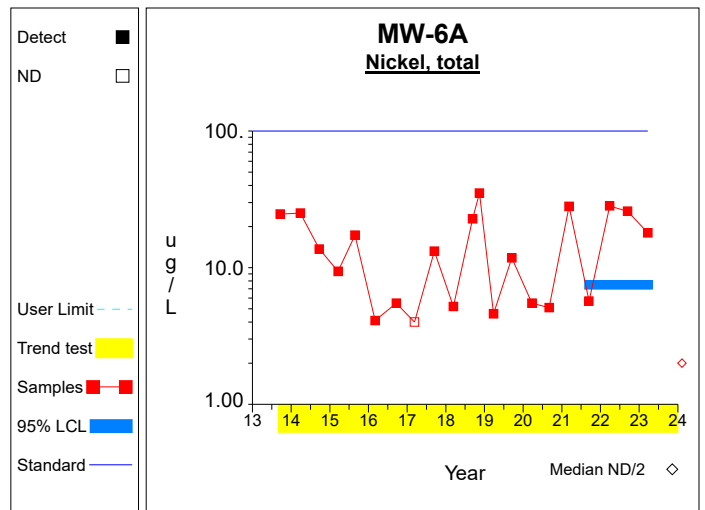
Graph 6



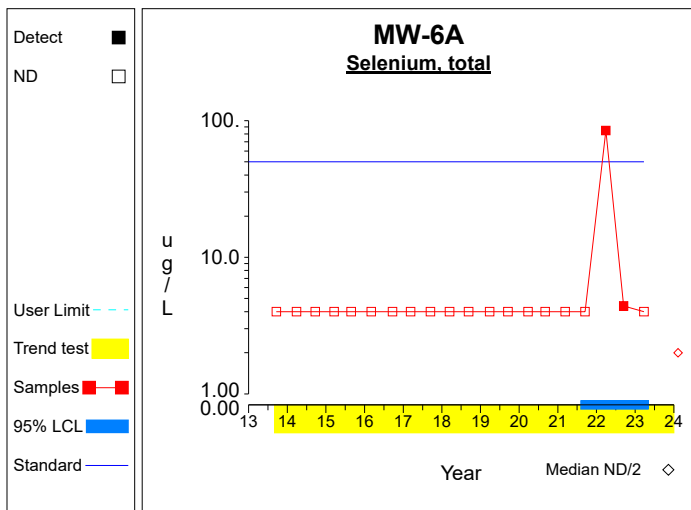
Graph 7



Graph 8

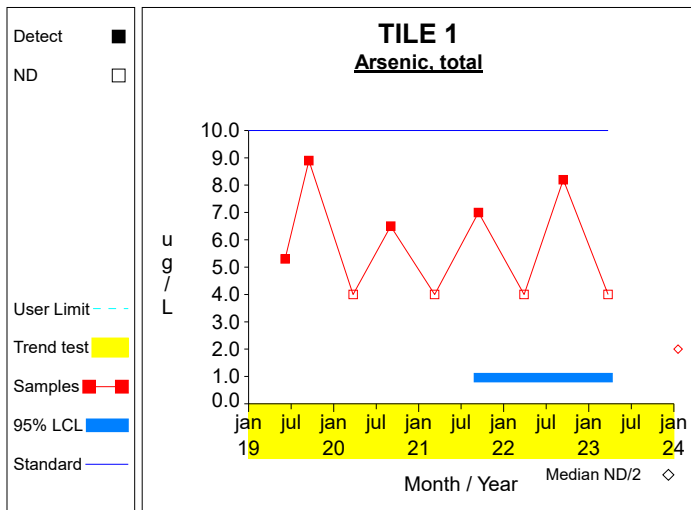


Graph 9

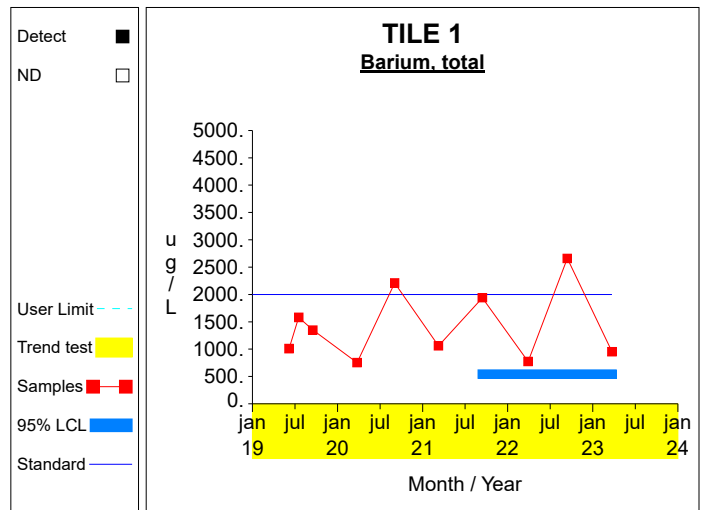


Graph 10

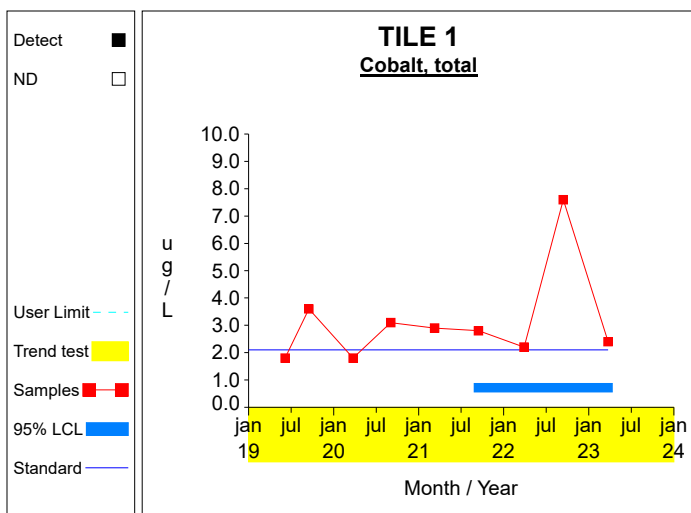
Confidence Limits (Assessment)



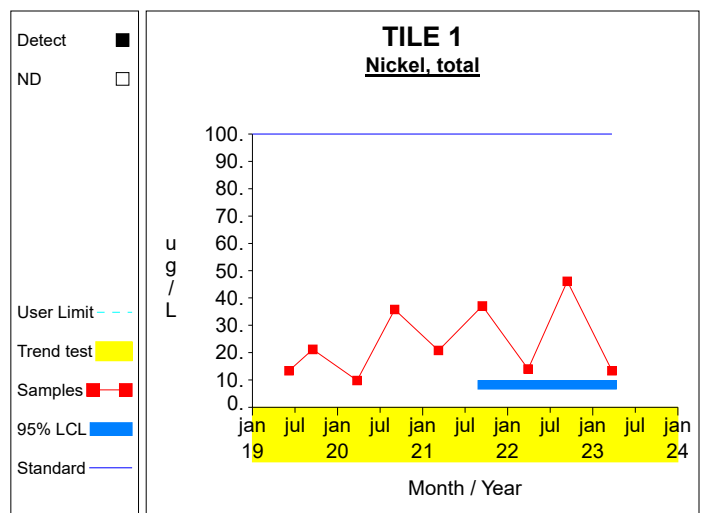
Graph 11



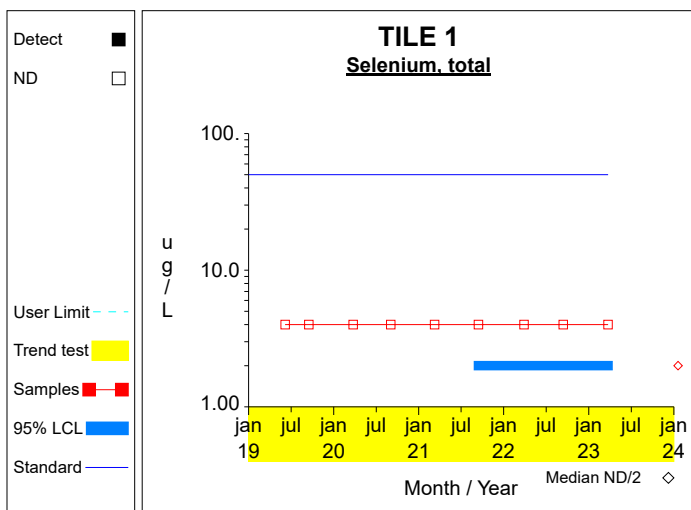
Graph 12



Graph 13

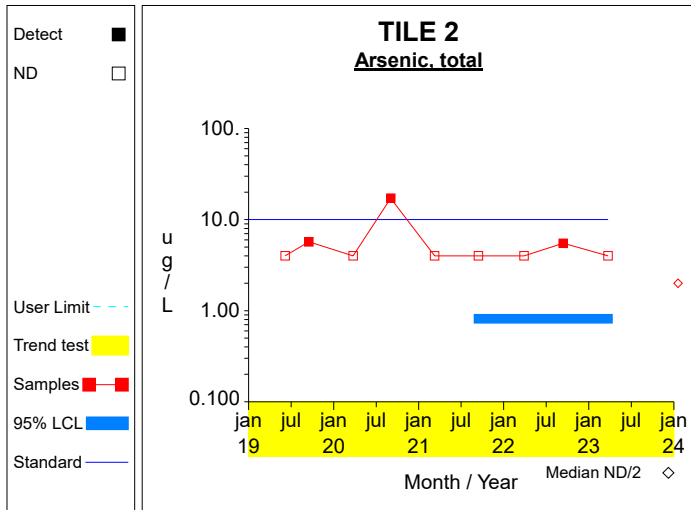


Graph 14

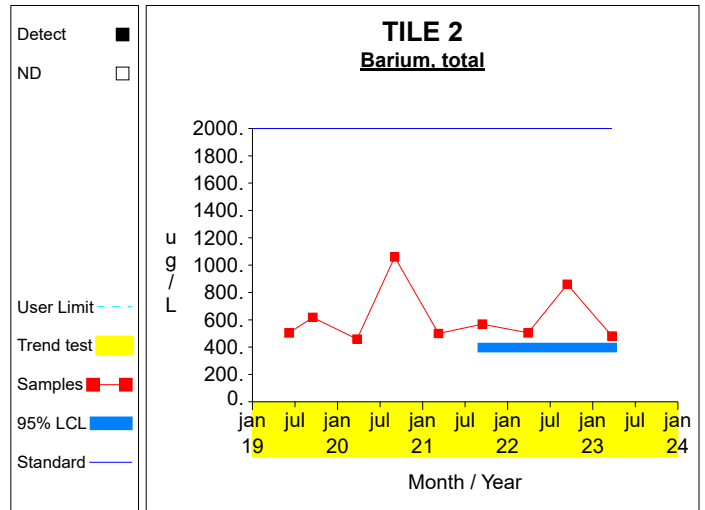


Graph 15

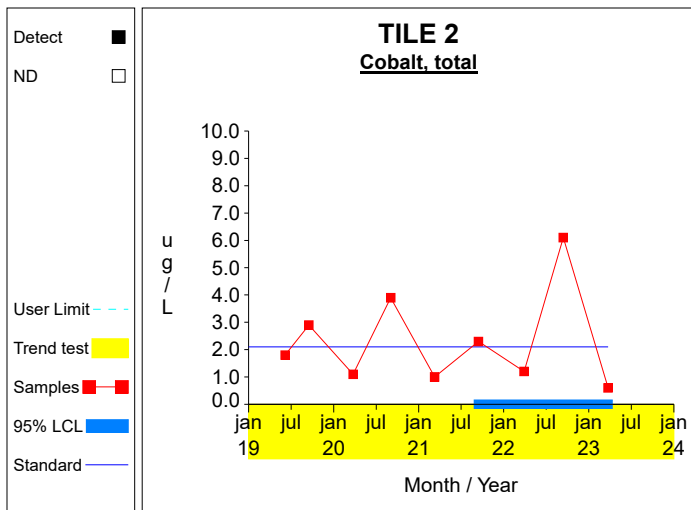
Confidence Limits (Assessment)



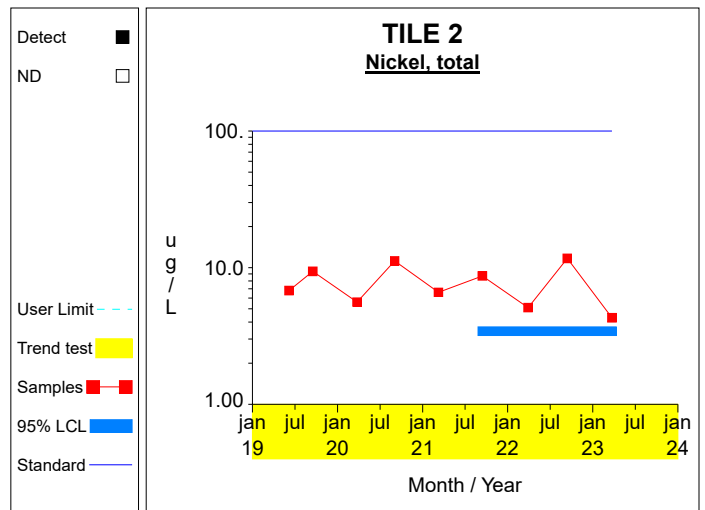
Graph 16



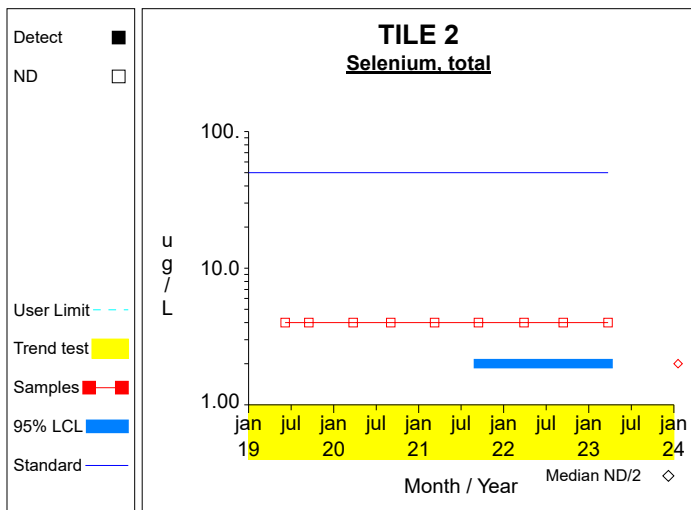
Graph 17



Graph 18



Graph 19



Graph 20

Attachment D

Summary Tables and Graphs for the Interwell Comparisons
Bedrock Ground Water

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted
Antimony, total	ug/L	MW-11C	09/23/2014		2.0000	
Antimony, total	ug/L	MW-11C	09/21/2016	ND	2.0000	
Antimony, total	ug/L	MW-11C	03/09/2017	ND	2.0000	
Antimony, total	ug/L	MW-11C	09/14/2017	ND	2.0000	
Antimony, total	ug/L	MW-11C	03/12/2018	ND	2.0000	
Antimony, total	ug/L	MW-11C	09/10/2018	ND	2.0000	
Antimony, total	ug/L	MW-11C	03/26/2019	ND	2.0000	
Antimony, total	ug/L	MW-11C	09/16/2019	ND	2.0000	
Antimony, total	ug/L	MW-11C	03/24/2020	ND	2.0000	
Antimony, total	ug/L	MW-11C	09/02/2020	ND	2.0000	
Antimony, total	ug/L	MW-11C	03/08/2021	ND	2.0000	
Antimony, total	ug/L	MW-11C	09/14/2021	ND	2.0000	
Antimony, total	ug/L	MW-11C	03/28/2022	ND	2.0000	
Antimony, total	ug/L	MW-11C	09/13/2022	ND	2.0000	
Antimony, total	ug/L	MW-11C	03/23/2023	ND	2.0000	
Arsenic, total	ug/L	MW-11C	09/23/2014	ND	4.0000	
Arsenic, total	ug/L	MW-11C	09/21/2016	ND	4.0000	
Arsenic, total	ug/L	MW-11C	03/09/2017	ND	4.0000	
Arsenic, total	ug/L	MW-11C	09/14/2017	ND	4.0000	
Arsenic, total	ug/L	MW-11C	03/12/2018	ND	4.0000	
Arsenic, total	ug/L	MW-11C	09/10/2018	ND	4.0000	
Arsenic, total	ug/L	MW-11C	03/26/2019	ND	4.0000	
Arsenic, total	ug/L	MW-11C	09/16/2019	ND	4.0000	
Arsenic, total	ug/L	MW-11C	03/24/2020	ND	4.0000	
Arsenic, total	ug/L	MW-11C	09/02/2020	ND	4.0000	
Arsenic, total	ug/L	MW-11C	03/08/2021	ND	4.0000	
Arsenic, total	ug/L	MW-11C	09/14/2021	ND	4.0000	
Arsenic, total	ug/L	MW-11C	03/28/2022	ND	4.0000	
Arsenic, total	ug/L	MW-11C	09/13/2022	ND	4.0000	
Arsenic, total	ug/L	MW-11C	03/23/2023	ND	4.0000	
Barium, total	ug/L	MW-11C	09/23/2014		130.0000	
Barium, total	ug/L	MW-11C	09/21/2016		83.7000	
Barium, total	ug/L	MW-11C	03/09/2017		91.5000	
Barium, total	ug/L	MW-11C	09/14/2017		75.9000	
Barium, total	ug/L	MW-11C	03/12/2018		71.5000	
Barium, total	ug/L	MW-11C	09/10/2018		69.9000	
Barium, total	ug/L	MW-11C	03/26/2019		70.5000	
Barium, total	ug/L	MW-11C	09/16/2019		68.6000	
Barium, total	ug/L	MW-11C	03/24/2020		67.8000	
Barium, total	ug/L	MW-11C	09/02/2020		58.8000	
Barium, total	ug/L	MW-11C	03/08/2021		53.7000	
Barium, total	ug/L	MW-11C	09/14/2021		62.3000	
Barium, total	ug/L	MW-11C	03/28/2022		53.4000	
Barium, total	ug/L	MW-11C	09/13/2022		78.3000	
Barium, total	ug/L	MW-11C	03/23/2023		69.2000	
Beryllium, total	ug/L	MW-11C	09/23/2014	ND	4.0000	
Beryllium, total	ug/L	MW-11C	09/21/2016	ND	4.0000	
Beryllium, total	ug/L	MW-11C	03/09/2017	ND	4.0000	
Beryllium, total	ug/L	MW-11C	09/14/2017	ND	4.0000	
Beryllium, total	ug/L	MW-11C	03/12/2018	ND	4.0000	
Beryllium, total	ug/L	MW-11C	09/10/2018	ND	4.0000	
Beryllium, total	ug/L	MW-11C	03/26/2019	ND	4.0000	
Beryllium, total	ug/L	MW-11C	09/16/2019	ND	4.0000	
Beryllium, total	ug/L	MW-11C	03/24/2020	ND	4.0000	
Beryllium, total	ug/L	MW-11C	09/02/2020	ND	4.0000	
Beryllium, total	ug/L	MW-11C	03/08/2021	ND	4.0000	
Beryllium, total	ug/L	MW-11C	09/14/2021	ND	4.0000	
Beryllium, total	ug/L	MW-11C	03/28/2022	ND	4.0000	
Beryllium, total	ug/L	MW-11C	09/13/2022	ND	4.0000	
Beryllium, total	ug/L	MW-11C	03/23/2023	ND	4.0000	
Cadmium, total	ug/L	MW-11C	09/23/2014	ND	0.8000	
Cadmium, total	ug/L	MW-11C	09/21/2016	ND	0.8000	
Cadmium, total	ug/L	MW-11C	03/09/2017	ND	0.8000	
Cadmium, total	ug/L	MW-11C	09/14/2017	ND	0.8000	
Cadmium, total	ug/L	MW-11C	03/12/2018	ND	0.8000	
Cadmium, total	ug/L	MW-11C	09/10/2018	ND	0.8000	
Cadmium, total	ug/L	MW-11C	03/26/2019	ND	0.8000	
Cadmium, total	ug/L	MW-11C	09/16/2019	ND	0.8000	
Cadmium, total	ug/L	MW-11C	03/24/2020	ND	0.8000	
Cadmium, total	ug/L	MW-11C	09/02/2020	ND	0.8000	
Cadmium, total	ug/L	MW-11C	03/08/2021	ND	0.8000	
Cadmium, total	ug/L	MW-11C	09/14/2021	ND	0.8000	
Cadmium, total	ug/L	MW-11C	03/28/2022	ND	0.8000	
Cadmium, total	ug/L	MW-11C	09/13/2022	ND	0.8000	
Cadmium, total	ug/L	MW-11C	03/23/2023	ND	0.8000	

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cadmium, total	ug/L	MW-11C	03/23/2023	ND	0.8000		
Chromium, total	ug/L	MW-11C	09/23/2014	ND	8.0000		
Chromium, total	ug/L	MW-11C	09/21/2016	ND	8.0000		
Chromium, total	ug/L	MW-11C	03/09/2017	ND	8.0000		
Chromium, total	ug/L	MW-11C	09/14/2017	ND	8.0000		
Chromium, total	ug/L	MW-11C	03/12/2018	ND	8.0000		
Chromium, total	ug/L	MW-11C	09/10/2018	ND	8.0000		
Chromium, total	ug/L	MW-11C	03/26/2019	ND	8.0000		
Chromium, total	ug/L	MW-11C	09/16/2019	ND	8.0000		
Chromium, total	ug/L	MW-11C	03/24/2020	ND	8.0000		
Chromium, total	ug/L	MW-11C	09/02/2020	ND	8.0000		
Chromium, total	ug/L	MW-11C	03/08/2021	ND	8.0000		
Chromium, total	ug/L	MW-11C	09/14/2021	ND	8.0000		
Chromium, total	ug/L	MW-11C	03/28/2022	ND	8.0000		
Chromium, total	ug/L	MW-11C	09/13/2022	ND	8.0000		
Chromium, total	ug/L	MW-11C	03/23/2023	ND	8.0000		
Cobalt, total	ug/L	MW-11C	09/23/2014		1.3000		
Cobalt, total	ug/L	MW-11C	09/21/2016	ND	0.8000	0.4000	**
Cobalt, total	ug/L	MW-11C	03/09/2017	ND	0.8000	0.4000	**
Cobalt, total	ug/L	MW-11C	09/14/2017	ND	0.8000	0.4000	**
Cobalt, total	ug/L	MW-11C	03/12/2018	ND	2.0000	0.4000	**
Cobalt, total	ug/L	MW-11C	09/10/2018	ND	0.8000	0.4000	**
Cobalt, total	ug/L	MW-11C	03/26/2019	ND	0.8000	0.4000	**
Cobalt, total	ug/L	MW-11C	09/16/2019	ND	0.8000	0.4000	**
Cobalt, total	ug/L	MW-11C	03/24/2020	ND	0.8000	0.4000	**
Cobalt, total	ug/L	MW-11C	09/02/2020	ND	0.4000		
Cobalt, total	ug/L	MW-11C	03/08/2021	ND	0.4000		
Cobalt, total	ug/L	MW-11C	09/14/2021	ND	0.4000		
Cobalt, total	ug/L	MW-11C	03/28/2022	ND	0.4000		
Cobalt, total	ug/L	MW-11C	09/13/2022		3.6000		
Cobalt, total	ug/L	MW-11C	03/23/2023	ND	0.4000		
Copper, total	ug/L	MW-11C	09/23/2014	ND	4.0000		
Copper, total	ug/L	MW-11C	09/21/2016	ND	4.0000		
Copper, total	ug/L	MW-11C	03/09/2017	ND	4.0000		
Copper, total	ug/L	MW-11C	09/14/2017	ND	4.0000		
Copper, total	ug/L	MW-11C	03/12/2018	ND	4.0000		
Copper, total	ug/L	MW-11C	09/10/2018	ND	4.0000		
Copper, total	ug/L	MW-11C	03/26/2019	ND	4.0000		
Copper, total	ug/L	MW-11C	09/16/2019	ND	4.0000		
Copper, total	ug/L	MW-11C	03/24/2020	ND	4.0000		
Copper, total	ug/L	MW-11C	09/02/2020	ND	4.0000		
Copper, total	ug/L	MW-11C	03/08/2021	ND	4.0000		
Copper, total	ug/L	MW-11C	09/14/2021	ND	4.0000		
Copper, total	ug/L	MW-11C	03/28/2022	ND	4.0000		
Copper, total	ug/L	MW-11C	09/13/2022	ND	4.0000		
Copper, total	ug/L	MW-11C	03/23/2023	ND	4.0000		
Lead, total	ug/L	MW-11C	09/23/2014	ND	4.0000		
Lead, total	ug/L	MW-11C	09/21/2016	ND	4.0000		
Lead, total	ug/L	MW-11C	03/09/2017	ND	4.0000		
Lead, total	ug/L	MW-11C	09/14/2017	ND	4.0000		
Lead, total	ug/L	MW-11C	03/12/2018	ND	4.0000		
Lead, total	ug/L	MW-11C	09/10/2018	ND	4.0000		
Lead, total	ug/L	MW-11C	03/26/2019	ND	4.0000		
Lead, total	ug/L	MW-11C	09/16/2019	ND	4.0000		
Lead, total	ug/L	MW-11C	03/24/2020	ND	4.0000		
Lead, total	ug/L	MW-11C	09/02/2020	ND	4.0000		
Lead, total	ug/L	MW-11C	03/08/2021	ND	4.0000		
Lead, total	ug/L	MW-11C	09/14/2021	ND	4.0000		
Lead, total	ug/L	MW-11C	03/28/2022	ND	4.0000		
Lead, total	ug/L	MW-11C	09/13/2022	ND	4.0000		
Lead, total	ug/L	MW-11C	03/23/2023	ND	4.0000		
Nickel, total	ug/L	MW-11C	09/23/2014		9.5000		
Nickel, total	ug/L	MW-11C	09/21/2016		4.9000		
Nickel, total	ug/L	MW-11C	03/09/2017		5.9000		
Nickel, total	ug/L	MW-11C	09/14/2017	ND	4.0000		
Nickel, total	ug/L	MW-11C	03/12/2018	ND	4.0000		
Nickel, total	ug/L	MW-11C	09/10/2018	ND	4.0000		
Nickel, total	ug/L	MW-11C	03/26/2019	ND	4.0000		
Nickel, total	ug/L	MW-11C	09/16/2019	ND	4.0000		
Nickel, total	ug/L	MW-11C	03/24/2020	ND	4.0000		
Nickel, total	ug/L	MW-11C	09/02/2020	ND	4.0000		
Nickel, total	ug/L	MW-11C	03/08/2021	ND	4.0000		
Nickel, total	ug/L	MW-11C	09/14/2021	ND	4.0000		
Nickel, total	ug/L	MW-11C	03/28/2022	ND	4.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Nickel, total	ug/L	MW-11C	09/13/2022	ND	4.0000		
Nickel, total	ug/L	MW-11C	03/23/2023	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/23/2014	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/21/2016	ND	4.0000		
Selenium, total	ug/L	MW-11C	03/09/2017	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/14/2017	ND	4.0000		
Selenium, total	ug/L	MW-11C	03/12/2018	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/10/2018	ND	4.0000		
Selenium, total	ug/L	MW-11C	03/26/2019	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/16/2019	ND	4.0000		
Selenium, total	ug/L	MW-11C	03/24/2020	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/02/2020	ND	4.0000		
Selenium, total	ug/L	MW-11C	03/08/2021	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/14/2021	ND	4.0000		
Selenium, total	ug/L	MW-11C	03/28/2022	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/13/2022	ND	4.0000		
Selenium, total	ug/L	MW-11C	03/23/2023	ND	4.0000		
Silver, total	ug/L	MW-11C	09/23/2014	ND	4.0000		
Silver, total	ug/L	MW-11C	09/21/2016	ND	4.0000		
Silver, total	ug/L	MW-11C	03/09/2017	ND	4.0000		
Silver, total	ug/L	MW-11C	09/14/2017	ND	4.0000		
Silver, total	ug/L	MW-11C	03/12/2018	ND	4.0000		
Silver, total	ug/L	MW-11C	09/10/2018	ND	4.0000		
Silver, total	ug/L	MW-11C	03/26/2019	ND	4.0000		
Silver, total	ug/L	MW-11C	09/16/2019	ND	4.0000		
Silver, total	ug/L	MW-11C	03/24/2020	ND	4.0000		
Silver, total	ug/L	MW-11C	09/02/2020	ND	4.0000		
Silver, total	ug/L	MW-11C	03/08/2021	ND	4.0000		
Silver, total	ug/L	MW-11C	09/14/2021	ND	4.0000		
Silver, total	ug/L	MW-11C	03/28/2022	ND	4.0000		
Silver, total	ug/L	MW-11C	09/13/2022	ND	4.0000		
Silver, total	ug/L	MW-11C	03/23/2023	ND	4.0000		
Thallium, total	ug/L	MW-11C	09/23/2014	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-11C	09/21/2016	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-11C	03/09/2017	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-11C	09/14/2017	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-11C	03/12/2018	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-11C	09/10/2018	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-11C	03/26/2019	ND	2.0000		
Thallium, total	ug/L	MW-11C	09/16/2019	ND	2.0000		
Thallium, total	ug/L	MW-11C	03/24/2020	ND	2.0000		
Thallium, total	ug/L	MW-11C	09/02/2020	ND	2.0000		
Thallium, total	ug/L	MW-11C	03/08/2021	ND	2.0000		
Thallium, total	ug/L	MW-11C	09/14/2021	ND	2.0000		
Thallium, total	ug/L	MW-11C	03/28/2022	ND	2.0000		
Thallium, total	ug/L	MW-11C	09/13/2022	ND	2.0000		
Thallium, total	ug/L	MW-11C	03/23/2023	ND	2.0000		
Vanadium, total	ug/L	MW-11C	09/23/2014	ND	20.0000		
Vanadium, total	ug/L	MW-11C	09/21/2016	ND	20.0000		
Vanadium, total	ug/L	MW-11C	03/09/2017	ND	20.0000		
Vanadium, total	ug/L	MW-11C	09/14/2017	ND	20.0000		
Vanadium, total	ug/L	MW-11C	03/12/2018	ND	20.0000		
Vanadium, total	ug/L	MW-11C	09/10/2018	ND	20.0000		
Vanadium, total	ug/L	MW-11C	03/26/2019	ND	20.0000		
Vanadium, total	ug/L	MW-11C	09/16/2019	ND	20.0000		
Vanadium, total	ug/L	MW-11C	03/24/2020	ND	20.0000		
Vanadium, total	ug/L	MW-11C	09/02/2020	ND	20.0000		
Vanadium, total	ug/L	MW-11C	03/08/2021	ND	20.0000		
Vanadium, total	ug/L	MW-11C	09/14/2021	ND	20.0000		
Vanadium, total	ug/L	MW-11C	03/28/2022	ND	20.0000		
Vanadium, total	ug/L	MW-11C	09/13/2022	ND	20.0000		
Vanadium, total	ug/L	MW-11C	03/23/2023	ND	20.0000		
Zinc, total	ug/L	MW-11C	09/23/2014		20.7000		
Zinc, total	ug/L	MW-11C	09/21/2016		11.9000		
Zinc, total	ug/L	MW-11C	03/09/2017		15.8000		
Zinc, total	ug/L	MW-11C	09/14/2017	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-11C	03/12/2018	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-11C	09/10/2018	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-11C	03/26/2019	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-11C	09/16/2019	ND	20.0000		
Zinc, total	ug/L	MW-11C	03/24/2020	ND	20.0000		
Zinc, total	ug/L	MW-11C	09/02/2020	ND	20.0000		
Zinc, total	ug/L	MW-11C	03/08/2021	ND	20.0000		
Zinc, total	ug/L	MW-11C	09/14/2021	ND	20.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Zinc, total	ug/L	MW-11C	03/28/2022	ND	20.0000		
Zinc, total	ug/L	MW-11C	09/13/2022	ND	20.0000		
Zinc, total	ug/L	MW-11C	03/23/2023	ND	20.0000		
Antimony, total	ug/L	MW-39D	09/02/2020		2.1000		
Antimony, total	ug/L	MW-39D	03/08/2021	ND	2.0000		
Antimony, total	ug/L	MW-39D	09/14/2021	ND	2.0000		
Antimony, total	ug/L	MW-39D	03/28/2022	ND	2.0000		
Antimony, total	ug/L	MW-39D	09/13/2022	ND	2.0000		
Antimony, total	ug/L	MW-39D	03/23/2023	ND	2.0000		
Arsenic, total	ug/L	MW-39D	09/02/2020		5.8000		
Arsenic, total	ug/L	MW-39D	03/08/2021	ND	4.0000		
Arsenic, total	ug/L	MW-39D	09/14/2021	ND	4.0000		
Arsenic, total	ug/L	MW-39D	03/28/2022	ND	4.0000		
Arsenic, total	ug/L	MW-39D	09/13/2022	ND	4.0000		
Arsenic, total	ug/L	MW-39D	03/23/2023	ND	4.0000		
Barium, total	ug/L	MW-39D	09/02/2020		45.7000		
Barium, total	ug/L	MW-39D	03/08/2021		54.9000		
Barium, total	ug/L	MW-39D	09/14/2021		38.3000		
Barium, total	ug/L	MW-39D	03/28/2022		36.5000		
Barium, total	ug/L	MW-39D	09/13/2022		51.0000		
Barium, total	ug/L	MW-39D	03/23/2023		34.8000		
Beryllium, total	ug/L	MW-39D	09/02/2020	ND	4.0000		
Beryllium, total	ug/L	MW-39D	03/08/2021	ND	4.0000		
Beryllium, total	ug/L	MW-39D	09/14/2021	ND	4.0000		
Beryllium, total	ug/L	MW-39D	03/28/2022	ND	4.0000		
Beryllium, total	ug/L	MW-39D	09/13/2022	ND	4.0000		
Beryllium, total	ug/L	MW-39D	03/23/2023	ND	4.0000		
Cadmium, total	ug/L	MW-39D	09/02/2020	ND	0.8000		
Cadmium, total	ug/L	MW-39D	03/08/2021	ND	0.8000		
Cadmium, total	ug/L	MW-39D	09/14/2021	ND	0.8000		
Cadmium, total	ug/L	MW-39D	03/28/2022	ND	0.8000		
Cadmium, total	ug/L	MW-39D	09/13/2022	ND	0.8000		
Cadmium, total	ug/L	MW-39D	03/23/2023	ND	0.8000		
Chromium, total	ug/L	MW-39D	09/02/2020	ND	8.0000		
Chromium, total	ug/L	MW-39D	03/08/2021		13.2000		
Chromium, total	ug/L	MW-39D	09/14/2021	ND	8.0000		
Chromium, total	ug/L	MW-39D	03/28/2022	ND	8.0000		
Chromium, total	ug/L	MW-39D	09/13/2022	ND	8.0000		
Chromium, total	ug/L	MW-39D	03/23/2023	ND	8.0000		
Cobalt, total	ug/L	MW-39D	09/02/2020	ND	0.4000		
Cobalt, total	ug/L	MW-39D	03/08/2021		2.6000		*
Cobalt, total	ug/L	MW-39D	09/14/2021	ND	0.4000		
Cobalt, total	ug/L	MW-39D	03/28/2022	ND	0.4000		
Cobalt, total	ug/L	MW-39D	09/13/2022		3.3000		*
Cobalt, total	ug/L	MW-39D	03/23/2023	ND	0.4000		
Copper, total	ug/L	MW-39D	09/02/2020	ND	4.0000		
Copper, total	ug/L	MW-39D	03/08/2021		5.6000		
Copper, total	ug/L	MW-39D	09/14/2021	ND	4.0000		
Copper, total	ug/L	MW-39D	03/28/2022	ND	4.0000		
Copper, total	ug/L	MW-39D	09/13/2022	ND	4.0000		
Copper, total	ug/L	MW-39D	03/23/2023	ND	4.0000		
Lead, total	ug/L	MW-39D	09/02/2020	ND	4.0000		
Lead, total	ug/L	MW-39D	03/08/2021	ND	4.0000		
Lead, total	ug/L	MW-39D	09/14/2021	ND	4.0000		
Lead, total	ug/L	MW-39D	03/28/2022	ND	4.0000		
Lead, total	ug/L	MW-39D	09/13/2022	ND	4.0000		
Lead, total	ug/L	MW-39D	03/23/2023	ND	4.0000		
Nickel, total	ug/L	MW-39D	09/02/2020	ND	4.0000		
Nickel, total	ug/L	MW-39D	03/08/2021		10.6000		
Nickel, total	ug/L	MW-39D	09/14/2021	ND	4.0000		
Nickel, total	ug/L	MW-39D	03/28/2022	ND	4.0000		
Nickel, total	ug/L	MW-39D	09/13/2022	ND	4.0000		
Nickel, total	ug/L	MW-39D	03/23/2023	ND	4.0000		
Selenium, total	ug/L	MW-39D	09/02/2020	ND	4.0000		
Selenium, total	ug/L	MW-39D	03/08/2021	ND	4.0000		
Selenium, total	ug/L	MW-39D	09/14/2021	ND	4.0000		
Selenium, total	ug/L	MW-39D	03/28/2022	ND	4.0000		
Selenium, total	ug/L	MW-39D	09/13/2022	ND	4.0000		
Selenium, total	ug/L	MW-39D	03/23/2023	ND	4.0000		
Silver, total	ug/L	MW-39D	09/02/2020	ND	4.0000		
Silver, total	ug/L	MW-39D	03/08/2021	ND	4.0000		
Silver, total	ug/L	MW-39D	09/14/2021	ND	4.0000		
Silver, total	ug/L	MW-39D	03/28/2022	ND	4.0000		
Silver, total	ug/L	MW-39D	09/13/2022	ND	4.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted
Silver, total	ug/L	MW-39D	03/23/2023	ND	4.0000	
Thallium, total	ug/L	MW-39D	09/02/2020	ND	2.0000	
Thallium, total	ug/L	MW-39D	03/08/2021	ND	2.0000	
Thallium, total	ug/L	MW-39D	09/14/2021	ND	2.0000	
Thallium, total	ug/L	MW-39D	03/28/2022	ND	2.0000	
Thallium, total	ug/L	MW-39D	09/13/2022	ND	2.0000	
Thallium, total	ug/L	MW-39D	03/23/2023	ND	2.0000	
Vanadium, total	ug/L	MW-39D	09/02/2020	ND	20.0000	
Vanadium, total	ug/L	MW-39D	03/08/2021		20.0000	
Vanadium, total	ug/L	MW-39D	09/14/2021	ND	20.0000	
Vanadium, total	ug/L	MW-39D	03/28/2022	ND	20.0000	
Vanadium, total	ug/L	MW-39D	09/13/2022	ND	20.0000	
Vanadium, total	ug/L	MW-39D	03/23/2023	ND	20.0000	
Zinc, total	ug/L	MW-39D	09/02/2020	ND	20.0000	
Zinc, total	ug/L	MW-39D	03/08/2021		20.7000	
Zinc, total	ug/L	MW-39D	09/14/2021	ND	20.0000	
Zinc, total	ug/L	MW-39D	03/28/2022	ND	20.0000	
Zinc, total	ug/L	MW-39D	09/13/2022		25.0000	
Zinc, total	ug/L	MW-39D	03/23/2023	ND	20.0000	
Antimony, total	ug/L	MW-41D	09/02/2020	ND	2.0000	
Antimony, total	ug/L	MW-41D	03/08/2021	ND	2.0000	
Antimony, total	ug/L	MW-41D	09/14/2021	ND	2.0000	
Antimony, total	ug/L	MW-41D	03/28/2022	ND	2.0000	
Antimony, total	ug/L	MW-41D	09/13/2022		2.6000	
Antimony, total	ug/L	MW-41D	03/23/2023		2.8000	
Arsenic, total	ug/L	MW-41D	09/02/2020	ND	4.0000	
Arsenic, total	ug/L	MW-41D	03/08/2021		5.2000	
Arsenic, total	ug/L	MW-41D	09/14/2021		4.7000	
Arsenic, total	ug/L	MW-41D	03/28/2022	ND	4.0000	
Arsenic, total	ug/L	MW-41D	09/13/2022	ND	4.0000	
Arsenic, total	ug/L	MW-41D	03/23/2023	ND	4.0000	
Barium, total	ug/L	MW-41D	09/02/2020		38.4000	
Barium, total	ug/L	MW-41D	03/08/2021		34.4000	
Barium, total	ug/L	MW-41D	09/14/2021		30.5000	
Barium, total	ug/L	MW-41D	03/28/2022		33.7000	
Barium, total	ug/L	MW-41D	09/13/2022		31.3000	
Barium, total	ug/L	MW-41D	03/23/2023		32.2000	
Beryllium, total	ug/L	MW-41D	09/02/2020	ND	4.0000	
Beryllium, total	ug/L	MW-41D	03/08/2021	ND	4.0000	
Beryllium, total	ug/L	MW-41D	09/14/2021	ND	4.0000	
Beryllium, total	ug/L	MW-41D	03/28/2022	ND	4.0000	
Beryllium, total	ug/L	MW-41D	09/13/2022	ND	4.0000	
Beryllium, total	ug/L	MW-41D	03/23/2023	ND	4.0000	
Cadmium, total	ug/L	MW-41D	09/02/2020	ND	0.8000	
Cadmium, total	ug/L	MW-41D	03/08/2021	ND	0.8000	
Cadmium, total	ug/L	MW-41D	09/14/2021	ND	0.8000	
Cadmium, total	ug/L	MW-41D	03/28/2022	ND	0.8000	
Cadmium, total	ug/L	MW-41D	09/13/2022	ND	0.8000	
Cadmium, total	ug/L	MW-41D	03/23/2023	ND	0.8000	
Chromium, total	ug/L	MW-41D	09/02/2020	ND	8.0000	
Chromium, total	ug/L	MW-41D	03/08/2021	ND	8.0000	
Chromium, total	ug/L	MW-41D	09/14/2021	ND	8.0000	
Chromium, total	ug/L	MW-41D	03/28/2022	ND	8.0000	
Chromium, total	ug/L	MW-41D	09/13/2022	ND	8.0000	
Chromium, total	ug/L	MW-41D	03/23/2023	ND	8.0000	
Cobalt, total	ug/L	MW-41D	09/02/2020		5.1000	
Cobalt, total	ug/L	MW-41D	03/08/2021		3.9000	
Cobalt, total	ug/L	MW-41D	09/14/2021		2.6000	
Cobalt, total	ug/L	MW-41D	03/28/2022		2.5000	
Cobalt, total	ug/L	MW-41D	09/13/2022		5.4000	
Cobalt, total	ug/L	MW-41D	03/23/2023		1.2000	
Copper, total	ug/L	MW-41D	09/02/2020	ND	4.0000	
Copper, total	ug/L	MW-41D	03/08/2021	ND	4.0000	
Copper, total	ug/L	MW-41D	09/14/2021	ND	4.0000	
Copper, total	ug/L	MW-41D	03/28/2022	ND	4.0000	
Copper, total	ug/L	MW-41D	09/13/2022	ND	4.0000	
Copper, total	ug/L	MW-41D	03/23/2023	ND	4.0000	
Lead, total	ug/L	MW-41D	09/02/2020	ND	4.0000	
Lead, total	ug/L	MW-41D	03/08/2021	ND	4.0000	
Lead, total	ug/L	MW-41D	09/14/2021	ND	4.0000	
Lead, total	ug/L	MW-41D	03/28/2022	ND	4.0000	
Lead, total	ug/L	MW-41D	09/13/2022	ND	4.0000	
Lead, total	ug/L	MW-41D	03/23/2023	ND	4.0000	
Nickel, total	ug/L	MW-41D	09/02/2020		11.8000	

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted
Nickel, total	ug/L	MW-41D	03/08/2021		6.7000	
Nickel, total	ug/L	MW-41D	09/14/2021		6.6000	
Nickel, total	ug/L	MW-41D	03/28/2022		6.7000	
Nickel, total	ug/L	MW-41D	09/13/2022		10.3000	
Nickel, total	ug/L	MW-41D	03/23/2023		8.5000	
Selenium, total	ug/L	MW-41D	09/02/2020	ND	4.0000	
Selenium, total	ug/L	MW-41D	03/08/2021	ND	4.0000	
Selenium, total	ug/L	MW-41D	09/14/2021	ND	4.0000	
Selenium, total	ug/L	MW-41D	03/28/2022	ND	4.0000	
Selenium, total	ug/L	MW-41D	09/13/2022	ND	4.0000	
Selenium, total	ug/L	MW-41D	03/23/2023	ND	4.0000	
Silver, total	ug/L	MW-41D	09/02/2020	ND	4.0000	
Silver, total	ug/L	MW-41D	03/08/2021	ND	4.0000	
Silver, total	ug/L	MW-41D	09/14/2021	ND	4.0000	
Silver, total	ug/L	MW-41D	03/28/2022	ND	4.0000	
Silver, total	ug/L	MW-41D	09/13/2022	ND	4.0000	
Silver, total	ug/L	MW-41D	03/23/2023	ND	4.0000	
Thallium, total	ug/L	MW-41D	09/02/2020	ND	2.0000	
Thallium, total	ug/L	MW-41D	03/08/2021	ND	2.0000	
Thallium, total	ug/L	MW-41D	09/14/2021	ND	2.0000	
Thallium, total	ug/L	MW-41D	03/28/2022	ND	2.0000	
Thallium, total	ug/L	MW-41D	09/13/2022	ND	2.0000	
Thallium, total	ug/L	MW-41D	03/23/2023	ND	2.0000	
Vanadium, total	ug/L	MW-41D	09/02/2020	ND	20.0000	
Vanadium, total	ug/L	MW-41D	03/08/2021	ND	20.0000	
Vanadium, total	ug/L	MW-41D	09/14/2021	ND	20.0000	
Vanadium, total	ug/L	MW-41D	03/28/2022	ND	20.0000	
Vanadium, total	ug/L	MW-41D	09/13/2022	ND	20.0000	
Vanadium, total	ug/L	MW-41D	03/23/2023	ND	20.0000	
Zinc, total	ug/L	MW-41D	09/02/2020	ND	20.0000	
Zinc, total	ug/L	MW-41D	03/08/2021	ND	20.0000	
Zinc, total	ug/L	MW-41D	09/14/2021	ND	20.0000	
Zinc, total	ug/L	MW-41D	03/28/2022	ND	20.0000	
Zinc, total	ug/L	MW-41D	09/13/2022	ND	20.0000	
Zinc, total	ug/L	MW-41D	03/23/2023	ND	20.0000	
Antimony, total	ug/L	MW-42D	09/02/2020		10.9000	
Antimony, total	ug/L	MW-42D	03/08/2021		8.9000	
Antimony, total	ug/L	MW-42D	09/14/2021		9.4000	
Antimony, total	ug/L	MW-42D	03/28/2022		7.4000	
Antimony, total	ug/L	MW-42D	09/13/2022	ND	2.0000	
Antimony, total	ug/L	MW-42D	03/23/2023	ND	2.0000	
Arsenic, total	ug/L	MW-42D	09/02/2020	ND	4.0000	
Arsenic, total	ug/L	MW-42D	03/08/2021	ND	4.0000	
Arsenic, total	ug/L	MW-42D	09/14/2021		4.3000	
Arsenic, total	ug/L	MW-42D	03/28/2022		5.0000	
Arsenic, total	ug/L	MW-42D	09/13/2022		5.7000	
Arsenic, total	ug/L	MW-42D	03/23/2023	ND	4.0000	
Barium, total	ug/L	MW-42D	09/02/2020		58.3000	
Barium, total	ug/L	MW-42D	03/08/2021		53.5000	
Barium, total	ug/L	MW-42D	09/14/2021		55.5000	
Barium, total	ug/L	MW-42D	03/28/2022		52.3000	
Barium, total	ug/L	MW-42D	09/13/2022		44.7000	
Barium, total	ug/L	MW-42D	03/23/2023		40.1000	
Beryllium, total	ug/L	MW-42D	09/02/2020	ND	4.0000	
Beryllium, total	ug/L	MW-42D	03/08/2021	ND	4.0000	
Beryllium, total	ug/L	MW-42D	09/14/2021	ND	4.0000	
Beryllium, total	ug/L	MW-42D	03/28/2022	ND	4.0000	
Beryllium, total	ug/L	MW-42D	09/13/2022	ND	4.0000	
Beryllium, total	ug/L	MW-42D	03/23/2023	ND	4.0000	
Cadmium, total	ug/L	MW-42D	09/02/2020	ND	0.8000	
Cadmium, total	ug/L	MW-42D	03/08/2021	ND	0.8000	
Cadmium, total	ug/L	MW-42D	09/14/2021	ND	0.8000	
Cadmium, total	ug/L	MW-42D	03/28/2022	ND	0.8000	
Cadmium, total	ug/L	MW-42D	09/13/2022	ND	0.8000	
Cadmium, total	ug/L	MW-42D	03/23/2023	ND	0.8000	
Chromium, total	ug/L	MW-42D	09/02/2020	ND	8.0000	
Chromium, total	ug/L	MW-42D	03/08/2021	ND	8.0000	
Chromium, total	ug/L	MW-42D	09/14/2021	ND	8.0000	
Chromium, total	ug/L	MW-42D	03/28/2022	ND	8.0000	
Chromium, total	ug/L	MW-42D	09/13/2022	ND	8.0000	
Chromium, total	ug/L	MW-42D	03/23/2023	ND	8.0000	
Cobalt, total	ug/L	MW-42D	09/02/2020	ND	0.4000	
Cobalt, total	ug/L	MW-42D	03/08/2021	ND	0.4000	
Cobalt, total	ug/L	MW-42D	09/14/2021	ND	0.4000	

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cobalt, total	ug/L	MW-42D	03/28/2022		0.5000		
Cobalt, total	ug/L	MW-42D	09/13/2022		3.4000		*
Cobalt, total	ug/L	MW-42D	03/23/2023	ND	0.4000		
Copper, total	ug/L	MW-42D	09/02/2020		6.5000		
Copper, total	ug/L	MW-42D	03/08/2021	ND	4.0000		
Copper, total	ug/L	MW-42D	09/14/2021	ND	4.0000		
Copper, total	ug/L	MW-42D	03/28/2022	ND	4.0000		
Copper, total	ug/L	MW-42D	09/13/2022	ND	4.0000		
Copper, total	ug/L	MW-42D	03/23/2023	ND	4.0000		
Lead, total	ug/L	MW-42D	09/02/2020	ND	4.0000		
Lead, total	ug/L	MW-42D	03/08/2021	ND	4.0000		
Lead, total	ug/L	MW-42D	09/14/2021	ND	4.0000		
Lead, total	ug/L	MW-42D	03/28/2022	ND	4.0000		
Lead, total	ug/L	MW-42D	09/13/2022	ND	4.0000		
Lead, total	ug/L	MW-42D	03/23/2023	ND	4.0000		
Nickel, total	ug/L	MW-42D	09/02/2020	ND	4.0000		
Nickel, total	ug/L	MW-42D	03/08/2021	ND	4.0000		
Nickel, total	ug/L	MW-42D	09/14/2021	ND	4.0000		
Nickel, total	ug/L	MW-42D	03/28/2022	ND	4.0000		
Nickel, total	ug/L	MW-42D	09/13/2022	ND	4.0000		
Nickel, total	ug/L	MW-42D	03/23/2023	ND	4.0000		
Selenium, total	ug/L	MW-42D	09/02/2020	ND	4.0000		
Selenium, total	ug/L	MW-42D	03/08/2021	ND	4.0000		
Selenium, total	ug/L	MW-42D	09/14/2021	ND	4.0000		
Selenium, total	ug/L	MW-42D	03/28/2022	ND	4.0000		
Selenium, total	ug/L	MW-42D	09/13/2022	ND	4.0000		
Selenium, total	ug/L	MW-42D	03/23/2023	ND	4.0000		
Silver, total	ug/L	MW-42D	09/02/2020	ND	4.0000		
Silver, total	ug/L	MW-42D	03/08/2021	ND	4.0000		
Silver, total	ug/L	MW-42D	09/14/2021	ND	4.0000		
Silver, total	ug/L	MW-42D	03/28/2022	ND	4.0000		
Silver, total	ug/L	MW-42D	09/13/2022	ND	4.0000		
Silver, total	ug/L	MW-42D	03/23/2023	ND	4.0000		
Thallium, total	ug/L	MW-42D	09/02/2020	ND	2.0000		
Thallium, total	ug/L	MW-42D	03/08/2021	ND	2.0000		
Thallium, total	ug/L	MW-42D	09/14/2021	ND	2.0000		
Thallium, total	ug/L	MW-42D	03/28/2022	ND	2.0000		
Thallium, total	ug/L	MW-42D	09/13/2022	ND	2.0000		
Thallium, total	ug/L	MW-42D	03/23/2023	ND	2.0000		
Vanadium, total	ug/L	MW-42D	09/02/2020	ND	20.0000		
Vanadium, total	ug/L	MW-42D	03/08/2021	ND	20.0000		
Vanadium, total	ug/L	MW-42D	09/14/2021	ND	20.0000		
Vanadium, total	ug/L	MW-42D	03/28/2022	ND	20.0000		
Vanadium, total	ug/L	MW-42D	09/13/2022	ND	20.0000		
Vanadium, total	ug/L	MW-42D	03/23/2023	ND	20.0000		
Zinc, total	ug/L	MW-42D	09/02/2020		34.5000		
Zinc, total	ug/L	MW-42D	03/08/2021	ND	20.0000		
Zinc, total	ug/L	MW-42D	09/14/2021	ND	20.0000		
Zinc, total	ug/L	MW-42D	03/28/2022	ND	20.0000		
Zinc, total	ug/L	MW-42D	09/13/2022	ND	20.0000		
Zinc, total	ug/L	MW-42D	03/23/2023	ND	20.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Antimony, total	ug/L	MW-17R	03/23/2023	ND	2.0000		10.9000
Arsenic, total	ug/L	MW-17R	03/23/2023	ND	4.0000		5.8000
Barium, total	ug/L	MW-17R	03/23/2023		446.0000	***	109.3098
Beryllium, total	ug/L	MW-17R	03/23/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-17R	03/23/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-17R	03/23/2023	ND	8.0000		13.2000
Cobalt, total	ug/L	MW-17R	03/23/2023		1.6000	**	5.4000
Copper, total	ug/L	MW-17R	03/23/2023	ND	4.0000		6.5000
Lead, total	ug/L	MW-17R	03/23/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-17R	03/23/2023		22.2000	***	11.8000
Selenium, total	ug/L	MW-17R	03/23/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-17R	03/23/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-17R	03/23/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-17R	03/23/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-17R	03/23/2023	ND	20.0000		34.5000
Antimony, total	ug/L	MW-28	03/23/2023	ND	2.0000		10.9000
Arsenic, total	ug/L	MW-28	03/23/2023		100.0000	***	5.8000
Barium, total	ug/L	MW-28	03/23/2023		1570.0000	***	109.3098
Beryllium, total	ug/L	MW-28	03/23/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-28	03/23/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-28	03/23/2023	ND	8.0000		13.2000
Cobalt, total	ug/L	MW-28	03/23/2023		82.1000	***	5.4000
Copper, total	ug/L	MW-28	03/23/2023	ND	4.0000		6.5000
Lead, total	ug/L	MW-28	03/23/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-28	03/23/2023		29.8000	***	11.8000
Selenium, total	ug/L	MW-28	03/23/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-28	03/23/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-28	03/23/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-28	03/23/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-28	03/23/2023	ND	20.0000		34.5000

* - Current value failed - awaiting verification.
 ** - Current value passed - previous exceedance not verified.
 *** - Current value failed - exceedance verified.
 **** - Current value passed - awaiting one more verification.
 ***** - Insufficient background data to compute prediction limit.
 ND = Not Detected, Result = detection limit.

Table 3

Detection Frequencies in Upgradient and Downgradient Wells

Constituent	Upgradient			Downgradient		
	Detect	N	Proportion	Detect	N	Proportion
Antimony, total	8	33	0.242	0	23	0.000
Arsenic, total	6	33	0.182	6	23	0.261
Barium, total	33	33	1.000	23	23	1.000
Beryllium, total	0	33	0.000	0	23	0.000
Cadmium, total	0	33	0.000	0	23	0.000
Chromium, total	1	33	0.030	0	23	0.000
Cobalt, total	9	30	0.300	20	23	0.870
Copper, total	2	33	0.061	0	23	0.000
Lead, total	0	33	0.000	0	23	0.000
Nickel, total	10	33	0.303	24	24	1.000
Selenium, total	0	33	0.000	0	25	0.000
Silver, total	0	33	0.000	0	23	0.000
Thallium, total	0	33	0.000	0	23	0.000
Vanadium, total	1	33	0.030	0	23	0.000
Zinc, total	6	33	0.182	2	23	0.087

N = Total number of measurements in all wells.
Detect = Total number of detections in all wells.
Proportion = Detect/N.

Table 4

Shapiro-Wilk Multiple Group Test of Normality

Constituent	Detect	N	Detect Freq	G raw	G log	G cbrt	G sqrt	G sqr	G cub	Crit Value	Dist Form	Model Type
Antimony, total	8	33	0.242	1.609	1.379					2.326	normal	nonpar
Arsenic, total	6	33	0.182	2.393	1.422					2.326	lognor	nonpar
Barium, total	33	33	1.000	1.506	0.729					2.326	normal	normal
Beryllium, total	0	33	0.000									nonpar
Cadmium, total	0	33	0.000									nonpar
Chromium, total	1	33	0.030									nonpar
Cobalt, total	9	30	0.300	0.335	0.132					2.326	normal	nonpar
Copper, total	2	33	0.061									nonpar
Lead, total	0	33	0.000									nonpar
Nickel, total	10	33	0.303	0.987	0.739					2.326	normal	nonpar
Selenium, total	0	33	0.000									nonpar
Silver, total	0	33	0.000									nonpar
Thallium, total	0	33	0.000									nonpar
Vanadium, total	1	33	0.030									nonpar
Zinc, total	6	33	0.182	1.143	1.913					2.326	normal	nonpar

* - Distribution override for that constituent.

Fit to distribution is confirmed if G <= critical value.

Model type may not match distributional form when detection frequency < 50%.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type	Conf
Antimony, total	ug/L	8	33					10.9000	nonpar	0.99
Arsenic, total	ug/L	6	33					5.8000	nonpar	0.99
Barium, total	ug/L	33	33	56.7030	21.1673	0.0100	2.4853	109.3098	normal	
Beryllium, total	ug/L	0	33					4.0000	nonpar	*** 0.99
Cadmium, total	ug/L	0	33					0.8000	nonpar	*** 0.99
Chromium, total	ug/L	1	33					13.2000	nonpar	0.99
Cobalt, total	ug/L	9	30					5.4000	nonpar	0.99
Copper, total	ug/L	2	33					6.5000	nonpar	0.99
Lead, total	ug/L	0	33					4.0000	nonpar	*** 0.99
Nickel, total	ug/L	10	33					11.8000	nonpar	0.99
Selenium, total	ug/L	0	33					4.0000	nonpar	*** 0.99
Silver, total	ug/L	0	33					4.0000	nonpar	*** 0.99
Thallium, total	ug/L	0	33					2.0000	nonpar	*** 0.99
Vanadium, total	ug/L	1	33					20.0000	nonpar	*** 0.99
Zinc, total	ug/L	6	33					34.5000	nonpar	0.99

Conf = confidence level for passing initial test or one verification resample at all downgradient wells for a single constituent (nonparametric test only).

* - Insufficient Data.

** - Calculated limit raised to Manual Reporting Limit.

*** - Nonparametric limit based on ND value.

For transformed data, mean and SD in transformed units and prediction limit in original units.

All sample sizes and statistics are based on outlier free data.

For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Table 6

**Dixon's Test Outliers
1% Significance Level**

Constituent	Units	Well	Date	Result	ND Qualifier	Date Range	N	Critical Value
Cobalt, total	ug/L	MW-39D	03/08/2021	2.6000		09/02/2020-03/23/2023	6	0.7819
Cobalt, total	ug/L	MW-39D	09/13/2022	3.3000		09/02/2020-03/23/2023	6	0.7819
Cobalt, total	ug/L	MW-42D	09/13/2022	3.4000		09/02/2020-03/23/2023	6	0.6987

N = Total number of independent measurements in background at each well.

Date Range = Dates of the first and last measurements included in background at each well.

Critical Value depends on the significance level and on N-1 when the two most extreme values are tested or N for the most extreme value.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result		Pred. Limit
Barium, total	ug/L	MW-17R	09/23/2014		344.0000	*	109.3098
Barium, total	ug/L	MW-17R	03/03/2016		378.0000	*	109.3098
Barium, total	ug/L	MW-17R	09/21/2016		369.0000	*	109.3098
Barium, total	ug/L	MW-17R	03/09/2017		369.0000	*	109.3098
Barium, total	ug/L	MW-17R	09/14/2017		411.0000	*	109.3098
Barium, total	ug/L	MW-17R	03/12/2018		408.0000	*	109.3098
Barium, total	ug/L	MW-17R	09/10/2018		406.0000	*	109.3098
Barium, total	ug/L	MW-17R	03/26/2019		430.0000	*	109.3098
Barium, total	ug/L	MW-17R	09/16/2019		533.0000	*	109.3098
Barium, total	ug/L	MW-17R	03/24/2020		429.0000	*	109.3098
Barium, total	ug/L	MW-17R	09/02/2020		398.0000	*	109.3098
Barium, total	ug/L	MW-17R	03/08/2021		416.0000	*	109.3098
Barium, total	ug/L	MW-17R	09/14/2021		442.0000	*	109.3098
Barium, total	ug/L	MW-17R	03/28/2022		446.0000	*	109.3098
Barium, total	ug/L	MW-17R	09/13/2022		587.0000	*	109.3098
Barium, total	ug/L	MW-17R	03/23/2023		446.0000	*	109.3098
Cobalt, total	ug/L	MW-17R	09/23/2014		0.9000		5.4000
Cobalt, total	ug/L	MW-17R	03/03/2016		1.2000		5.4000
Cobalt, total	ug/L	MW-17R	09/21/2016		1.5000		5.4000
Cobalt, total	ug/L	MW-17R	03/09/2017		1.1000		5.4000
Cobalt, total	ug/L	MW-17R	09/14/2017	ND	0.8000		5.4000
Cobalt, total	ug/L	MW-17R	03/12/2018	ND	2.0000		5.4000
Cobalt, total	ug/L	MW-17R	09/10/2018		0.8000		5.4000
Cobalt, total	ug/L	MW-17R	03/26/2019		0.9000		5.4000
Cobalt, total	ug/L	MW-17R	09/16/2019	ND	0.8000		5.4000
Cobalt, total	ug/L	MW-17R	03/24/2020		1.1000		5.4000
Cobalt, total	ug/L	MW-17R	09/02/2020		1.1000		5.4000
Cobalt, total	ug/L	MW-17R	03/08/2021		0.9000		5.4000
Cobalt, total	ug/L	MW-17R	09/14/2021		1.5000		5.4000
Cobalt, total	ug/L	MW-17R	03/28/2022		2.1000		5.4000
Cobalt, total	ug/L	MW-17R	09/13/2022		5.6000	*	5.4000
Cobalt, total	ug/L	MW-17R	03/23/2023		1.6000		5.4000
Nickel, total	ug/L	MW-17R	09/23/2014		14.9000	*	11.8000
Nickel, total	ug/L	MW-17R	03/03/2016		16.3000	*	11.8000
Nickel, total	ug/L	MW-17R	09/21/2016		15.2000	*	11.8000
Nickel, total	ug/L	MW-17R	03/09/2017		16.6000	*	11.8000
Nickel, total	ug/L	MW-17R	09/14/2017		20.1000	*	11.8000
Nickel, total	ug/L	MW-17R	12/13/2017		17.2000	*	11.8000
Nickel, total	ug/L	MW-17R	03/12/2018		17.6000	*	11.8000
Nickel, total	ug/L	MW-17R	09/10/2018		18.1000	*	11.8000
Nickel, total	ug/L	MW-17R	03/26/2019		20.3000	*	11.8000
Nickel, total	ug/L	MW-17R	09/16/2019		21.4000	*	11.8000
Nickel, total	ug/L	MW-17R	03/24/2020		19.2000	*	11.8000
Nickel, total	ug/L	MW-17R	09/02/2020		19.0000	*	11.8000
Nickel, total	ug/L	MW-17R	03/08/2021		20.8000	*	11.8000
Nickel, total	ug/L	MW-17R	09/14/2021		21.8000	*	11.8000
Nickel, total	ug/L	MW-17R	03/28/2022		22.3000	*	11.8000
Nickel, total	ug/L	MW-17R	09/13/2022		28.9000	*	11.8000
Nickel, total	ug/L	MW-17R	03/23/2023		22.2000	*	11.8000
Arsenic, total	ug/L	MW-28	03/24/2020		72.8000	*	5.8000
Arsenic, total	ug/L	MW-28	09/02/2020	ND	4.0000	*	5.8000
Arsenic, total	ug/L	MW-28	03/08/2021		13.8000	*	5.8000
Arsenic, total	ug/L	MW-28	10/15/2021		4.3000	*	5.8000
Arsenic, total	ug/L	MW-28	03/28/2022		38.7000	*	5.8000
Arsenic, total	ug/L	MW-28	09/13/2022		8.2000	*	5.8000
Arsenic, total	ug/L	MW-28	03/23/2023		100.0000	*	5.8000
Barium, total	ug/L	MW-28	03/24/2020		1030.0000	*	109.3098
Barium, total	ug/L	MW-28	09/02/2020		655.0000	*	109.3098
Barium, total	ug/L	MW-28	03/08/2021		735.0000	*	109.3098
Barium, total	ug/L	MW-28	10/15/2021		679.0000	*	109.3098
Barium, total	ug/L	MW-28	03/28/2022		1080.0000	*	109.3098
Barium, total	ug/L	MW-28	09/13/2022		865.0000	*	109.3098
Barium, total	ug/L	MW-28	03/23/2023		1570.0000	*	109.3098
Cobalt, total	ug/L	MW-28	03/24/2020		38.2000	*	5.4000
Cobalt, total	ug/L	MW-28	09/02/2020		41.9000	*	5.4000
Cobalt, total	ug/L	MW-28	03/08/2021		47.3000	*	5.4000
Cobalt, total	ug/L	MW-28	10/15/2021		40.7000	*	5.4000
Cobalt, total	ug/L	MW-28	03/28/2022		79.3000	*	5.4000
Cobalt, total	ug/L	MW-28	09/13/2022		54.2000	*	5.4000
Cobalt, total	ug/L	MW-28	03/23/2023		82.1000	*	5.4000
Nickel, total	ug/L	MW-28	03/24/2020		20.2000	*	11.8000

* - Significantly increased over background.
 ** - Detect at limit for 100% NDs in background (NPPL only).
 *** - Manual exclusion.
 ND = Not Detected, Result = detection limit.

Table 8

**Historical Downgradient Data for Constituent-Well Combinations
that Failed the Current Statistical Evaluation or
are in Verification Resampling Mode**

Constituent	Units	Well	Date		Result		Pred. Limit
Nickel, total	ug/L	MW-28	09/02/2020		21.5000	*	11.8000
Nickel, total	ug/L	MW-28	03/08/2021		23.7000	*	11.8000
Nickel, total	ug/L	MW-28	10/15/2021		18.8000	*	11.8000
Nickel, total	ug/L	MW-28	03/28/2022		29.0000	*	11.8000
Nickel, total	ug/L	MW-28	09/13/2022		22.0000	*	11.8000
Nickel, total	ug/L	MW-28	03/23/2023		29.8000	*	11.8000

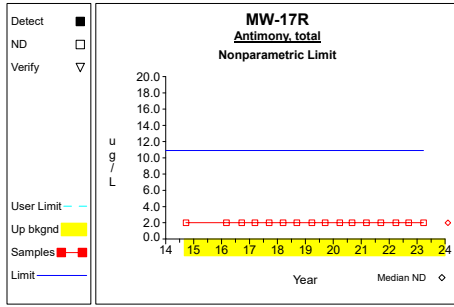
* - Significantly increased over background.

** - Detect at limit for 100% NDs in background (NPPL only).

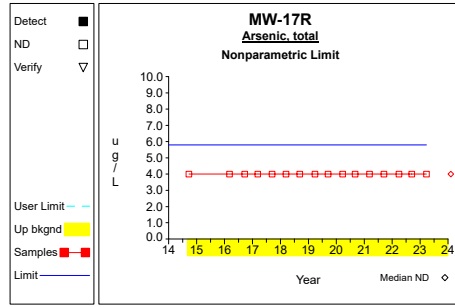
*** - Manual exclusion.

ND = Not Detected, Result = detection limit.

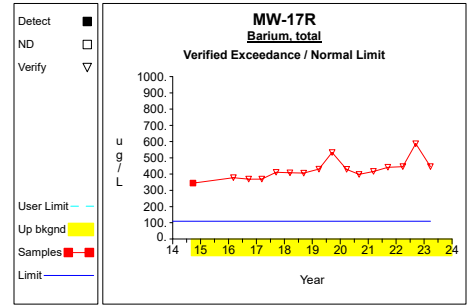
Up vs. Down Prediction Limits



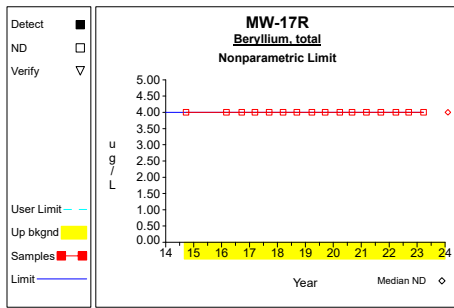
Graph 1



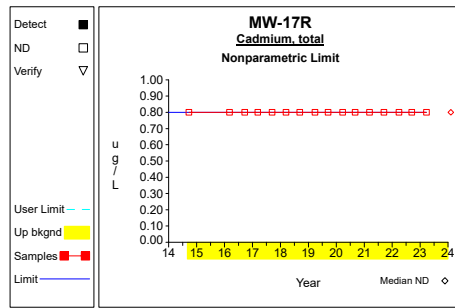
Graph 2



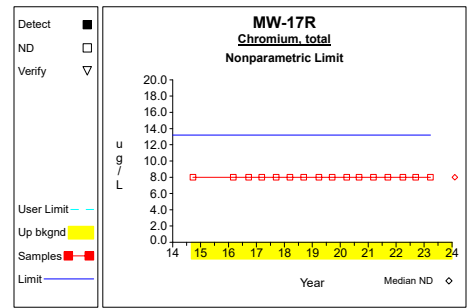
Graph 3



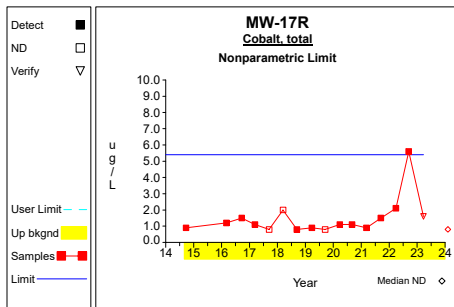
Graph 4



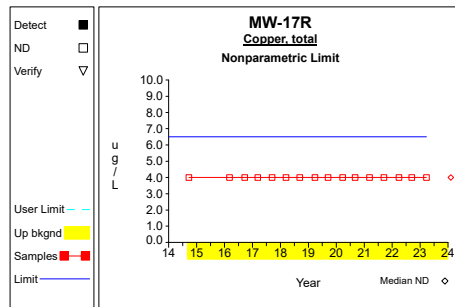
Graph 5



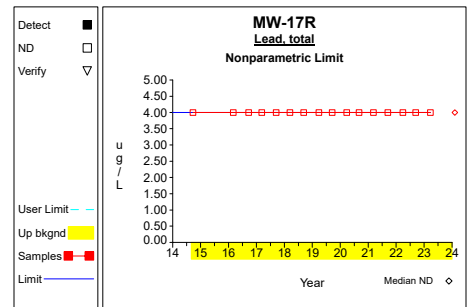
Graph 6



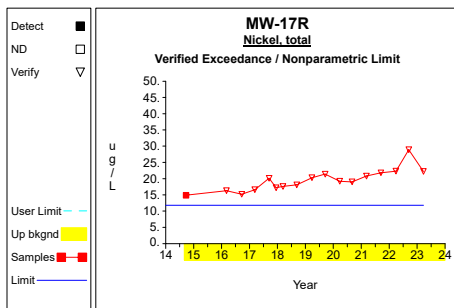
Graph 7



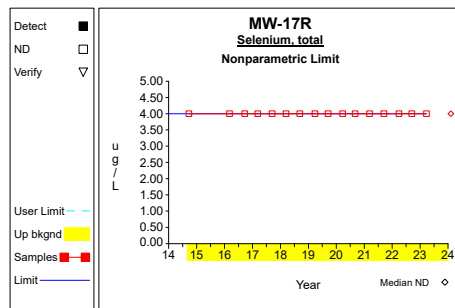
Graph 8



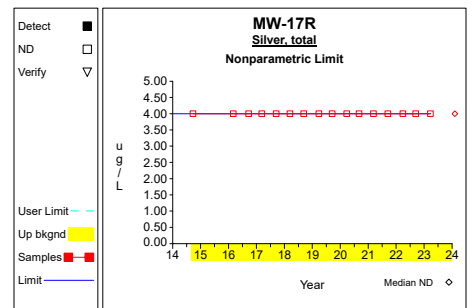
Graph 9



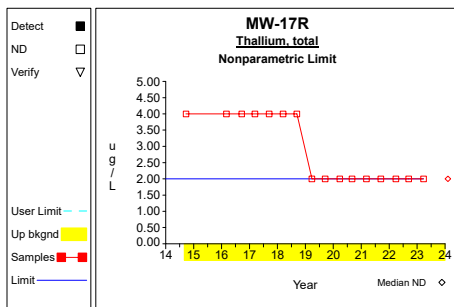
Graph 10



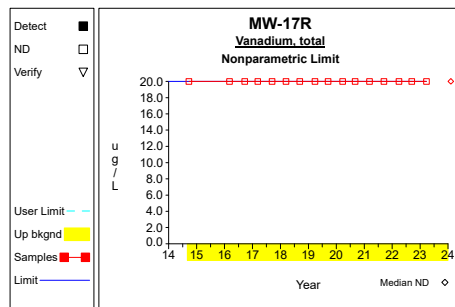
Graph 11



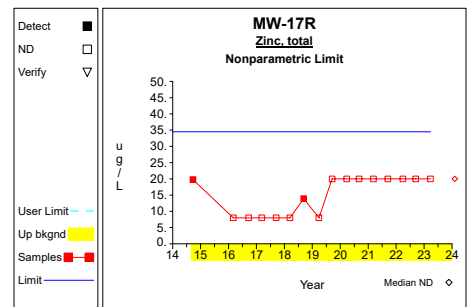
Graph 12



Graph 13

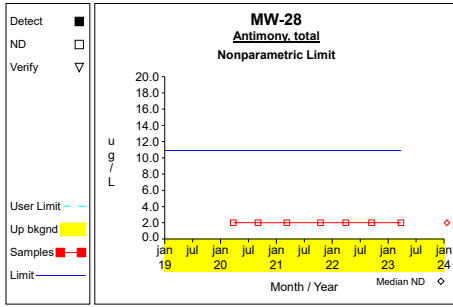


Graph 14

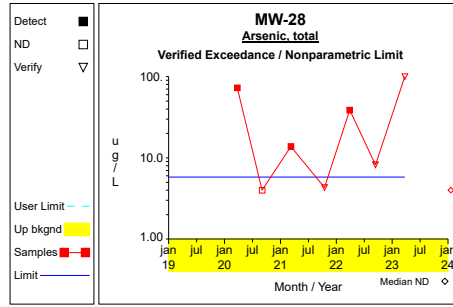


Graph 15

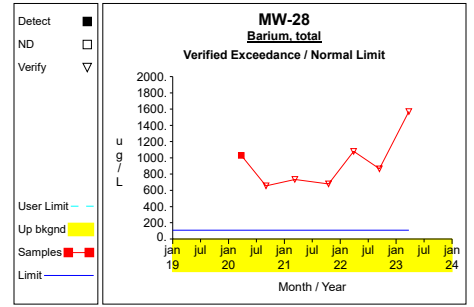
Up vs. Down Prediction Limits



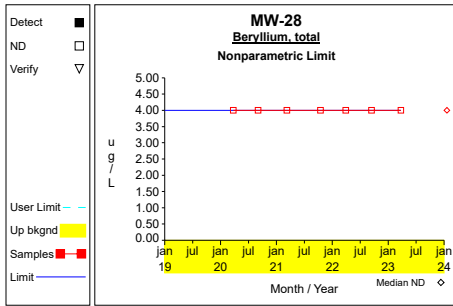
Graph 16



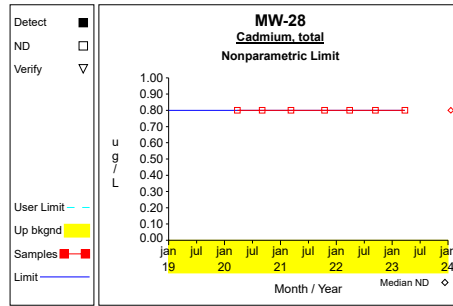
Graph 17



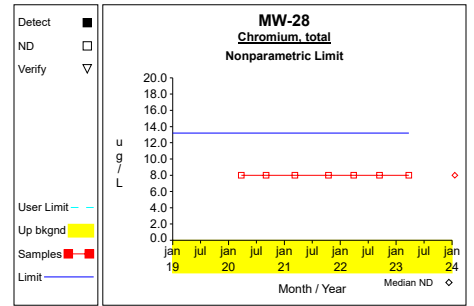
Graph 18



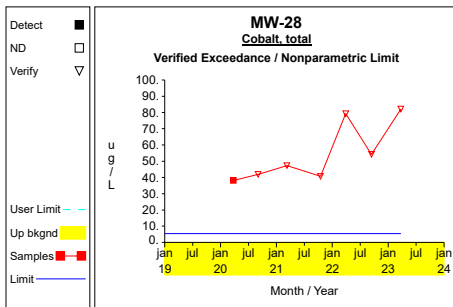
Graph 19



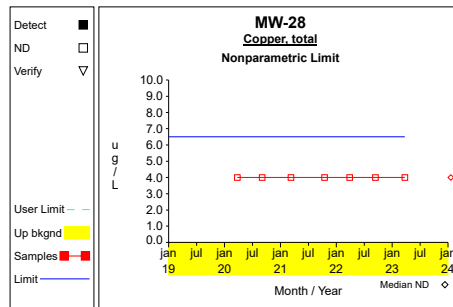
Graph 20



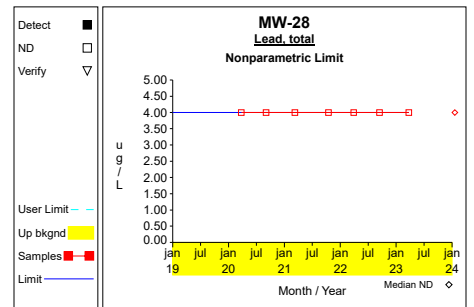
Graph 21



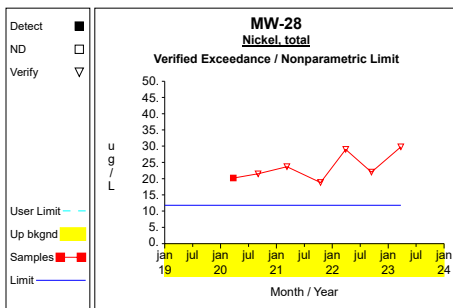
Graph 22



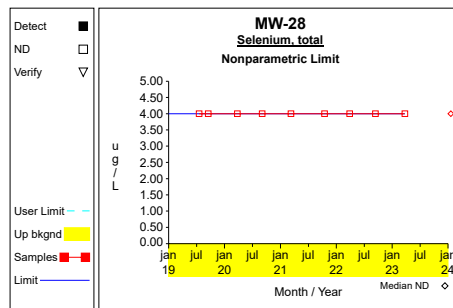
Graph 23



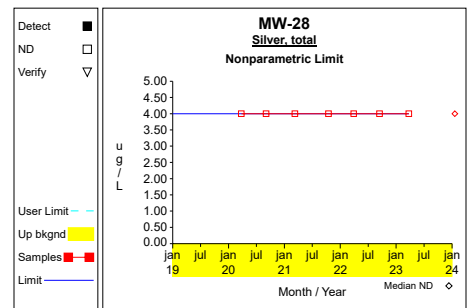
Graph 24



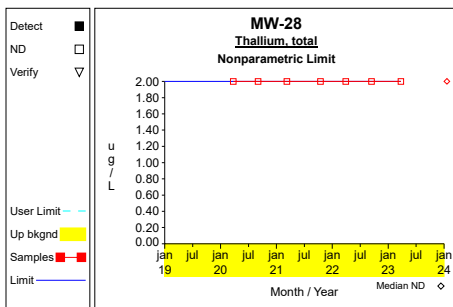
Graph 25



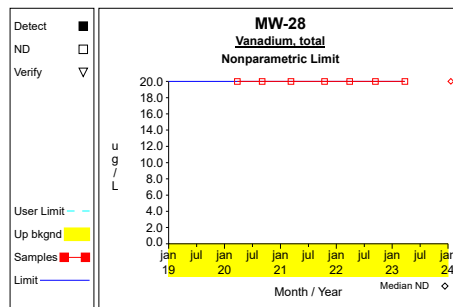
Graph 26



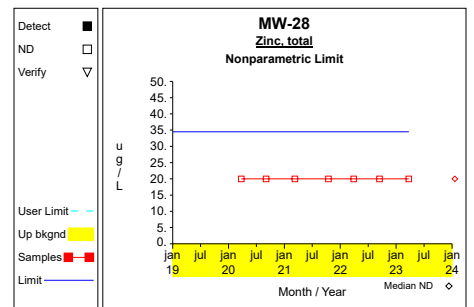
Graph 27



Graph 28

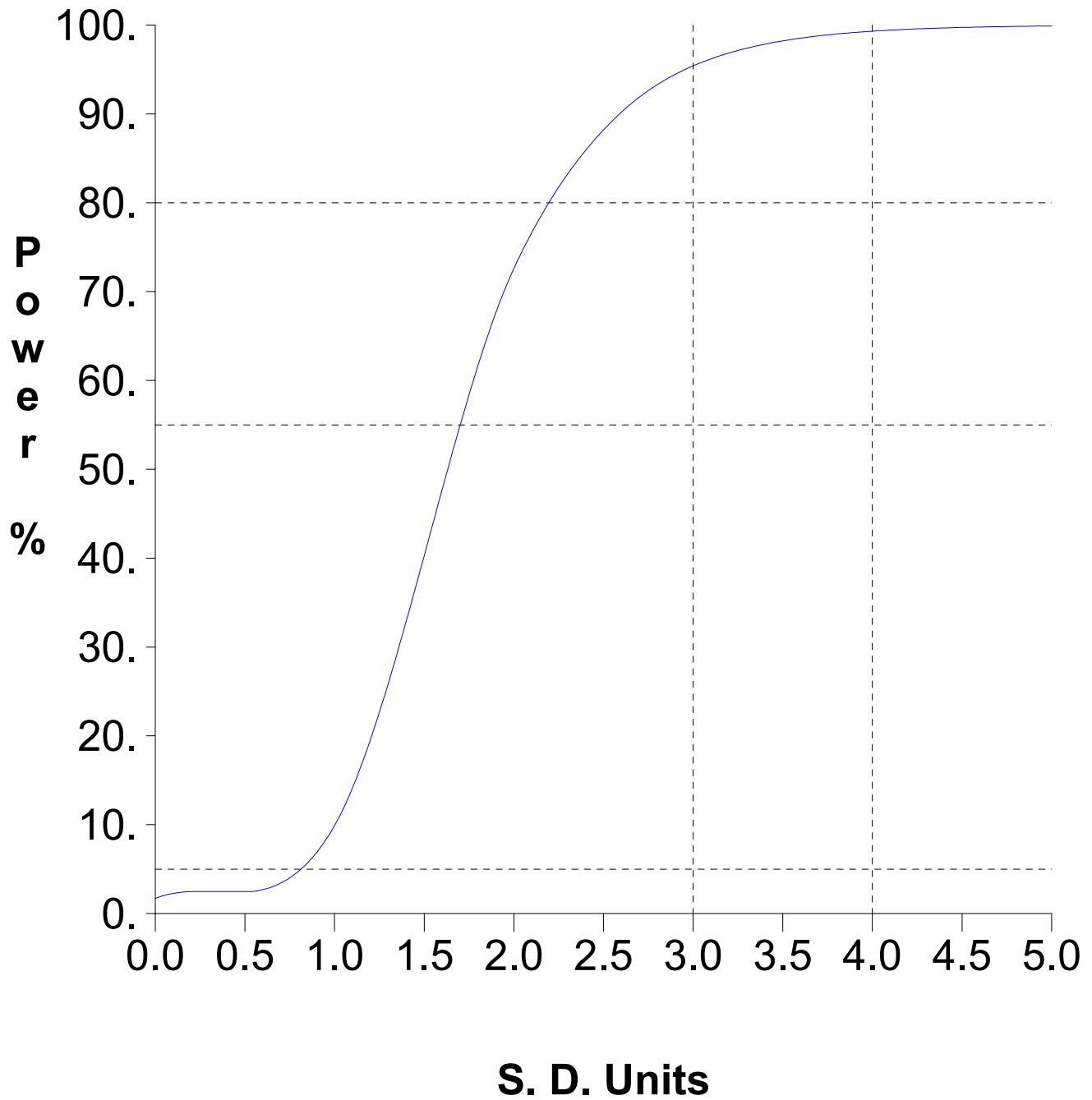


Graph 29



Graph 30

False Positive and False Negative Rates for Current Upgradient vs. Downgradient Monitoring Program



Attachment E

Assessment Statistics for Verified Trace Metals
Deep Ground Water

Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Arsenic, total	ug/L	MW-17R	4	2.000	0.000	1.176	2.000	2.000	10.000		
Barium, total	ug/L	MW-17R	4	480.250	71.192	1.176	396.508	563.992	2000.000	inc	
Cobalt, total	ug/L	MW-17R	4	2.700	1.951	1.176	0.405	4.995	2.100		
Nickel, total	ug/L	MW-17R	4	23.800	3.407	1.176	19.793	27.807	100.000	inc	
Arsenic, total	ug/L	MW-28	4	37.800	44.227	1.176	0.000	89.824	10.000		
Barium, total	ug/L	MW-28	4	1048.500	384.342	1.176	596.403	1500.597	2000.000		
Cobalt, total	ug/L	MW-28	4	64.075	20.005	1.176	40.543	87.607	2.100		**
Nickel, total	ug/L	MW-28	4	24.900	5.368	1.176	18.586	31.214	100.000		

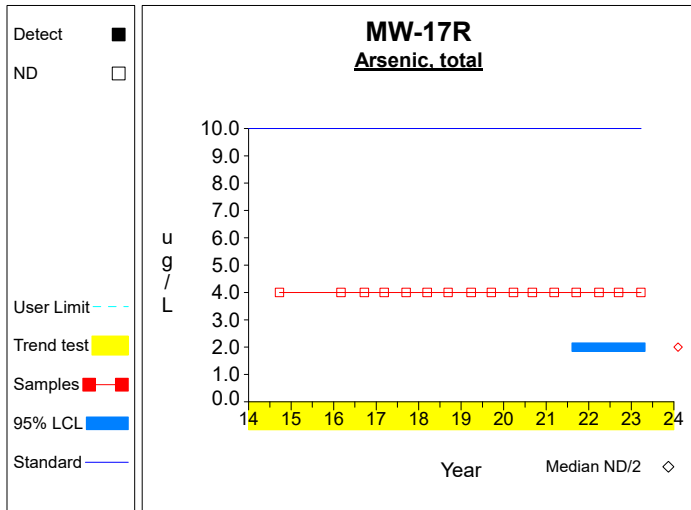
* - Insufficient Data

** - Significant Exceedance

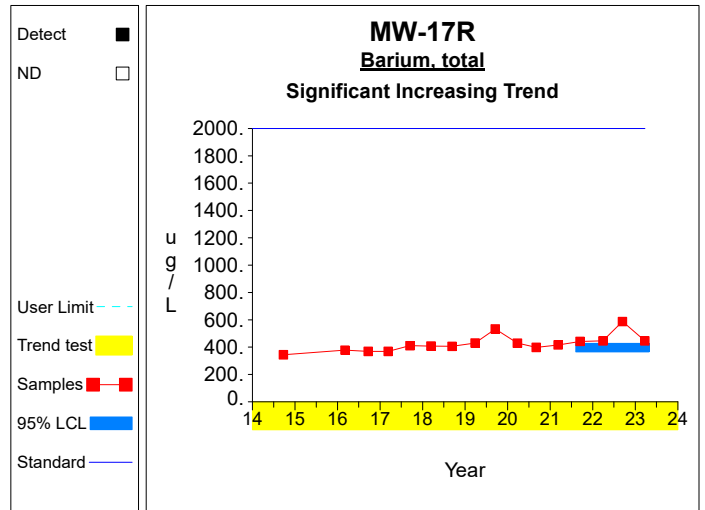
LCL = Lower Confidence Limit

UCL = Upper Confidence Limit

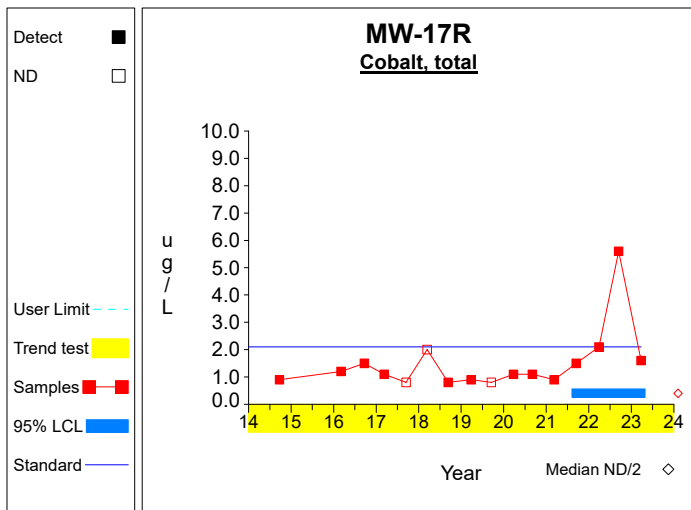
Confidence Limits (Assessment)



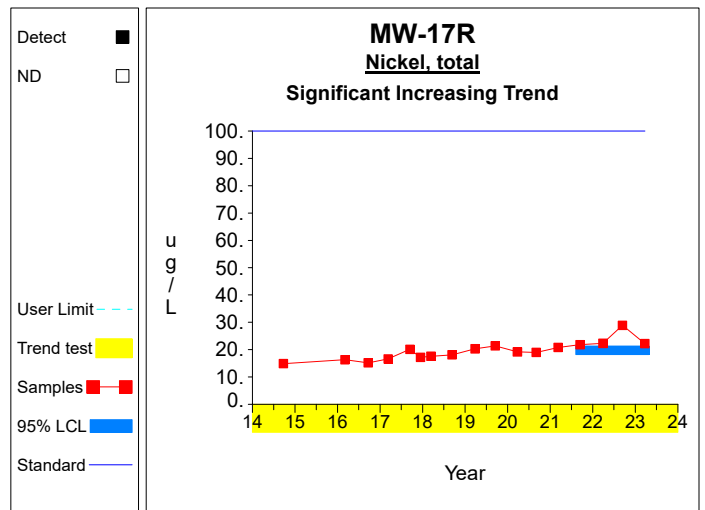
Graph 1



Graph 2

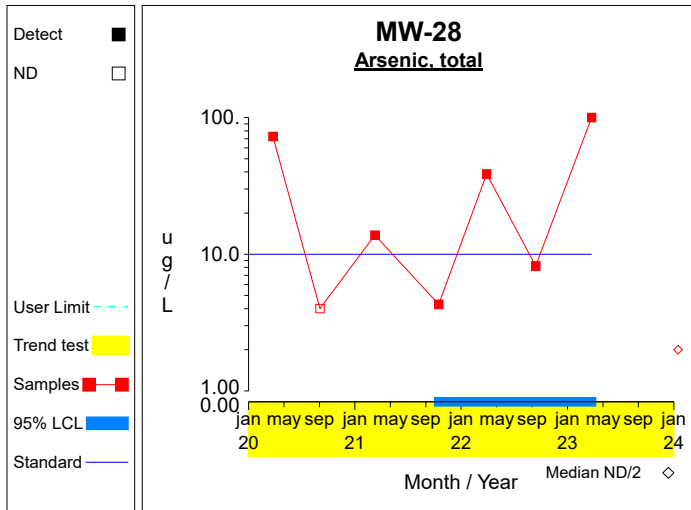


Graph 3

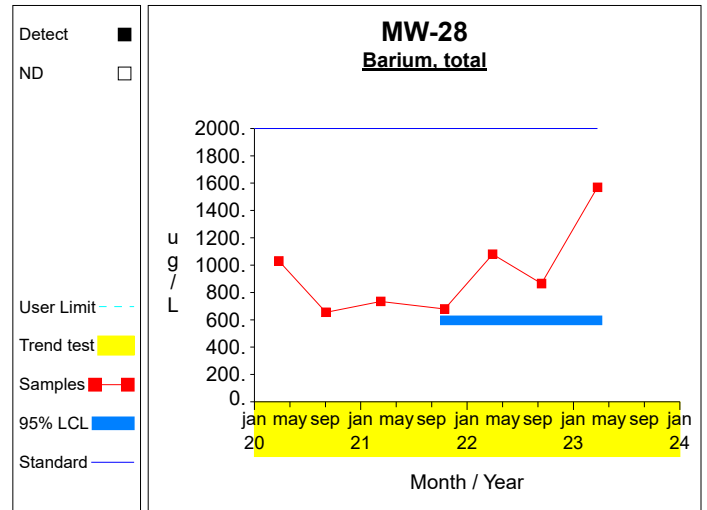


Graph 4

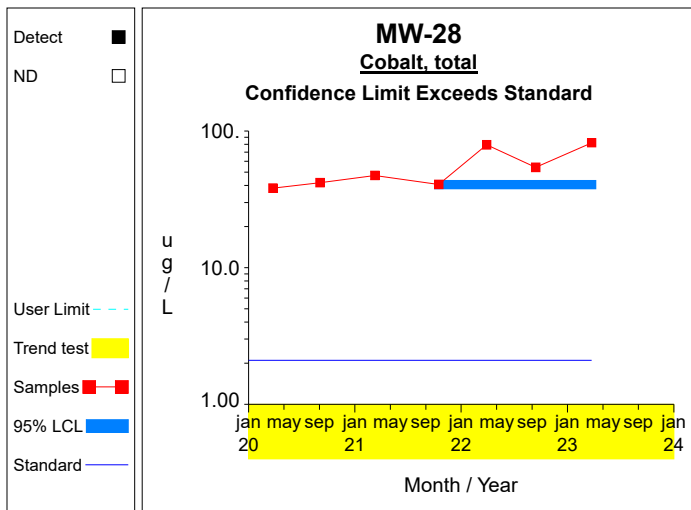
Confidence Limits (Assessment)



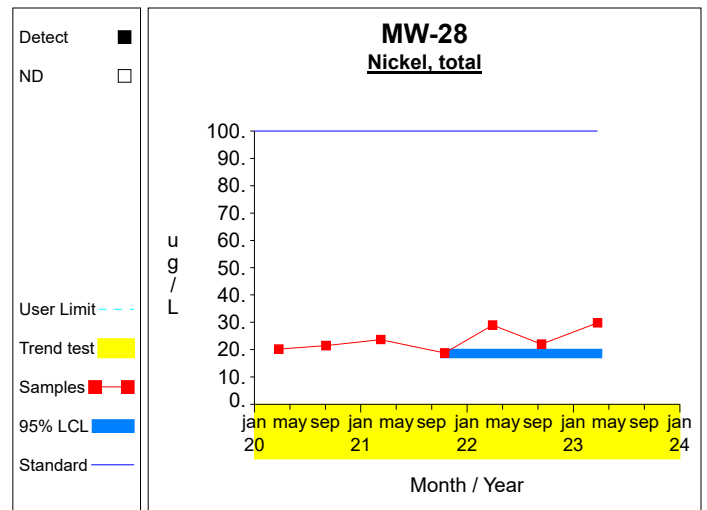
Graph 5



Graph 6



Graph 7



Graph 8

Attachment F

Summary Tables and Graphs for the Intrawell Comparisons

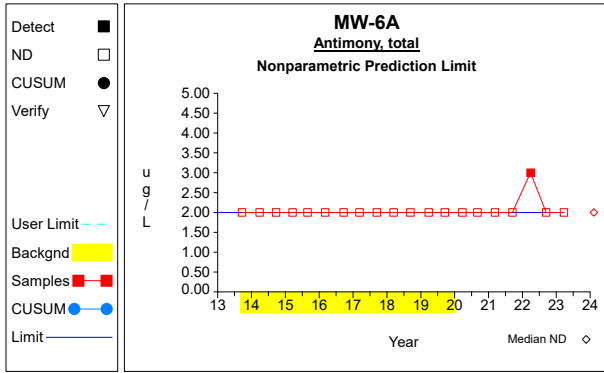
Table 1

**Summary Statistics and Intermediate Computations
for Combined Shewhart-CUSUM Control Charts**

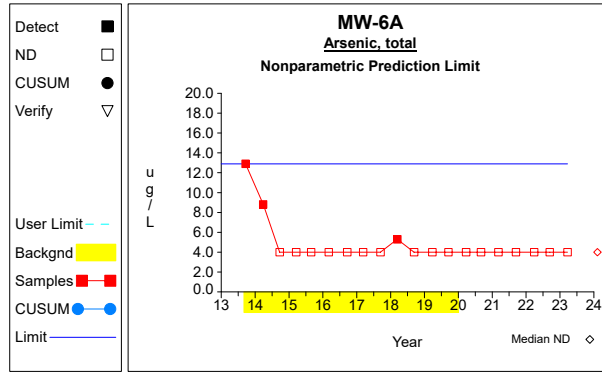
Constituent	Units	Well	N(back)	N(mon)	N(tot)	Mean	SD	R(i-1)	R(i)	S(i-1)	S(i)	Limit	Type	Conf	
Antimony, total	ug/L	MW-6A	13	7	20			2.0000	2.0000			2.0000	nonpar	.99	**
Arsenic, total	ug/L	MW-6A	13	7	20			4.0000	4.0000			12.9000	nonpar	.99	**
Barium, total	ug/L	MW-6A	13	7	20	270.6923	117.6289	174.0000	119.0000	270.6923	270.6923	1035.2803	normal		
Beryllium, total	ug/L	MW-6A	13	7	20			4.0000	4.0000			4.0000	nonpar	.99	**
Cadmium, total	ug/L	MW-6A	13	7	20			0.8000	0.8000			2.6000	nonpar	.99	**
Chromium, total	ug/L	MW-6A	13	7	20			8.0000	8.0000			8.0000	nonpar	.99	**
Cobalt, total	ug/L	MW-6A	14	7	21	1.5000	1.2490	2.8000	0.4000	1.8633	1.5000	9.6185	normal		
Copper, total	ug/L	MW-6A	13	7	20			4.0000	4.0000			19.0000	nonpar	.99	**
Lead, total	ug/L	MW-6A	13	7	20			4.0000	4.0000			5.8000	nonpar	.99	**
Nickel, total	ug/L	MW-6A	14	7	21	14.0429	9.7595	25.9000	18.0000	25.5178	22.1553	77.4799	normal		
Selenium, total	ug/L	MW-6A	13	7	20			4.4000	4.0000			4.0000	nonpar	.99	**
Silver, total	ug/L	MW-6A	13	7	20			4.0000	4.0000			4.0000	nonpar	.99	**
Thallium, total	ug/L	MW-6A	13	7	20			2.0000	2.0000			4.0000	nonpar	.99	**
Vanadium, total	ug/L	MW-6A	13	7	20			20.0000	20.0000			20.0000	nonpar	.99	**
Zinc, total	ug/L	MW-6A	13	7	20	14.5923	14.5122	20.0000	20.0000	14.5923	14.5923	108.9216	normal		

N(back) and N(mon) = Non-outlier measurements in the background and monitoring periods.
 N(tot) = All independent measurements for that constituent and well.
 For transformed data, mean and SD in transformed units and control limit in original units.
 Conf = confidence level for passing initial test or one verification resample (nonparametric test only).
 * - Insufficient Data.
 ** - Detection Frequency < 25%.
 *** - Zero Variance.

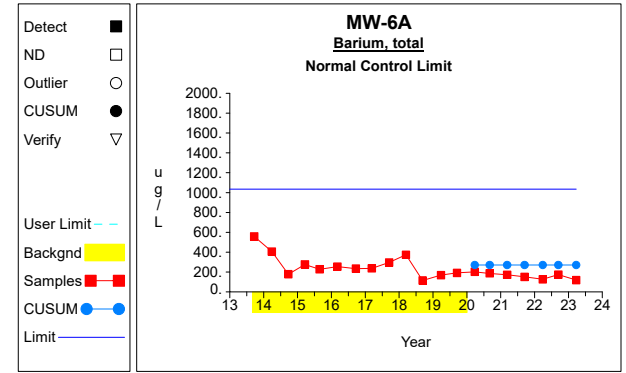
Intra-Well Control Charts / Prediction Limits



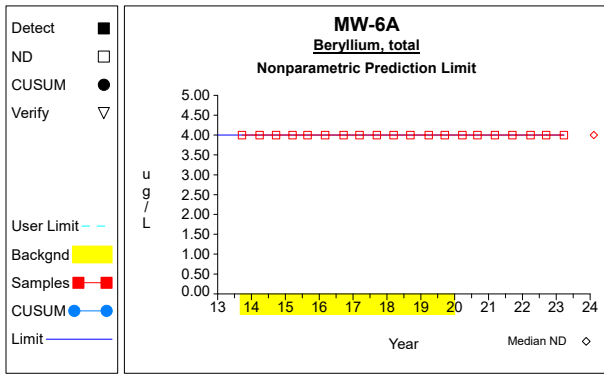
Graph 1



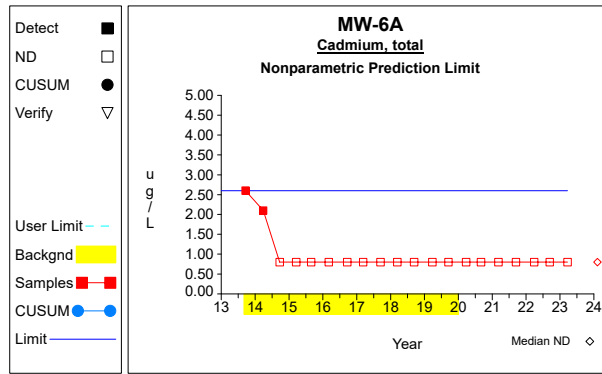
Graph 2



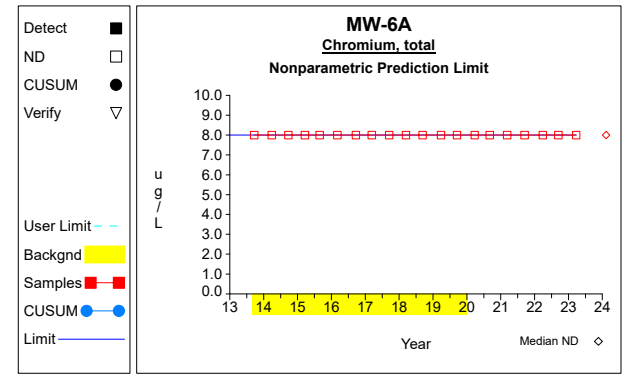
Graph 3



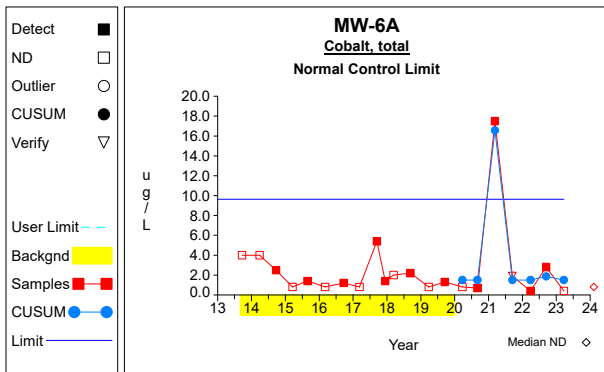
Graph 4



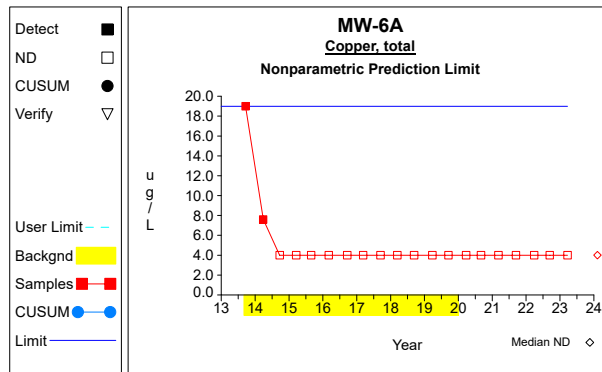
Graph 5



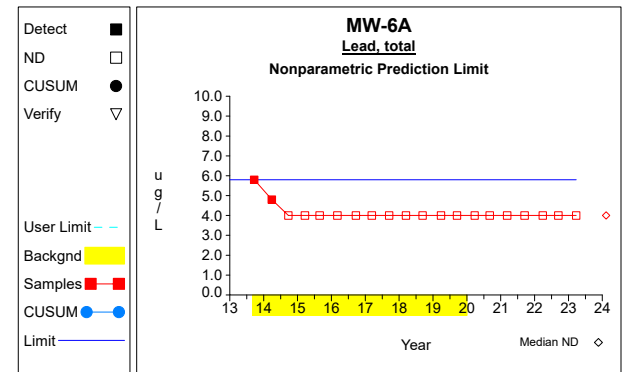
Graph 6



Graph 7

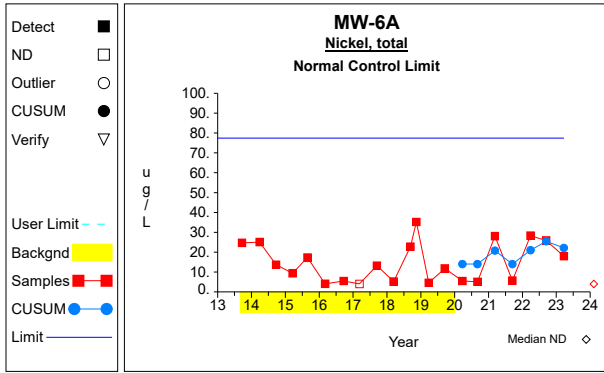


Graph 8

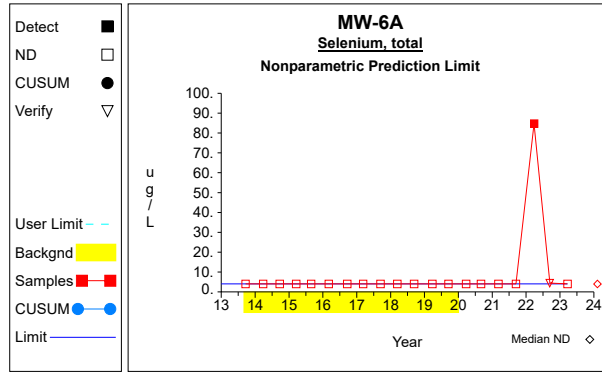


Graph 9

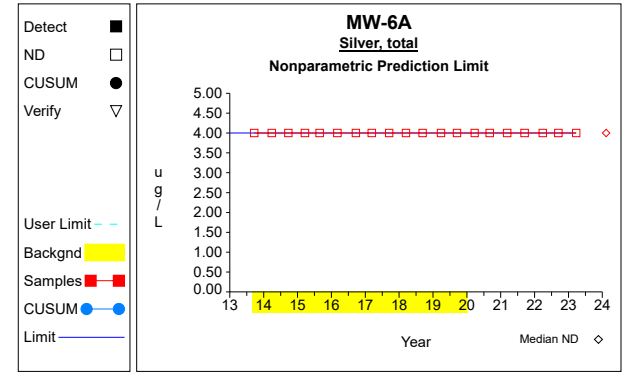
Intra-Well Control Charts / Prediction Limits



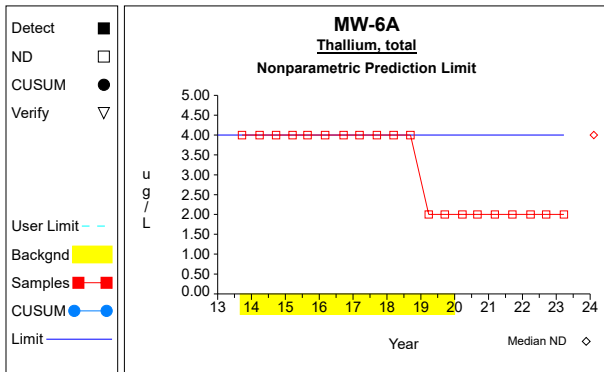
Graph 10



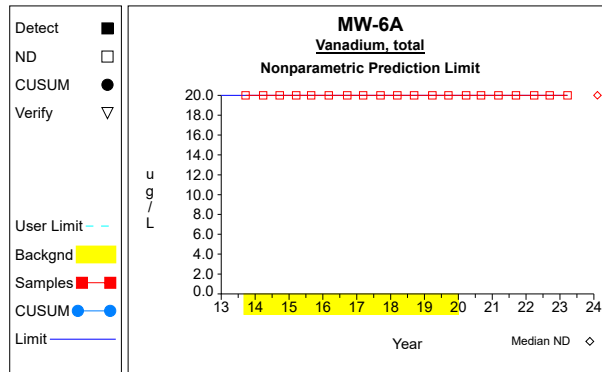
Graph 11



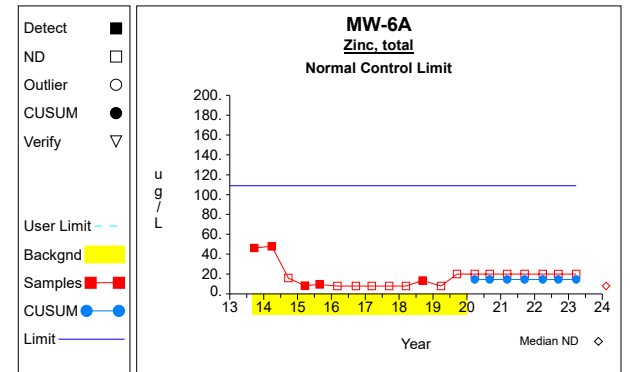
Graph 12



Graph 13

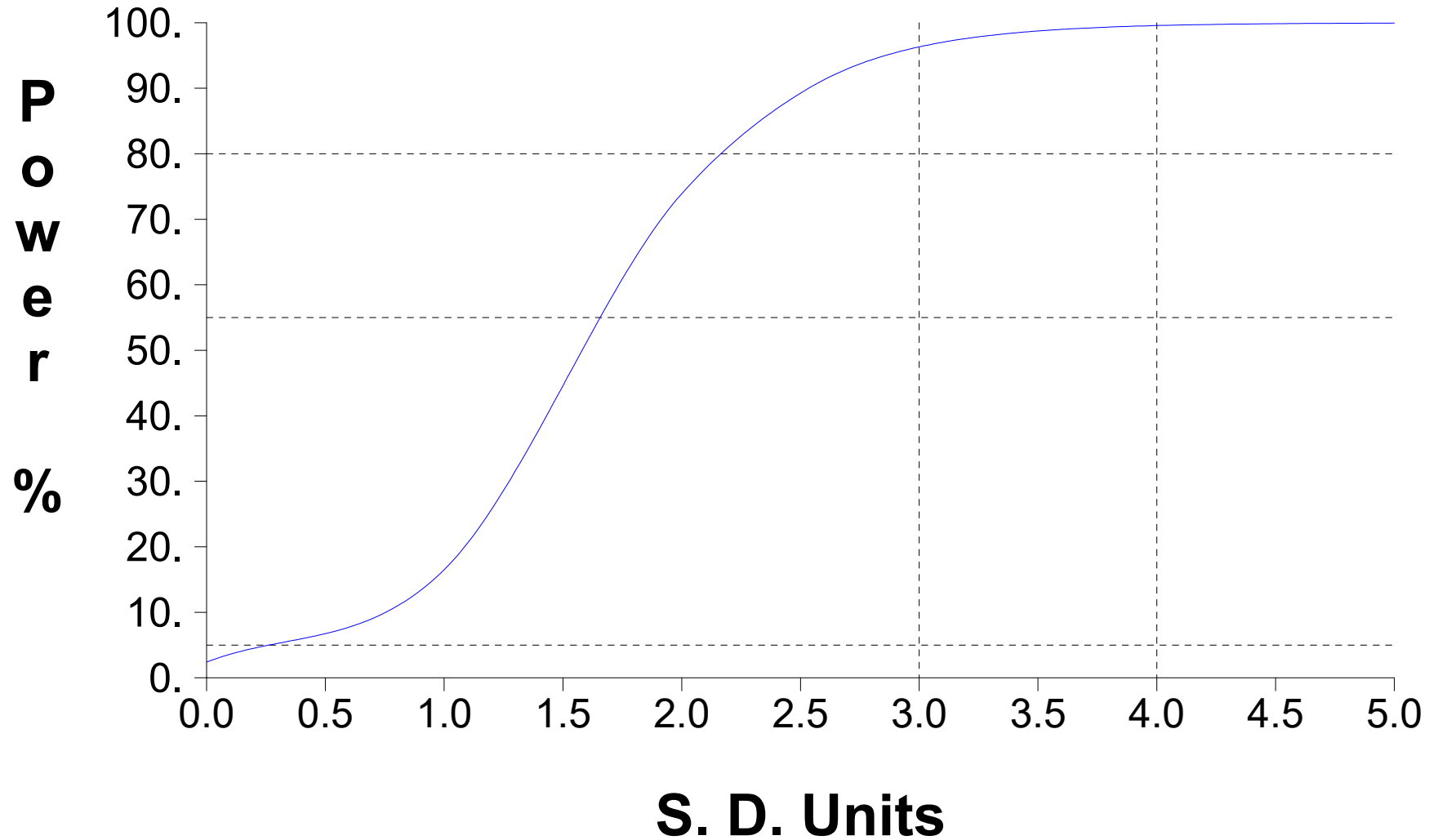


Graph 14



Graph 15

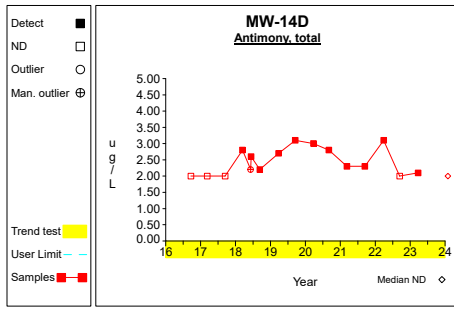
False Positive and False Negative Rates for Current Intra-Well Control Charts Monitoring Program



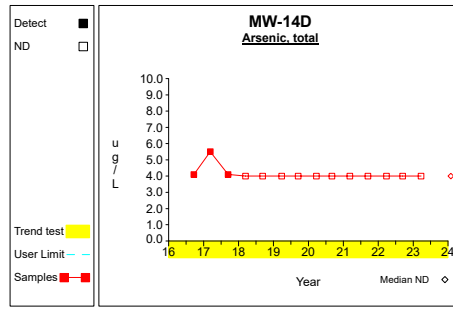
Attachment G

Time Series of Trace Metals at Downgradient Attenuation Zone Wells

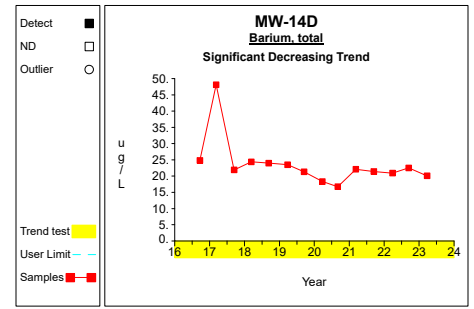
Time Series



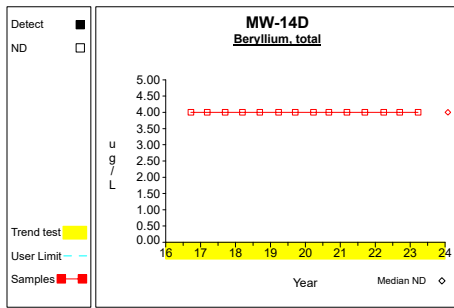
Graph 1



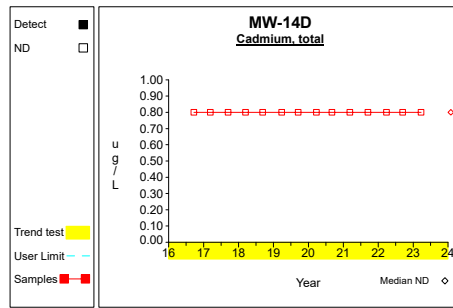
Graph 2



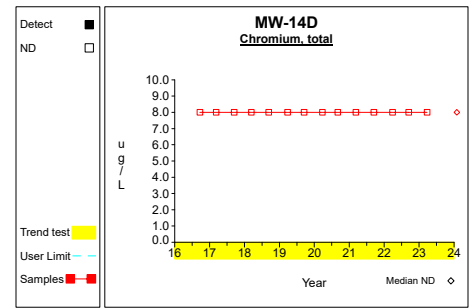
Graph 3



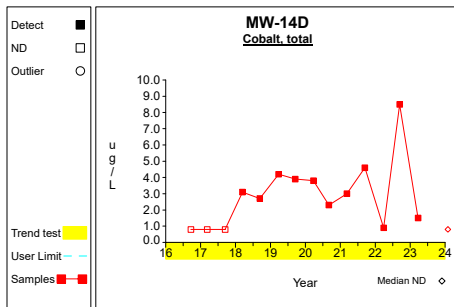
Graph 4



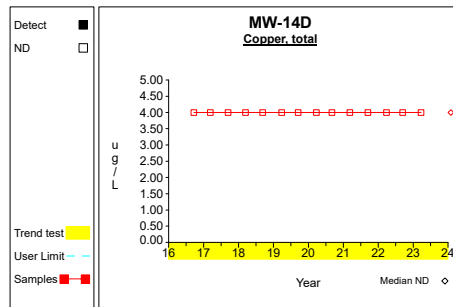
Graph 5



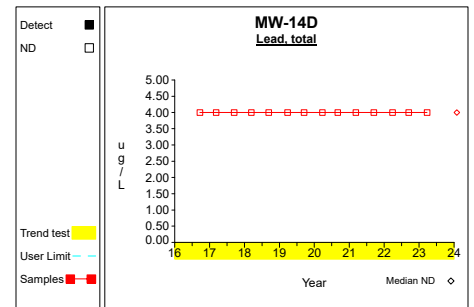
Graph 6



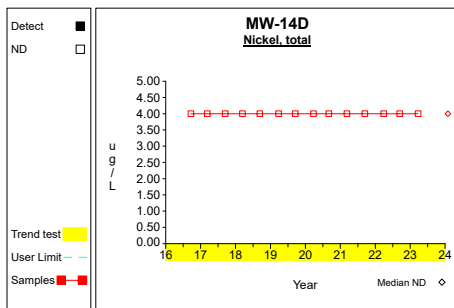
Graph 7



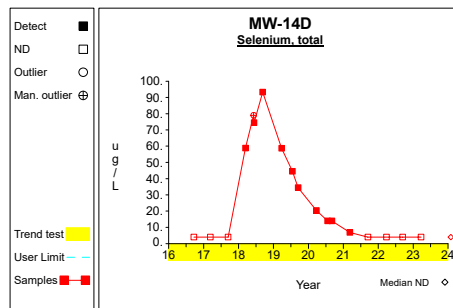
Graph 8



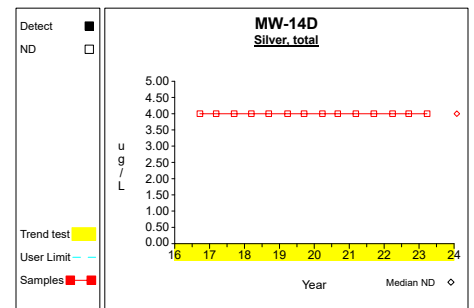
Graph 9



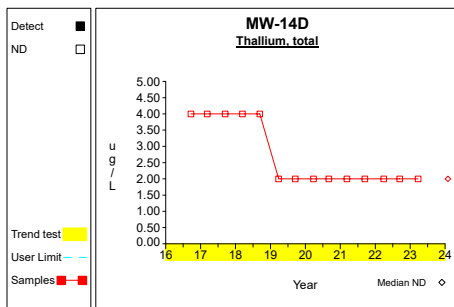
Graph 10



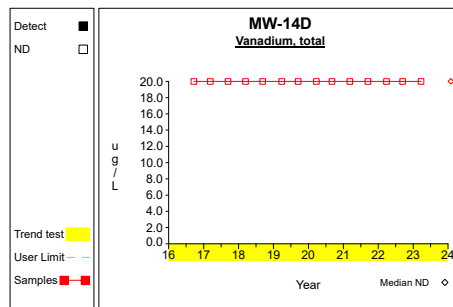
Graph 11



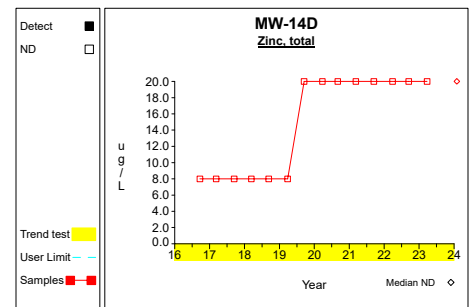
Graph 12



Graph 13

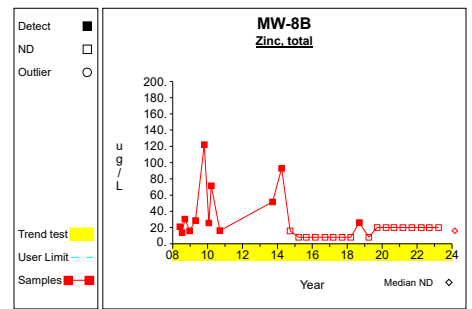
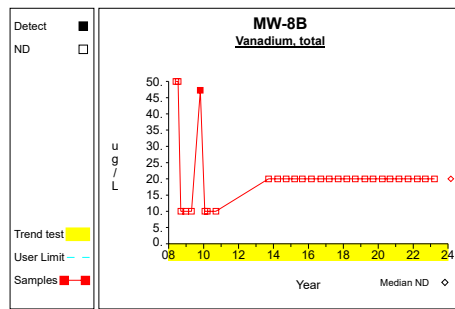
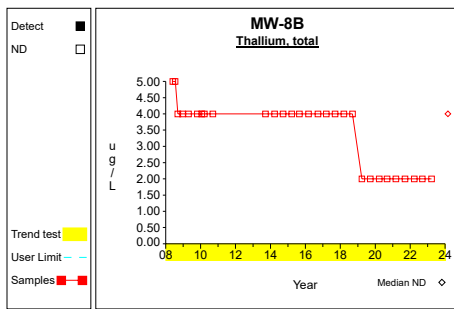
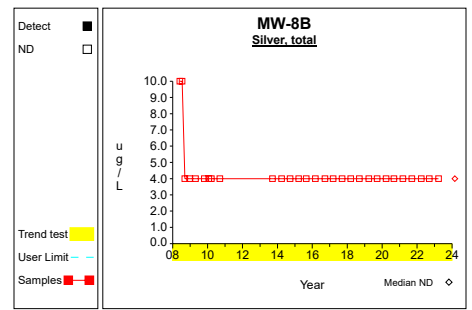
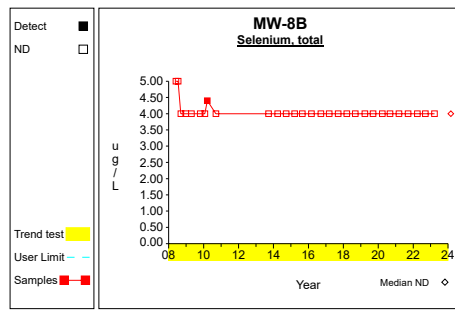
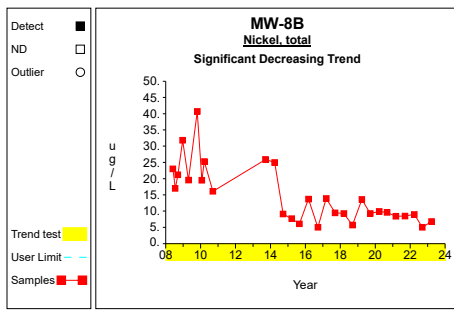
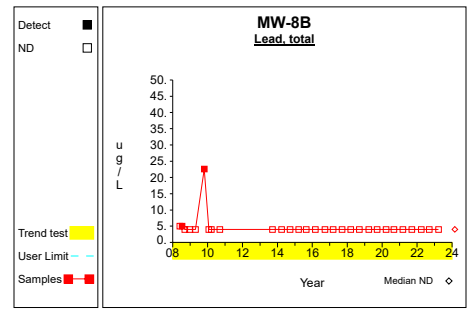
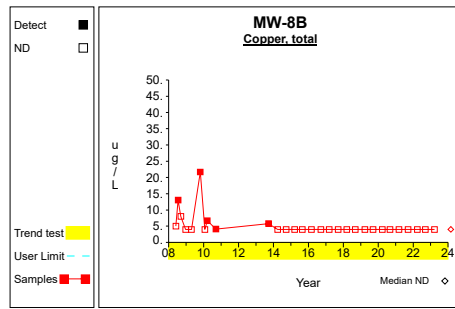
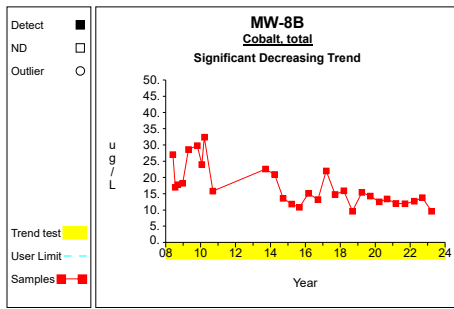
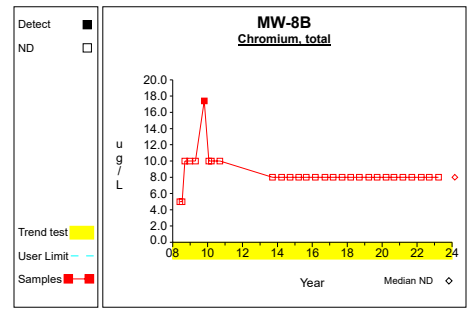
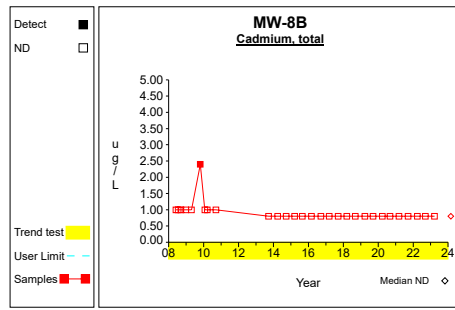
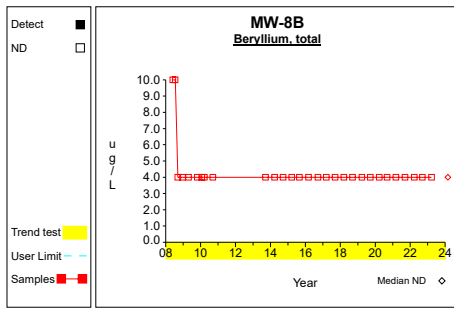
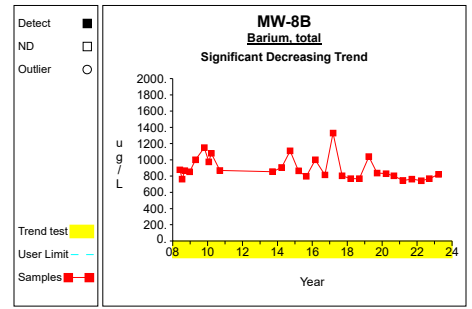
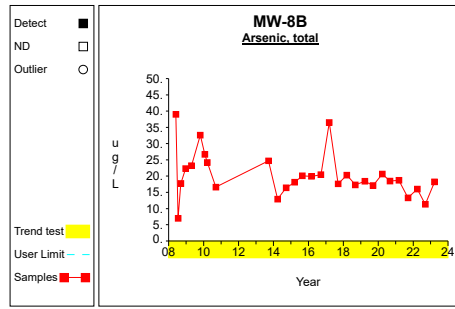
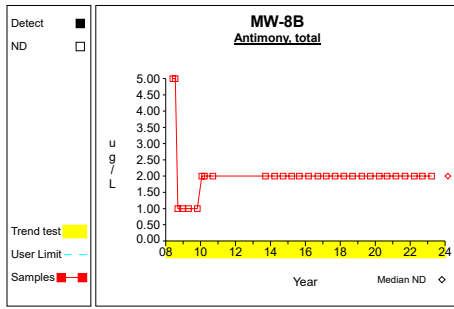


Graph 14

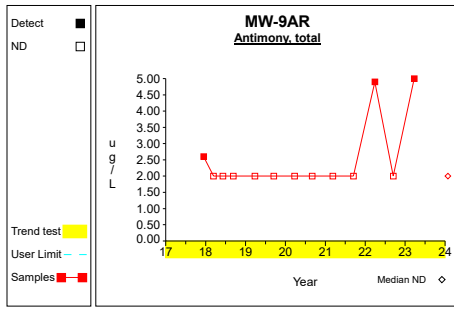


Graph 15

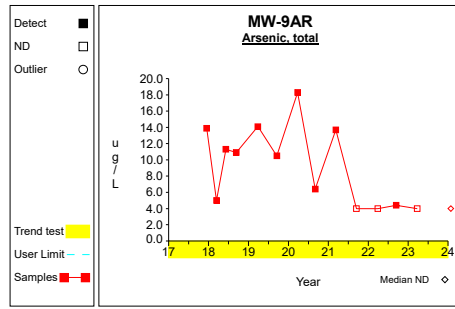
Time Series



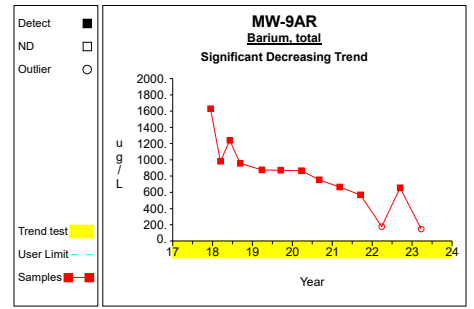
Time Series



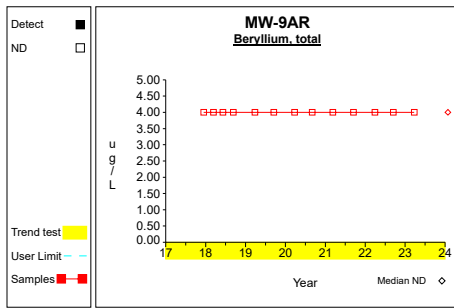
Graph 31



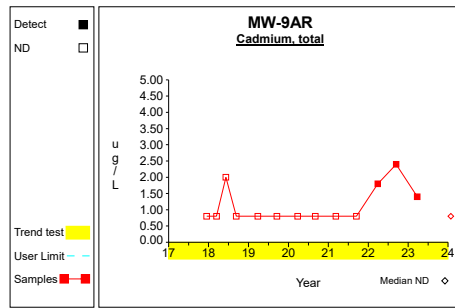
Graph 32



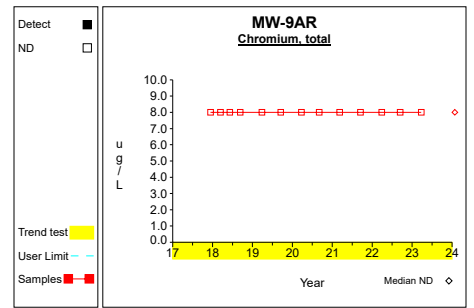
Graph 33



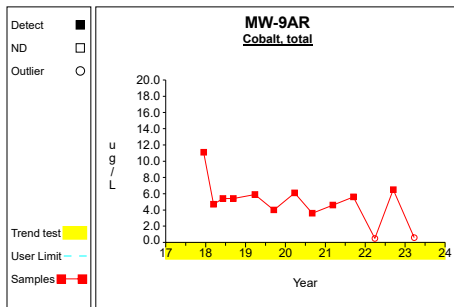
Graph 34



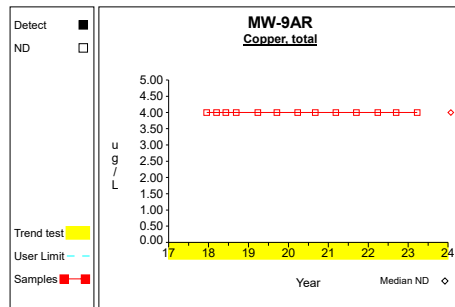
Graph 35



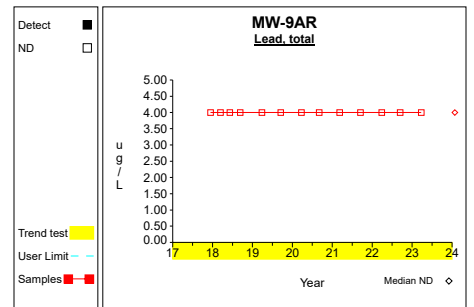
Graph 36



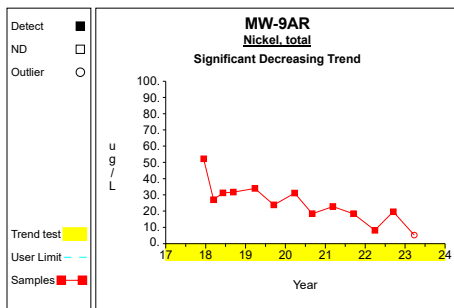
Graph 37



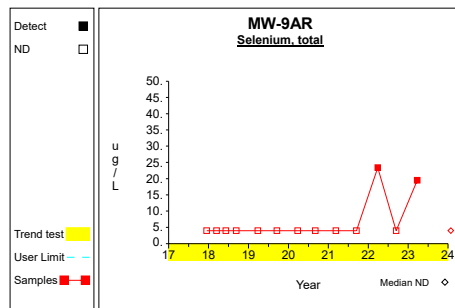
Graph 38



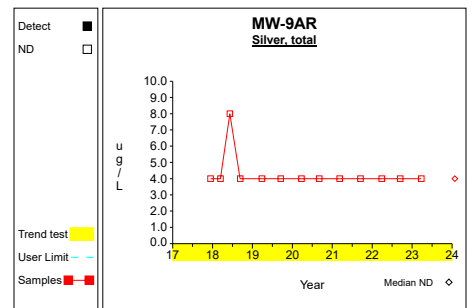
Graph 39



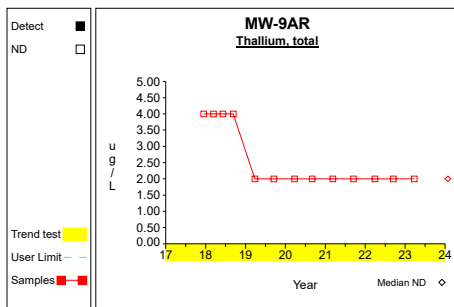
Graph 40



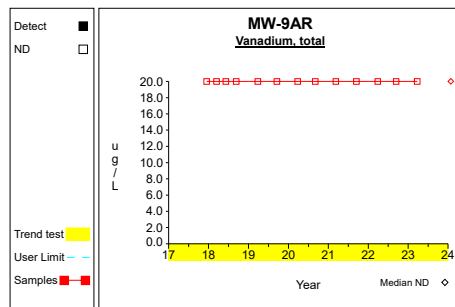
Graph 41



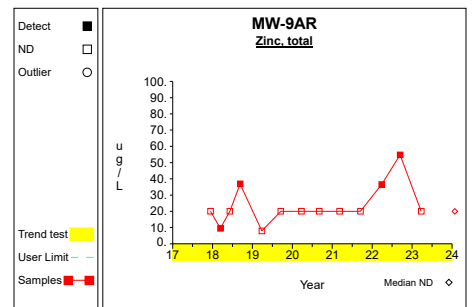
Graph 42



Graph 43



Graph 44



Graph 45

Attachment H

Summary of Historical VOC Detections

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
1,4-dichlorobenzene	L-26	9/02/2020		14.0	1.0	ug/L
1,4-dichlorobenzene	L-26	3/08/2021		8.2	1.0	ug/L
2-butanone (mek)	L-26	9/02/2020		9.4	5.0	ug/L
Acetone	L-26	3/08/2021		13.1	10.0	ug/L
Benzene	L-26	9/02/2020		4.1	1.0	ug/L
Benzene	L-26	3/08/2021		3.3	1.0	ug/L
Chlorobenzene	L-26	9/02/2020		23.9	1.0	ug/L
Chlorobenzene	L-26	3/08/2021		13.3	1.0	ug/L
Ethylbenzene	L-26	9/02/2020		1	1	ug/L
Xylenes, total	L-26	9/02/2020		3.7	2.0	ug/L
Xylenes, total	L-26	3/08/2021		2.6	2.0	ug/L
1,4-dichlorobenzene	LW26	3/28/2022		7.1	1.0	ug/L
1,4-dichlorobenzene	LW26	3/23/2023		5.6	1.0	ug/L
Benzene	LW26	3/28/2022		2.3	1.0	ug/L
Benzene	LW26	3/23/2023		2.4	1.0	ug/L
Chlorobenzene	LW26	3/28/2022		11.5	1.0	ug/L
Chlorobenzene	LW26	3/23/2023		9.2	1.0	ug/L
Toluene	LW26	3/23/2023		1.5	1.0	ug/L
Xylenes, total	LW26	3/23/2023		2.8	2.0	ug/L
Acetone	MW-11C	9/14/2017		14.2	10.0	ug/L
Chloroform	MW-14D	9/24/2014		1.6	1.0	ug/L
Chloroform	MW-14D	12/02/2014		1.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-14D	9/24/2014		1.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-14D	12/02/2014		8.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-14D	3/03/2016		1.4	1.0	ug/L
(3 + 4)-methylphenol	MW-15	3/09/2017		31	8	ug/L
Acetone	MW-15	9/23/2014		11.3	10.0	ug/L
Acetone	MW-15	3/09/2017		10.5	10.0	ug/L
Acetone	MW-15	9/14/2017		18.2	10.0	ug/L
Benzene	MW-15	3/09/2017		1.7	1.0	ug/L
Benzene	MW-15	9/14/2017		1.3	1.0	ug/L
Bis(2-ethylhexyl) phthalate	MW-15	3/09/2017		12	8	ug/L
Toluene	MW-15	3/09/2017		1	1	ug/L
Xylenes, total	MW-15	9/14/2017		3.3	2.0	ug/L
Acetone	MW-17R	9/14/2017		13.3	10.0	ug/L
Bis(2-ethylhexyl) phthalate	MW-17R	3/28/2022		13	6	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/23/2014		1.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/18/2015		6.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	8/27/2015		3.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/03/2016		3.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/21/2016		2.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/09/2017		6.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/14/2017		2.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/12/2018		3.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/10/2018		2.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/26/2019		3.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/16/2019		4.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/24/2020		4.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/02/2020		3.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/08/2021		3.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/14/2021		4.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/28/2022		4.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/13/2022		3.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/23/2023		2.2	1.0	ug/L
Trans-1,2-dichloroethylene	MW-17R	3/12/2018		3.3	1.0	ug/L
Acetone	MW-21	9/14/2017		12	10	ug/L
Acetone	MW-23B	9/14/2017		13	10	ug/L
Cis-1,2-dichloroethylene	MW-28	9/24/2014		4.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	12/02/2014		3.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/19/2015		3.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	8/27/2015		2.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	12/10/2015		3.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	2/11/2016		5.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/04/2016		14.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	5/10/2016		7.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	9/20/2016		5.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/09/2017		15.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	9/14/2017		15.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/12/2018		21.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	9/10/2018		12.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/26/2019		17.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	9/16/2019		13.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/24/2020		15.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	9/02/2020		17.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/08/2021		10.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	10/15/2021		21.0	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Cis-1,2-dichloroethylene	MW-28	3/28/2022		15.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	9/13/2022		14.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/23/2023		10.0	1.0	ug/L
Trans-1,2-dichloroethylene	MW-28	3/12/2018		20.2	1.0	ug/L
Trans-1,2-dichloroethylene	MW-28	9/02/2020		1.1	1.0	ug/L
Vinyl chloride	MW-28	3/04/2016		1.4	1.0	ug/L
Vinyl chloride	MW-28	3/09/2017		1.8	1.0	ug/L
Vinyl chloride	MW-28	9/14/2017		1.1	1.0	ug/L
Vinyl chloride	MW-28	3/12/2018		2.0	1.0	ug/L
Vinyl chloride	MW-28	3/26/2019		1.4	1.0	ug/L
Vinyl chloride	MW-28	9/02/2020		1.5	1.0	ug/L
Vinyl chloride	MW-28	10/15/2021		1.6	1.0	ug/L
Vinyl chloride	MW-28	3/28/2022		1.5	1.0	ug/L
Vinyl chloride	MW-28	3/23/2023		1.2	1.0	ug/L
1,4-dichlorobenzene	MW-31	9/24/2014		4.8	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/19/2015		5.4	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/03/2016		5.5	1.0	ug/L
1,4-dichlorobenzene	MW-31	9/20/2016		5.2	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/09/2017		6.2	1.0	ug/L
1,4-dichlorobenzene	MW-31	9/14/2017		6.1	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/12/2018		6.3	1.0	ug/L
1,4-dichlorobenzene	MW-31	9/10/2018		3.8	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/26/2019		6.0	1.0	ug/L
1,4-dichlorobenzene	MW-31	9/16/2019		5.0	1.0	ug/L
1,4-dichlorobenzene	MW-31	9/02/2020		4.8	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/08/2021		4.6	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/28/2022		4.8	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/23/2023		3.5	1.0	ug/L
Acetone	MW-31	9/14/2017		15	10	ug/L
Benzene	MW-31	9/24/2014		3.9	1.0	ug/L
Benzene	MW-31	3/19/2015		5.2	1.0	ug/L
Benzene	MW-31	3/03/2016		4.0	1.0	ug/L
Benzene	MW-31	9/20/2016		3.3	1.0	ug/L
Benzene	MW-31	3/09/2017		5.0	1.0	ug/L
Benzene	MW-31	9/14/2017		4.0	1.0	ug/L
Benzene	MW-31	3/12/2018		5.0	1.0	ug/L
Benzene	MW-31	9/10/2018		2.1	1.0	ug/L
Benzene	MW-31	3/26/2019		1.5	1.0	ug/L
Benzene	MW-31	9/16/2019		1.5	1.0	ug/L
Benzene	MW-31	9/02/2020		1.3	1.0	ug/L
Benzene	MW-31	3/08/2021		1.2	1.0	ug/L
Benzene	MW-31	3/28/2022		1.4	1.0	ug/L
Benzene	MW-31	3/23/2023		1.4	1.0	ug/L
Chlorobenzene	MW-31	9/24/2014		7.1	1.0	ug/L
Chlorobenzene	MW-31	3/19/2015		7.9	1.0	ug/L
Chlorobenzene	MW-31	3/03/2016		7.6	1.0	ug/L
Chlorobenzene	MW-31	9/20/2016		7.0	1.0	ug/L
Chlorobenzene	MW-31	3/09/2017		8.4	1.0	ug/L
Chlorobenzene	MW-31	9/14/2017		8.6	1.0	ug/L
Chlorobenzene	MW-31	3/12/2018		8.6	1.0	ug/L
Chlorobenzene	MW-31	9/10/2018		6.2	1.0	ug/L
Chlorobenzene	MW-31	3/26/2019		5.9	1.0	ug/L
Chlorobenzene	MW-31	9/16/2019		4.5	1.0	ug/L
Chlorobenzene	MW-31	9/02/2020		2.7	1.0	ug/L
Chlorobenzene	MW-31	3/08/2021		3.0	1.0	ug/L
Chlorobenzene	MW-31	3/28/2022		2.9	1.0	ug/L
Chlorobenzene	MW-31	3/23/2023		1.9	1.0	ug/L
Chloroethane	MW-31	9/14/2017		1.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-31	3/12/2018		2.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-31	3/26/2019		4.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-31	9/16/2019		2.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-31	3/08/2021		1.7	1.0	ug/L
Vinyl chloride	MW-31	9/14/2017		1.6	1.0	ug/L
Vinyl chloride	MW-31	3/12/2018		2.2	1.0	ug/L
Vinyl chloride	MW-31	3/26/2019		2.1	1.0	ug/L
Vinyl chloride	MW-31	9/16/2019		1.0	1.0	ug/L
Vinyl chloride	MW-31	3/08/2021		1.9	1.0	ug/L
Xylenes, total	MW-31	3/09/2017		3	2	ug/L
Xylenes, total	MW-31	3/26/2019		2	2	ug/L
Chlorobenzene	MW-32	3/03/2016		1.8	1.0	ug/L
Chlorobenzene	MW-32	9/20/2016		1.6	1.0	ug/L
Chlorobenzene	MW-32	3/09/2017		2.7	1.0	ug/L
Chlorobenzene	MW-32	9/14/2017		2.7	1.0	ug/L
Chlorobenzene	MW-32	3/12/2018		3.9	1.0	ug/L
Chlorobenzene	MW-32	9/10/2018		1.7	1.0	ug/L
Chlorobenzene	MW-32	3/26/2019		1.1	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Chlorobenzene	MW-32	9/16/2019		3.0	1.0	ug/L
Chlorobenzene	MW-32	3/24/2020		2.8	1.0	ug/L
Chlorobenzene	MW-32	9/02/2020		2.0	1.0	ug/L
Chlorobenzene	MW-32	3/08/2021		1.2	1.0	ug/L
Chlorobenzene	MW-32	3/28/2022		2.5	1.0	ug/L
Chloromethane	MW-32	9/14/2017		1.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	9/24/2014		2.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	3/19/2015		2.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	3/03/2016		2.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	9/20/2016		1.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	3/09/2017		2.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	9/14/2017		1.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	3/26/2019		1.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	9/16/2019		2.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	3/24/2020		1.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	3/28/2022		1.0	1.0	ug/L
Vinyl chloride	MW-32	9/24/2014		2.1	1.0	ug/L
Vinyl chloride	MW-32	3/19/2015		2.2	1.0	ug/L
Vinyl chloride	MW-32	3/03/2016		1.8	1.0	ug/L
Vinyl chloride	MW-32	3/09/2017		1.2	1.0	ug/L
Trichloroethylene	MW-4A	10/28/1994		5.10	.17	ug/L
Bis(2-ethylhexyl) phthalate	MW-6A	3/26/2019		55	6	ug/L
Bis(2-ethylhexyl) phthalate	MW-6A	3/24/2020		7	6	ug/L
2-butanone (mek)	MW-7B	3/28/2014		391	5	ug/L
2-butanone (mek)	MW-7B	9/23/2014		698	25	ug/L
Acetone	MW-7B	3/28/2014		648	10	ug/L
Acetone	MW-7B	9/23/2014		2060	50	ug/L
Acetone	MW-7B	9/14/2017		15	10	ug/L
Acetone	MW-8B	9/20/2013		11.7	10.0	ug/L
Acetone	MW-8B	3/23/2023		12.2	10.0	ug/L
Cis-1,2-dichloroethylene	MW-8B	4/22/2009		1.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8B	1/27/2010		1.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8B	3/19/2010		1.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8B	9/14/2010		1.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8B	3/28/2014		1.1	1.0	ug/L
Trichloroethylene	MW-8B	7/21/1992		2.10	.17	ug/L
Trichloroethylene	MW-8B	10/21/1992		2.10	.17	ug/L
1,1-dichloroethane	MW-9AR	12/13/2017		2.1	1.0	ug/L
1,1-dichloroethane	MW-9AR	3/12/2018		2.1	1.0	ug/L
1,1-dichloroethane	MW-9AR	6/06/2018		1.6	1.0	ug/L
1,1-dichloroethane	MW-9AR	9/10/2018		1.9	1.0	ug/L
1,1-dichloroethane	MW-9AR	3/26/2019		1.7	1.0	ug/L
1,1-dichloroethane	MW-9AR	9/16/2019		1.5	1.0	ug/L
1,1-dichloroethane	MW-9AR	3/24/2020		1.5	1.0	ug/L
1,1-dichloroethane	MW-9AR	9/02/2020		1.4	1.0	ug/L
1,1-dichloroethane	MW-9AR	3/08/2021		1.4	1.0	ug/L
1,1-dichloroethane	MW-9AR	9/14/2021		1.4	1.0	ug/L
1,1-dichloroethane	MW-9AR	3/28/2022		1.3	1.0	ug/L
1,1-dichloroethane	MW-9AR	9/13/2022		1.2	1.0	ug/L
1,2-dichloropropane	MW-9AR	3/12/2018		1.1	1.0	ug/L
1,2-dichloropropane	MW-9AR	9/14/2021		1.0	1.0	ug/L
1,2-dichloropropane	MW-9AR	3/28/2022		1.4	1.0	ug/L
1,2-dichloropropane	MW-9AR	3/23/2023		1.3	1.0	ug/L
1,4-dichlorobenzene	MW-9AR	6/06/2018		1.4	1.0	ug/L
1,4-dichlorobenzene	MW-9AR	9/10/2018		1.4	1.0	ug/L
1,4-dichlorobenzene	MW-9AR	3/26/2019		1.2	1.0	ug/L
Benzene	MW-9AR	12/13/2017		2.4	1.0	ug/L
Benzene	MW-9AR	3/12/2018		2.6	1.0	ug/L
Benzene	MW-9AR	6/06/2018		2.8	1.0	ug/L
Benzene	MW-9AR	9/10/2018		3.2	1.0	ug/L
Benzene	MW-9AR	3/26/2019		2.0	1.0	ug/L
Benzene	MW-9AR	9/16/2019		1.6	1.0	ug/L
Benzene	MW-9AR	3/24/2020		1.5	1.0	ug/L
Benzene	MW-9AR	9/02/2020		2.0	1.0	ug/L
Benzene	MW-9AR	3/08/2021		1.4	1.0	ug/L
Benzene	MW-9AR	9/14/2021		1.2	1.0	ug/L
Benzene	MW-9AR	9/13/2022		2.1	1.0	ug/L
Carbon disulfide	MW-9AR	3/24/2020		1.2	1.0	ug/L
Chlorobenzene	MW-9AR	12/13/2017		1.7	1.0	ug/L
Chlorobenzene	MW-9AR	3/12/2018		1.5	1.0	ug/L
Chlorobenzene	MW-9AR	6/06/2018		4.4	1.0	ug/L
Chlorobenzene	MW-9AR	9/10/2018		4.7	1.0	ug/L
Chlorobenzene	MW-9AR	3/26/2019		4.3	1.0	ug/L
Chlorobenzene	MW-9AR	9/16/2019		5.5	1.0	ug/L
Chlorobenzene	MW-9AR	3/24/2020		3.8	1.0	ug/L
Chlorobenzene	MW-9AR	9/02/2020		5.9	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Chlorobenzene	MW-9AR	3/08/2021		3.6	1.0	ug/L
Chlorobenzene	MW-9AR	9/14/2021		3.4	1.0	ug/L
Chlorobenzene	MW-9AR	9/13/2022		3.0	1.0	ug/L
Chloroethane	MW-9AR	9/10/2018		2.6	1.0	ug/L
Chloroethane	MW-9AR	3/26/2019		1.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	12/13/2017		120.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	3/12/2018		94.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	6/06/2018		58.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	9/10/2018		69.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	3/26/2019		58.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	9/16/2019		82.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	3/24/2020		70.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	9/02/2020		83.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	3/08/2021		99.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	9/14/2021		102.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	3/28/2022		148.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	9/13/2022		88.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	3/23/2023		70.0	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	12/13/2017		6.8	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	3/12/2018		86.4	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	6/06/2018		4.2	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	9/10/2018		5.3	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	3/26/2019		3.3	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	9/16/2019		4.5	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	3/24/2020		4.3	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	9/02/2020		5.8	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	3/08/2021		4.4	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	9/14/2021		4.0	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	3/28/2022		4.6	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	9/13/2022		6.8	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	3/23/2023		4.4	1.0	ug/L
Trichloroethylene	MW-9AR	3/12/2018		1.7	1.0	ug/L
Trichloroethylene	MW-9AR	6/06/2018		1.3	1.0	ug/L
Trichloroethylene	MW-9AR	9/10/2018		1.3	1.0	ug/L
Trichloroethylene	MW-9AR	3/26/2019		1.9	1.0	ug/L
Trichloroethylene	MW-9AR	3/24/2020		1.4	1.0	ug/L
Trichloroethylene	MW-9AR	9/02/2020		1.9	1.0	ug/L
Trichloroethylene	MW-9AR	3/08/2021		2.2	1.0	ug/L
Trichloroethylene	MW-9AR	9/14/2021		2.7	1.0	ug/L
Trichloroethylene	MW-9AR	3/28/2022		9.0	1.0	ug/L
Trichloroethylene	MW-9AR	9/13/2022		1.7	1.0	ug/L
Trichloroethylene	MW-9AR	3/23/2023		7.4	1.0	ug/L
Vinyl chloride	MW-9AR	12/13/2017		19.7	1.0	ug/L
Vinyl chloride	MW-9AR	3/12/2018		31.5	1.0	ug/L
Vinyl chloride	MW-9AR	6/06/2018		39.2	1.0	ug/L
Vinyl chloride	MW-9AR	9/10/2018		50.7	1.0	ug/L
Vinyl chloride	MW-9AR	3/26/2019		24.7	1.0	ug/L
Vinyl chloride	MW-9AR	9/16/2019		27.6	1.0	ug/L
Vinyl chloride	MW-9AR	3/24/2020		30.4	1.0	ug/L
Vinyl chloride	MW-9AR	9/02/2020		33.5	1.0	ug/L
Vinyl chloride	MW-9AR	3/08/2021		24.4	1.0	ug/L
Vinyl chloride	MW-9AR	9/14/2021		24.1	1.0	ug/L
Vinyl chloride	MW-9AR	3/28/2022		1.4	1.0	ug/L
Vinyl chloride	MW-9AR	9/13/2022		39.3	1.0	ug/L
Vinyl chloride	MW-9AR	3/23/2023		1.2	1.0	ug/L
Cis-1,2-dichloroethylene	SW-1	9/16/2019		1.2	1.0	ug/L
Acetone	SW-101	9/14/2017		13.7	10.0	ug/L
Bis(2-ethylhexyl) phthalate	SW-101	3/09/2017		25	8	ug/L
Acetone	SW-102	9/14/2017		12.3	10.0	ug/L
Cis-1,2-dichloroethylene	SW-102	9/26/2011		2	1	ug/L
Acetone	SW-103	9/14/2017		16.6	10.0	ug/L
Cis-1,2-dichloroethylene	SW-103	9/24/2014		1.0	1.0	ug/L
Cis-1,2-dichloroethylene	SW-103	12/02/2014		6.8	1.0	ug/L
Cis-1,2-dichloroethylene	SW-103	3/19/2015		1.0	1.0	ug/L
Cis-1,2-dichloroethylene	SW-103	3/04/2016		25.2	1.0	ug/L
Cis-1,2-dichloroethylene	SW-103	5/10/2016		6.6	1.0	ug/L
Cis-1,2-dichloroethylene	SW-103	3/09/2017		1.7	1.0	ug/L
Cis-1,2-dichloroethylene	SW-103	9/14/2017		2.2	1.0	ug/L
Cis-1,2-dichloroethylene	SW-103	3/12/2018		4.5	1.0	ug/L
Vinyl chloride	SW-103	12/02/2014		11.5	1.0	ug/L
Vinyl chloride	SW-103	3/04/2016		10.7	1.0	ug/L
Vinyl chloride	SW-103	3/09/2017		1.6	1.0	ug/L
Vinyl chloride	SW-103	9/14/2017		5.4	1.0	ug/L
Vinyl chloride	SW-103	3/12/2018		3.2	1.0	ug/L
Cis-1,2-dichloroethylene	SW-106	3/03/2016		1	1	ug/L
2-butanone (mek)	SW-2B	10/29/2009		237	5	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Acetone	SW-2B	10/29/2009		124	10	ug/L
Trichloroethylene	SW-2B	6/15/2005		1.61	.17	ug/L
1,4-dichlorobenzene	TILE 1	9/20/2016		1.3	1.0	ug/L
1,4-dichlorobenzene	TILE 1	11/09/2016		1.8	1.0	ug/L
1,4-dichlorobenzene	TILE 1	3/09/2017		2.6	1.0	ug/L
1,4-dichlorobenzene	TILE 1	9/14/2017		4.5	1.0	ug/L
1,4-dichlorobenzene	TILE 1	3/12/2018		5.6	1.0	ug/L
1,4-dichlorobenzene	TILE 1	9/10/2018		1.7	1.0	ug/L
1,4-dichlorobenzene	TILE 1	3/26/2019		1.8	1.0	ug/L
1,4-dichlorobenzene	TILE 1	3/24/2020		1.8	1.0	ug/L
1,4-dichlorobenzene	TILE 1	9/02/2020		3.7	1.0	ug/L
1,4-dichlorobenzene	TILE 1	3/08/2021		1.6	1.0	ug/L
1,4-dichlorobenzene	TILE 1	9/14/2021		2.5	1.0	ug/L
1,4-dichlorobenzene	TILE 1	3/28/2022		1.4	1.0	ug/L
1,4-dichlorobenzene	TILE 1	9/13/2022		2.3	1.0	ug/L
1,4-dichlorobenzene	TILE 1	3/23/2023		1.6	1.0	ug/L
Acetone	TILE 1	9/14/2017		18.1	10.0	ug/L
Benzene	TILE 1	11/09/2016		1.6	1.0	ug/L
Benzene	TILE 1	3/09/2017		2.2	1.0	ug/L
Benzene	TILE 1	9/14/2017		2.7	1.0	ug/L
Benzene	TILE 1	3/12/2018		3.7	1.0	ug/L
Benzene	TILE 1	9/02/2020		1.9	1.0	ug/L
Benzene	TILE 1	9/14/2021		1.1	1.0	ug/L
Benzene	TILE 1	9/13/2022		2.1	1.0	ug/L
Chlorobenzene	TILE 1	9/20/2016		3.4	1.0	ug/L
Chlorobenzene	TILE 1	11/09/2016		3.6	1.0	ug/L
Chlorobenzene	TILE 1	3/09/2017		7.9	1.0	ug/L
Chlorobenzene	TILE 1	9/14/2017		5.8	1.0	ug/L
Chlorobenzene	TILE 1	3/12/2018		7.2	1.0	ug/L
Chlorobenzene	TILE 1	9/10/2018		4.3	1.0	ug/L
Chlorobenzene	TILE 1	3/26/2019		3.0	1.0	ug/L
Chlorobenzene	TILE 1	6/05/2019		4.9	1.0	ug/L
Chlorobenzene	TILE 1	9/16/2019		4.1	1.0	ug/L
Chlorobenzene	TILE 1	3/24/2020		3.9	1.0	ug/L
Chlorobenzene	TILE 1	9/02/2020		4.4	1.0	ug/L
Chlorobenzene	TILE 1	3/08/2021		2.7	1.0	ug/L
Chlorobenzene	TILE 1	9/14/2021		2.7	1.0	ug/L
Chlorobenzene	TILE 1	3/28/2022		2.9	1.0	ug/L
Chlorobenzene	TILE 1	9/13/2022		3.0	1.0	ug/L
Chlorobenzene	TILE 1	3/23/2023		2.9	1.0	ug/L
Chloroform	TILE 1	9/16/2019		1.4	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	9/20/2016		7.0	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	11/09/2016		2.8	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	3/09/2017		3.9	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	3/12/2018		1.0	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	3/26/2019		3.6	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	6/05/2019		5.7	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	9/16/2019		3.9	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	3/24/2020		3.2	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	9/02/2020		1.7	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	9/14/2021		1.0	1.0	ug/L
Trans-1,2-dichloroethylene	TILE 1	3/12/2018		1.1	1.0	ug/L
Vinyl chloride	TILE 1	9/20/2016		3.0	1.0	ug/L
Vinyl chloride	TILE 1	11/09/2016		3.6	1.0	ug/L
Vinyl chloride	TILE 1	3/09/2017		4.0	1.0	ug/L
Vinyl chloride	TILE 1	9/02/2020		1.2	1.0	ug/L
1,4-dichlorobenzene	TILE 2	3/26/2019		1	1	ug/L
Chlorobenzene	TILE 2	3/26/2019		2.0	1.0	ug/L
Chlorobenzene	TILE 2	6/05/2019		1.2	1.0	ug/L
Chlorobenzene	TILE 2	9/16/2019		2.2	1.0	ug/L
Chlorobenzene	TILE 2	3/24/2020		1.0	1.0	ug/L
Chlorobenzene	TILE 2	9/02/2020		1.1	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	9/10/2018		6.6	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	3/26/2019		19.9	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	6/05/2019		18.2	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	9/16/2019		5.6	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	3/24/2020		10.6	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	9/02/2020		1.3	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	3/08/2021		8.1	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	9/14/2021		3.8	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	3/28/2022		2.7	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	9/13/2022		4.1	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	3/23/2023		6.2	1.0	ug/L
Vinyl chloride	TILE 2	3/26/2019		6.2	1.0	ug/L
Vinyl chloride	TILE 2	9/16/2019		8.3	1.0	ug/L
Vinyl chloride	TILE 2	3/24/2020		3.5	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Vinyl chloride	TILE 2	9/02/2020		4.7	1.0	ug/L
Vinyl chloride	TILE 2	3/08/2021		2.4	1.0	ug/L
Vinyl chloride	TILE 2	9/14/2021		3.3	1.0	ug/L
Vinyl chloride	TILE 2	3/28/2022		1.3	1.0	ug/L
Vinyl chloride	TILE 2	9/13/2022		1.6	1.0	ug/L
Vinyl chloride	TILE 2	3/23/2023		1.9	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Attachment I

Assessment Statistics for Verified VOCs

Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
1,1-dichloroethane	ug/L	MW-17R	4	0.500	0.000	1.176	0.500	0.500	140.000		
1,2-dichloropropane	ug/L	MW-17R	4	0.500	0.000	1.176	0.500	0.500	5.000		
1,4-dichlorobenzene	ug/L	MW-17R	4	0.500	0.000	1.176	0.500	0.500	75.000		
Acetone	ug/L	MW-17R	4	5.000	0.000	1.176	5.000	5.000	6300.000		
Benzene	ug/L	MW-17R	4	0.500	0.000	1.176	0.500	0.500	5.000		
Bis(2-ethylhexyl) phthalate	ug/L	MW-17R	4	6.250	4.500	1.176	0.957	11.543	6.000		
Chlorobenzene	ug/L	MW-17R	4	0.500	0.000	1.176	0.500	0.500	100.000		
Cis-1,2-dichloroethylene	ug/L	MW-17R	4	3.425	0.873	1.176	2.398	4.452	70.000		
Trans-1,2-dichloroethylene	ug/L	MW-17R	4	0.500	0.000	1.176	0.500	0.500	100.000		
Trichloroethylene	ug/L	MW-17R	4	0.500	0.000	1.176	0.500	0.500	5.000		
Vinyl chloride	ug/L	MW-17R	4	0.500	0.000	1.176	0.500	0.500	2.000		
1,1-dichloroethane	ug/L	MW-28	4	0.500	0.000	1.176	0.500	0.500	140.000		
1,2-dichloropropane	ug/L	MW-28	4	0.500	0.000	1.176	0.500	0.500	5.000		
1,4-dichlorobenzene	ug/L	MW-28	4	0.500	0.000	1.176	0.500	0.500	75.000		
Acetone	ug/L	MW-28	4	5.000	0.000	1.176	5.000	5.000	6300.000		
Benzene	ug/L	MW-28	4	0.500	0.000	1.176	0.500	0.500	5.000		
Bis(2-ethylhexyl) phthalate	ug/L	MW-28	2								*
Chlorobenzene	ug/L	MW-28	4	0.500	0.000	1.176	0.500	0.500	100.000		
Cis-1,2-dichloroethylene	ug/L	MW-28	4	15.200	4.551	1.176	9.846	20.554	70.000	inc	
Trans-1,2-dichloroethylene	ug/L	MW-28	4	0.500	0.000	1.176	0.500	0.500	100.000		
Trichloroethylene	ug/L	MW-28	4	0.500	0.000	1.176	0.500	0.500	5.000		
Vinyl chloride	ug/L	MW-28	4	1.200	0.497	1.176	0.616	1.784	2.000		
1,1-dichloroethane	ug/L	MW-31	4	0.500	0.000	1.176	0.500	0.500	140.000		
1,2-dichloropropane	ug/L	MW-31	4	0.500	0.000	1.176	0.500	0.500	5.000		
1,4-dichlorobenzene	ug/L	MW-31	4	4.425	0.624	1.176	3.691	5.159	75.000		
Acetone	ug/L	MW-31	4	5.000	0.000	1.176	5.000	5.000	6300.000		
Benzene	ug/L	MW-31	4	1.325	0.096	1.176	1.212	1.438	5.000	dec	
Bis(2-ethylhexyl) phthalate	ug/L	MW-31	0								*
Chlorobenzene	ug/L	MW-31	4	2.625	0.499	1.176	2.038	3.212	100.000	dec	
Cis-1,2-dichloroethylene	ug/L	MW-31	4	0.800	0.600	1.176	0.094	1.506	70.000		
Trans-1,2-dichloroethylene	ug/L	MW-31	4	0.500	0.000	1.176	0.500	0.500	100.000		
Trichloroethylene	ug/L	MW-31	4	0.500	0.000	1.176	0.500	0.500	5.000		
Vinyl chloride	ug/L	MW-31	4	0.850	0.700	1.176	0.027	1.673	2.000		
1,1-dichloroethane	ug/L	MW-32	4	0.500	0.000	1.176	0.500	0.500	140.000		
1,2-dichloropropane	ug/L	MW-32	4	0.500	0.000	1.176	0.500	0.500	5.000		
1,4-dichlorobenzene	ug/L	MW-32	4	0.500	0.000	1.176	0.500	0.500	75.000		
Acetone	ug/L	MW-32	4	5.000	0.000	1.176	5.000	5.000	6300.000		
Benzene	ug/L	MW-32	4	0.500	0.000	1.176	0.500	0.500	5.000		
Bis(2-ethylhexyl) phthalate	ug/L	MW-32	0								*
Chlorobenzene	ug/L	MW-32	4	1.550	0.881	1.176	0.513	2.587	100.000		
Cis-1,2-dichloroethylene	ug/L	MW-32	4	0.625	0.250	1.176	0.331	0.919	70.000		
Trans-1,2-dichloroethylene	ug/L	MW-32	4	0.500	0.000	1.176	0.500	0.500	100.000		
Trichloroethylene	ug/L	MW-32	4	0.500	0.000	1.176	0.500	0.500	5.000		
Vinyl chloride	ug/L	MW-32	4	0.500	0.000	1.176	0.500	0.500	2.000		
1,1-dichloroethane	ug/L	MW-6A	4	0.500	0.000	1.176	0.500	0.500	140.000		
1,2-dichloropropane	ug/L	MW-6A	4	0.500	0.000	1.176	0.500	0.500	5.000		
1,4-dichlorobenzene	ug/L	MW-6A	4	0.500	0.000	1.176	0.500	0.500	75.000		
Acetone	ug/L	MW-6A	4	5.000	0.000	1.176	5.000	5.000	6300.000		
Benzene	ug/L	MW-6A	4	0.500	0.000	1.176	0.500	0.500	5.000		
Bis(2-ethylhexyl) phthalate	ug/L	MW-6A	4	4.000	2.000	1.176	1.647	6.353	6.000		
Chlorobenzene	ug/L	MW-6A	4	0.500	0.000	1.176	0.500	0.500	100.000		
Cis-1,2-dichloroethylene	ug/L	MW-6A	4	0.500	0.000	1.176	0.500	0.500	70.000		
Trans-1,2-dichloroethylene	ug/L	MW-6A	4	0.500	0.000	1.176	0.500	0.500	100.000		
Trichloroethylene	ug/L	MW-6A	4	0.500	0.000	1.176	0.500	0.500	5.000		
Vinyl chloride	ug/L	MW-6A	4	0.500	0.000	1.176	0.500	0.500	2.000		
1,1-dichloroethane	ug/L	MW-8B	4	0.500	0.000	1.176	0.500	0.500	140.000		
1,2-dichloropropane	ug/L	MW-8B	4	0.500	0.000	1.176	0.500	0.500	5.000		
1,4-dichlorobenzene	ug/L	MW-8B	4	0.500	0.000	1.176	0.500	0.500	75.000		
Acetone	ug/L	MW-8B	4	6.800	3.600	1.176	2.565	11.035	6300.000		
Benzene	ug/L	MW-8B	4	0.500	0.000	1.176	0.500	0.500	5.000		
Bis(2-ethylhexyl) phthalate	ug/L	MW-8B	3								*
Chlorobenzene	ug/L	MW-8B	4	0.500	0.000	1.176	0.500	0.500	100.000		
Cis-1,2-dichloroethylene	ug/L	MW-8B	4	0.500	0.000	1.176	0.500	0.500	70.000		
Trans-1,2-dichloroethylene	ug/L	MW-8B	4	0.500	0.000	1.176	0.500	0.500	100.000		
Trichloroethylene	ug/L	MW-8B	4	0.500	0.000	1.176	0.500	0.500	5.000		
Vinyl chloride	ug/L	MW-8B	4	0.500	0.000	1.176	0.500	0.500	2.000		
1,1-dichloroethane	ug/L	MW-9AR	4	1.100	0.408	1.176	0.620	1.580	140.000	dec	
1,2-dichloropropane	ug/L	MW-9AR	4	1.050	0.404	1.176	0.575	1.525	5.000		
1,4-dichlorobenzene	ug/L	MW-9AR	4	0.500	0.000	1.176	0.500	0.500	75.000		
Acetone	ug/L	MW-9AR	4	5.000	0.000	1.176	5.000	5.000	6300.000		
Benzene	ug/L	MW-9AR	4	1.075	0.759	1.176	0.182	1.968	5.000	dec	
Bis(2-ethylhexyl) phthalate	ug/L	MW-9AR	0								*

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

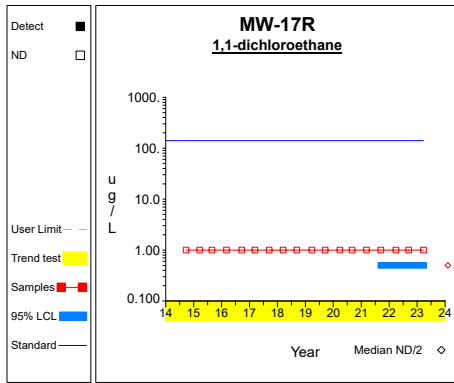
Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

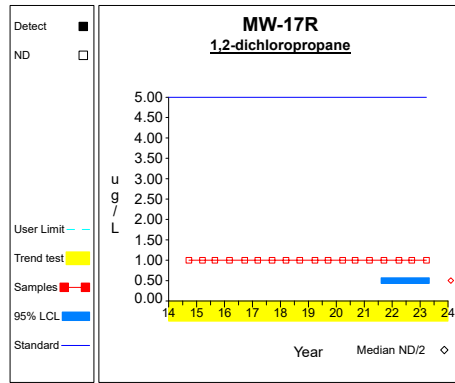
Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
Chlorobenzene	ug/L	MW-9AR	4	1.850	1.567	1.176	0.006	3.694	100.000	
Cis-1,2-dichloroethylene	ug/L	MW-9AR	4	102.200	33.237	1.176	63.104	141.296	70.000	
Trans-1,2-dichloroethylene	ug/L	MW-9AR	4	4.950	1.258	1.176	3.470	6.430	100.000	
Trichloroethylene	ug/L	MW-9AR	4	5.200	3.549	1.176	1.026	9.374	5.000	inc
Vinyl chloride	ug/L	MW-9AR	4	16.500	18.616	1.176	0.000	38.398	2.000	
1,1-dichloroethane	ug/L	TILE 1	4	0.500	0.000	1.176	0.500	0.500	140.000	
1,2-dichloropropane	ug/L	TILE 1	4	0.500	0.000	1.176	0.500	0.500	5.000	
1,4-dichlorobenzene	ug/L	TILE 1	4	1.950	0.532	1.176	1.324	2.576	75.000	
Acetone	ug/L	TILE 1	4	5.000	0.000	1.176	5.000	5.000	6300.000	
Benzene	ug/L	TILE 1	4	1.050	0.755	1.176	0.162	1.938	5.000	
Bis(2-ethylhexyl) phthalate	ug/L	TILE 1	2							*
Chlorobenzene	ug/L	TILE 1	4	2.875	0.126	1.176	2.727	3.023	100.000	
Cis-1,2-dichloroethylene	ug/L	TILE 1	4	0.625	0.250	1.176	0.331	0.919	70.000	
Trans-1,2-dichloroethylene	ug/L	TILE 1	4	0.500	0.000	1.176	0.500	0.500	100.000	
Trichloroethylene	ug/L	TILE 1	4	0.500	0.000	1.176	0.500	0.500	5.000	
Vinyl chloride	ug/L	TILE 1	4	0.500	0.000	1.176	0.500	0.500	2.000	
1,1-dichloroethane	ug/L	TILE 2	4	0.500	0.000	1.176	0.500	0.500	140.000	
1,2-dichloropropane	ug/L	TILE 2	4	0.500	0.000	1.176	0.500	0.500	5.000	
1,4-dichlorobenzene	ug/L	TILE 2	4	0.500	0.000	1.176	0.500	0.500	75.000	
Acetone	ug/L	TILE 2	4	5.000	0.000	1.176	5.000	5.000	6300.000	
Benzene	ug/L	TILE 2	4	0.500	0.000	1.176	0.500	0.500	5.000	
Bis(2-ethylhexyl) phthalate	ug/L	TILE 2	2							*
Chlorobenzene	ug/L	TILE 2	4	0.500	0.000	1.176	0.500	0.500	100.000	
Cis-1,2-dichloroethylene	ug/L	TILE 2	4	4.200	1.463	1.176	2.479	5.921	70.000	
Trans-1,2-dichloroethylene	ug/L	TILE 2	4	0.500	0.000	1.176	0.500	0.500	100.000	
Trichloroethylene	ug/L	TILE 2	4	0.500	0.000	1.176	0.500	0.500	5.000	
Vinyl chloride	ug/L	TILE 2	4	2.025	0.885	1.176	0.984	3.066	2.000	

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

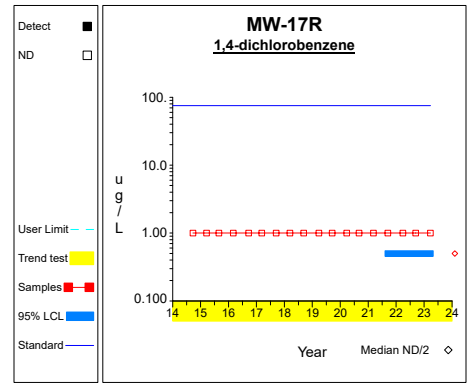
Confidence Limits (Assessment)



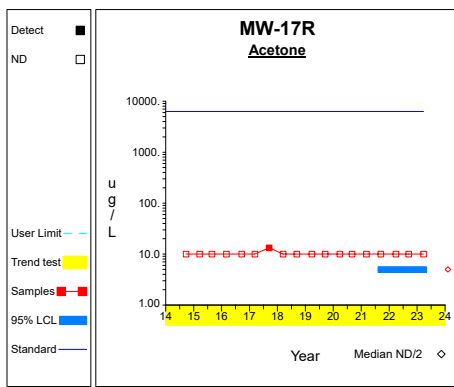
Graph 1



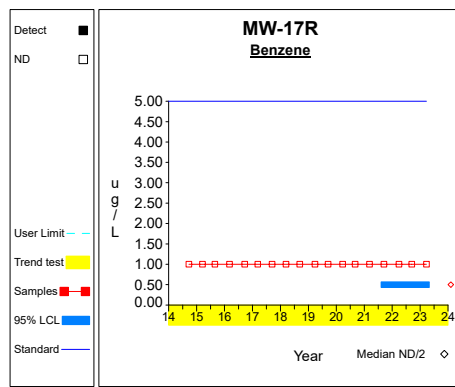
Graph 2



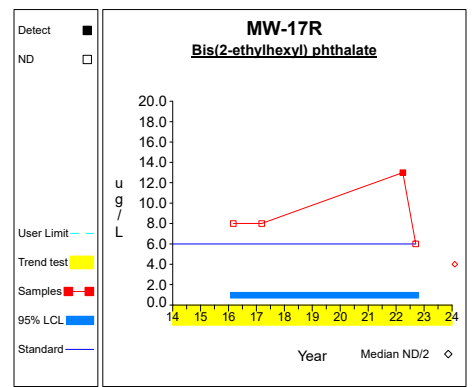
Graph 3



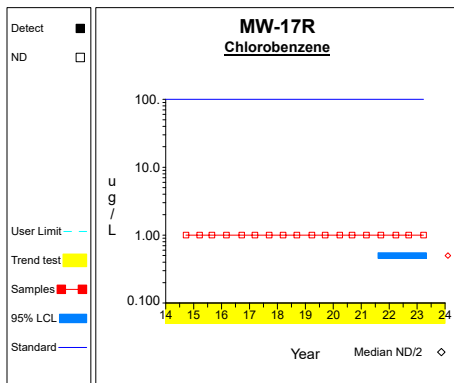
Graph 4



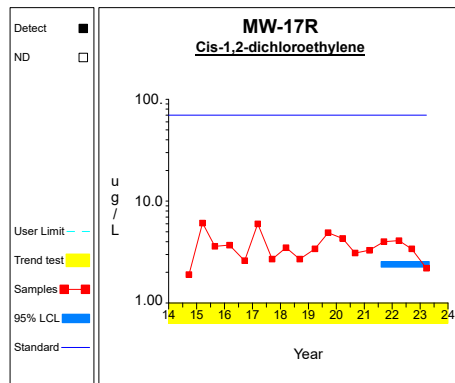
Graph 5



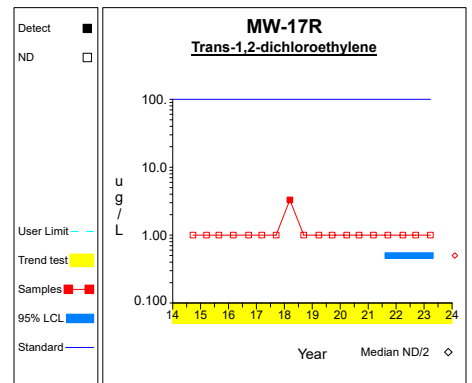
Graph 6



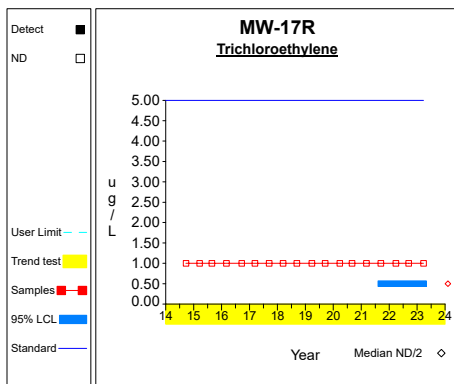
Graph 7



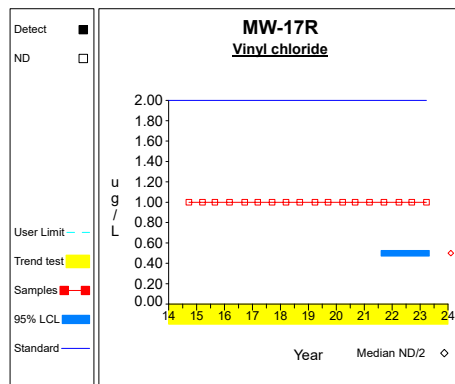
Graph 8



Graph 9

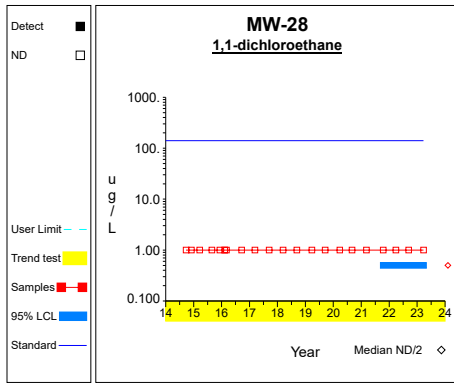


Graph 10

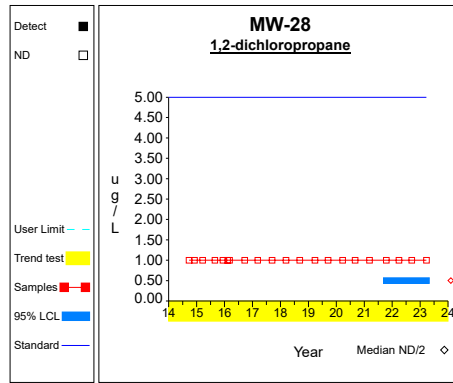


Graph 11

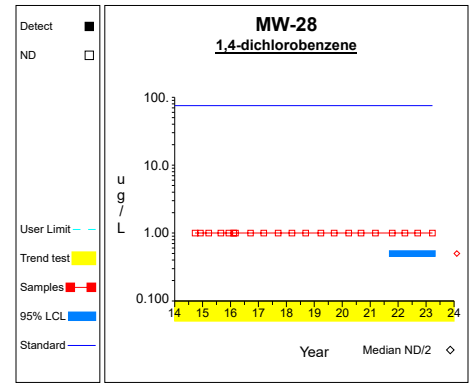
Confidence Limits (Assessment)



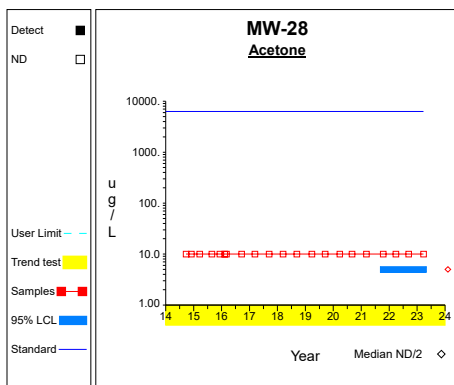
Graph 12



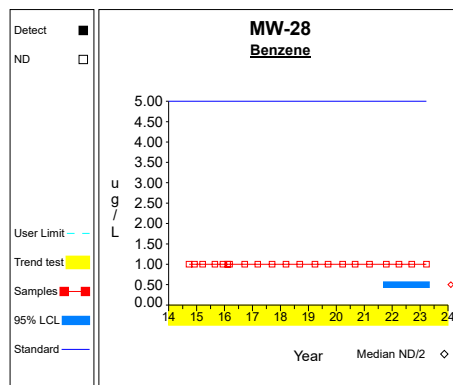
Graph 13



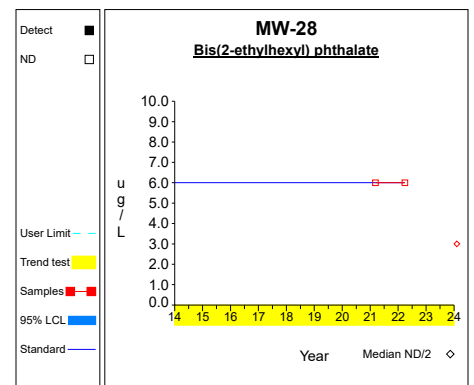
Graph 14



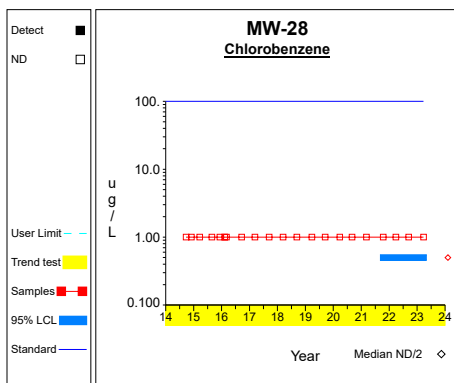
Graph 15



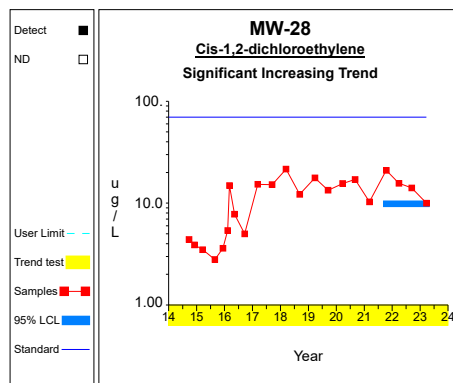
Graph 16



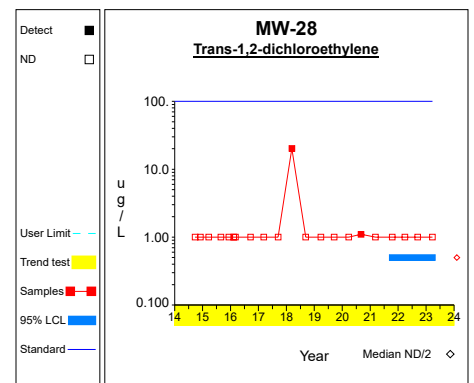
Graph 17



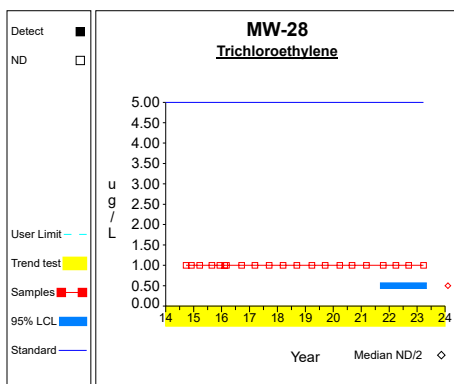
Graph 18



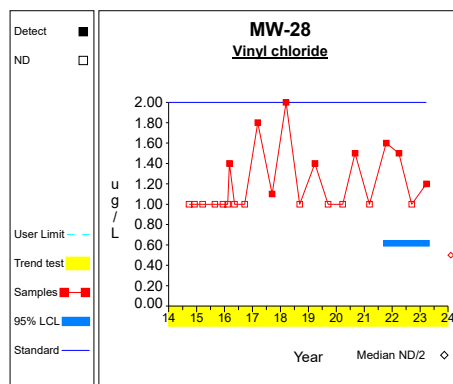
Graph 19



Graph 20

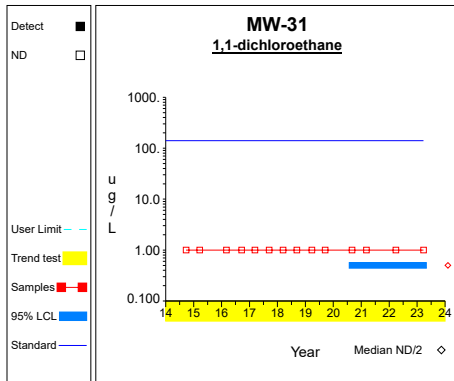


Graph 21

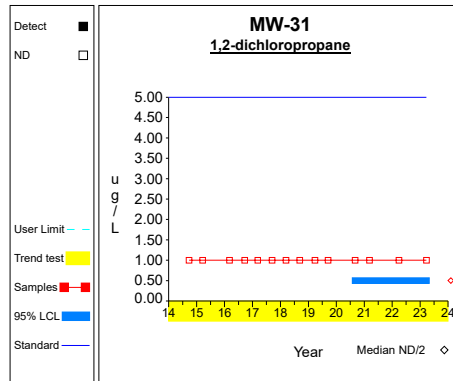


Graph 22

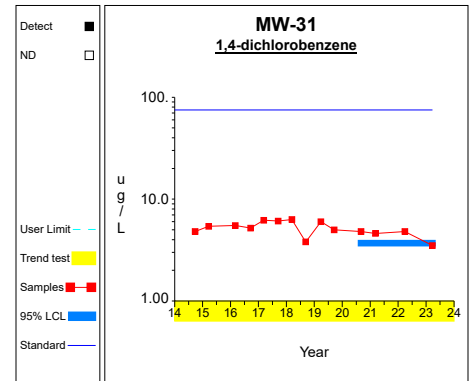
Confidence Limits (Assessment)



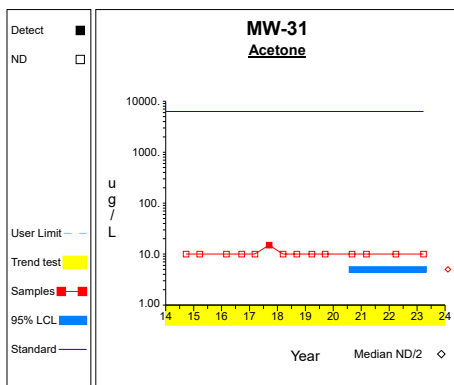
Graph 23



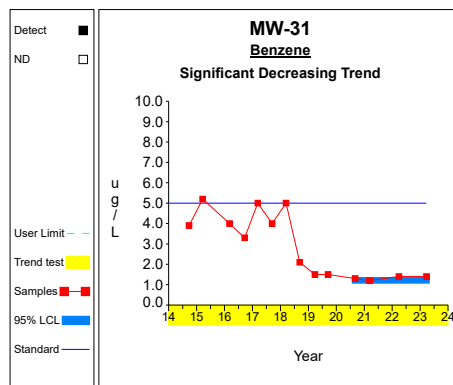
Graph 24



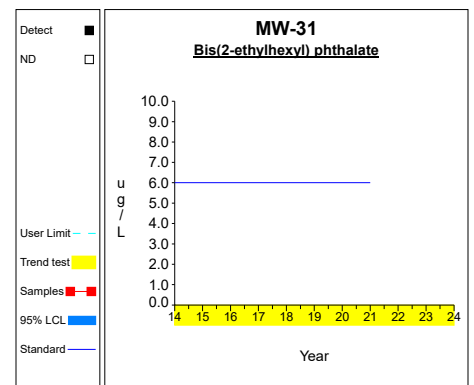
Graph 25



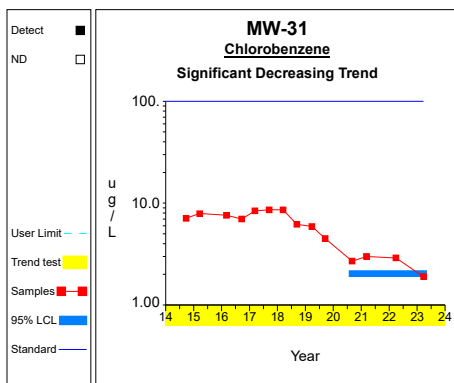
Graph 26



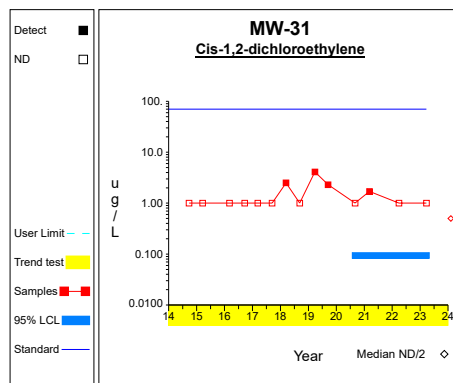
Graph 27



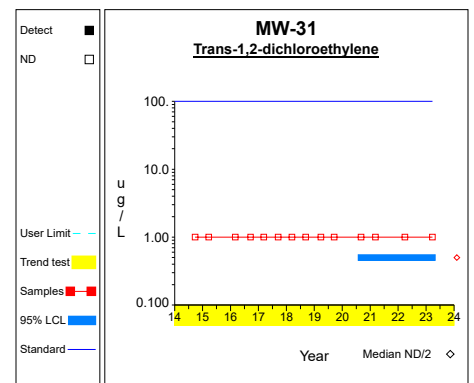
Graph 28



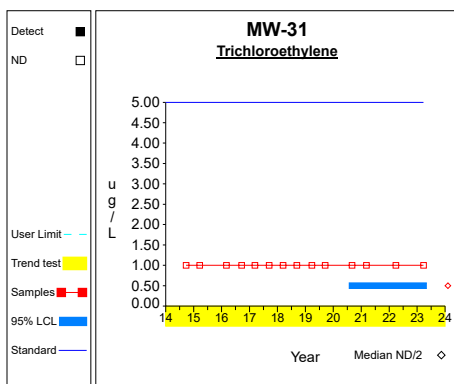
Graph 29



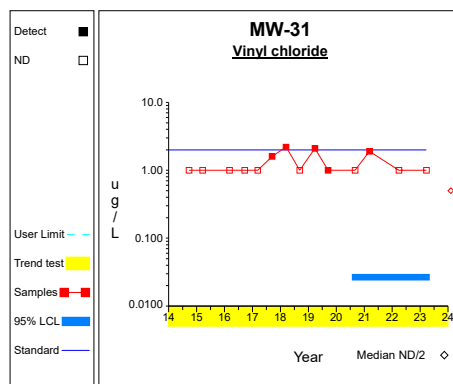
Graph 30



Graph 31

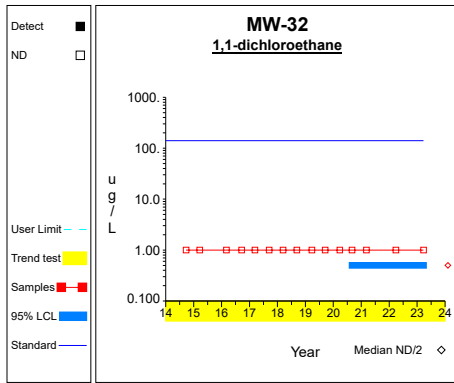


Graph 32

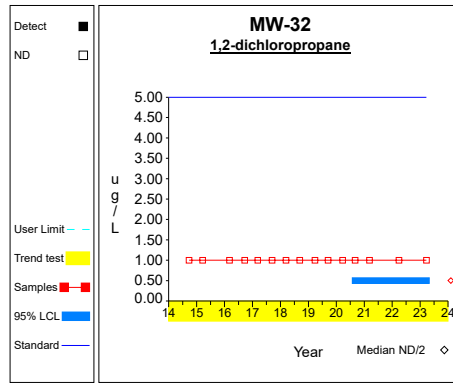


Graph 33

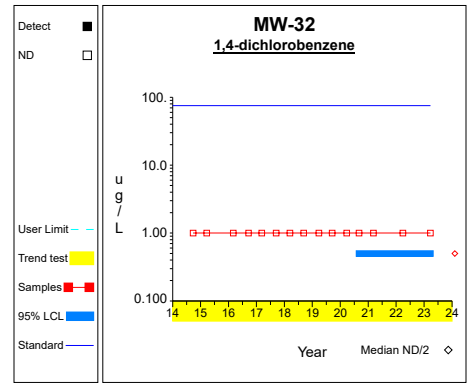
Confidence Limits (Assessment)



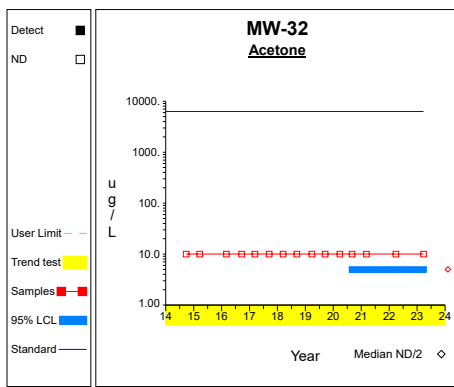
Graph 34



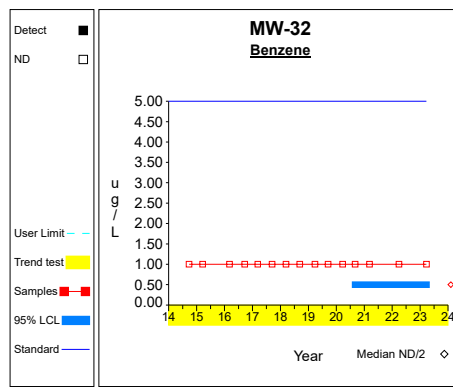
Graph 35



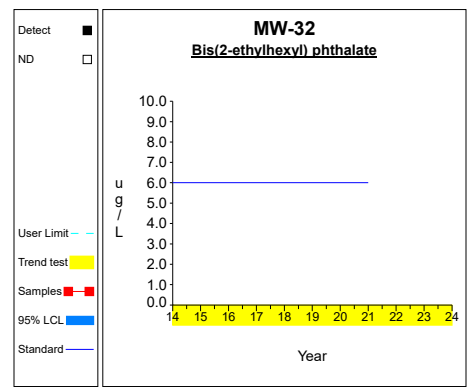
Graph 36



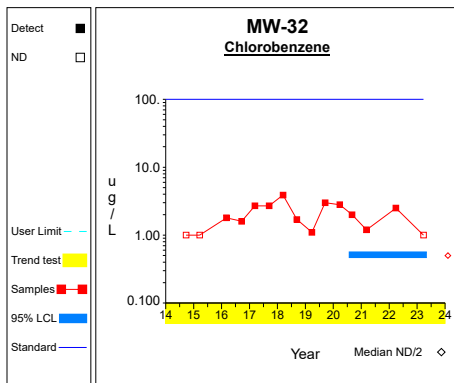
Graph 37



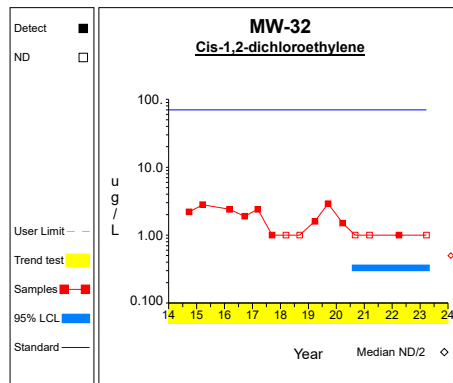
Graph 38



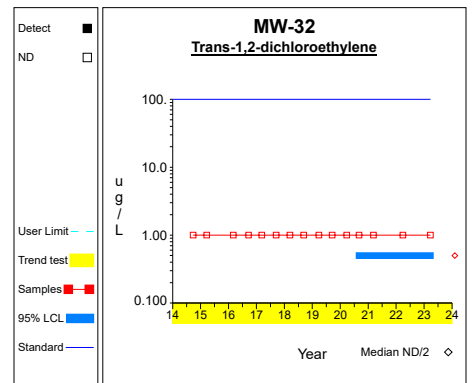
Graph 39



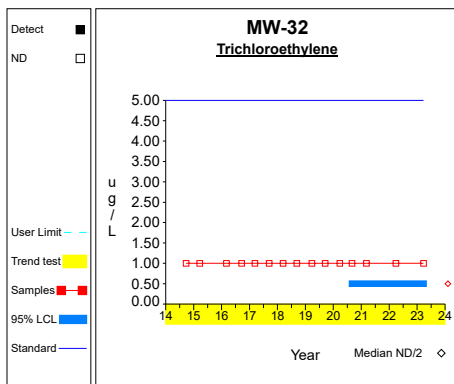
Graph 40



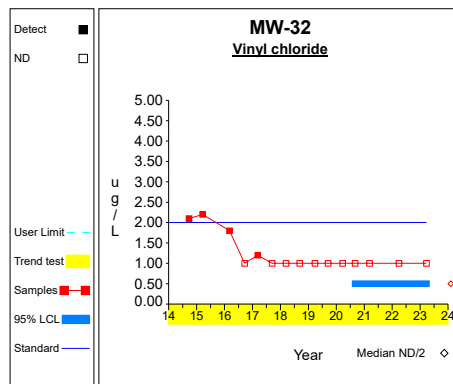
Graph 41



Graph 42

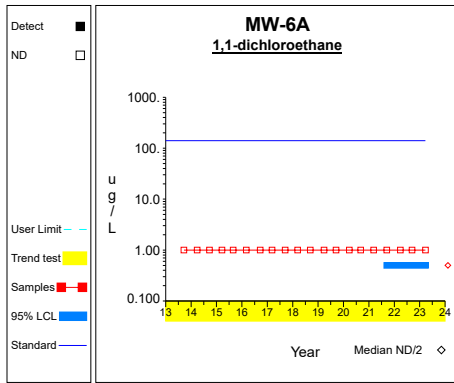


Graph 43

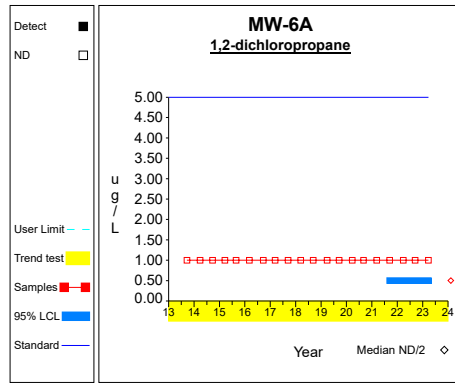


Graph 44

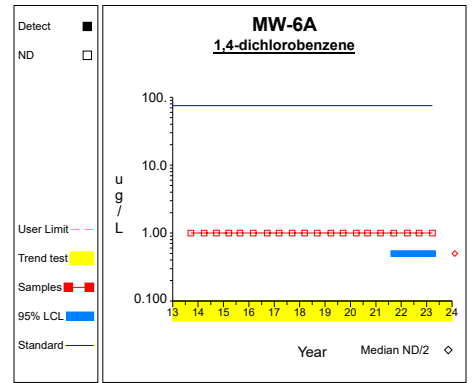
Confidence Limits (Assessment)



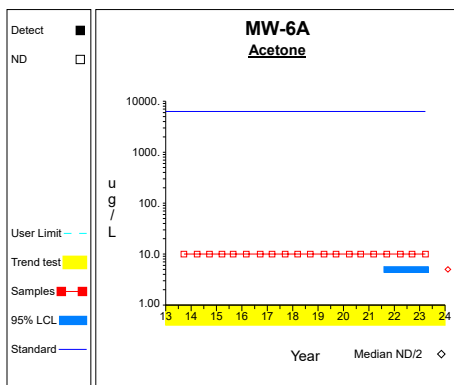
Graph 45



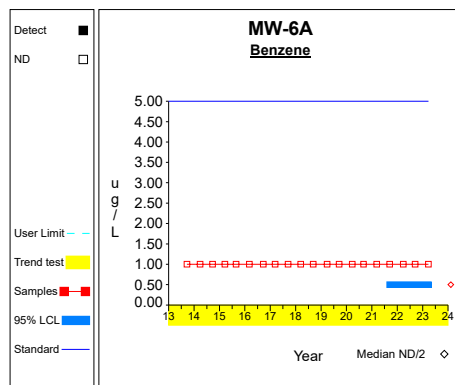
Graph 46



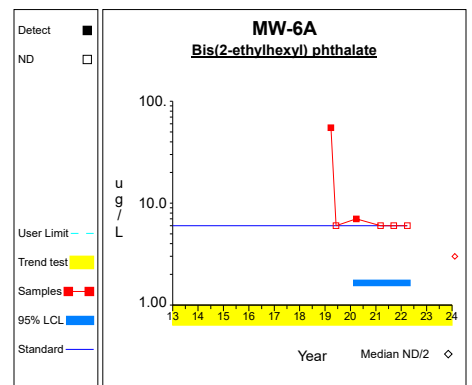
Graph 47



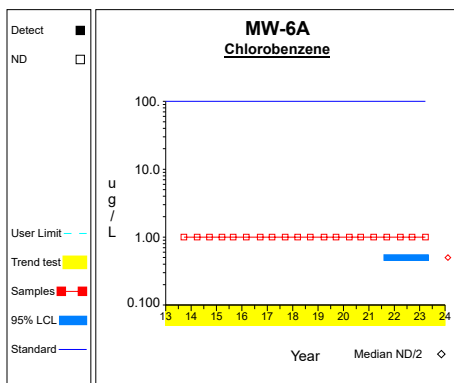
Graph 48



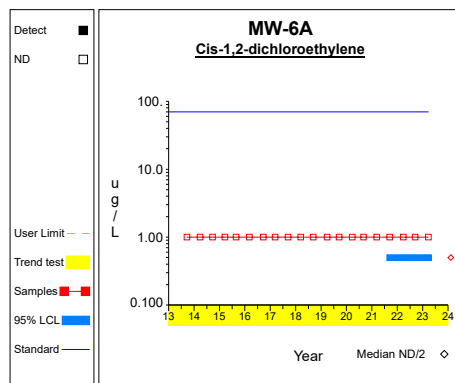
Graph 49



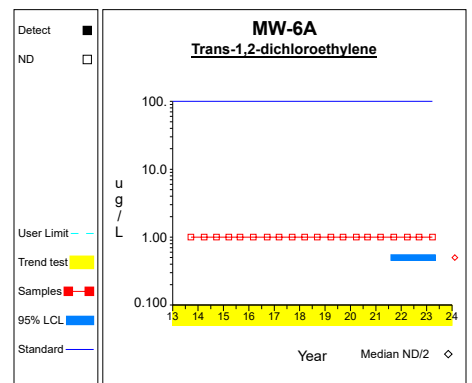
Graph 50



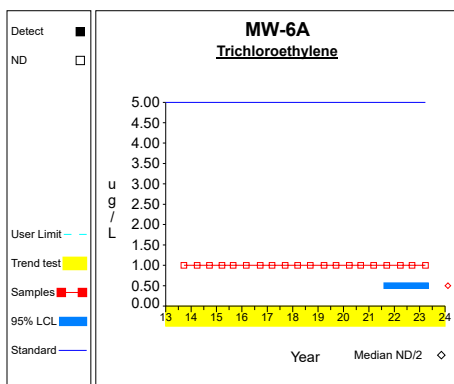
Graph 51



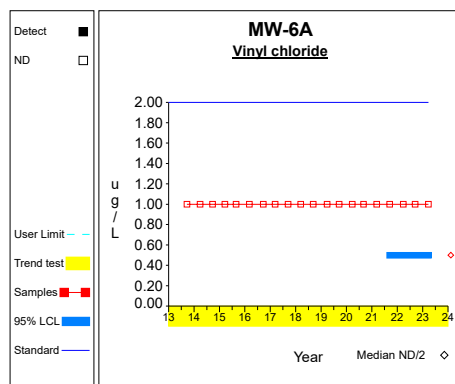
Graph 52



Graph 53

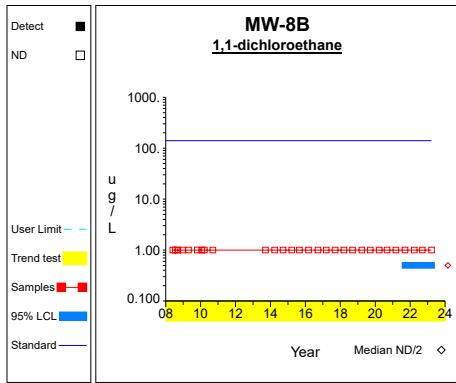


Graph 54

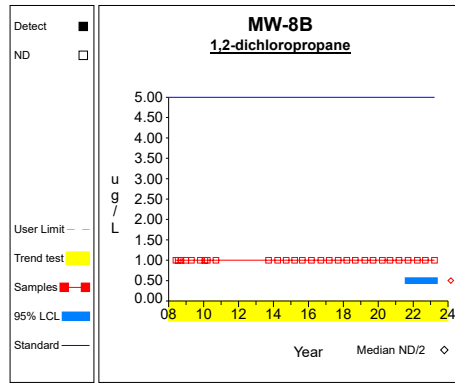


Graph 55

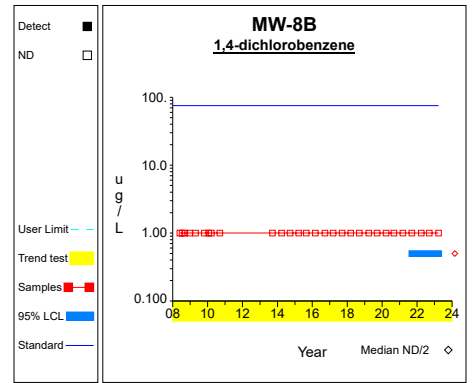
Confidence Limits (Assessment)



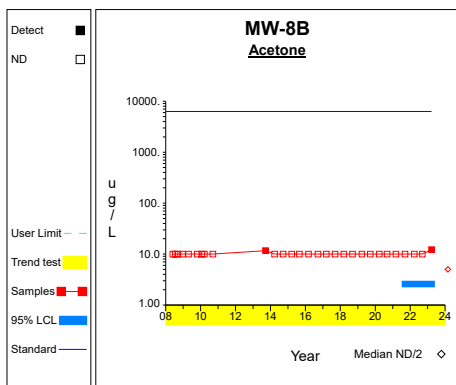
Graph 56



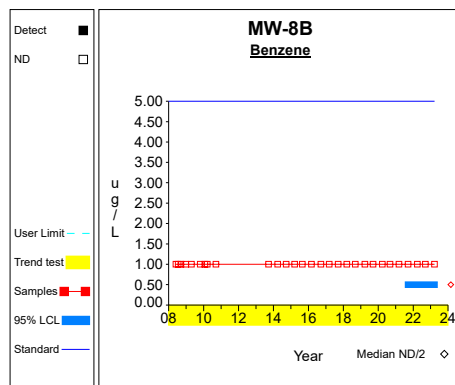
Graph 57



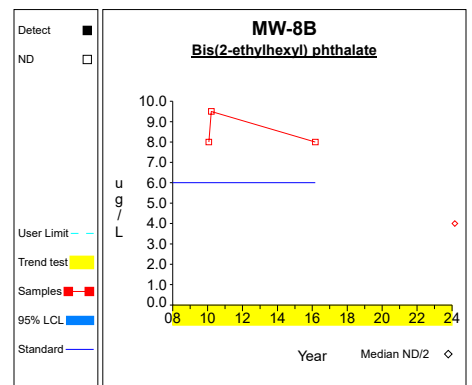
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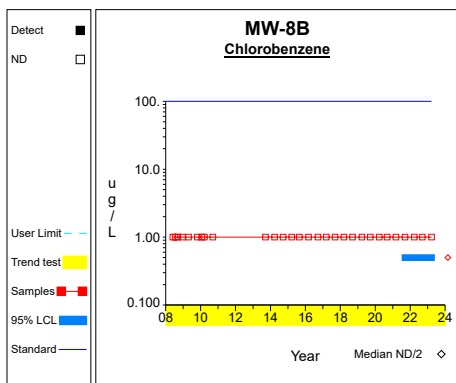
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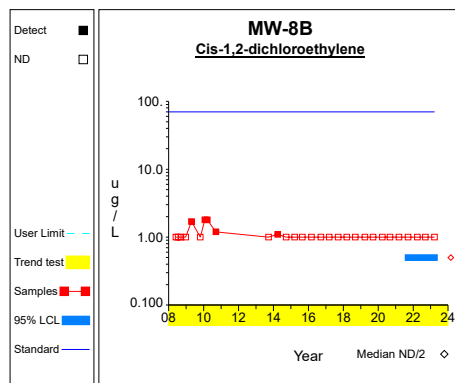
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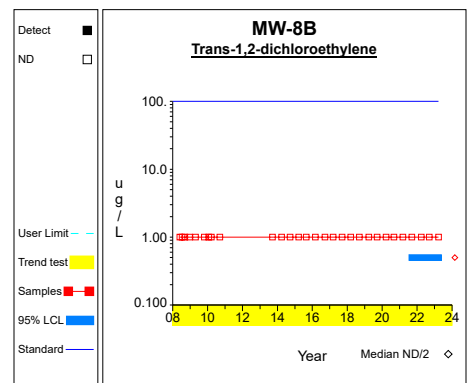
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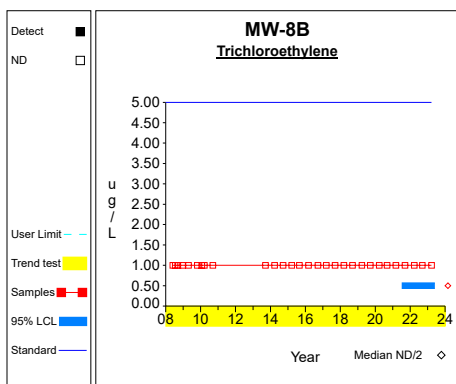
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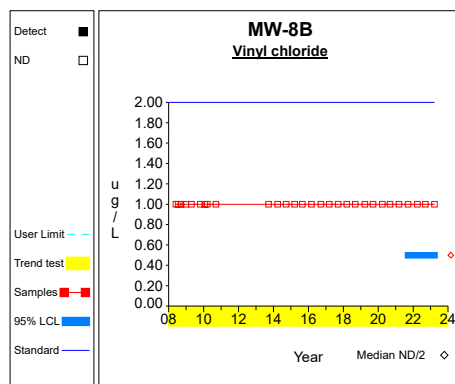
Graph 63



Graph 64

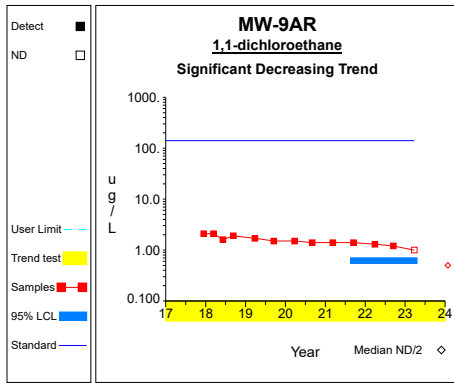


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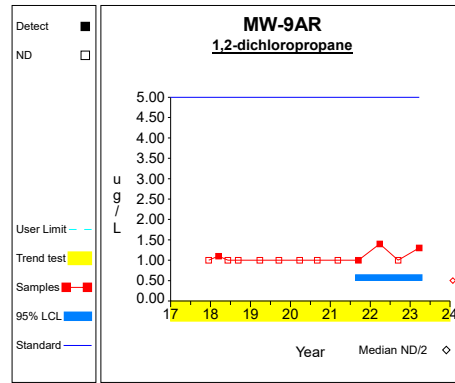


Graph 66

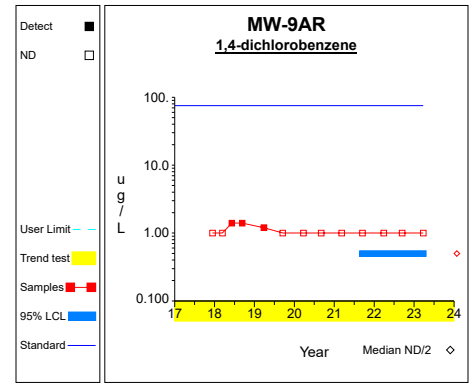
Confidence Limits (Assessment)



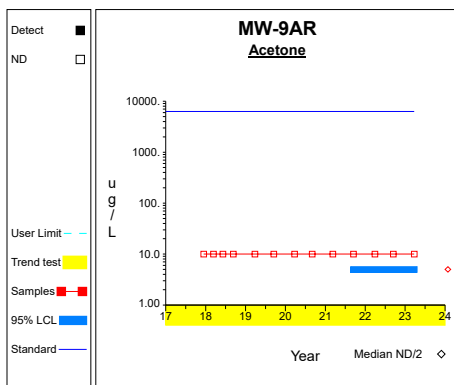
Graph 67



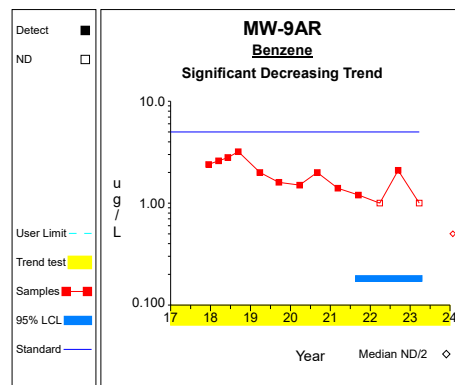
Graph 68



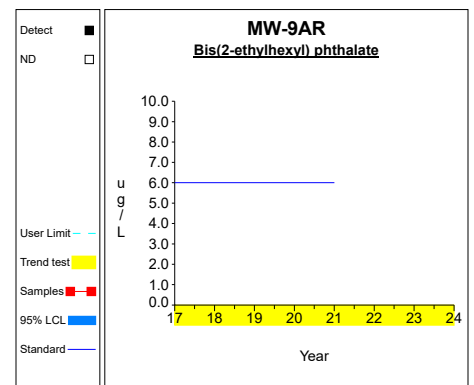
Graph 69



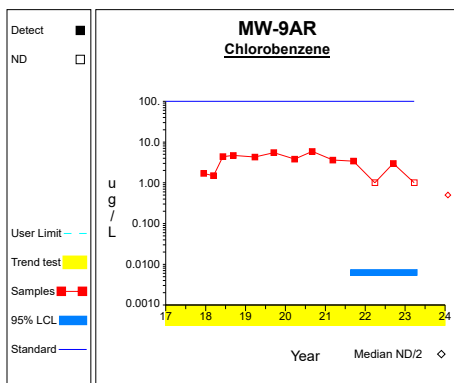
Graph 70



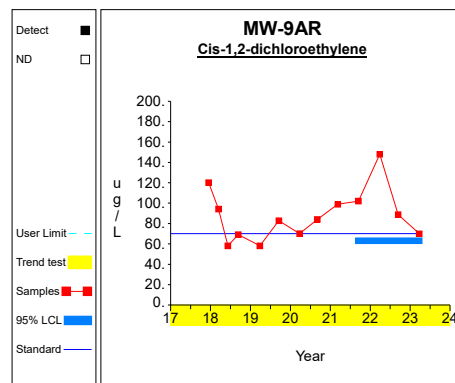
Graph 71



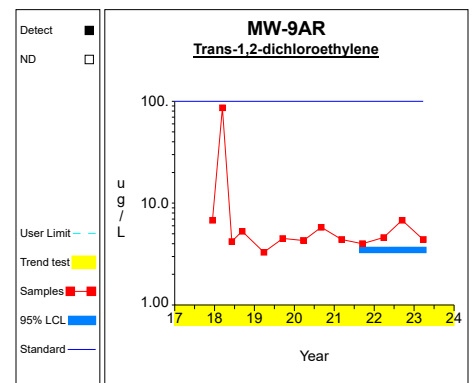
Graph 72



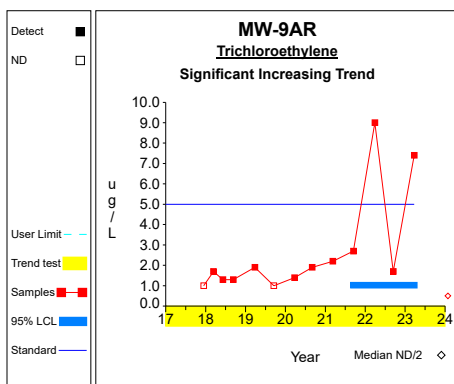
Graph 73



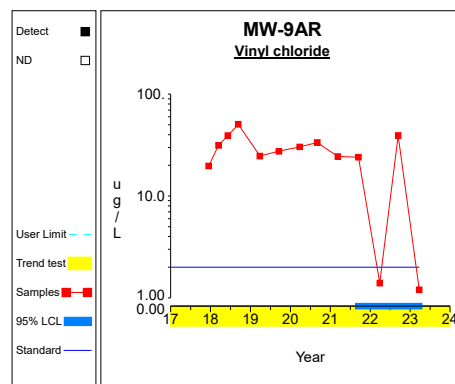
Graph 74



Graph 75

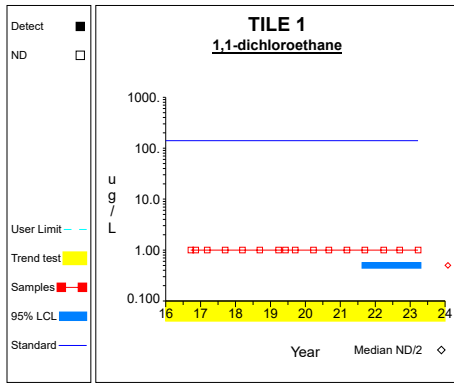


Graph 76

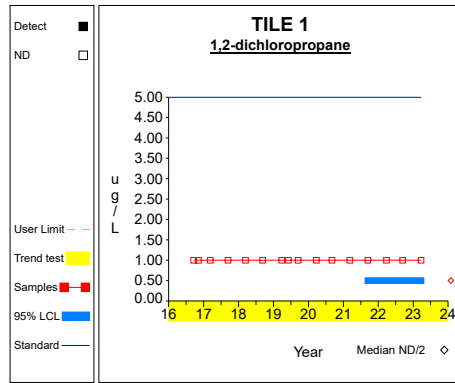


Graph 77

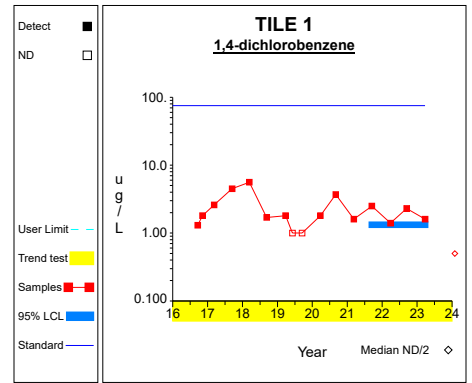
Confidence Limits (Assessment)



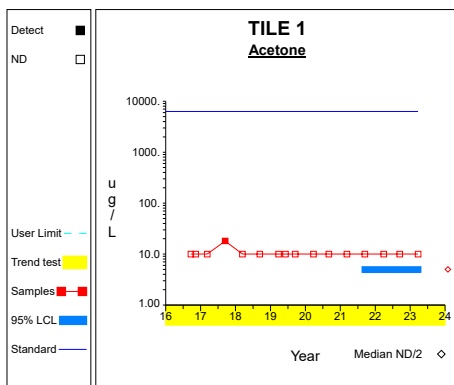
Graph 77



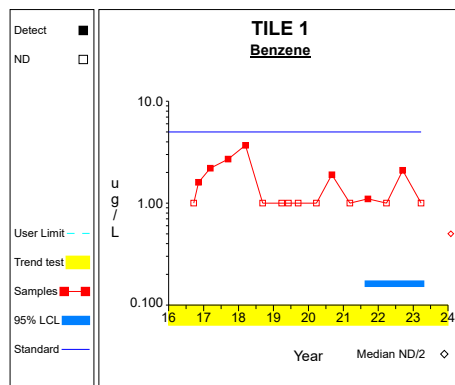
Graph 79



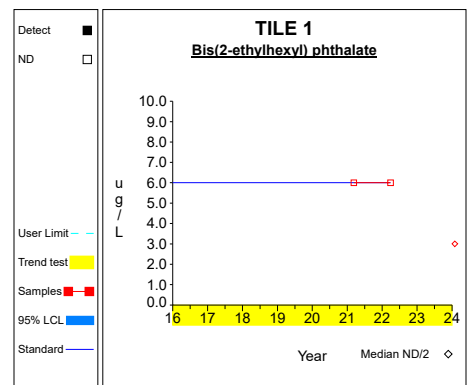
Graph 80



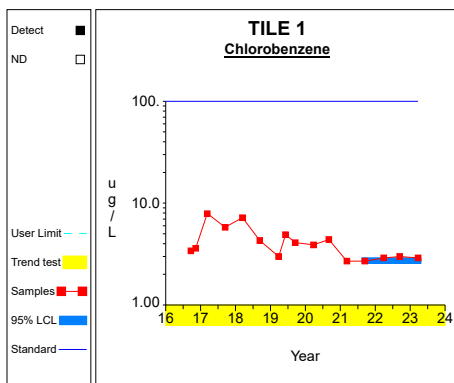
Graph 81



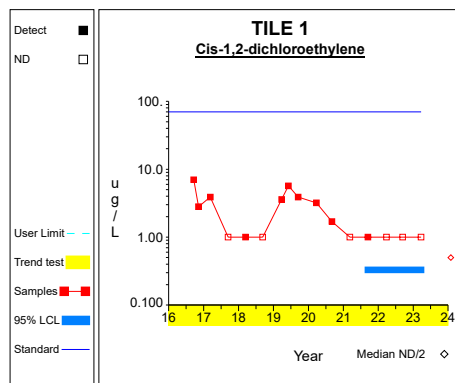
Graph 82



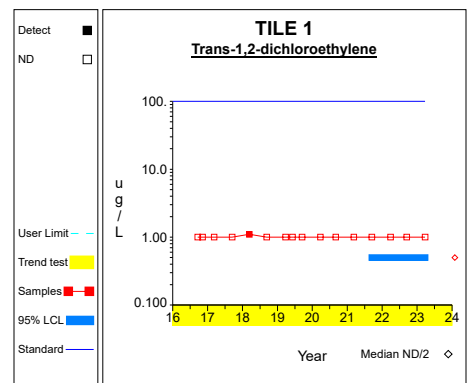
Graph 83



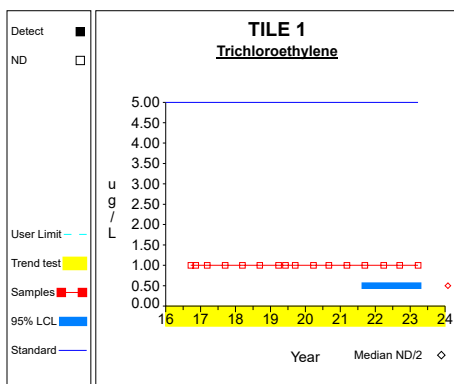
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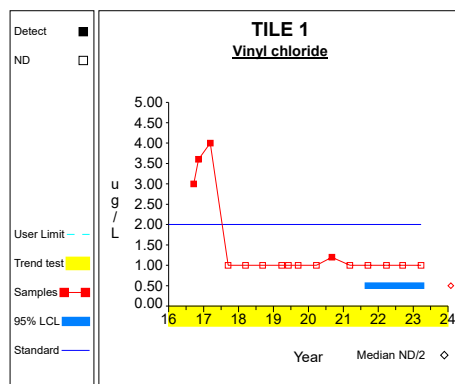
Graph 85



Graph 86

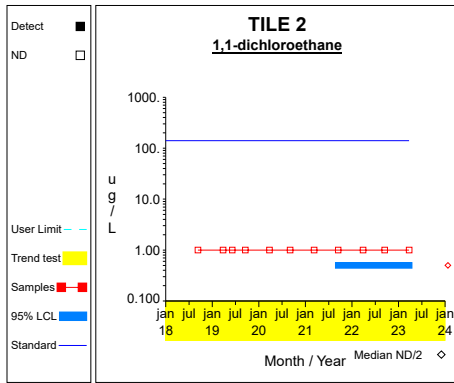


Graph 87

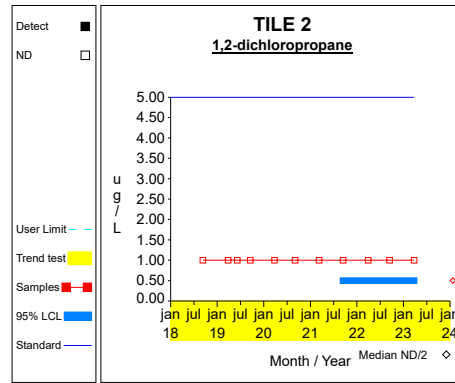


Graph 88

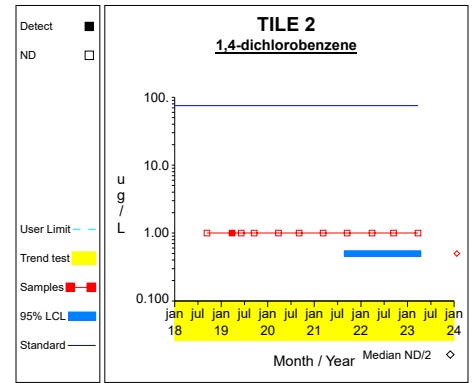
Confidence Limits (Assessment)



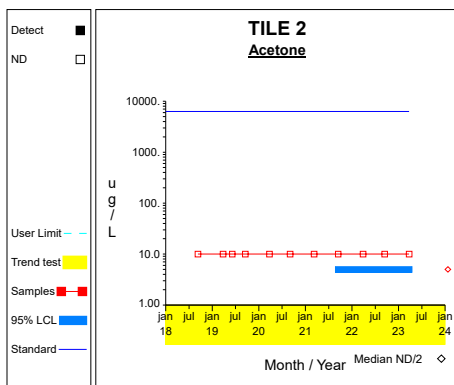
Graph 89



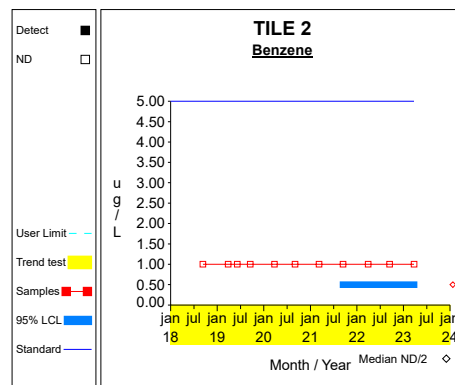
Graph 90



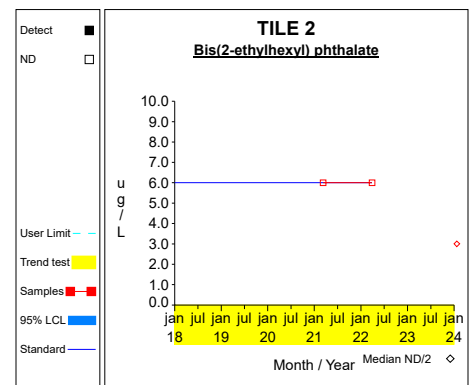
Graph 91



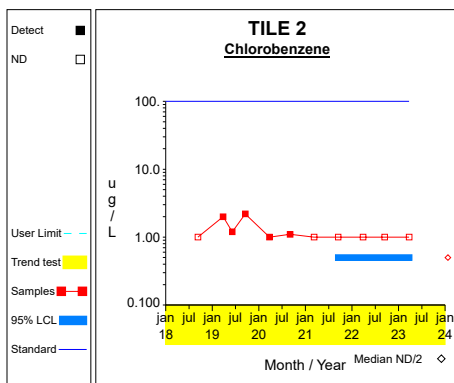
Graph 92



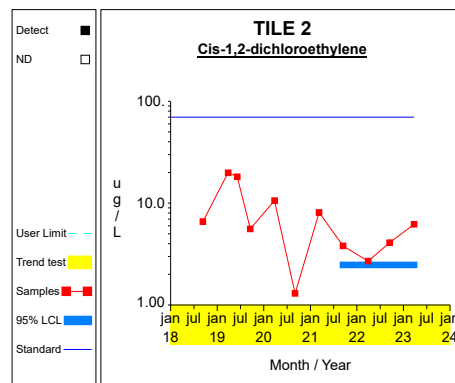
Graph 93



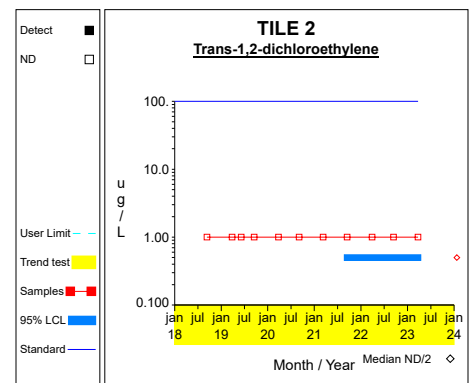
Graph 94



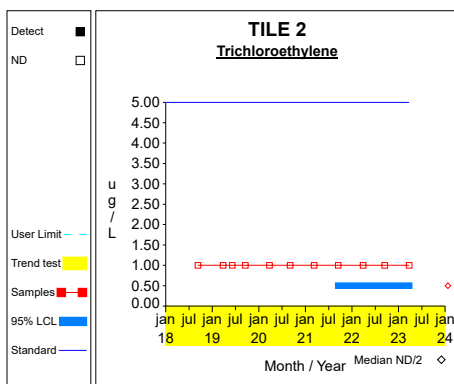
Graph 95



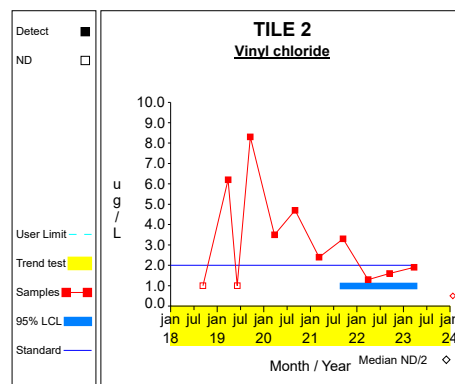
Graph 96



Graph 97



Graph 98



Graph 99

Appendix C.2 – Fall - Otter Creek Statistical Report

GROUND WATER STATISTICS
FOR THE
SOUTH CENTRAL IOWA LANDFILL

Second Semi-Annual Monitoring Event in 2023

Prepared for:
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September 2023

INTRODUCTION

This report summarizes the results of the statistical analysis used to evaluate the ground water quality data obtained during the second semi-annual monitoring event in 2023 at the South Central Iowa Landfill in Winterset, Iowa. The statistical plan was designed to detect a release from the facility at the earliest indication so that it is protective of human health and the environment. The interwell statistical method was applied to the current data. The statistical plan conforms with IAC 567, Chapter 113.10, USEPA Guidance document (“*Statistical Analysis of Ground-Water Monitoring Data at RCRA Facilities, Unified Guidance*”, March 2009), and the American Society for Testing and Materials (ASTM) standard D6312-98, *Developing Appropriate Statistical Approaches for Ground-Water Detection Monitoring Programs*.

Ground Water Monitoring Program

The shallow groundwater monitoring network for the South Central Iowa Landfill includes sample points MW-4A (upgradient), MW-18 (upgradient), GU-1, MW-1R, MW-6A, MW-21, Tile 1, Tile 2, MW-38A, and MW-44. The deep groundwater monitoring network for the South Central Iowa Landfill includes sample points MW-11C (upgradient), MW-39D, MW-41D, MW-42D, MW-14D, MW-17R, and MW-28. Supplemental wells monitored include MW-8B, MW-9AR, and MW-15R. Additionally, surface water is monitored from a stream on the western edge of the property at sample points SW-1 (upgradient) SW-101, SW-102, SW-103, SW-104, SW-105, SW-106, and SW-2B. Each of the groundwater monitoring wells and surface waters are to be sampled at least semiannually and analyzed for the detection monitoring parameters listed in 113.10(5), which includes 15 inorganic constituents and 47 organic compounds, summarized in Table 1 below.

Table 1: Detection monitoring constituents listed in Appendix I of IAC 567, Chapter 113.

Organic Compounds:

Acetone	<i>trans</i> -1,4-Dichloro-2-butene	Iodomethane
Acrylonitrile	1,1-Dichloroethane	4-Methyl-2-pentanone
Benzene	1,2-Dichloroethane	Styrene
Bromochloromethane	1,1-Dichloroethene	1,1,1,2-Tetrachloroethane
Bromodichloromethane	<i>cis</i> -1,2-Dichloroethene	1,1,2,2-Tetrachloroethane
Bromoform	<i>trans</i> -1,2-Dichloroethene	Tetrachloroethene
Carbon disulfide	1,2-Dichloropropane	Toluene
Carbon tetrachloride	<i>cis</i> -1,3-Dichloropropene	1,1,1-Trichloroethane
Chlorobenzene	<i>trans</i> -1,3-Dichloropropene	1,1,2-Trichloroethane
Chloroethane	Ethylbenzene	Trichloroethene
Chloroform	2-Hexanone	Trichlorofluoromethane
Dibromochloromethane	Bromomethane	1,2,3-Trichloropropane
1,2-Dibromo-3-chloropropane	Chloromethane	Vinyl acetate
1,2-Dibromoethane	Dibromomethane	Vinyl chloride
1,2-Dichlorobenzene	Methylene chloride	Xylenes (Total)
1,4-Dichlorobenzene	2-Butanone	

Inorganic constituents:

Antimony, Total	Chromium, Total	Selenium, Total
Arsenic, Total	Cobalt, Total	Silver, Total
Barium, Total	Copper, Total	Thallium, Total
Beryllium, Total	Lead, Total	Vanadium, Total
Cadmium, Total	Nickel, Total	Zinc, Total

The ground water and surface water data obtained during the second semi-annual monitoring events in 2023 are summarized in Attachment A.

STATISTICAL METHODOLOGIES FOR DETECTION MONITORING

IAC 567, Chapter 113.10(4) provides several options for statistically evaluating the ground water data at those wells that monitor the open cells or contiguous MSWLF units. The preferred methods for comparing ground water data are using either prediction limits or using control charts. The prediction limit method was applied to the South Central Iowa Landfill data using the DUMPStat[®] statistical program. Ground water statistics are to be done on the inorganic constituents listed. The organic constituents are compared to maximum contaminant levels (MCLs) or practical quantitation limits (PQLs), in lieu of statistical comparisons to historical concentrations.

Interwell Statistics: Upgradient versus Downgradient Comparisons

Interwell statistics are appropriate when the upgradient and downgradient wells monitor the same ground water formation and there is similar variability in the upgradient and downgradient zones. Site prediction limits are determined by pooling the historical ground water data from hydraulically upgradient wells. This statistical method compares the current downgradient determinations to site prediction limits and checks for exceedances. The type of prediction limit utilized (e.g., parametric or nonparametric) is based on the detection frequency and the data distribution of each parameter in the background data. The distribution of the background data is tested for normality using the Shapiro-Wilk test (Gibbons, 1994 and USEPA 1992). If the constituent is normally distributed, a normal prediction limit is used. If normality is rejected by the Shapiro-Wilk test, the background data is transformed by taking the natural logarithm. The Shapiro-Wilk test is then reapplied on the transformed data. If it is not rejected, lognormal prediction limits are used. If after transforming the data, normality is still rejected, nonparametric prediction limits are used for that analyte. The nonparametric prediction limit is the largest determination in the background measurements. For constituents where the background detection frequency is greater than 0% but less than 50%, nonparametric prediction limits will be used. If the detection frequency is 0% after thirteen samples have been collected, the practical quantitation limit (PQL) becomes the nonparametric prediction limit.

Since there is limited background, Poisson prediction limits were previously computed for those rarely detected parameters. Poisson prediction limits are appropriate for small data sets. Once twelve rounds of data are available, it was recommended that nonparametric prediction limits be used for parameters detected at a frequency less than 25%. Since the Unified Guidance recommends nonparametric limits over Poisson limits, nonparametric limits were used for the current comparisons.

Results of the Interwell Statistics (Shallow Ground Water Samples)

The background data used in this statistical analysis includes the ground water data collected from ground water wells MW-4A and MW-18 during the period from September 2014 through the current data. A summary of the background data from monitoring wells MW-4A and MW-18, used to determine the site prediction limits, is listed in Attachment B, Table 1 “Upgradient Data”. This statistical method compares the current downgradient determinations to site prediction limits and checks for exceedances.

Table 2 “Most Current Downgradient Monitoring Data”, summarizes the current data from downgradient wells MW-21, MW-44, Tile 1, and Tile 2, compared to the site prediction limits. Prediction limit exceedances are flagged with asterisks. For the most current data, the site prediction limit exceedances detected are summarized in the table below.

Trace Metal Prediction Limit Exceedances during the Second Semi-Annual Monitoring Event in 2023

Well	Trace Metal Detected	Result, µg/L	Prediction Limit, µg/L	Prediction Limit Type	Verified/ Awaiting verification
MW-44	Barium	708	623.3256	Normal	Verified
Tile 1	Barium	2510	623.3256	Normal	Verified
	Nickel	43.6	23.8000	Nonparametric	Awaiting verification

The detection frequencies of the parameters in the up and down gradient monitoring wells are summarized in Table 3. Table 4 summarizes the results of the Shapiro-Wilk test. Table 5 is a summary of the statistics and prediction limits determined for the metals. Time series graphs of each of the parameters at each well with the corresponding prediction limits are attached.

A statistical power curve indicates the expected false assessments for the site as a whole. The false positive rate for interwell analyses is the percentage of failures when the upgradient versus downgradient true mean difference equals zero. False negative rate indicates the chance of missing contamination at a single well for a single constituent. The statistical power is a function of the number of wells included, the number of constituents compared, the detection frequencies, and the data distributions involved. For interwell analysis, the site-wide false positive rate is 2% and the test becomes sensitive to 4 standard deviation unit increases over background.

The verified trace metal exceedances were evaluated against the ground water protection standards (GWPS) using confidence limits calculated in accordance with the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, USEPA, March 2009 (Attachment C). The analysis was conducted to evaluate whether verified concentrations are significantly above the water quality standard. The 95% lower confidence limit (LCL) for the mean of the historical data was used to evaluate whether the regulated unit is in compliance with the ground-water protection standards under 40 CFR 264 (e.g. whether the verified constituent is detected at a significant level above the GWPS). An exceedance is verified if the LCL is above the Regulatory GWPS.

The calculated 95% LCLs are below GWPS.

Results of the Interwell Statistics (Bedrock Ground Water Samples)

The previous background data used in this statistical analysis included the ground water data collected from ground water wells MW-7B and MW-11C during the period from September 2014 through the current data. The background data used in this statistical analysis includes the ground water data collected from ground water well MW-11C during the period from September 2014 through the current data, and new wells MW-39D, MW-41D, and MW-42D. A summary of the background data from monitoring wells MW-11C, MW-39D, MW-41D, and MW-42D, used to determine the site prediction limits, is listed in Attachment D, Table

1 “Upgradient Data”. This statistical method compares the current downgradient determinations to site prediction limits and checks for exceedances.

Table 2 “Most Current Downgradient Monitoring Data”, summarizes the current data from downgradient wells MW-14D, MW-17R, and MW-28 compared to the site prediction limits. Prediction limit exceedances are flagged with asterisks. For the most current data, the site prediction limit exceedances detected are summarized in the table below.

Trace Metal Prediction Limit Exceedances during the Second Semi-Annual Monitoring Event in 2023

Well	Trace Metal Detected	Result, µg/L	Prediction Limit, µg/L	Prediction Limit Type	Verified/Awaiting verification
MW-14D	Cobalt	5.9	5.4000	Nonparametric	Awaiting verification
MW-17R	Barium	422	107.4794	Normal	Verified
	Nickel	21.4	11.8000	Nonparametric	Verified
MW-28	Arsenic	8.8	5.8000	Nonparametric	Verified
	Barium	647	107.4794	Normal	Verified
	Cobalt	28.6	5.4000	Nonparametric	Verified
	Nickel	19.1	11.8000	Nonparametric	Verified

The detection frequencies of the parameters in the up and down gradient monitoring wells are summarized in Table 3. Table 4 summarizes the results of the Shapiro-Wilk test. Table 5 is a summary of the statistics and prediction limits determined for the metals. Time series graphs of each of the parameters at each well with the corresponding prediction limits are attached. For interwell analysis, the site-wide false positive rate is 1% and the test becomes sensitive to 4 standard deviation unit increases over background.

The verified trace metal exceedances were evaluated against the GWPS (Attachment E). The 95% LCL for cobalt MW-28 (31.634 µg/L) exceeds the GWPS of 2.1 µg/L. The remainder of the calculated 95% LCLs are below GWPS.

Supplemental Downgradient Attenuation Zone

Time series plots of the Appendix I trace metals at wells MW-8B, MW-9AR, and MW-15R are provided in Attachment F. An increasing trend was detected for barium at MW-15R.

Volatile Organic Compounds

Volatile Organic Compounds (VOCs) are generally man-made compounds not present in ambient ground water. If VOCs are detected above their statistical limit (i.e., the laboratory PQL or reporting limit), a verification resample will be conducted at the next scheduled sampling event. A statistical exceedance will be indicated if the VOC detection is confirmed by the subsequent monitoring. VOCs detected in the ground water at South Central Iowa Landfill during the second semi-annual monitoring event in 2023 are summarized below. Historical VOC detections are summarized in Attachment G.

VOCs Detected at SCILA during the Second Semi-Annual Monitoring Event in 2023

Well	VOC Detected	Result µg/L	Reporting Limit µg/L	Verified/Awaiting Verification	Ground Water Standard, µg/L
MW-14D	Chloroform	1.4	1	Awaiting Verification	80 ^b
MW-17R	<i>cis</i> -1,2-Dichloroethene	3.7	1	Verified	70 ^a
MW-28	<i>cis</i> -1,2-Dichloroethene	12.2	1	Verified	70 ^a
MW-44	Toluene	2.2	1	Awaiting Verification	1000 ^a
MW-9AR	1,1-Dichloroethane	1.5	1	Awaiting Verification	140 ^b
	Benzene	2.0	1	Awaiting Verification	5 ^a
	Chlorobenzene	5.8	1	Awaiting Verification	100 ^a
	<i>cis</i> -1,2-Dichloroethene	70.8	1	Verified	70 ^a
	<i>trans</i> -1,2-Dichloroethene	5.0	1	Verified	100 ^a
	Trichloroethene	2.4	1	Verified	5 ^a
	Vinyl chloride	32.8	1	Verified	2 ^a
Tile 1	1,4-Dichlorobenzene	4.5	1	Verified	75 ^a
	Benzene	3.0	1	Awaiting Verification	5 ^a
	Chlorobenzene	5.6	1	Verified	100 ^a
Tile 2	<i>cis</i> -1,2-Dichloroethene	2.3	1	Verified	70 ^a
	Vinyl chloride	1.6	1	Verified	2 ^a

a – USEPA MCL,
b – Iowa Statewide Standard

The past and current verified VOC detections were evaluated against the ground water protection standards (GWPS) using confidence limits calculated in accordance with the Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities, USEPA, March 2009 (Attachment H). The analysis was conducted to evaluate whether verified concentrations are significantly above the water quality standard. The 95% lower confidence limit (LCL) for the mean of the historical data was used to evaluate whether the regulated unit is in compliance with the ground-water protection standards under 40 CFR 264 (e.g. whether the verified constituent is detected at a significant level above the GWPS). An exceedance is verified if the LCL is above the Regulatory GWPS.

The calculated 95% LCLs are below GWPS.

Attachment A

Summary of the Data obtained during the Second Semi-Annual Monitoring Event in 2023

Table 1

Analytical Data Summary for 9/5/2023

Constituents	Units	MW-11C	MW-14D	MW-15R	MW-17R	MW-18	MW-21	MW-28	MW-39D	MW-41D	MW-42D	MW-44	MW-8B	MW-9AR	TILE 1	TILE 2
1,1,1,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
1,1,1-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
1,1,2,2-tetrachloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
1,1,2-trichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
1,1-dichloroethane	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0	<1.0	<1.0	1.5	<1.0	<1.0
1,1-dichloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
1,2,3-trichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
1,2-dibromo-3-chloropropane	ug/L	<5	<5	<5	<5	<5	<5	<5			<5	<5	<5	<5	<5	<5
1,2-dibromoethane	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
1,2-dichlorobenzene	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
1,2-dichloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
1,2-dichloropropane	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
1,4-dichlorobenzene	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0	<1.0	<1.0	<1.0	4.5	<1.0
2-butanone (mek)	ug/L	<10	<10	<10	<10	<10	<10	<10			<10	<10	<10	<10	<10	<10
2-hexanone (mbk)	ug/L	<5	<5	<5	<5	<5	<5	<5			<5	<5	<5	<5	<5	<5
4-methyl-2-pentanone (mibk)	ug/L	<5	<5	<5	<5	<5	<5	<5			<5	<5	<5	<5	<5	<5
Acetone	ug/L	<10	<10	<10	<10	<10	<10	<10			<10	<10	<10	<10	<10	<10
Acrylonitrile	ug/L	<5	<5	<5	<5	<5	<5	<5			<5	<5	<5	<5	<5	<5
Antimony, total	ug/L	<2.0	2.3	<2.0	<2.0	5.5	<2.0	<2.0	<2.0	3.1	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Arsenic, total	ug/L	<4.0	<4.0	70.3	<4.0	26.8	<4.0	8.8	<4.0	<4.0	4.3	<4.0	17.4	4.1	8.7	<4.0
Barium, total	ug/L	72.3	18.3	743.0	422.0	509.0	162.0	647.0	33.5	30.3	36.6	708.0	810.0	523.0	2510.0	590.0
Benzene	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	2	3	<1
Beryllium, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	698	690	<4	<4
Bicarbonate, as cacO3	mg/L			620												
Bromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
Bromodichloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
Bromoform	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
Bromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
Cadmium, total	ug/L	<.8	<.8	<.8	<.8	1.8	<.8	<.8	<.8	<.8	<.8	<.8	<.8	1.9	<.8	<.8
Carbon disulfide	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
Carbon tetrachloride	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
Chlorobenzene	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0	<1.0	<1.0	5.8	5.6	<1.0
Chloroethane	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
Chloroform	ug/L	<1.0	1.4	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Chloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
Chromium, total	ug/L	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8	<8
Cis-1,2-dichloroethylene	ug/L	<1.0	<1.0	<1.0	3.7	<1.0	<1.0	12.2			<1.0	<1.0	<1.0	70.8	<1.0	2.3
Cis-1,3-dichloropropene	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
Cobalt, total	ug/L	<.4	5.9	1.2	1.8	2.2	<.4	28.6	<.4	.9	<.4	.6	12.3	4.1	3.3	1.5
Copper, total	ug/L	<4.0	<4.0	<4.0	<4.0	5.9	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0	<4.0
Dibromochloromethane	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
Dibromomethane	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
Ethylbenzene	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
Lead, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Methyl iodide	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
Methylene chloride	ug/L	<5	<5	<5	<5	<5	<5	<5			<5	<5	<5	<5	<5	<5
Nickel, total	ug/L	<4.0	<4.0	<4.0	21.4	14.0	<4.0	19.1	<4.0	7.5	<4.0	<4.0	7.1	19.4	43.6	7.7
pH	pH			6.6									7.0	6.6		
Selenium, total	ug/L	<4	<4	<4	<4	8	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Silver, total	ug/L	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4
Styrene	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
Tetrachloroethylene	ug/L	<1	<1	<1	<1	<1	<1	<1			<1	<1	<1	<1	<1	<1
Thallium, total	ug/L	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2
Toluene	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0			<1.0	2.2	<1.0	<1.0	<1.0	<1.0

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

Table 1

Analytical Data Summary for 9/5/2023

Constituents	Units	MW-11C	MW-14D	MW-15R	MW-17R	MW-18	MW-21	MW-28	MW-39D	MW-41D	MW-42D	MW-44	MW-8B	MW-9AR	TILE 1	TILE 2
Trans-1,2-dichloroethylene	ug/L	<1	<1	<1	<1		<1	<1			<1	<1	<1	5	<1	<1
Trans-1,3-dichloropropene	ug/L	<1	<1	<1	<1		<1	<1			<1	<1	<1	<1	<1	<1
Trans-1,4-dichloro-2-butene	ug/L	<5	<5	<5	<5		<5	<5			<5	<5	<5	<5	<5	<5
Trichloroethylene	ug/L	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0			<1.0	<1.0	<1.0	2.4	<1.0	<1.0
Trichlorofluoromethane	ug/L	<1	<1	<1	<1		<1	<1			<1	<1	<1	<1	<1	<1
Vanadium, total	ug/L	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Vinyl acetate	ug/L	<5	<5	<5	<5		<5	<5			<5	<5	<5	<5	<5	<5
Vinyl chloride	ug/L	<1.0	<1.0	<1.0	<1.0		<1.0	<1.0			<1.0	<1.0	<1.0	32.8	<1.0	1.6
Xylenes, total	ug/L	<2	<2	<2	<2		<2	<2			<2	<2	<2	<2	<2	<2
Zinc, total	ug/L	<20.0	<20.0	<20.0	<20.0	48.1	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	<20.0	28.3	<20.0	<20.0

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

Attachment B

Summary Tables and Graphs for the Interwell Comparisons
Shallow Ground Water

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Antimony, total	ug/L	MW-18	09/23/2014	ND	2.0000		
Antimony, total	ug/L	MW-18	12/02/2014	ND	2.0000		
Antimony, total	ug/L	MW-18	03/19/2015	ND	2.0000		
Antimony, total	ug/L	MW-18	06/17/2015	ND	2.0000		
Antimony, total	ug/L	MW-18	08/27/2015	ND	2.0000		
Antimony, total	ug/L	MW-18	03/03/2016		2.6000		
Antimony, total	ug/L	MW-18	09/20/2016	ND	2.0000		
Antimony, total	ug/L	MW-18	03/09/2017	ND	2.0000		
Antimony, total	ug/L	MW-18	09/14/2017	ND	2.0000		
Antimony, total	ug/L	MW-18	03/12/2018	ND	2.0000		
Antimony, total	ug/L	MW-18	09/10/2018	ND	2.0000		
Antimony, total	ug/L	MW-18	03/26/2019	ND	2.0000		
Antimony, total	ug/L	MW-18	09/16/2019	ND	2.0000		
Antimony, total	ug/L	MW-18	03/24/2020	ND	2.0000		
Antimony, total	ug/L	MW-18	09/02/2020	ND	2.0000		
Antimony, total	ug/L	MW-18	03/08/2021	ND	2.0000		
Antimony, total	ug/L	MW-18	09/14/2021	ND	2.0000		
Antimony, total	ug/L	MW-18	03/28/2022		2.1000		
Antimony, total	ug/L	MW-18	09/13/2022	ND	2.0000		
Antimony, total	ug/L	MW-18	03/23/2023		4.2000		
Antimony, total	ug/L	MW-18	09/05/2023		5.5000		
Arsenic, total	ug/L	MW-18	09/23/2014		23.0000		
Arsenic, total	ug/L	MW-18	12/02/2014		38.7000		
Arsenic, total	ug/L	MW-18	03/19/2015		30.7000		
Arsenic, total	ug/L	MW-18	06/17/2015		53.7000		
Arsenic, total	ug/L	MW-18	08/27/2015		26.8000		
Arsenic, total	ug/L	MW-18	03/03/2016		97.7000	*	
Arsenic, total	ug/L	MW-18	09/20/2016		33.2000		
Arsenic, total	ug/L	MW-18	03/09/2017		34.0000		
Arsenic, total	ug/L	MW-18	07/12/2017		22.3000		
Arsenic, total	ug/L	MW-18	09/14/2017		8.3000		
Arsenic, total	ug/L	MW-18	12/13/2017		7.2000		
Arsenic, total	ug/L	MW-18	03/12/2018		11.6000		
Arsenic, total	ug/L	MW-18	09/10/2018		11.4000		
Arsenic, total	ug/L	MW-18	03/26/2019		26.1000		
Arsenic, total	ug/L	MW-18	09/16/2019		13.0000		
Arsenic, total	ug/L	MW-18	03/24/2020		10.7000		
Arsenic, total	ug/L	MW-18	09/02/2020		14.3000		
Arsenic, total	ug/L	MW-18	03/08/2021		14.2000		
Arsenic, total	ug/L	MW-18	09/14/2021		15.3000		
Arsenic, total	ug/L	MW-18	03/28/2022		26.8000		
Arsenic, total	ug/L	MW-18	09/13/2022		34.0000		
Arsenic, total	ug/L	MW-18	03/23/2023		79.4000	*	
Arsenic, total	ug/L	MW-18	09/05/2023		26.8000		
Barium, total	ug/L	MW-18	09/23/2014		407.0000		
Barium, total	ug/L	MW-18	12/02/2014		459.0000		
Barium, total	ug/L	MW-18	03/19/2015		436.0000		
Barium, total	ug/L	MW-18	06/17/2015		377.0000		
Barium, total	ug/L	MW-18	08/27/2015		392.0000		
Barium, total	ug/L	MW-18	03/03/2016		486.0000		
Barium, total	ug/L	MW-18	09/20/2016		320.0000		
Barium, total	ug/L	MW-18	03/09/2017		465.0000		
Barium, total	ug/L	MW-18	09/14/2017		452.0000		
Barium, total	ug/L	MW-18	03/12/2018		410.0000		
Barium, total	ug/L	MW-18	09/10/2018		374.0000		
Barium, total	ug/L	MW-18	03/26/2019		352.0000		
Barium, total	ug/L	MW-18	09/16/2019		559.0000		
Barium, total	ug/L	MW-18	03/24/2020		330.0000		
Barium, total	ug/L	MW-18	09/02/2020		478.0000		
Barium, total	ug/L	MW-18	03/08/2021		463.0000		
Barium, total	ug/L	MW-18	09/14/2021		499.0000		
Barium, total	ug/L	MW-18	03/28/2022		479.0000		
Barium, total	ug/L	MW-18	09/13/2022		551.0000		
Barium, total	ug/L	MW-18	03/23/2023		655.0000		
Barium, total	ug/L	MW-18	09/05/2023		509.0000		
Beryllium, total	ug/L	MW-18	09/23/2014	ND	4.0000		
Beryllium, total	ug/L	MW-18	12/02/2014	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/19/2015	ND	4.0000		
Beryllium, total	ug/L	MW-18	06/17/2015	ND	4.0000		
Beryllium, total	ug/L	MW-18	08/27/2015	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/03/2016	ND	4.0000		
Beryllium, total	ug/L	MW-18	09/20/2016	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/09/2017	ND	4.0000		
Beryllium, total	ug/L	MW-18	09/14/2017	ND	4.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Beryllium, total	ug/L	MW-18	03/12/2018	ND	4.0000		
Beryllium, total	ug/L	MW-18	09/10/2018	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/26/2019	ND	4.0000		
Beryllium, total	ug/L	MW-18	09/16/2019	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/24/2020	ND	4.0000		
Beryllium, total	ug/L	MW-18	09/02/2020	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/08/2021	ND	4.0000		
Beryllium, total	ug/L	MW-18	09/14/2021	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/28/2022	ND	4.0000		
Beryllium, total	ug/L	MW-18	09/13/2022	ND	4.0000		
Beryllium, total	ug/L	MW-18	03/23/2023	ND	4.0000		
Beryllium, total	ug/L	MW-18	09/05/2023	ND	4.0000		
Cadmium, total	ug/L	MW-18	09/23/2014	ND	0.8000		
Cadmium, total	ug/L	MW-18	12/02/2014	ND	0.8000		
Cadmium, total	ug/L	MW-18	03/19/2015	ND	0.8000		
Cadmium, total	ug/L	MW-18	06/17/2015	ND	0.8000		
Cadmium, total	ug/L	MW-18	08/27/2015	ND	0.8000		
Cadmium, total	ug/L	MW-18	03/03/2016	ND	0.8000		
Cadmium, total	ug/L	MW-18	09/20/2016	ND	0.8000		
Cadmium, total	ug/L	MW-18	03/09/2017	ND	0.8000		
Cadmium, total	ug/L	MW-18	09/14/2017		1.3000		
Cadmium, total	ug/L	MW-18	03/12/2018	ND	0.8000		
Cadmium, total	ug/L	MW-18	09/10/2018	ND	0.8000		
Cadmium, total	ug/L	MW-18	03/26/2019	ND	0.8000		
Cadmium, total	ug/L	MW-18	09/16/2019	ND	0.8000		
Cadmium, total	ug/L	MW-18	03/24/2020	ND	0.8000		
Cadmium, total	ug/L	MW-18	09/02/2020	ND	0.8000		
Cadmium, total	ug/L	MW-18	03/08/2021	ND	0.8000		
Cadmium, total	ug/L	MW-18	09/14/2021	ND	0.8000		
Cadmium, total	ug/L	MW-18	03/28/2022		1.3000		
Cadmium, total	ug/L	MW-18	09/13/2022		1.1000		
Cadmium, total	ug/L	MW-18	03/23/2023		3.9000		*
Cadmium, total	ug/L	MW-18	09/05/2023		1.8000		
Chromium, total	ug/L	MW-18	09/23/2014	ND	8.0000		
Chromium, total	ug/L	MW-18	12/02/2014	ND	8.0000		
Chromium, total	ug/L	MW-18	03/19/2015	ND	8.0000		
Chromium, total	ug/L	MW-18	06/17/2015	ND	8.0000		
Chromium, total	ug/L	MW-18	08/27/2015	ND	8.0000		
Chromium, total	ug/L	MW-18	03/03/2016	ND	8.0000		
Chromium, total	ug/L	MW-18	09/20/2016	ND	8.0000		
Chromium, total	ug/L	MW-18	03/09/2017	ND	8.0000		
Chromium, total	ug/L	MW-18	09/14/2017		10.4000		
Chromium, total	ug/L	MW-18	03/12/2018	ND	8.0000		
Chromium, total	ug/L	MW-18	09/10/2018	ND	8.0000		
Chromium, total	ug/L	MW-18	03/26/2019	ND	8.0000		
Chromium, total	ug/L	MW-18	09/16/2019	ND	8.0000		
Chromium, total	ug/L	MW-18	03/24/2020	ND	8.0000		
Chromium, total	ug/L	MW-18	09/02/2020	ND	8.0000		
Chromium, total	ug/L	MW-18	03/08/2021	ND	8.0000		
Chromium, total	ug/L	MW-18	09/14/2021	ND	8.0000		
Chromium, total	ug/L	MW-18	03/28/2022	ND	8.0000		
Chromium, total	ug/L	MW-18	09/13/2022	ND	8.0000		
Chromium, total	ug/L	MW-18	03/23/2023	ND	8.0000		
Chromium, total	ug/L	MW-18	09/05/2023	ND	8.0000		
Cobalt, total	ug/L	MW-18	09/23/2014		0.8000		
Cobalt, total	ug/L	MW-18	12/02/2014		1.2000		
Cobalt, total	ug/L	MW-18	03/19/2015		1.3000		
Cobalt, total	ug/L	MW-18	06/17/2015		1.4000		
Cobalt, total	ug/L	MW-18	08/27/2015		0.9000		
Cobalt, total	ug/L	MW-18	03/03/2016		2.1000		
Cobalt, total	ug/L	MW-18	09/20/2016		3.5000		
Cobalt, total	ug/L	MW-18	03/09/2017		1.9000		
Cobalt, total	ug/L	MW-18	09/14/2017		3.1000		
Cobalt, total	ug/L	MW-18	03/12/2018	ND	2.0000	0.8000	**
Cobalt, total	ug/L	MW-18	09/10/2018		0.9000		
Cobalt, total	ug/L	MW-18	03/26/2019		1.6000		
Cobalt, total	ug/L	MW-18	09/16/2019		1.0000		
Cobalt, total	ug/L	MW-18	03/24/2020	ND	0.8000		
Cobalt, total	ug/L	MW-18	09/02/2020		0.8000		
Cobalt, total	ug/L	MW-18	03/08/2021		1.1000		
Cobalt, total	ug/L	MW-18	09/14/2021		1.7000		
Cobalt, total	ug/L	MW-18	03/28/2022		0.7000		
Cobalt, total	ug/L	MW-18	09/13/2022		7.2000		
Cobalt, total	ug/L	MW-18	03/23/2023		2.9000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted
Cobalt, total	ug/L	MW-18	09/05/2023		2.2000	
Copper, total	ug/L	MW-18	09/23/2014	ND	4.0000	
Copper, total	ug/L	MW-18	12/02/2014	ND	4.0000	
Copper, total	ug/L	MW-18	03/19/2015	ND	4.0000	
Copper, total	ug/L	MW-18	06/17/2015	ND	4.0000	
Copper, total	ug/L	MW-18	08/27/2015	ND	4.0000	
Copper, total	ug/L	MW-18	03/03/2016	ND	4.0000	
Copper, total	ug/L	MW-18	09/20/2016	ND	4.0000	
Copper, total	ug/L	MW-18	03/09/2017	ND	4.0000	
Copper, total	ug/L	MW-18	09/14/2017		6.3000	
Copper, total	ug/L	MW-18	03/12/2018	ND	4.0000	
Copper, total	ug/L	MW-18	09/10/2018		5.2000	
Copper, total	ug/L	MW-18	03/26/2019	ND	4.0000	
Copper, total	ug/L	MW-18	09/16/2019	ND	4.0000	
Copper, total	ug/L	MW-18	03/24/2020	ND	4.0000	
Copper, total	ug/L	MW-18	09/02/2020	ND	4.0000	
Copper, total	ug/L	MW-18	03/08/2021	ND	4.0000	
Copper, total	ug/L	MW-18	09/14/2021	ND	4.0000	
Copper, total	ug/L	MW-18	03/28/2022		6.7000	
Copper, total	ug/L	MW-18	09/13/2022		12.0000	
Copper, total	ug/L	MW-18	03/23/2023		9.9000	
Copper, total	ug/L	MW-18	09/05/2023		5.9000	
Lead, total	ug/L	MW-18	09/23/2014	ND	4.0000	
Lead, total	ug/L	MW-18	12/02/2014	ND	4.0000	
Lead, total	ug/L	MW-18	03/19/2015	ND	4.0000	
Lead, total	ug/L	MW-18	06/17/2015	ND	4.0000	
Lead, total	ug/L	MW-18	08/27/2015	ND	4.0000	
Lead, total	ug/L	MW-18	03/03/2016	ND	4.0000	
Lead, total	ug/L	MW-18	09/20/2016	ND	4.0000	
Lead, total	ug/L	MW-18	03/09/2017	ND	4.0000	
Lead, total	ug/L	MW-18	09/14/2017	ND	4.0000	
Lead, total	ug/L	MW-18	03/12/2018	ND	4.0000	
Lead, total	ug/L	MW-18	09/10/2018	ND	4.0000	
Lead, total	ug/L	MW-18	03/26/2019	ND	4.0000	
Lead, total	ug/L	MW-18	09/16/2019	ND	4.0000	
Lead, total	ug/L	MW-18	03/24/2020	ND	4.0000	
Lead, total	ug/L	MW-18	09/02/2020	ND	4.0000	
Lead, total	ug/L	MW-18	03/08/2021	ND	4.0000	
Lead, total	ug/L	MW-18	09/14/2021	ND	4.0000	
Lead, total	ug/L	MW-18	03/28/2022	ND	4.0000	
Lead, total	ug/L	MW-18	09/13/2022	ND	4.0000	
Lead, total	ug/L	MW-18	03/23/2023	ND	4.0000	
Lead, total	ug/L	MW-18	09/05/2023	ND	4.0000	
Nickel, total	ug/L	MW-18	09/23/2014		5.0000	
Nickel, total	ug/L	MW-18	12/02/2014		5.4000	
Nickel, total	ug/L	MW-18	03/19/2015		6.3000	
Nickel, total	ug/L	MW-18	06/17/2015		10.3000	
Nickel, total	ug/L	MW-18	08/27/2015		6.8000	
Nickel, total	ug/L	MW-18	03/03/2016		12.7000	
Nickel, total	ug/L	MW-18	09/20/2016	ND	4.0000	
Nickel, total	ug/L	MW-18	03/09/2017		5.3000	
Nickel, total	ug/L	MW-18	09/14/2017		16.1000	
Nickel, total	ug/L	MW-18	03/12/2018	ND	4.0000	
Nickel, total	ug/L	MW-18	09/10/2018		4.4000	
Nickel, total	ug/L	MW-18	03/26/2019		7.2000	
Nickel, total	ug/L	MW-18	09/16/2019		4.7000	
Nickel, total	ug/L	MW-18	03/24/2020		4.4000	
Nickel, total	ug/L	MW-18	09/02/2020	ND	4.0000	
Nickel, total	ug/L	MW-18	03/08/2021	ND	4.0000	
Nickel, total	ug/L	MW-18	09/14/2021		10.7000	
Nickel, total	ug/L	MW-18	03/28/2022		8.4000	
Nickel, total	ug/L	MW-18	09/13/2022		11.3000	
Nickel, total	ug/L	MW-18	03/23/2023		23.8000	
Nickel, total	ug/L	MW-18	09/05/2023		14.0000	
Selenium, total	ug/L	MW-18	09/23/2014	ND	4.0000	
Selenium, total	ug/L	MW-18	12/02/2014	ND	4.0000	
Selenium, total	ug/L	MW-18	03/19/2015	ND	4.0000	
Selenium, total	ug/L	MW-18	06/17/2015	ND	4.0000	
Selenium, total	ug/L	MW-18	08/27/2015	ND	4.0000	
Selenium, total	ug/L	MW-18	03/03/2016	ND	4.0000	
Selenium, total	ug/L	MW-18	09/20/2016	ND	4.0000	
Selenium, total	ug/L	MW-18	03/09/2017	ND	4.0000	
Selenium, total	ug/L	MW-18	09/14/2017	ND	4.0000	
Selenium, total	ug/L	MW-18	03/12/2018	ND	4.0000	

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Selenium, total	ug/L	MW-18	09/10/2018	ND	4.0000		
Selenium, total	ug/L	MW-18	03/26/2019	ND	4.0000		
Selenium, total	ug/L	MW-18	09/16/2019	ND	4.0000		
Selenium, total	ug/L	MW-18	03/24/2020	ND	4.0000		
Selenium, total	ug/L	MW-18	09/02/2020	ND	4.0000		
Selenium, total	ug/L	MW-18	03/08/2021	ND	4.0000		
Selenium, total	ug/L	MW-18	09/14/2021	ND	4.0000		
Selenium, total	ug/L	MW-18	03/28/2022		5.1000		
Selenium, total	ug/L	MW-18	09/13/2022		8.7000		
Selenium, total	ug/L	MW-18	03/23/2023		16.2000		
Selenium, total	ug/L	MW-18	09/05/2023		8.0000		
Silver, total	ug/L	MW-18	09/23/2014	ND	4.0000		
Silver, total	ug/L	MW-18	12/02/2014	ND	4.0000		
Silver, total	ug/L	MW-18	03/19/2015	ND	4.0000		
Silver, total	ug/L	MW-18	06/17/2015	ND	4.0000		
Silver, total	ug/L	MW-18	08/27/2015	ND	4.0000		
Silver, total	ug/L	MW-18	03/03/2016	ND	4.0000		
Silver, total	ug/L	MW-18	09/20/2016	ND	4.0000		
Silver, total	ug/L	MW-18	03/09/2017	ND	4.0000		
Silver, total	ug/L	MW-18	09/14/2017	ND	4.0000		
Silver, total	ug/L	MW-18	03/12/2018	ND	4.0000		
Silver, total	ug/L	MW-18	09/10/2018	ND	4.0000		
Silver, total	ug/L	MW-18	03/26/2019	ND	4.0000		
Silver, total	ug/L	MW-18	09/16/2019	ND	4.0000		
Silver, total	ug/L	MW-18	03/24/2020	ND	4.0000		
Silver, total	ug/L	MW-18	09/02/2020	ND	4.0000		
Silver, total	ug/L	MW-18	03/08/2021	ND	4.0000		
Silver, total	ug/L	MW-18	09/14/2021	ND	4.0000		
Silver, total	ug/L	MW-18	03/28/2022	ND	4.0000		
Silver, total	ug/L	MW-18	09/13/2022	ND	4.0000		
Silver, total	ug/L	MW-18	03/23/2023	ND	4.0000		
Silver, total	ug/L	MW-18	09/05/2023	ND	4.0000		
Thallium, total	ug/L	MW-18	09/23/2014	ND	4.0000		
Thallium, total	ug/L	MW-18	12/02/2014	ND	4.0000		
Thallium, total	ug/L	MW-18	03/19/2015	ND	4.0000		
Thallium, total	ug/L	MW-18	06/17/2015	ND	4.0000		
Thallium, total	ug/L	MW-18	08/27/2015	ND	4.0000		
Thallium, total	ug/L	MW-18	03/03/2016	ND	4.0000		
Thallium, total	ug/L	MW-18	09/20/2016	ND	4.0000		
Thallium, total	ug/L	MW-18	03/09/2017	ND	4.0000		
Thallium, total	ug/L	MW-18	09/14/2017	ND	4.0000		
Thallium, total	ug/L	MW-18	03/12/2018	ND	4.0000		
Thallium, total	ug/L	MW-18	09/10/2018	ND	4.0000		
Thallium, total	ug/L	MW-18	03/26/2019	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	09/16/2019	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	03/24/2020	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	09/02/2020	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	03/08/2021	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	09/14/2021	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	03/28/2022	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	09/13/2022	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	03/23/2023	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-18	09/05/2023	ND	2.0000	4.0000	**
Vanadium, total	ug/L	MW-18	09/23/2014	ND	20.0000		
Vanadium, total	ug/L	MW-18	12/02/2014	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/19/2015	ND	20.0000		
Vanadium, total	ug/L	MW-18	06/17/2015	ND	20.0000		
Vanadium, total	ug/L	MW-18	08/27/2015	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/03/2016	ND	20.0000		
Vanadium, total	ug/L	MW-18	09/20/2016	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/09/2017	ND	20.0000		
Vanadium, total	ug/L	MW-18	09/14/2017		30.7000		
Vanadium, total	ug/L	MW-18	03/12/2018	ND	20.0000		
Vanadium, total	ug/L	MW-18	09/10/2018	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/26/2019	ND	20.0000		
Vanadium, total	ug/L	MW-18	09/16/2019	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/24/2020	ND	20.0000		
Vanadium, total	ug/L	MW-18	09/02/2020	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/08/2021	ND	20.0000		
Vanadium, total	ug/L	MW-18	09/14/2021	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/28/2022	ND	20.0000		
Vanadium, total	ug/L	MW-18	09/13/2022	ND	20.0000		
Vanadium, total	ug/L	MW-18	03/23/2023	ND	20.0000		
Vanadium, total	ug/L	MW-18	09/05/2023	ND	20.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Zinc, total	ug/L	MW-18	09/23/2014		11.9000		
Zinc, total	ug/L	MW-18	12/02/2014		11.3000		
Zinc, total	ug/L	MW-18	03/19/2015	ND	8.0000		
Zinc, total	ug/L	MW-18	06/17/2015		23.7000		
Zinc, total	ug/L	MW-18	08/27/2015		13.5000		
Zinc, total	ug/L	MW-18	03/03/2016		18.8000		
Zinc, total	ug/L	MW-18	09/20/2016		8.7000		
Zinc, total	ug/L	MW-18	03/09/2017	ND	8.0000		
Zinc, total	ug/L	MW-18	09/14/2017		53.3000		
Zinc, total	ug/L	MW-18	03/12/2018	ND	8.0000		
Zinc, total	ug/L	MW-18	09/10/2018		27.3000		
Zinc, total	ug/L	MW-18	03/26/2019		13.7000		
Zinc, total	ug/L	MW-18	09/16/2019		20.6000		
Zinc, total	ug/L	MW-18	03/24/2020	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-18	09/02/2020	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-18	03/08/2021	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-18	09/14/2021		34.6000		
Zinc, total	ug/L	MW-18	03/28/2022	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-18	09/13/2022	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-18	03/23/2023		51.2000		
Zinc, total	ug/L	MW-18	09/05/2023		48.1000		
Antimony, total	ug/L	MW-4A	09/23/2014	ND	2.0000		
Antimony, total	ug/L	MW-4A	12/02/2014	ND	2.0000		
Antimony, total	ug/L	MW-4A	03/19/2015	ND	2.0000		
Antimony, total	ug/L	MW-4A	06/17/2015	ND	2.0000		
Antimony, total	ug/L	MW-4A	08/27/2015	ND	2.0000		
Antimony, total	ug/L	MW-4A	03/03/2016	ND	2.0000		
Antimony, total	ug/L	MW-4A	09/20/2016	ND	2.0000		
Antimony, total	ug/L	MW-4A	03/09/2017	ND	2.0000		
Antimony, total	ug/L	MW-4A	09/14/2017	ND	2.0000		
Antimony, total	ug/L	MW-4A	03/12/2018	ND	2.0000		
Antimony, total	ug/L	MW-4A	09/10/2018	ND	2.0000		
Antimony, total	ug/L	MW-4A	03/26/2019	ND	2.0000		
Antimony, total	ug/L	MW-4A	09/16/2019	ND	2.0000		
Antimony, total	ug/L	MW-4A	03/24/2020	ND	2.0000		
Antimony, total	ug/L	MW-4A	09/02/2020	ND	2.0000		
Antimony, total	ug/L	MW-4A	03/08/2021	ND	2.0000		
Antimony, total	ug/L	MW-4A	09/14/2021	ND	2.0000		
Arsenic, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Arsenic, total	ug/L	MW-4A	12/02/2014	ND	4.0000		
Arsenic, total	ug/L	MW-4A	03/19/2015	ND	4.0000		
Arsenic, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Arsenic, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Arsenic, total	ug/L	MW-4A	03/03/2016	ND	4.0000		
Arsenic, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Arsenic, total	ug/L	MW-4A	03/09/2017	ND	4.0000		
Arsenic, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Arsenic, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Arsenic, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Arsenic, total	ug/L	MW-4A	03/26/2019	ND	4.0000		
Arsenic, total	ug/L	MW-4A	09/16/2019	ND	4.0000		
Arsenic, total	ug/L	MW-4A	03/24/2020	ND	4.0000		
Arsenic, total	ug/L	MW-4A	09/02/2020	ND	4.0000		
Arsenic, total	ug/L	MW-4A	03/08/2021	ND	4.0000		
Arsenic, total	ug/L	MW-4A	09/14/2021	ND	4.0000		
Barium, total	ug/L	MW-4A	09/23/2014		367.0000		
Barium, total	ug/L	MW-4A	12/02/2014		418.0000		
Barium, total	ug/L	MW-4A	03/19/2015		322.0000		
Barium, total	ug/L	MW-4A	06/17/2015		267.0000		
Barium, total	ug/L	MW-4A	08/27/2015		390.0000		
Barium, total	ug/L	MW-4A	03/03/2016		378.0000		
Barium, total	ug/L	MW-4A	09/20/2016		380.0000		
Barium, total	ug/L	MW-4A	03/09/2017		265.0000		
Barium, total	ug/L	MW-4A	09/14/2017		365.0000		
Barium, total	ug/L	MW-4A	03/12/2018		313.0000		
Barium, total	ug/L	MW-4A	09/10/2018		316.0000		
Barium, total	ug/L	MW-4A	03/26/2019		232.0000		
Barium, total	ug/L	MW-4A	09/16/2019		346.0000		
Barium, total	ug/L	MW-4A	03/24/2020		250.0000		
Barium, total	ug/L	MW-4A	09/02/2020		360.0000		
Barium, total	ug/L	MW-4A	03/08/2021		296.0000		
Barium, total	ug/L	MW-4A	09/14/2021		344.0000		
Beryllium, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Beryllium, total	ug/L	MW-4A	12/02/2014	ND	4.0000		

* - Outlier for that well and constituent.
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 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Beryllium, total	ug/L	MW-4A	03/19/2015	ND	4.0000		
Beryllium, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Beryllium, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Beryllium, total	ug/L	MW-4A	03/03/2016	ND	4.0000		
Beryllium, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Beryllium, total	ug/L	MW-4A	03/09/2017	ND	4.0000		
Beryllium, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Beryllium, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Beryllium, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Beryllium, total	ug/L	MW-4A	03/26/2019	ND	4.0000		
Beryllium, total	ug/L	MW-4A	09/16/2019	ND	4.0000		
Beryllium, total	ug/L	MW-4A	03/24/2020	ND	4.0000		
Beryllium, total	ug/L	MW-4A	09/02/2020	ND	4.0000		
Beryllium, total	ug/L	MW-4A	03/08/2021	ND	4.0000		
Beryllium, total	ug/L	MW-4A	09/14/2021	ND	4.0000		
Cadmium, total	ug/L	MW-4A	09/23/2014	ND	0.8000		
Cadmium, total	ug/L	MW-4A	12/02/2014	ND	0.8000		
Cadmium, total	ug/L	MW-4A	03/19/2015	ND	0.8000		
Cadmium, total	ug/L	MW-4A	06/17/2015	ND	0.8000		
Cadmium, total	ug/L	MW-4A	08/27/2015	ND	0.8000		
Cadmium, total	ug/L	MW-4A	03/03/2016	ND	0.8000		
Cadmium, total	ug/L	MW-4A	09/20/2016	ND	0.8000		
Cadmium, total	ug/L	MW-4A	03/09/2017	ND	0.8000		
Cadmium, total	ug/L	MW-4A	09/14/2017	ND	0.8000		
Cadmium, total	ug/L	MW-4A	03/12/2018	ND	0.8000		
Cadmium, total	ug/L	MW-4A	09/10/2018	ND	0.8000		
Cadmium, total	ug/L	MW-4A	03/26/2019	ND	0.8000		
Cadmium, total	ug/L	MW-4A	09/16/2019	ND	0.8000		
Cadmium, total	ug/L	MW-4A	03/24/2020	ND	0.8000		
Cadmium, total	ug/L	MW-4A	09/02/2020	ND	0.8000		
Cadmium, total	ug/L	MW-4A	03/08/2021	ND	0.8000		
Cadmium, total	ug/L	MW-4A	09/14/2021	ND	0.8000		
Chromium, total	ug/L	MW-4A	09/23/2014	ND	8.0000		
Chromium, total	ug/L	MW-4A	12/02/2014	ND	8.0000		
Chromium, total	ug/L	MW-4A	03/19/2015	ND	8.0000		
Chromium, total	ug/L	MW-4A	06/17/2015	ND	8.0000		
Chromium, total	ug/L	MW-4A	08/27/2015	ND	8.0000		
Chromium, total	ug/L	MW-4A	03/03/2016	ND	8.0000		
Chromium, total	ug/L	MW-4A	09/20/2016	ND	8.0000		
Chromium, total	ug/L	MW-4A	03/09/2017	ND	8.0000		
Chromium, total	ug/L	MW-4A	09/14/2017	ND	8.0000		
Chromium, total	ug/L	MW-4A	03/12/2018	ND	8.0000		
Chromium, total	ug/L	MW-4A	09/10/2018	ND	8.0000		
Chromium, total	ug/L	MW-4A	03/26/2019	ND	8.0000		
Chromium, total	ug/L	MW-4A	09/16/2019	ND	8.0000		
Chromium, total	ug/L	MW-4A	03/24/2020	ND	8.0000		
Chromium, total	ug/L	MW-4A	09/02/2020	ND	8.0000		
Chromium, total	ug/L	MW-4A	03/08/2021	ND	8.0000		
Chromium, total	ug/L	MW-4A	09/14/2021	ND	8.0000		
Cobalt, total	ug/L	MW-4A	09/23/2014	ND	0.8000		
Cobalt, total	ug/L	MW-4A	12/02/2014	ND	0.8000		
Cobalt, total	ug/L	MW-4A	03/19/2015	ND	0.8000		
Cobalt, total	ug/L	MW-4A	06/17/2015	ND	0.8000		
Cobalt, total	ug/L	MW-4A	08/27/2015	ND	0.8000		
Cobalt, total	ug/L	MW-4A	03/03/2016	ND	0.8000		
Cobalt, total	ug/L	MW-4A	09/20/2016	ND	0.8000		
Cobalt, total	ug/L	MW-4A	03/09/2017	ND	0.8000		
Cobalt, total	ug/L	MW-4A	09/14/2017	ND	0.8000		
Cobalt, total	ug/L	MW-4A	03/12/2018	ND	2.0000	0.8000	**
Cobalt, total	ug/L	MW-4A	09/10/2018	ND	0.8000		
Cobalt, total	ug/L	MW-4A	03/26/2019	ND	0.8000		
Cobalt, total	ug/L	MW-4A	09/16/2019	ND	0.8000		
Cobalt, total	ug/L	MW-4A	03/24/2020	ND	0.8000		
Cobalt, total	ug/L	MW-4A	09/02/2020	ND	0.4000	0.8000	**
Cobalt, total	ug/L	MW-4A	03/08/2021	ND	0.4000	0.8000	**
Cobalt, total	ug/L	MW-4A	09/14/2021	ND	0.4000	0.8000	**
Copper, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Copper, total	ug/L	MW-4A	12/02/2014	ND	4.0000		
Copper, total	ug/L	MW-4A	03/19/2015		30.1000		*
Copper, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Copper, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Copper, total	ug/L	MW-4A	03/03/2016	ND	4.0000		
Copper, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Copper, total	ug/L	MW-4A	03/09/2017	ND	4.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Copper, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Copper, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Copper, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Copper, total	ug/L	MW-4A	03/26/2019	ND	4.0000		
Copper, total	ug/L	MW-4A	09/16/2019	ND	4.0000		
Copper, total	ug/L	MW-4A	03/24/2020	ND	4.0000		
Copper, total	ug/L	MW-4A	09/02/2020	ND	4.0000		
Copper, total	ug/L	MW-4A	03/08/2021	ND	4.0000		
Copper, total	ug/L	MW-4A	09/14/2021	ND	4.0000		
Lead, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Lead, total	ug/L	MW-4A	12/02/2014	ND	4.0000		
Lead, total	ug/L	MW-4A	03/19/2015	ND	4.0000		
Lead, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Lead, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Lead, total	ug/L	MW-4A	03/03/2016	ND	4.0000		
Lead, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Lead, total	ug/L	MW-4A	03/09/2017	ND	4.0000		
Lead, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Lead, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Lead, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Lead, total	ug/L	MW-4A	03/26/2019	ND	4.0000		
Lead, total	ug/L	MW-4A	09/16/2019	ND	4.0000		
Lead, total	ug/L	MW-4A	03/24/2020	ND	4.0000		
Lead, total	ug/L	MW-4A	09/02/2020	ND	4.0000		
Lead, total	ug/L	MW-4A	03/08/2021	ND	4.0000		
Lead, total	ug/L	MW-4A	09/14/2021	ND	4.0000		
Nickel, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Nickel, total	ug/L	MW-4A	12/02/2014	ND	4.0000		
Nickel, total	ug/L	MW-4A	03/19/2015	ND	4.0000		
Nickel, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Nickel, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Nickel, total	ug/L	MW-4A	03/03/2016	ND	4.0000		
Nickel, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Nickel, total	ug/L	MW-4A	03/09/2017	ND	4.0000		
Nickel, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Nickel, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Nickel, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Nickel, total	ug/L	MW-4A	03/26/2019	ND	4.0000		
Nickel, total	ug/L	MW-4A	09/16/2019	ND	4.0000		
Nickel, total	ug/L	MW-4A	03/24/2020	ND	4.0000		
Nickel, total	ug/L	MW-4A	09/02/2020	ND	4.0000		
Nickel, total	ug/L	MW-4A	03/08/2021	ND	4.0000		
Nickel, total	ug/L	MW-4A	09/14/2021	ND	4.0000		
Selenium, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Selenium, total	ug/L	MW-4A	12/02/2014	ND	4.0000		
Selenium, total	ug/L	MW-4A	03/19/2015		4.0000		
Selenium, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Selenium, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Selenium, total	ug/L	MW-4A	03/03/2016	ND	4.0000		
Selenium, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Selenium, total	ug/L	MW-4A	03/09/2017	ND	4.0000		
Selenium, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Selenium, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Selenium, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Selenium, total	ug/L	MW-4A	03/26/2019	ND	4.0000		
Selenium, total	ug/L	MW-4A	09/16/2019	ND	4.0000		
Selenium, total	ug/L	MW-4A	03/24/2020	ND	4.0000		
Selenium, total	ug/L	MW-4A	09/02/2020	ND	4.0000		
Selenium, total	ug/L	MW-4A	03/08/2021	ND	4.0000		
Selenium, total	ug/L	MW-4A	09/14/2021	ND	4.0000		
Silver, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Silver, total	ug/L	MW-4A	12/02/2014	ND	4.0000		
Silver, total	ug/L	MW-4A	03/19/2015	ND	4.0000		
Silver, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Silver, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Silver, total	ug/L	MW-4A	03/03/2016	ND	4.0000		
Silver, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Silver, total	ug/L	MW-4A	03/09/2017	ND	4.0000		
Silver, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Silver, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Silver, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Silver, total	ug/L	MW-4A	03/26/2019	ND	4.0000		
Silver, total	ug/L	MW-4A	09/16/2019	ND	4.0000		
Silver, total	ug/L	MW-4A	03/24/2020	ND	4.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Silver, total	ug/L	MW-4A	09/02/2020	ND	4.0000		
Silver, total	ug/L	MW-4A	03/08/2021	ND	4.0000		
Silver, total	ug/L	MW-4A	09/14/2021	ND	4.0000		
Thallium, total	ug/L	MW-4A	09/23/2014	ND	4.0000		
Thallium, total	ug/L	MW-4A	12/02/2014	ND	4.0000		
Thallium, total	ug/L	MW-4A	03/19/2015	ND	4.0000		
Thallium, total	ug/L	MW-4A	06/17/2015	ND	4.0000		
Thallium, total	ug/L	MW-4A	08/27/2015	ND	4.0000		
Thallium, total	ug/L	MW-4A	03/03/2016	ND	4.0000		
Thallium, total	ug/L	MW-4A	09/20/2016	ND	4.0000		
Thallium, total	ug/L	MW-4A	03/09/2017	ND	4.0000		
Thallium, total	ug/L	MW-4A	09/14/2017	ND	4.0000		
Thallium, total	ug/L	MW-4A	03/12/2018	ND	4.0000		
Thallium, total	ug/L	MW-4A	09/10/2018	ND	4.0000		
Thallium, total	ug/L	MW-4A	03/26/2019	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-4A	09/16/2019	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-4A	03/24/2020	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-4A	09/02/2020	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-4A	03/08/2021	ND	2.0000	4.0000	**
Thallium, total	ug/L	MW-4A	09/14/2021	ND	2.0000	4.0000	**
Vanadium, total	ug/L	MW-4A	09/23/2014	ND	20.0000		
Vanadium, total	ug/L	MW-4A	12/02/2014	ND	20.0000		
Vanadium, total	ug/L	MW-4A	03/19/2015	ND	20.0000		
Vanadium, total	ug/L	MW-4A	06/17/2015	ND	20.0000		
Vanadium, total	ug/L	MW-4A	08/27/2015	ND	20.0000		
Vanadium, total	ug/L	MW-4A	03/03/2016	ND	20.0000		
Vanadium, total	ug/L	MW-4A	09/20/2016	ND	20.0000		
Vanadium, total	ug/L	MW-4A	03/09/2017	ND	20.0000		
Vanadium, total	ug/L	MW-4A	09/14/2017	ND	20.0000		
Vanadium, total	ug/L	MW-4A	03/12/2018	ND	20.0000		
Vanadium, total	ug/L	MW-4A	09/10/2018	ND	20.0000		
Vanadium, total	ug/L	MW-4A	03/26/2019	ND	20.0000		
Vanadium, total	ug/L	MW-4A	09/16/2019	ND	20.0000		
Vanadium, total	ug/L	MW-4A	03/24/2020	ND	20.0000		
Vanadium, total	ug/L	MW-4A	09/02/2020	ND	20.0000		
Vanadium, total	ug/L	MW-4A	03/08/2021	ND	20.0000		
Vanadium, total	ug/L	MW-4A	09/14/2021	ND	20.0000		
Zinc, total	ug/L	MW-4A	09/23/2014	ND	8.0000		
Zinc, total	ug/L	MW-4A	12/02/2014	ND	8.0000		
Zinc, total	ug/L	MW-4A	03/19/2015		14.7000		
Zinc, total	ug/L	MW-4A	06/17/2015	ND	8.0000		
Zinc, total	ug/L	MW-4A	08/27/2015	ND	8.0000		
Zinc, total	ug/L	MW-4A	03/03/2016	ND	8.0000		
Zinc, total	ug/L	MW-4A	09/20/2016	ND	8.0000		
Zinc, total	ug/L	MW-4A	03/09/2017	ND	8.0000		
Zinc, total	ug/L	MW-4A	09/14/2017	ND	8.0000		
Zinc, total	ug/L	MW-4A	03/12/2018	ND	8.0000		
Zinc, total	ug/L	MW-4A	09/10/2018		14.1000		
Zinc, total	ug/L	MW-4A	03/26/2019	ND	8.0000		
Zinc, total	ug/L	MW-4A	09/16/2019	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-4A	03/24/2020	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-4A	09/02/2020	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-4A	03/08/2021	ND	20.0000	8.0000	**
Zinc, total	ug/L	MW-4A	09/14/2021	ND	20.0000	8.0000	**

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Antimony, total	ug/L	MW-21	09/05/2023	ND	2.0000		5.5000
Arsenic, total	ug/L	MW-21	09/05/2023	ND	4.0000		48.5787
Barium, total	ug/L	MW-21	09/05/2023		162.0000		623.3256
Beryllium, total	ug/L	MW-21	09/05/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-21	09/05/2023	ND	0.8000		1.8000
Chromium, total	ug/L	MW-21	09/05/2023	ND	8.0000		10.4000
Cobalt, total	ug/L	MW-21	09/05/2023	ND	0.4000		4.1367
Copper, total	ug/L	MW-21	09/05/2023	ND	4.0000		12.0000
Lead, total	ug/L	MW-21	09/05/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-21	09/05/2023	ND	4.0000		23.8000
Selenium, total	ug/L	MW-21	09/05/2023	ND	4.0000		16.2000
Silver, total	ug/L	MW-21	09/05/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-21	09/05/2023	ND	2.0000		4.0000
Vanadium, total	ug/L	MW-21	09/05/2023	ND	20.0000		30.7000
Zinc, total	ug/L	MW-21	09/05/2023	ND	20.0000		53.3000
Antimony, total	ug/L	MW-44	09/05/2023	ND	2.0000		5.5000
Arsenic, total	ug/L	MW-44	09/05/2023	ND	4.0000		48.5787
Barium, total	ug/L	MW-44	09/05/2023		708.0000	***	623.3256
Beryllium, total	ug/L	MW-44	09/05/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-44	09/05/2023	ND	0.8000		1.8000
Chromium, total	ug/L	MW-44	09/05/2023	ND	8.0000		10.4000
Cobalt, total	ug/L	MW-44	09/05/2023		0.6000		4.1367
Copper, total	ug/L	MW-44	09/05/2023	ND	4.0000		12.0000
Lead, total	ug/L	MW-44	09/05/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-44	09/05/2023	ND	4.0000		23.8000
Selenium, total	ug/L	MW-44	09/05/2023	ND	4.0000		16.2000
Silver, total	ug/L	MW-44	09/05/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-44	09/05/2023	ND	2.0000		4.0000
Vanadium, total	ug/L	MW-44	09/05/2023	ND	20.0000		30.7000
Zinc, total	ug/L	MW-44	09/05/2023	ND	20.0000		53.3000
Antimony, total	ug/L	TILE 1	09/05/2023	ND	2.0000		5.5000
Arsenic, total	ug/L	TILE 1	09/05/2023		8.7000		48.5787
Barium, total	ug/L	TILE 1	09/05/2023		2510.0000	***	623.3256
Beryllium, total	ug/L	TILE 1	09/05/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	TILE 1	09/05/2023	ND	0.8000		1.8000
Chromium, total	ug/L	TILE 1	09/05/2023	ND	8.0000		10.4000
Cobalt, total	ug/L	TILE 1	09/05/2023		3.3000		4.1367
Copper, total	ug/L	TILE 1	09/05/2023	ND	4.0000		12.0000
Lead, total	ug/L	TILE 1	09/05/2023	ND	4.0000		4.0000
Nickel, total	ug/L	TILE 1	09/05/2023		43.6000	*	23.8000
Selenium, total	ug/L	TILE 1	09/05/2023	ND	4.0000		16.2000
Silver, total	ug/L	TILE 1	09/05/2023	ND	4.0000		4.0000
Thallium, total	ug/L	TILE 1	09/05/2023	ND	2.0000		4.0000
Vanadium, total	ug/L	TILE 1	09/05/2023	ND	20.0000		30.7000
Zinc, total	ug/L	TILE 1	09/05/2023	ND	20.0000		53.3000
Antimony, total	ug/L	TILE 2	09/05/2023	ND	2.0000		5.5000
Arsenic, total	ug/L	TILE 2	09/05/2023	ND	4.0000		48.5787
Barium, total	ug/L	TILE 2	09/05/2023		590.0000		623.3256
Beryllium, total	ug/L	TILE 2	09/05/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	TILE 2	09/05/2023	ND	0.8000		1.8000
Chromium, total	ug/L	TILE 2	09/05/2023	ND	8.0000		10.4000
Cobalt, total	ug/L	TILE 2	09/05/2023		1.5000		4.1367
Copper, total	ug/L	TILE 2	09/05/2023	ND	4.0000		12.0000
Lead, total	ug/L	TILE 2	09/05/2023	ND	4.0000		4.0000
Nickel, total	ug/L	TILE 2	09/05/2023		7.7000		23.8000
Selenium, total	ug/L	TILE 2	09/05/2023	ND	4.0000		16.2000
Silver, total	ug/L	TILE 2	09/05/2023	ND	4.0000		4.0000
Thallium, total	ug/L	TILE 2	09/05/2023	ND	2.0000		4.0000
Vanadium, total	ug/L	TILE 2	09/05/2023	ND	20.0000		30.7000
Zinc, total	ug/L	TILE 2	09/05/2023	ND	20.0000		53.3000

* - Current value failed - awaiting verification.
 ** - Current value passed - previous exceedance not verified.
 *** - Current value failed - exceedance verified.
 **** - Current value passed - awaiting one more verification.
 ***** - Insufficient background data to compute prediction limit.
 ND = Not Detected, Result = detection limit.

Table 3

Detection Frequencies in Upgradient and Downgradient Wells

Constituent	Upgradient			Downgradient		
	Detect	N	Proportion	Detect	N	Proportion
Antimony, total	4	38	0.105	0	44	0.000
Arsenic, total	21	38	0.553	9	44	0.205
Barium, total	38	38	1.000	45	45	1.000
Beryllium, total	0	38	0.000	1	44	0.023
Cadmium, total	4	37	0.108	1	44	0.023
Chromium, total	1	38	0.026	1	44	0.023
Cobalt, total	19	38	0.500	27	44	0.614
Copper, total	6	37	0.162	2	44	0.045
Lead, total	0	38	0.000	1	44	0.023
Nickel, total	17	38	0.447	26	44	0.591
Selenium, total	5	38	0.132	0	44	0.000
Silver, total	0	38	0.000	0	44	0.000
Thallium, total	0	38	0.000	0	44	0.000
Vanadium, total	1	38	0.026	1	44	0.023
Zinc, total	15	38	0.395	9	44	0.205

N = Total number of measurements in all wells.
Detect = Total number of detections in all wells.
Proportion = Detect/N.

Table 4

Shapiro-Wilk Multiple Group Test of Normality

Constituent	Detect	N	Detect Freq	G raw	G log	G cbrt	G sqrt	G sqr	G cub	Crit Value	Dist Form	Model Type
Antimony, total	4	38	0.105	0.329	0.502					2.326	normal	nonpar
Arsenic, total	21	38	0.553	1.119	0.255					2.326	normal	normal
Barium, total	38	38	1.000	0.454	0.674					2.326	normal	normal
Beryllium, total	0	38	0.000									nonpar
Cadmium, total	4	37	0.108	0.611	0.221					2.326	normal	nonpar
Chromium, total	1	38	0.026									nonpar
Cobalt, total	19	38	0.500	4.116	0.636					2.326	lognor	lognor
Copper, total	6	37	0.162	0.967	0.408					2.326	normal	nonpar
Lead, total	0	38	0.000									nonpar
Nickel, total	17	38	0.447	2.400	0.641					2.326	lognor	nonpar
Selenium, total	5	38	0.132	0.278	0.729					2.326	normal	nonpar
Silver, total	0	38	0.000									nonpar
Thallium, total	0	38	0.000									nonpar
Vanadium, total	1	38	0.026									nonpar
Zinc, total	15	38	0.395	1.720	0.296					2.326	normal	nonpar

* - Distribution override for that constituent.

Fit to distribution is confirmed if G <= critical value.

Model type may not match distributional form when detection frequency < 50%.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type	Conf
Antimony, total	ug/L	4	38					5.5000	nonpar	0.99
Arsenic, total	ug/L	21	38	12.6868	14.5718	0.0100	2.4631	48.5787	normal	
Barium, total	ug/L	38	38	396.3684	92.1431	0.0100	2.4631	623.3256	normal	
Beryllium, total	ug/L	0	38					4.0000	nonpar	*** 0.99
Cadmium, total	ug/L	4	37					1.8000	nonpar	0.99
Chromium, total	ug/L	1	38					10.4000	nonpar	0.99
Cobalt, total	ug/L	19	38	0.2226	0.4861	0.0100	2.4631	4.1367	lognor	
Copper, total	ug/L	6	37					12.0000	nonpar	0.99
Lead, total	ug/L	0	38					4.0000	nonpar	*** 0.99
Nickel, total	ug/L	17	38					23.8000	nonpar	0.99
Selenium, total	ug/L	5	38					16.2000	nonpar	0.99
Silver, total	ug/L	0	38					4.0000	nonpar	*** 0.99
Thallium, total	ug/L	0	38					4.0000	nonpar	*** 0.99
Vanadium, total	ug/L	1	38					30.7000	nonpar	0.99
Zinc, total	ug/L	15	38					53.3000	nonpar	0.99

Conf = confidence level for passing initial test or one verification resample at all downgradient wells for a single constituent (nonparametric test only).

* - Insufficient Data.

** - Calculated limit raised to Manual Reporting Limit.

*** - Nonparametric limit based on ND value.

For transformed data, mean and SD in transformed units and prediction limit in original units.

All sample sizes and statistics are based on outlier free data.

For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Table 6

**Dixon's Test Outliers
1% Significance Level**

Constituent	Units	Well	Date	Result	ND Qualifier	Date Range	N	Critical Value
Cadmium, total	ug/L	MW-18	03/23/2023	3.9000		09/23/2014-09/05/2023	21	0.5263
Copper, total	ug/L	MW-4A	03/19/2015	30.1000		09/23/2014-09/14/2021	17	0.5798

N = Total number of independent measurements in background at each well.

Date Range = Dates of the first and last measurements included in background at each well.

Critical Value depends on the significance level and on N-1 when the two most extreme values are tested or N for the most extreme value.

Table 8

**Historical Downgradient Data for Constituent-Well Combinations
that Failed the Current Statistical Evaluation or
are in Verification Resampling Mode**

Constituent	Units	Well	Date	Result		Pred. Limit
Barium, total	ug/L	MW-44	07/12/2023	624.0000	*	623.3256
Barium, total	ug/L	MW-44	09/05/2023	708.0000	*	623.3256
Barium, total	ug/L	TILE 1	06/05/2019	1010.0000	*	623.3256
Barium, total	ug/L	TILE 1	07/17/2019	1580.0000	*	623.3256
Barium, total	ug/L	TILE 1	09/16/2019	1350.0000	*	623.3256
Barium, total	ug/L	TILE 1	03/24/2020	754.0000	*	623.3256
Barium, total	ug/L	TILE 1	09/02/2020	2210.0000	*	623.3256
Barium, total	ug/L	TILE 1	03/08/2021	1060.0000	*	623.3256
Barium, total	ug/L	TILE 1	09/14/2021	1940.0000	*	623.3256
Barium, total	ug/L	TILE 1	03/28/2022	774.0000	*	623.3256
Barium, total	ug/L	TILE 1	09/13/2022	2660.0000	*	623.3256
Barium, total	ug/L	TILE 1	03/23/2023	953.0000	*	623.3256
Barium, total	ug/L	TILE 1	09/05/2023	2510.0000	*	623.3256
Nickel, total	ug/L	TILE 1	06/05/2019	13.4000		23.8000
Nickel, total	ug/L	TILE 1	09/16/2019	21.2000		23.8000
Nickel, total	ug/L	TILE 1	03/24/2020	9.8000		23.8000
Nickel, total	ug/L	TILE 1	09/02/2020	35.8000	*	23.8000
Nickel, total	ug/L	TILE 1	03/08/2021	20.8000		23.8000
Nickel, total	ug/L	TILE 1	09/14/2021	37.1000	*	23.8000
Nickel, total	ug/L	TILE 1	03/28/2022	14.0000		23.8000
Nickel, total	ug/L	TILE 1	09/13/2022	46.1000	*	23.8000
Nickel, total	ug/L	TILE 1	03/23/2023	13.4000		23.8000
Nickel, total	ug/L	TILE 1	09/05/2023	43.6000	*	23.8000

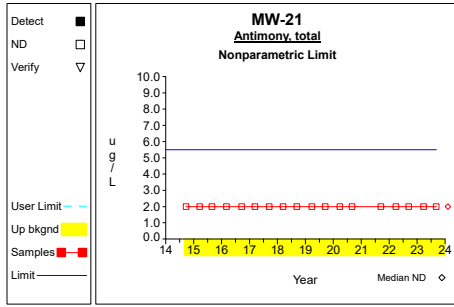
* - Significantly increased over background.

** - Detect at limit for 100% NDs in background (NPPL only).

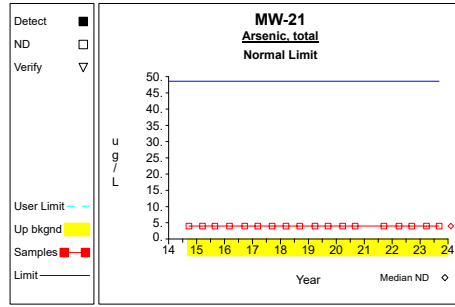
*** - Manual exclusion.

ND = Not Detected, Result = detection limit.

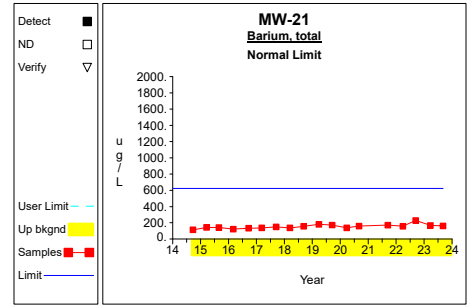
Up vs. Down Prediction Limits



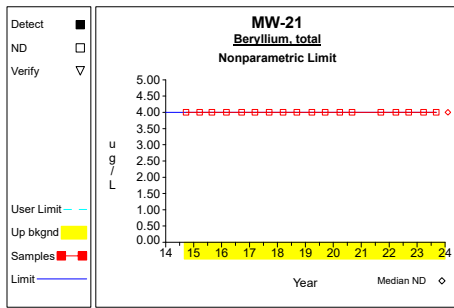
Graph 1



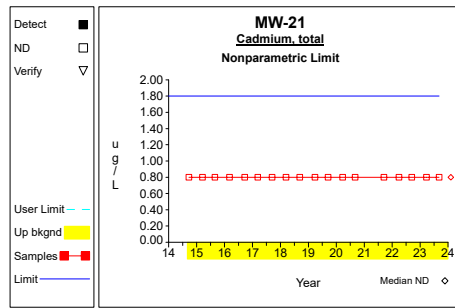
Graph 2



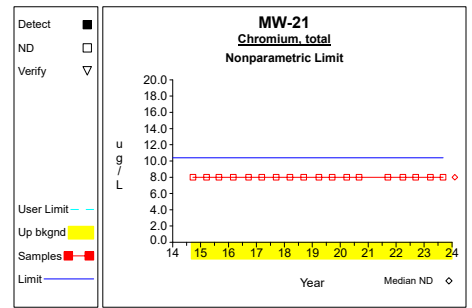
Graph 3



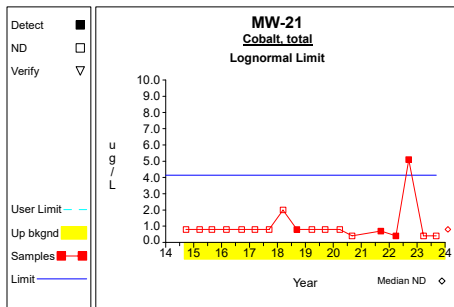
Graph 4



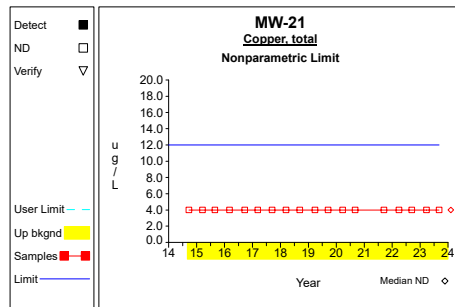
Graph 5



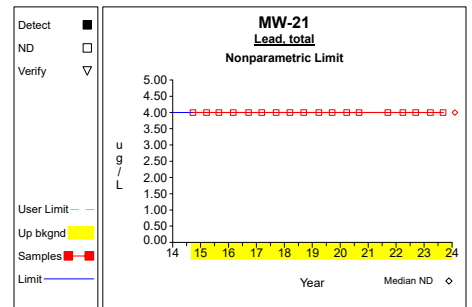
Graph 6



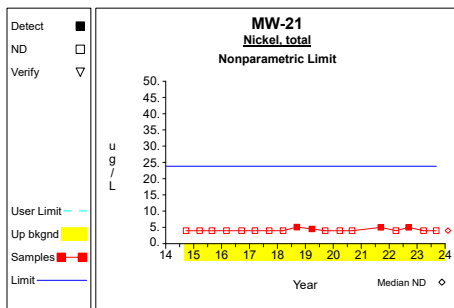
Graph 7



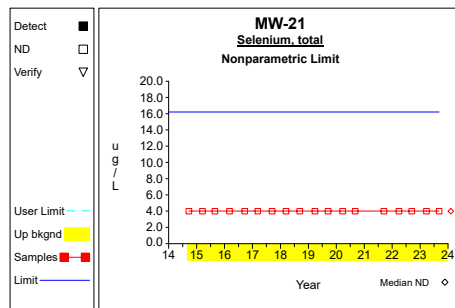
Graph 8



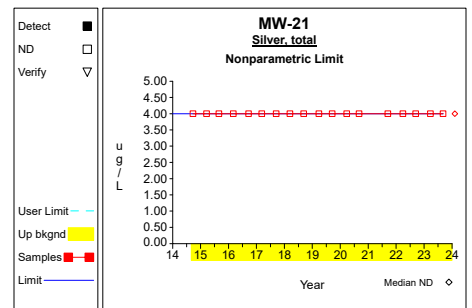
Graph 9



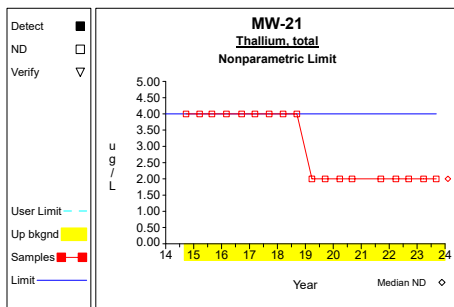
Graph 10



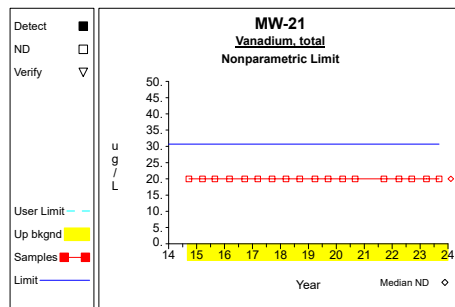
Graph 11



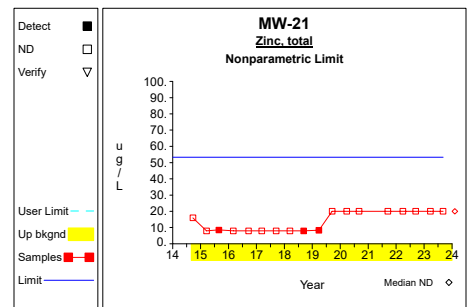
Graph 12



Graph 13

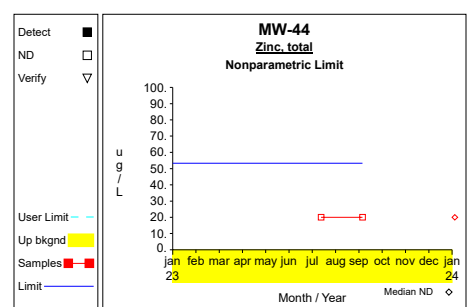
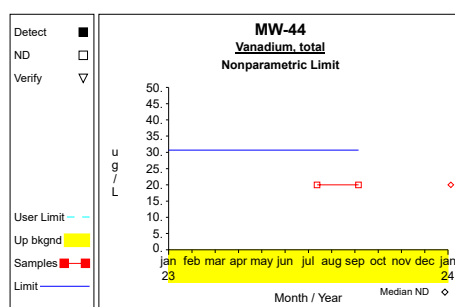
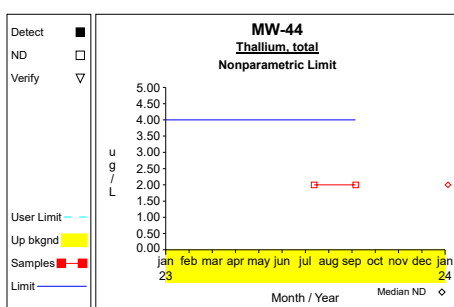
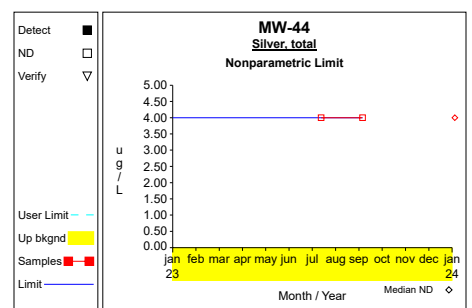
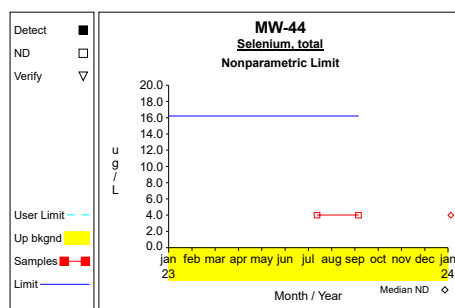
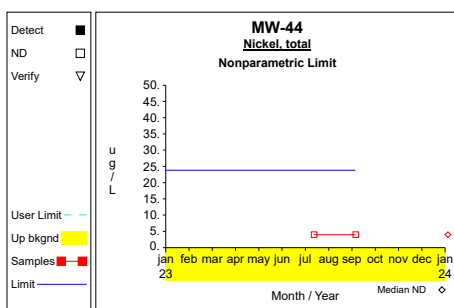
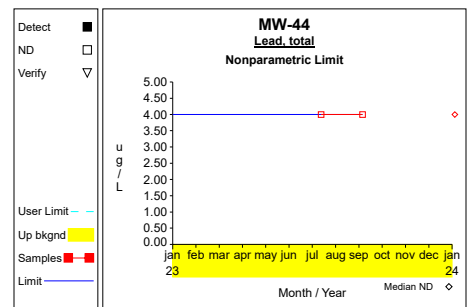
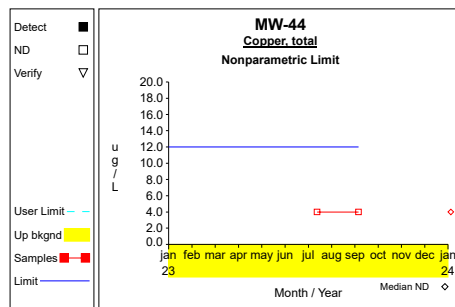
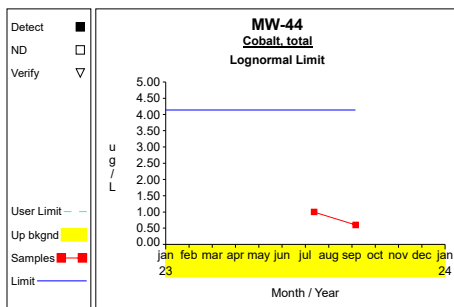
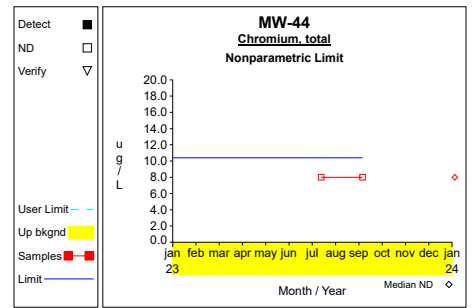
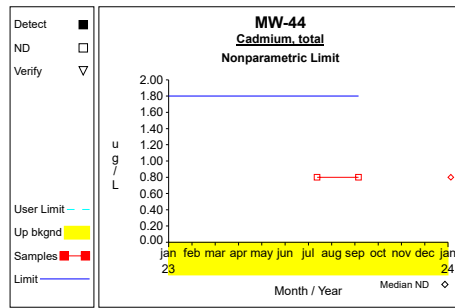
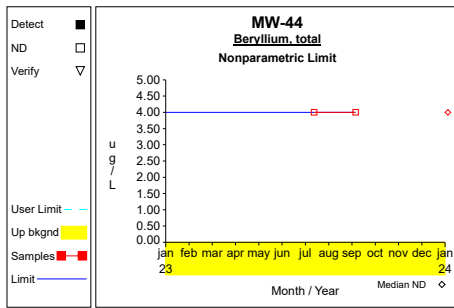
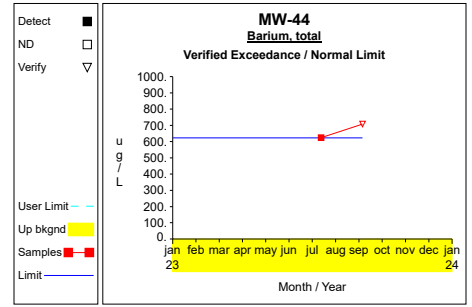
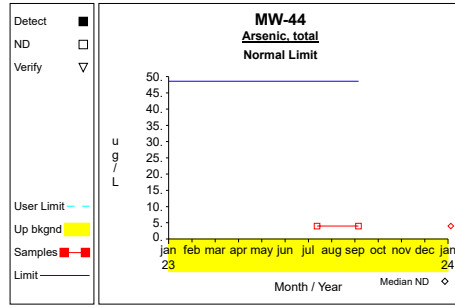
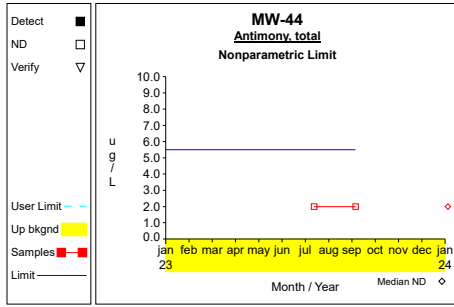


Graph 14

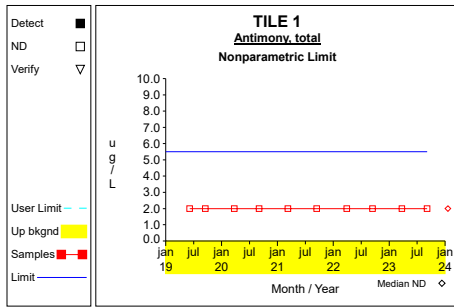


Graph 15

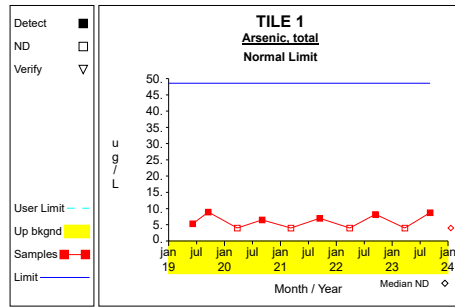
Up vs. Down Prediction Limits



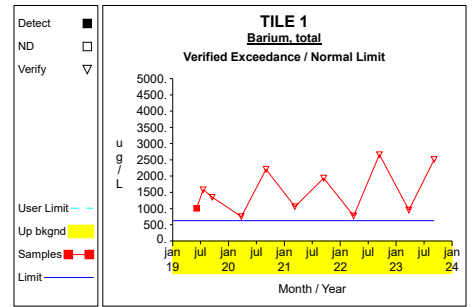
Up vs. Down Prediction Limits



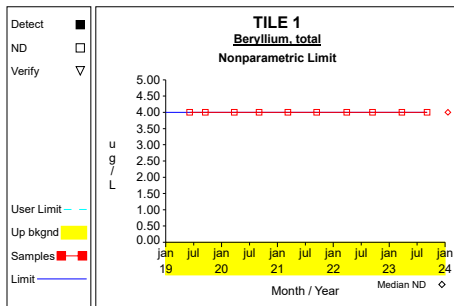
Graph 31



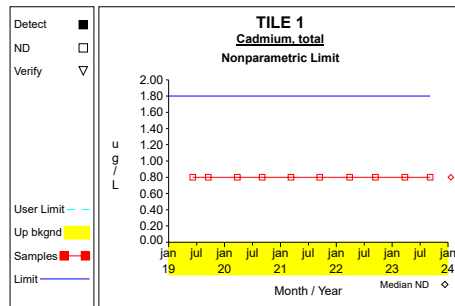
Graph 32



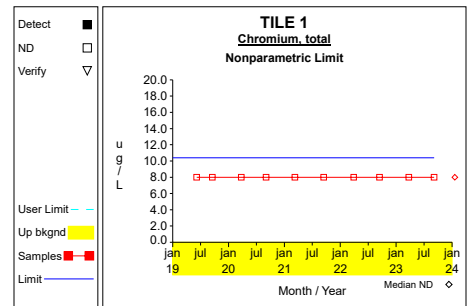
Graph 33



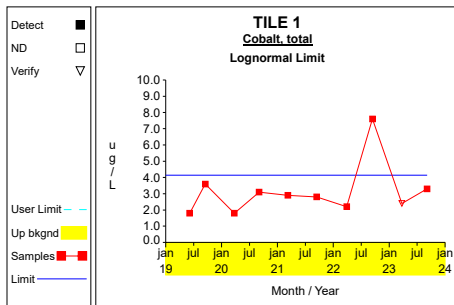
Graph 34



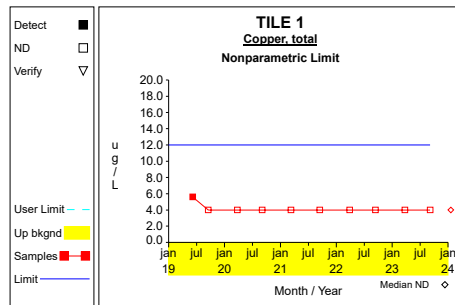
Graph 35



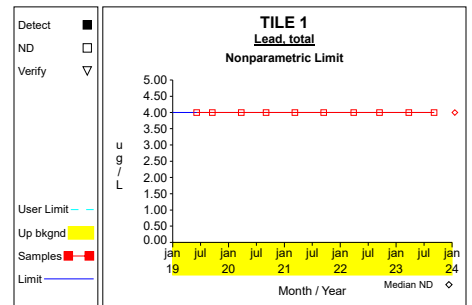
Graph 36



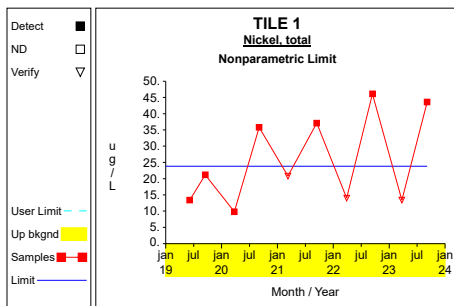
Graph 37



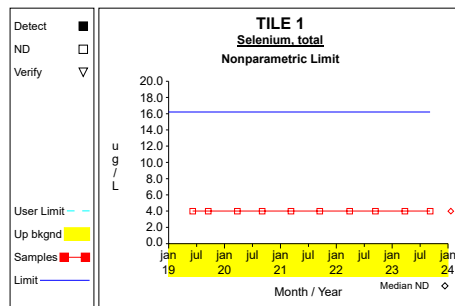
Graph 38



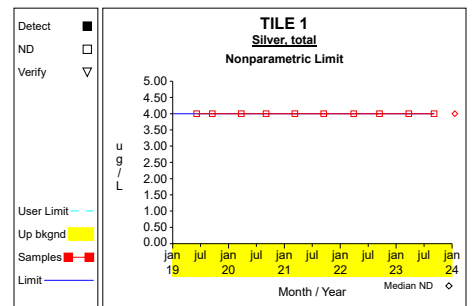
Graph 39



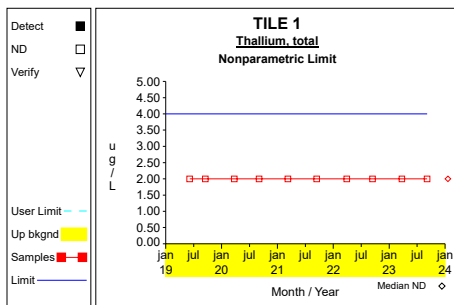
Graph 40



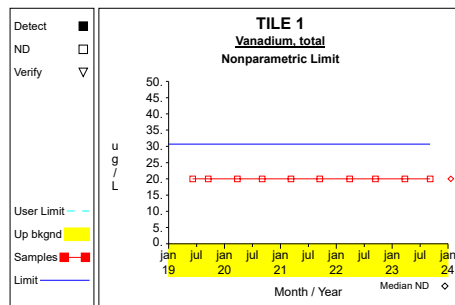
Graph 41



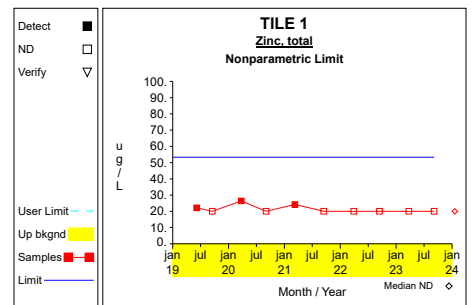
Graph 42



Graph 43

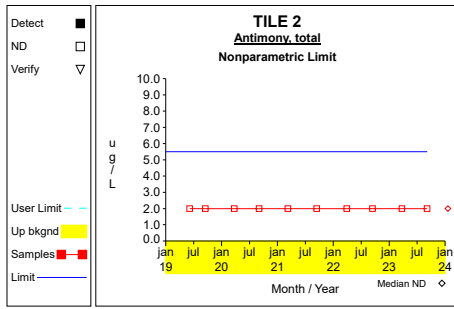


Graph 44

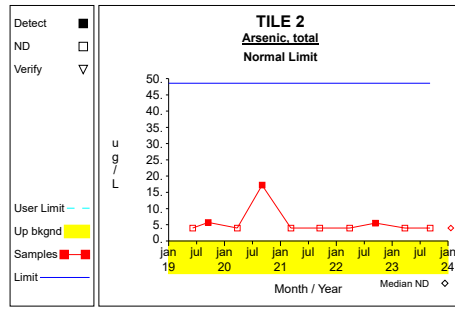


Graph 45

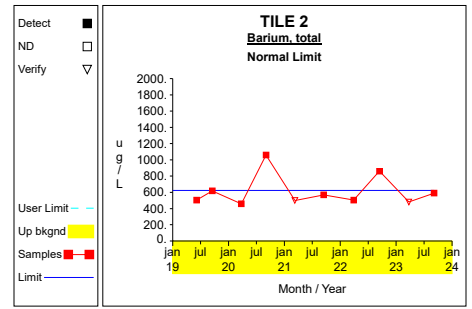
Up vs. Down Prediction Limits



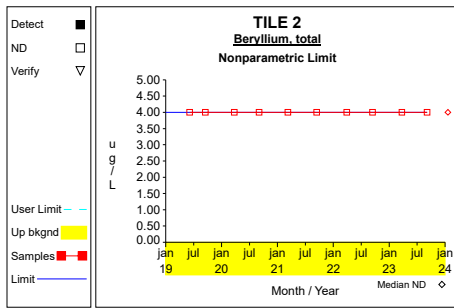
Graph 46



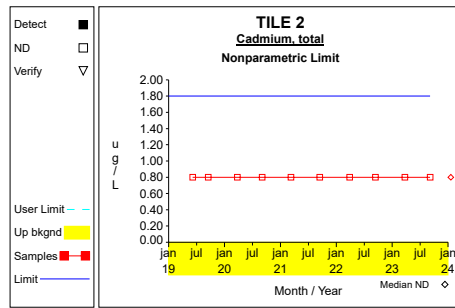
Graph 47



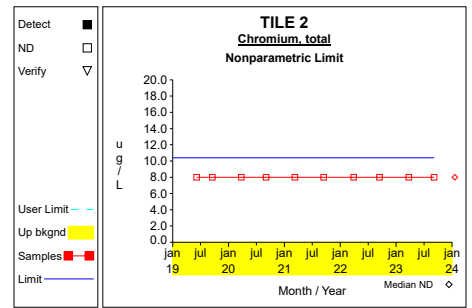
Graph 48



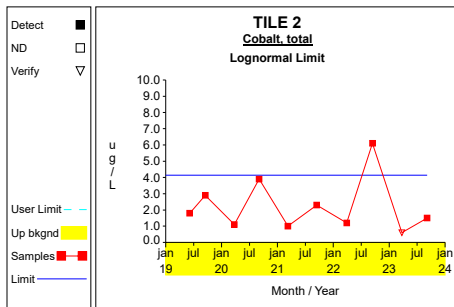
Graph 49



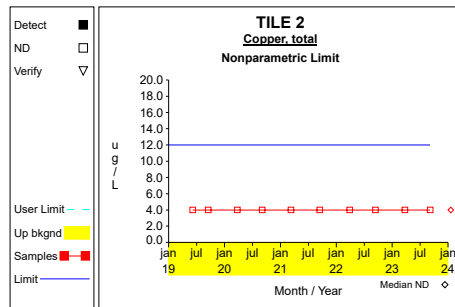
Graph 50



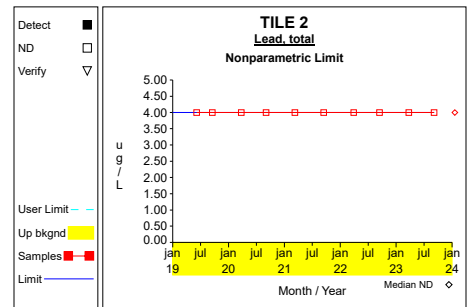
Graph 51



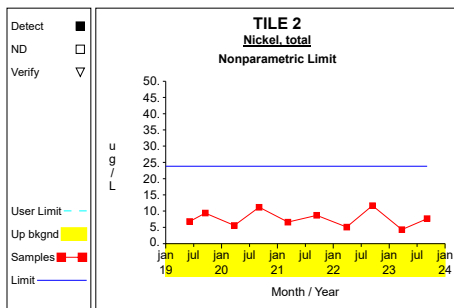
Graph 52



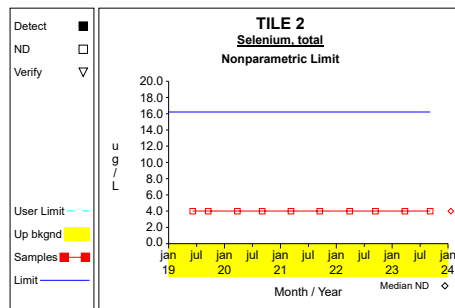
Graph 53



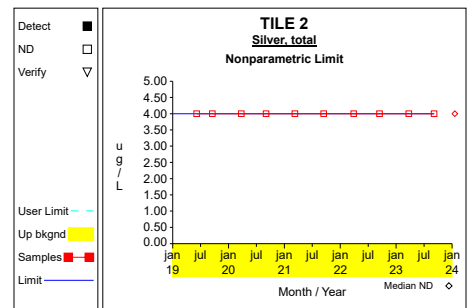
Graph 54



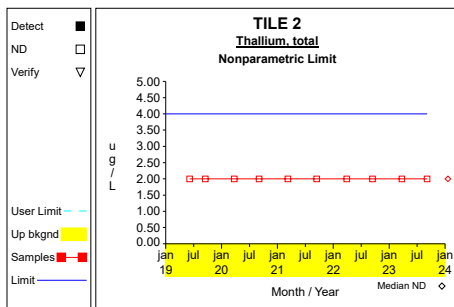
Graph 55



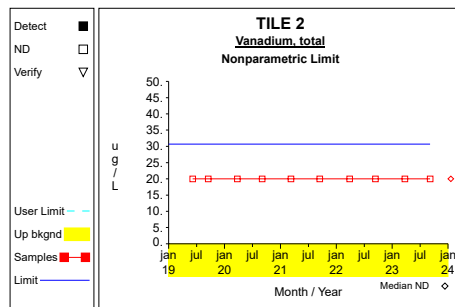
Graph 56



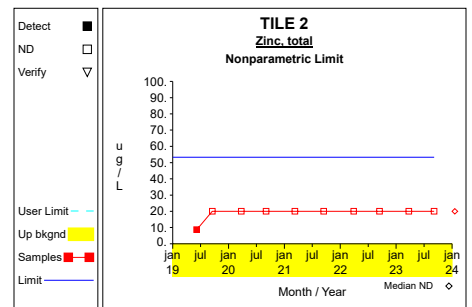
Graph 57



Graph 58

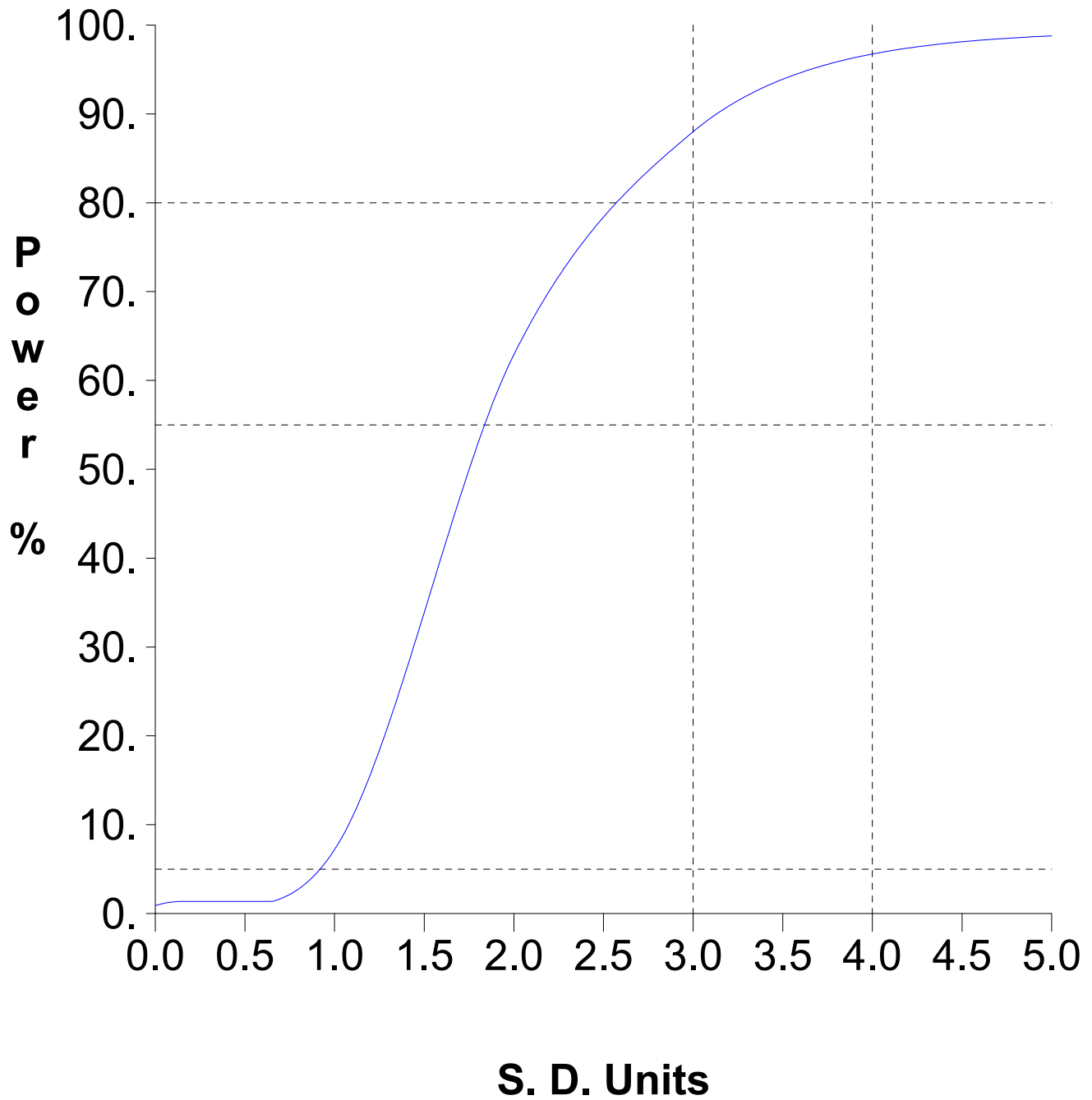


Graph 59



Graph 60

False Positive and False Negative Rates for Current Upgradient vs. Downgradient Monitoring Program



Attachment C

Assessment Statistics for Verified Trace Metals
Shallow Ground Water

Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
Barium, total	ug/L	TILE 1	4	1724.250	998.471	1.176	549.760	2898.740	2000.000	
Cobalt, total	ug/L	TILE 1	4	3.875	2.529	1.176	0.900	6.850	2.100	
Nickel, total	ug/L	TILE 1	4	29.275	18.015	1.176	8.084	50.466	100.000	
Barium, total	ug/L	TILE 2	4	608.750	173.945	1.176	404.140	813.360	2000.000	
Cobalt, total	ug/L	TILE 2	4	2.350	2.528	1.176	0.000	5.323	2.100	
Nickel, total	ug/L	TILE 2	4	7.200	3.333	1.176	3.280	11.120	100.000	

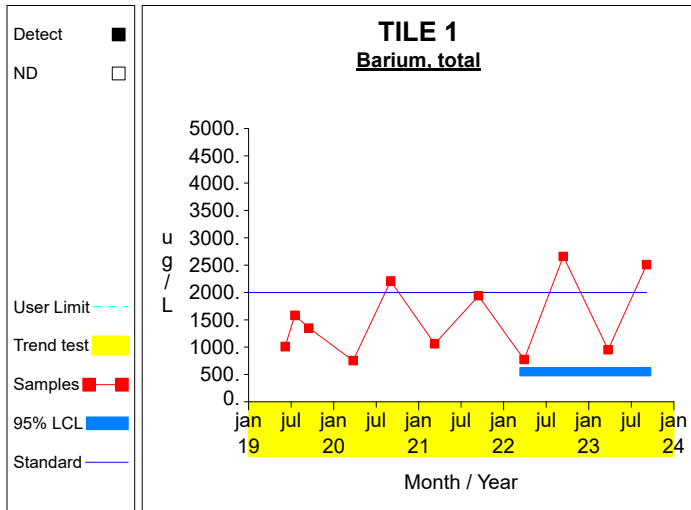
* - Insufficient Data

** - Significant Exceedance

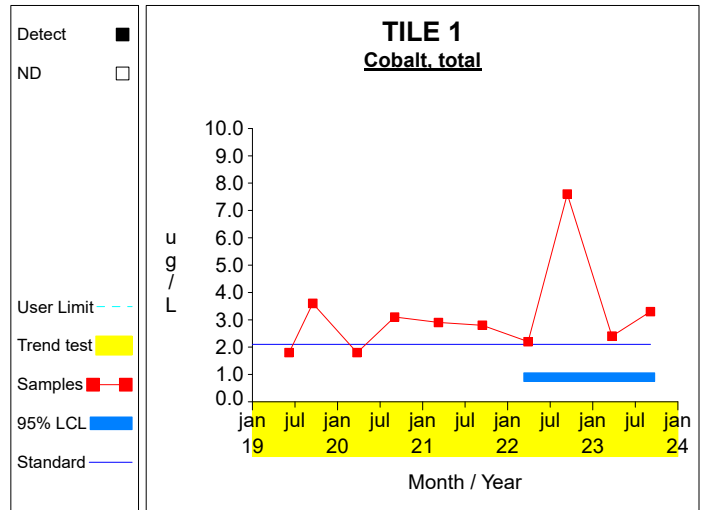
LCL = Lower Confidence Limit

UCL = Upper Confidence Limit

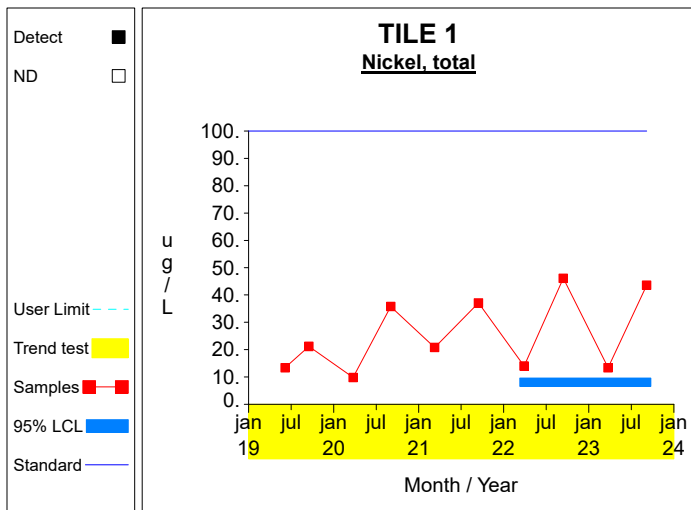
Confidence Limits (Assessment)



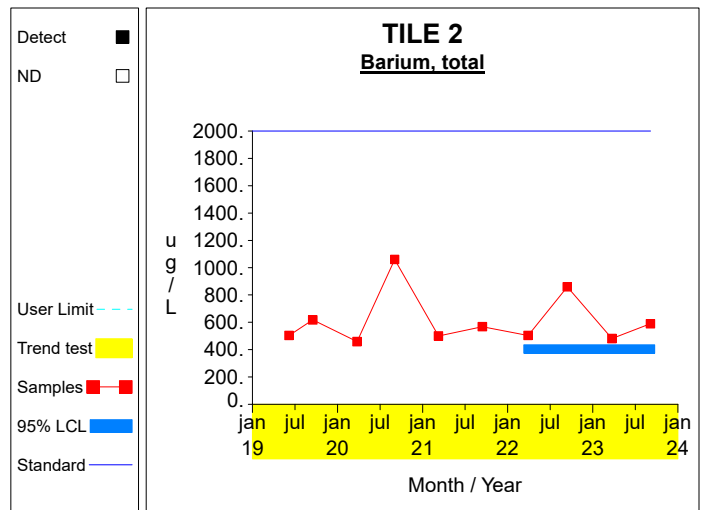
Graph 1



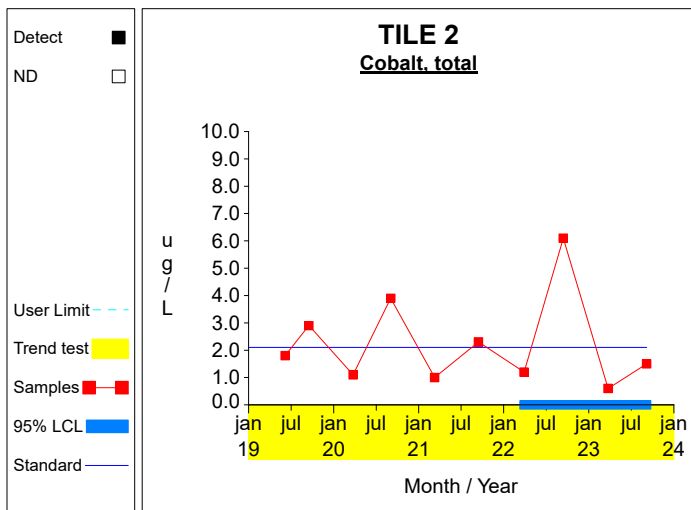
Graph 2



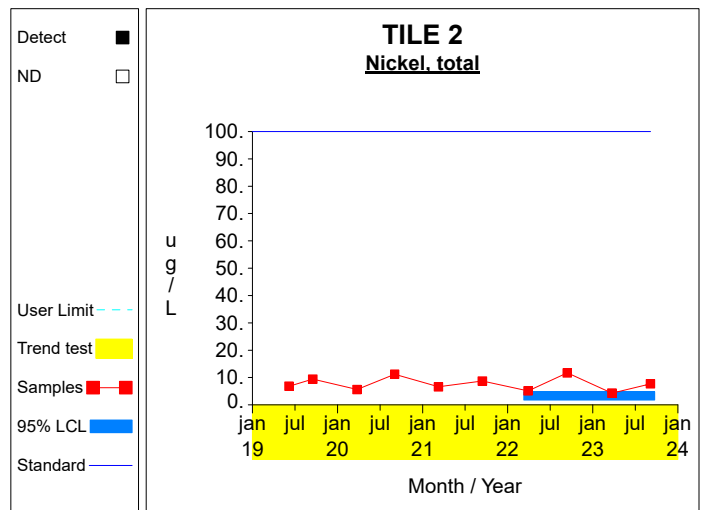
Graph 3



Graph 4



Graph 5



Graph 6

Attachment D

Summary Tables and Graphs for the Interwell Comparisons
Bedrock Ground Water

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted
Antimony, total	ug/L	MW-11C	09/23/2014		2.0000	
Antimony, total	ug/L	MW-11C	09/21/2016	ND	2.0000	
Antimony, total	ug/L	MW-11C	03/09/2017	ND	2.0000	
Antimony, total	ug/L	MW-11C	09/14/2017	ND	2.0000	
Antimony, total	ug/L	MW-11C	03/12/2018	ND	2.0000	
Antimony, total	ug/L	MW-11C	09/10/2018	ND	2.0000	
Antimony, total	ug/L	MW-11C	03/26/2019	ND	2.0000	
Antimony, total	ug/L	MW-11C	09/16/2019	ND	2.0000	
Antimony, total	ug/L	MW-11C	03/24/2020	ND	2.0000	
Antimony, total	ug/L	MW-11C	09/02/2020	ND	2.0000	
Antimony, total	ug/L	MW-11C	03/08/2021	ND	2.0000	
Antimony, total	ug/L	MW-11C	09/14/2021	ND	2.0000	
Antimony, total	ug/L	MW-11C	03/28/2022	ND	2.0000	
Antimony, total	ug/L	MW-11C	09/13/2022	ND	2.0000	
Antimony, total	ug/L	MW-11C	03/23/2023	ND	2.0000	
Antimony, total	ug/L	MW-11C	09/05/2023	ND	2.0000	
Arsenic, total	ug/L	MW-11C	09/23/2014	ND	4.0000	
Arsenic, total	ug/L	MW-11C	09/21/2016	ND	4.0000	
Arsenic, total	ug/L	MW-11C	03/09/2017	ND	4.0000	
Arsenic, total	ug/L	MW-11C	09/14/2017	ND	4.0000	
Arsenic, total	ug/L	MW-11C	03/12/2018	ND	4.0000	
Arsenic, total	ug/L	MW-11C	09/10/2018	ND	4.0000	
Arsenic, total	ug/L	MW-11C	03/26/2019	ND	4.0000	
Arsenic, total	ug/L	MW-11C	09/16/2019	ND	4.0000	
Arsenic, total	ug/L	MW-11C	03/24/2020	ND	4.0000	
Arsenic, total	ug/L	MW-11C	09/02/2020	ND	4.0000	
Arsenic, total	ug/L	MW-11C	03/08/2021	ND	4.0000	
Arsenic, total	ug/L	MW-11C	09/14/2021	ND	4.0000	
Arsenic, total	ug/L	MW-11C	03/28/2022	ND	4.0000	
Arsenic, total	ug/L	MW-11C	09/13/2022	ND	4.0000	
Arsenic, total	ug/L	MW-11C	03/23/2023	ND	4.0000	
Arsenic, total	ug/L	MW-11C	09/05/2023	ND	4.0000	
Barium, total	ug/L	MW-11C	09/23/2014		130.0000	
Barium, total	ug/L	MW-11C	09/21/2016		83.7000	
Barium, total	ug/L	MW-11C	03/09/2017		91.5000	
Barium, total	ug/L	MW-11C	09/14/2017		75.9000	
Barium, total	ug/L	MW-11C	03/12/2018		71.5000	
Barium, total	ug/L	MW-11C	09/10/2018		69.9000	
Barium, total	ug/L	MW-11C	03/26/2019		70.5000	
Barium, total	ug/L	MW-11C	09/16/2019		68.6000	
Barium, total	ug/L	MW-11C	03/24/2020		67.8000	
Barium, total	ug/L	MW-11C	09/02/2020		58.8000	
Barium, total	ug/L	MW-11C	03/08/2021		53.7000	
Barium, total	ug/L	MW-11C	09/14/2021		62.3000	
Barium, total	ug/L	MW-11C	03/28/2022		53.4000	
Barium, total	ug/L	MW-11C	09/13/2022		78.3000	
Barium, total	ug/L	MW-11C	03/23/2023		69.2000	
Barium, total	ug/L	MW-11C	09/05/2023		72.3000	
Beryllium, total	ug/L	MW-11C	09/23/2014	ND	4.0000	
Beryllium, total	ug/L	MW-11C	09/21/2016	ND	4.0000	
Beryllium, total	ug/L	MW-11C	03/09/2017	ND	4.0000	
Beryllium, total	ug/L	MW-11C	09/14/2017	ND	4.0000	
Beryllium, total	ug/L	MW-11C	03/12/2018	ND	4.0000	
Beryllium, total	ug/L	MW-11C	09/10/2018	ND	4.0000	
Beryllium, total	ug/L	MW-11C	03/26/2019	ND	4.0000	
Beryllium, total	ug/L	MW-11C	09/16/2019	ND	4.0000	
Beryllium, total	ug/L	MW-11C	03/24/2020	ND	4.0000	
Beryllium, total	ug/L	MW-11C	09/02/2020	ND	4.0000	
Beryllium, total	ug/L	MW-11C	03/08/2021	ND	4.0000	
Beryllium, total	ug/L	MW-11C	09/14/2021	ND	4.0000	
Beryllium, total	ug/L	MW-11C	03/28/2022	ND	4.0000	
Beryllium, total	ug/L	MW-11C	09/13/2022	ND	4.0000	
Beryllium, total	ug/L	MW-11C	03/23/2023	ND	4.0000	
Beryllium, total	ug/L	MW-11C	09/05/2023	ND	4.0000	
Cadmium, total	ug/L	MW-11C	09/23/2014	ND	0.8000	
Cadmium, total	ug/L	MW-11C	09/21/2016	ND	0.8000	
Cadmium, total	ug/L	MW-11C	03/09/2017	ND	0.8000	
Cadmium, total	ug/L	MW-11C	09/14/2017	ND	0.8000	
Cadmium, total	ug/L	MW-11C	03/12/2018	ND	0.8000	
Cadmium, total	ug/L	MW-11C	09/10/2018	ND	0.8000	
Cadmium, total	ug/L	MW-11C	03/26/2019	ND	0.8000	
Cadmium, total	ug/L	MW-11C	09/16/2019	ND	0.8000	
Cadmium, total	ug/L	MW-11C	03/24/2020	ND	0.8000	
Cadmium, total	ug/L	MW-11C	09/02/2020	ND	0.8000	

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Cadmium, total	ug/L	MW-11C	03/08/2021	ND	0.8000		
Cadmium, total	ug/L	MW-11C	09/14/2021	ND	0.8000		
Cadmium, total	ug/L	MW-11C	03/28/2022	ND	0.8000		
Cadmium, total	ug/L	MW-11C	09/13/2022	ND	0.8000		
Cadmium, total	ug/L	MW-11C	03/23/2023	ND	0.8000		
Cadmium, total	ug/L	MW-11C	09/05/2023	ND	0.8000		
Chromium, total	ug/L	MW-11C	09/23/2014	ND	8.0000		
Chromium, total	ug/L	MW-11C	09/21/2016	ND	8.0000		
Chromium, total	ug/L	MW-11C	03/09/2017	ND	8.0000		
Chromium, total	ug/L	MW-11C	09/14/2017	ND	8.0000		
Chromium, total	ug/L	MW-11C	03/12/2018	ND	8.0000		
Chromium, total	ug/L	MW-11C	09/10/2018	ND	8.0000		
Chromium, total	ug/L	MW-11C	03/26/2019	ND	8.0000		
Chromium, total	ug/L	MW-11C	09/16/2019	ND	8.0000		
Chromium, total	ug/L	MW-11C	03/24/2020	ND	8.0000		
Chromium, total	ug/L	MW-11C	09/02/2020	ND	8.0000		
Chromium, total	ug/L	MW-11C	03/08/2021	ND	8.0000		
Chromium, total	ug/L	MW-11C	09/14/2021	ND	8.0000		
Chromium, total	ug/L	MW-11C	03/28/2022	ND	8.0000		
Chromium, total	ug/L	MW-11C	09/13/2022	ND	8.0000		
Chromium, total	ug/L	MW-11C	03/23/2023	ND	8.0000		
Chromium, total	ug/L	MW-11C	09/05/2023	ND	8.0000		
Cobalt, total	ug/L	MW-11C	09/23/2014		1.3000		
Cobalt, total	ug/L	MW-11C	09/21/2016	ND	0.8000	0.4000	**
Cobalt, total	ug/L	MW-11C	03/09/2017	ND	0.8000	0.4000	**
Cobalt, total	ug/L	MW-11C	09/14/2017	ND	0.8000	0.4000	**
Cobalt, total	ug/L	MW-11C	03/12/2018	ND	2.0000	0.4000	**
Cobalt, total	ug/L	MW-11C	09/10/2018	ND	0.8000	0.4000	**
Cobalt, total	ug/L	MW-11C	03/26/2019	ND	0.8000	0.4000	**
Cobalt, total	ug/L	MW-11C	09/16/2019	ND	0.8000	0.4000	**
Cobalt, total	ug/L	MW-11C	03/24/2020	ND	0.8000	0.4000	**
Cobalt, total	ug/L	MW-11C	09/02/2020	ND	0.4000		
Cobalt, total	ug/L	MW-11C	03/08/2021	ND	0.4000		
Cobalt, total	ug/L	MW-11C	09/14/2021	ND	0.4000		
Cobalt, total	ug/L	MW-11C	03/28/2022	ND	0.4000		
Cobalt, total	ug/L	MW-11C	09/13/2022		3.6000		
Cobalt, total	ug/L	MW-11C	03/23/2023	ND	0.4000		
Cobalt, total	ug/L	MW-11C	09/05/2023	ND	0.4000		
Copper, total	ug/L	MW-11C	09/23/2014	ND	4.0000		
Copper, total	ug/L	MW-11C	09/21/2016	ND	4.0000		
Copper, total	ug/L	MW-11C	03/09/2017	ND	4.0000		
Copper, total	ug/L	MW-11C	09/14/2017	ND	4.0000		
Copper, total	ug/L	MW-11C	03/12/2018	ND	4.0000		
Copper, total	ug/L	MW-11C	09/10/2018	ND	4.0000		
Copper, total	ug/L	MW-11C	03/26/2019	ND	4.0000		
Copper, total	ug/L	MW-11C	09/16/2019	ND	4.0000		
Copper, total	ug/L	MW-11C	03/24/2020	ND	4.0000		
Copper, total	ug/L	MW-11C	09/02/2020	ND	4.0000		
Copper, total	ug/L	MW-11C	03/08/2021	ND	4.0000		
Copper, total	ug/L	MW-11C	09/14/2021	ND	4.0000		
Copper, total	ug/L	MW-11C	03/28/2022	ND	4.0000		
Copper, total	ug/L	MW-11C	09/13/2022	ND	4.0000		
Copper, total	ug/L	MW-11C	03/23/2023	ND	4.0000		
Copper, total	ug/L	MW-11C	09/05/2023	ND	4.0000		
Lead, total	ug/L	MW-11C	09/23/2014	ND	4.0000		
Lead, total	ug/L	MW-11C	09/21/2016	ND	4.0000		
Lead, total	ug/L	MW-11C	03/09/2017	ND	4.0000		
Lead, total	ug/L	MW-11C	09/14/2017	ND	4.0000		
Lead, total	ug/L	MW-11C	03/12/2018	ND	4.0000		
Lead, total	ug/L	MW-11C	09/10/2018	ND	4.0000		
Lead, total	ug/L	MW-11C	03/26/2019	ND	4.0000		
Lead, total	ug/L	MW-11C	09/16/2019	ND	4.0000		
Lead, total	ug/L	MW-11C	03/24/2020	ND	4.0000		
Lead, total	ug/L	MW-11C	09/02/2020	ND	4.0000		
Lead, total	ug/L	MW-11C	03/08/2021	ND	4.0000		
Lead, total	ug/L	MW-11C	09/14/2021	ND	4.0000		
Lead, total	ug/L	MW-11C	03/28/2022	ND	4.0000		
Lead, total	ug/L	MW-11C	09/13/2022	ND	4.0000		
Lead, total	ug/L	MW-11C	03/23/2023	ND	4.0000		
Lead, total	ug/L	MW-11C	09/05/2023	ND	4.0000		
Nickel, total	ug/L	MW-11C	09/23/2014		9.5000		
Nickel, total	ug/L	MW-11C	09/21/2016		4.9000		
Nickel, total	ug/L	MW-11C	03/09/2017		5.9000		
Nickel, total	ug/L	MW-11C	09/14/2017	ND	4.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Nickel, total	ug/L	MW-11C	03/12/2018	ND	4.0000		
Nickel, total	ug/L	MW-11C	09/10/2018	ND	4.0000		
Nickel, total	ug/L	MW-11C	03/26/2019	ND	4.0000		
Nickel, total	ug/L	MW-11C	09/16/2019	ND	4.0000		
Nickel, total	ug/L	MW-11C	03/24/2020	ND	4.0000		
Nickel, total	ug/L	MW-11C	09/02/2020	ND	4.0000		
Nickel, total	ug/L	MW-11C	03/08/2021	ND	4.0000		
Nickel, total	ug/L	MW-11C	09/14/2021	ND	4.0000		
Nickel, total	ug/L	MW-11C	03/28/2022	ND	4.0000		
Nickel, total	ug/L	MW-11C	09/13/2022	ND	4.0000		
Nickel, total	ug/L	MW-11C	03/23/2023	ND	4.0000		
Nickel, total	ug/L	MW-11C	09/05/2023	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/23/2014	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/21/2016	ND	4.0000		
Selenium, total	ug/L	MW-11C	03/09/2017	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/14/2017	ND	4.0000		
Selenium, total	ug/L	MW-11C	03/12/2018	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/10/2018	ND	4.0000		
Selenium, total	ug/L	MW-11C	03/26/2019	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/16/2019	ND	4.0000		
Selenium, total	ug/L	MW-11C	03/24/2020	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/02/2020	ND	4.0000		
Selenium, total	ug/L	MW-11C	03/08/2021	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/14/2021	ND	4.0000		
Selenium, total	ug/L	MW-11C	03/28/2022	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/13/2022	ND	4.0000		
Selenium, total	ug/L	MW-11C	03/23/2023	ND	4.0000		
Selenium, total	ug/L	MW-11C	09/05/2023	ND	4.0000		
Silver, total	ug/L	MW-11C	09/23/2014	ND	4.0000		
Silver, total	ug/L	MW-11C	09/21/2016	ND	4.0000		
Silver, total	ug/L	MW-11C	03/09/2017	ND	4.0000		
Silver, total	ug/L	MW-11C	09/14/2017	ND	4.0000		
Silver, total	ug/L	MW-11C	03/12/2018	ND	4.0000		
Silver, total	ug/L	MW-11C	09/10/2018	ND	4.0000		
Silver, total	ug/L	MW-11C	03/26/2019	ND	4.0000		
Silver, total	ug/L	MW-11C	09/16/2019	ND	4.0000		
Silver, total	ug/L	MW-11C	03/24/2020	ND	4.0000		
Silver, total	ug/L	MW-11C	09/02/2020	ND	4.0000		
Silver, total	ug/L	MW-11C	03/08/2021	ND	4.0000		
Silver, total	ug/L	MW-11C	09/14/2021	ND	4.0000		
Silver, total	ug/L	MW-11C	03/28/2022	ND	4.0000		
Silver, total	ug/L	MW-11C	09/13/2022	ND	4.0000		
Silver, total	ug/L	MW-11C	03/23/2023	ND	4.0000		
Silver, total	ug/L	MW-11C	09/05/2023	ND	4.0000		
Thallium, total	ug/L	MW-11C	09/23/2014	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-11C	09/21/2016	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-11C	03/09/2017	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-11C	09/14/2017	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-11C	03/12/2018	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-11C	09/10/2018	ND	4.0000	2.0000	**
Thallium, total	ug/L	MW-11C	03/26/2019	ND	2.0000		
Thallium, total	ug/L	MW-11C	09/16/2019	ND	2.0000		
Thallium, total	ug/L	MW-11C	03/24/2020	ND	2.0000		
Thallium, total	ug/L	MW-11C	09/02/2020	ND	2.0000		
Thallium, total	ug/L	MW-11C	03/08/2021	ND	2.0000		
Thallium, total	ug/L	MW-11C	09/14/2021	ND	2.0000		
Thallium, total	ug/L	MW-11C	03/28/2022	ND	2.0000		
Thallium, total	ug/L	MW-11C	09/13/2022	ND	2.0000		
Thallium, total	ug/L	MW-11C	03/23/2023	ND	2.0000		
Thallium, total	ug/L	MW-11C	09/05/2023	ND	2.0000		
Vanadium, total	ug/L	MW-11C	09/23/2014	ND	20.0000		
Vanadium, total	ug/L	MW-11C	09/21/2016	ND	20.0000		
Vanadium, total	ug/L	MW-11C	03/09/2017	ND	20.0000		
Vanadium, total	ug/L	MW-11C	09/14/2017	ND	20.0000		
Vanadium, total	ug/L	MW-11C	03/12/2018	ND	20.0000		
Vanadium, total	ug/L	MW-11C	09/10/2018	ND	20.0000		
Vanadium, total	ug/L	MW-11C	03/26/2019	ND	20.0000		
Vanadium, total	ug/L	MW-11C	09/16/2019	ND	20.0000		
Vanadium, total	ug/L	MW-11C	03/24/2020	ND	20.0000		
Vanadium, total	ug/L	MW-11C	09/02/2020	ND	20.0000		
Vanadium, total	ug/L	MW-11C	03/08/2021	ND	20.0000		
Vanadium, total	ug/L	MW-11C	09/14/2021	ND	20.0000		
Vanadium, total	ug/L	MW-11C	03/28/2022	ND	20.0000		
Vanadium, total	ug/L	MW-11C	09/13/2022	ND	20.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Vanadium, total	ug/L	MW-11C	03/23/2023	ND	20.0000		
Vanadium, total	ug/L	MW-11C	09/05/2023	ND	20.0000		
Zinc, total	ug/L	MW-11C	09/23/2014		20.7000		
Zinc, total	ug/L	MW-11C	09/21/2016		11.9000		
Zinc, total	ug/L	MW-11C	03/09/2017		15.8000		
Zinc, total	ug/L	MW-11C	09/14/2017	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-11C	03/12/2018	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-11C	09/10/2018	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-11C	03/26/2019	ND	8.0000	20.0000	**
Zinc, total	ug/L	MW-11C	09/16/2019	ND	20.0000		
Zinc, total	ug/L	MW-11C	03/24/2020	ND	20.0000		
Zinc, total	ug/L	MW-11C	09/02/2020	ND	20.0000		
Zinc, total	ug/L	MW-11C	03/08/2021	ND	20.0000		
Zinc, total	ug/L	MW-11C	09/14/2021	ND	20.0000		
Zinc, total	ug/L	MW-11C	03/28/2022	ND	20.0000		
Zinc, total	ug/L	MW-11C	09/13/2022	ND	20.0000		
Zinc, total	ug/L	MW-11C	03/23/2023	ND	20.0000		
Zinc, total	ug/L	MW-11C	09/05/2023	ND	20.0000		
Antimony, total	ug/L	MW-39D	09/02/2020		2.1000		
Antimony, total	ug/L	MW-39D	03/08/2021	ND	2.0000		
Antimony, total	ug/L	MW-39D	09/14/2021	ND	2.0000		
Antimony, total	ug/L	MW-39D	03/28/2022	ND	2.0000		
Antimony, total	ug/L	MW-39D	09/13/2022	ND	2.0000		
Antimony, total	ug/L	MW-39D	03/23/2023	ND	2.0000		
Antimony, total	ug/L	MW-39D	09/05/2023	ND	2.0000		
Arsenic, total	ug/L	MW-39D	09/02/2020		5.8000		
Arsenic, total	ug/L	MW-39D	03/08/2021	ND	4.0000		
Arsenic, total	ug/L	MW-39D	09/14/2021	ND	4.0000		
Arsenic, total	ug/L	MW-39D	03/28/2022	ND	4.0000		
Arsenic, total	ug/L	MW-39D	09/13/2022	ND	4.0000		
Arsenic, total	ug/L	MW-39D	03/23/2023	ND	4.0000		
Arsenic, total	ug/L	MW-39D	09/05/2023	ND	4.0000		
Barium, total	ug/L	MW-39D	09/02/2020		45.7000		
Barium, total	ug/L	MW-39D	03/08/2021		54.9000		
Barium, total	ug/L	MW-39D	09/14/2021		38.3000		
Barium, total	ug/L	MW-39D	03/28/2022		36.5000		
Barium, total	ug/L	MW-39D	09/13/2022		51.0000		
Barium, total	ug/L	MW-39D	03/23/2023		34.8000		
Barium, total	ug/L	MW-39D	09/05/2023		33.5000		
Beryllium, total	ug/L	MW-39D	09/02/2020	ND	4.0000		
Beryllium, total	ug/L	MW-39D	03/08/2021	ND	4.0000		
Beryllium, total	ug/L	MW-39D	09/14/2021	ND	4.0000		
Beryllium, total	ug/L	MW-39D	03/28/2022	ND	4.0000		
Beryllium, total	ug/L	MW-39D	09/13/2022	ND	4.0000		
Beryllium, total	ug/L	MW-39D	03/23/2023	ND	4.0000		
Beryllium, total	ug/L	MW-39D	09/05/2023	ND	4.0000		
Cadmium, total	ug/L	MW-39D	09/02/2020	ND	0.8000		
Cadmium, total	ug/L	MW-39D	03/08/2021	ND	0.8000		
Cadmium, total	ug/L	MW-39D	09/14/2021	ND	0.8000		
Cadmium, total	ug/L	MW-39D	03/28/2022	ND	0.8000		
Cadmium, total	ug/L	MW-39D	09/13/2022	ND	0.8000		
Cadmium, total	ug/L	MW-39D	03/23/2023	ND	0.8000		
Cadmium, total	ug/L	MW-39D	09/05/2023	ND	0.8000		
Chromium, total	ug/L	MW-39D	09/02/2020	ND	8.0000		
Chromium, total	ug/L	MW-39D	03/08/2021		13.2000		
Chromium, total	ug/L	MW-39D	09/14/2021	ND	8.0000		
Chromium, total	ug/L	MW-39D	03/28/2022	ND	8.0000		
Chromium, total	ug/L	MW-39D	09/13/2022	ND	8.0000		
Chromium, total	ug/L	MW-39D	03/23/2023	ND	8.0000		
Chromium, total	ug/L	MW-39D	09/05/2023	ND	8.0000		
Cobalt, total	ug/L	MW-39D	09/02/2020	ND	0.4000		
Cobalt, total	ug/L	MW-39D	03/08/2021		2.6000		*
Cobalt, total	ug/L	MW-39D	09/14/2021	ND	0.4000		
Cobalt, total	ug/L	MW-39D	03/28/2022	ND	0.4000		
Cobalt, total	ug/L	MW-39D	09/13/2022		3.3000		*
Cobalt, total	ug/L	MW-39D	03/23/2023	ND	0.4000		
Cobalt, total	ug/L	MW-39D	09/05/2023	ND	0.4000		
Copper, total	ug/L	MW-39D	09/02/2020	ND	4.0000		
Copper, total	ug/L	MW-39D	03/08/2021		5.6000		
Copper, total	ug/L	MW-39D	09/14/2021	ND	4.0000		
Copper, total	ug/L	MW-39D	03/28/2022	ND	4.0000		
Copper, total	ug/L	MW-39D	09/13/2022	ND	4.0000		
Copper, total	ug/L	MW-39D	03/23/2023	ND	4.0000		
Copper, total	ug/L	MW-39D	09/05/2023	ND	4.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted
Lead, total	ug/L	MW-39D	09/02/2020	ND	4.0000	
Lead, total	ug/L	MW-39D	03/08/2021	ND	4.0000	
Lead, total	ug/L	MW-39D	09/14/2021	ND	4.0000	
Lead, total	ug/L	MW-39D	03/28/2022	ND	4.0000	
Lead, total	ug/L	MW-39D	09/13/2022	ND	4.0000	
Lead, total	ug/L	MW-39D	03/23/2023	ND	4.0000	
Lead, total	ug/L	MW-39D	09/05/2023	ND	4.0000	
Nickel, total	ug/L	MW-39D	09/02/2020	ND	4.0000	
Nickel, total	ug/L	MW-39D	03/08/2021		10.6000	
Nickel, total	ug/L	MW-39D	09/14/2021	ND	4.0000	
Nickel, total	ug/L	MW-39D	03/28/2022	ND	4.0000	
Nickel, total	ug/L	MW-39D	09/13/2022	ND	4.0000	
Nickel, total	ug/L	MW-39D	03/23/2023	ND	4.0000	
Nickel, total	ug/L	MW-39D	09/05/2023	ND	4.0000	
Selenium, total	ug/L	MW-39D	09/02/2020	ND	4.0000	
Selenium, total	ug/L	MW-39D	03/08/2021	ND	4.0000	
Selenium, total	ug/L	MW-39D	09/14/2021	ND	4.0000	
Selenium, total	ug/L	MW-39D	03/28/2022	ND	4.0000	
Selenium, total	ug/L	MW-39D	09/13/2022	ND	4.0000	
Selenium, total	ug/L	MW-39D	03/23/2023	ND	4.0000	
Selenium, total	ug/L	MW-39D	09/05/2023	ND	4.0000	
Silver, total	ug/L	MW-39D	09/02/2020	ND	4.0000	
Silver, total	ug/L	MW-39D	03/08/2021	ND	4.0000	
Silver, total	ug/L	MW-39D	09/14/2021	ND	4.0000	
Silver, total	ug/L	MW-39D	03/28/2022	ND	4.0000	
Silver, total	ug/L	MW-39D	09/13/2022	ND	4.0000	
Silver, total	ug/L	MW-39D	03/23/2023	ND	4.0000	
Silver, total	ug/L	MW-39D	09/05/2023	ND	4.0000	
Thallium, total	ug/L	MW-39D	09/02/2020	ND	2.0000	
Thallium, total	ug/L	MW-39D	03/08/2021	ND	2.0000	
Thallium, total	ug/L	MW-39D	09/14/2021	ND	2.0000	
Thallium, total	ug/L	MW-39D	03/28/2022	ND	2.0000	
Thallium, total	ug/L	MW-39D	09/13/2022	ND	2.0000	
Thallium, total	ug/L	MW-39D	03/23/2023	ND	2.0000	
Thallium, total	ug/L	MW-39D	09/05/2023	ND	2.0000	
Vanadium, total	ug/L	MW-39D	09/02/2020	ND	20.0000	
Vanadium, total	ug/L	MW-39D	03/08/2021		20.0000	
Vanadium, total	ug/L	MW-39D	09/14/2021	ND	20.0000	
Vanadium, total	ug/L	MW-39D	03/28/2022	ND	20.0000	
Vanadium, total	ug/L	MW-39D	09/13/2022	ND	20.0000	
Vanadium, total	ug/L	MW-39D	03/23/2023	ND	20.0000	
Vanadium, total	ug/L	MW-39D	09/05/2023	ND	20.0000	
Zinc, total	ug/L	MW-39D	09/02/2020	ND	20.0000	
Zinc, total	ug/L	MW-39D	03/08/2021		20.7000	
Zinc, total	ug/L	MW-39D	09/14/2021	ND	20.0000	
Zinc, total	ug/L	MW-39D	03/28/2022	ND	20.0000	
Zinc, total	ug/L	MW-39D	09/13/2022		25.0000	
Zinc, total	ug/L	MW-39D	03/23/2023	ND	20.0000	
Zinc, total	ug/L	MW-39D	09/05/2023	ND	20.0000	
Antimony, total	ug/L	MW-41D	09/02/2020	ND	2.0000	
Antimony, total	ug/L	MW-41D	03/08/2021	ND	2.0000	
Antimony, total	ug/L	MW-41D	09/14/2021	ND	2.0000	
Antimony, total	ug/L	MW-41D	03/28/2022	ND	2.0000	
Antimony, total	ug/L	MW-41D	09/13/2022		2.6000	
Antimony, total	ug/L	MW-41D	03/23/2023		2.8000	
Antimony, total	ug/L	MW-41D	09/05/2023		3.1000	
Arsenic, total	ug/L	MW-41D	09/02/2020	ND	4.0000	
Arsenic, total	ug/L	MW-41D	03/08/2021		5.2000	
Arsenic, total	ug/L	MW-41D	09/14/2021		4.7000	
Arsenic, total	ug/L	MW-41D	03/28/2022	ND	4.0000	
Arsenic, total	ug/L	MW-41D	09/13/2022	ND	4.0000	
Arsenic, total	ug/L	MW-41D	03/23/2023	ND	4.0000	
Arsenic, total	ug/L	MW-41D	09/05/2023	ND	4.0000	
Barium, total	ug/L	MW-41D	09/02/2020		38.4000	
Barium, total	ug/L	MW-41D	03/08/2021		34.4000	
Barium, total	ug/L	MW-41D	09/14/2021		30.5000	
Barium, total	ug/L	MW-41D	03/28/2022		33.7000	
Barium, total	ug/L	MW-41D	09/13/2022		31.3000	
Barium, total	ug/L	MW-41D	03/23/2023		32.2000	
Barium, total	ug/L	MW-41D	09/05/2023		30.3000	
Beryllium, total	ug/L	MW-41D	09/02/2020	ND	4.0000	
Beryllium, total	ug/L	MW-41D	03/08/2021	ND	4.0000	
Beryllium, total	ug/L	MW-41D	09/14/2021	ND	4.0000	
Beryllium, total	ug/L	MW-41D	03/28/2022	ND	4.0000	

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted
Beryllium, total	ug/L	MW-41D	09/13/2022	ND	4.0000	
Beryllium, total	ug/L	MW-41D	03/23/2023	ND	4.0000	
Beryllium, total	ug/L	MW-41D	09/05/2023	ND	4.0000	
Cadmium, total	ug/L	MW-41D	09/02/2020	ND	0.8000	
Cadmium, total	ug/L	MW-41D	03/08/2021	ND	0.8000	
Cadmium, total	ug/L	MW-41D	09/14/2021	ND	0.8000	
Cadmium, total	ug/L	MW-41D	03/28/2022	ND	0.8000	
Cadmium, total	ug/L	MW-41D	09/13/2022	ND	0.8000	
Cadmium, total	ug/L	MW-41D	03/23/2023	ND	0.8000	
Cadmium, total	ug/L	MW-41D	09/05/2023	ND	0.8000	
Chromium, total	ug/L	MW-41D	09/02/2020	ND	8.0000	
Chromium, total	ug/L	MW-41D	03/08/2021	ND	8.0000	
Chromium, total	ug/L	MW-41D	09/14/2021	ND	8.0000	
Chromium, total	ug/L	MW-41D	03/28/2022	ND	8.0000	
Chromium, total	ug/L	MW-41D	09/13/2022	ND	8.0000	
Chromium, total	ug/L	MW-41D	03/23/2023	ND	8.0000	
Chromium, total	ug/L	MW-41D	09/05/2023	ND	8.0000	
Cobalt, total	ug/L	MW-41D	09/02/2020		5.1000	
Cobalt, total	ug/L	MW-41D	03/08/2021		3.9000	
Cobalt, total	ug/L	MW-41D	09/14/2021		2.6000	
Cobalt, total	ug/L	MW-41D	03/28/2022		2.5000	
Cobalt, total	ug/L	MW-41D	09/13/2022		5.4000	
Cobalt, total	ug/L	MW-41D	03/23/2023		1.2000	
Cobalt, total	ug/L	MW-41D	09/05/2023		0.9000	
Copper, total	ug/L	MW-41D	09/02/2020	ND	4.0000	
Copper, total	ug/L	MW-41D	03/08/2021	ND	4.0000	
Copper, total	ug/L	MW-41D	09/14/2021	ND	4.0000	
Copper, total	ug/L	MW-41D	03/28/2022	ND	4.0000	
Copper, total	ug/L	MW-41D	09/13/2022	ND	4.0000	
Copper, total	ug/L	MW-41D	03/23/2023	ND	4.0000	
Copper, total	ug/L	MW-41D	09/05/2023	ND	4.0000	
Lead, total	ug/L	MW-41D	09/02/2020	ND	4.0000	
Lead, total	ug/L	MW-41D	03/08/2021	ND	4.0000	
Lead, total	ug/L	MW-41D	09/14/2021	ND	4.0000	
Lead, total	ug/L	MW-41D	03/28/2022	ND	4.0000	
Lead, total	ug/L	MW-41D	09/13/2022	ND	4.0000	
Lead, total	ug/L	MW-41D	03/23/2023	ND	4.0000	
Lead, total	ug/L	MW-41D	09/05/2023	ND	4.0000	
Nickel, total	ug/L	MW-41D	09/02/2020		11.8000	
Nickel, total	ug/L	MW-41D	03/08/2021		6.7000	
Nickel, total	ug/L	MW-41D	09/14/2021		6.6000	
Nickel, total	ug/L	MW-41D	03/28/2022		6.7000	
Nickel, total	ug/L	MW-41D	09/13/2022		10.3000	
Nickel, total	ug/L	MW-41D	03/23/2023		8.5000	
Nickel, total	ug/L	MW-41D	09/05/2023		7.5000	
Selenium, total	ug/L	MW-41D	09/02/2020	ND	4.0000	
Selenium, total	ug/L	MW-41D	03/08/2021	ND	4.0000	
Selenium, total	ug/L	MW-41D	09/14/2021	ND	4.0000	
Selenium, total	ug/L	MW-41D	03/28/2022	ND	4.0000	
Selenium, total	ug/L	MW-41D	09/13/2022	ND	4.0000	
Selenium, total	ug/L	MW-41D	03/23/2023	ND	4.0000	
Selenium, total	ug/L	MW-41D	09/05/2023	ND	4.0000	
Silver, total	ug/L	MW-41D	09/02/2020	ND	4.0000	
Silver, total	ug/L	MW-41D	03/08/2021	ND	4.0000	
Silver, total	ug/L	MW-41D	09/14/2021	ND	4.0000	
Silver, total	ug/L	MW-41D	03/28/2022	ND	4.0000	
Silver, total	ug/L	MW-41D	09/13/2022	ND	4.0000	
Silver, total	ug/L	MW-41D	03/23/2023	ND	4.0000	
Silver, total	ug/L	MW-41D	09/05/2023	ND	4.0000	
Thallium, total	ug/L	MW-41D	09/02/2020	ND	2.0000	
Thallium, total	ug/L	MW-41D	03/08/2021	ND	2.0000	
Thallium, total	ug/L	MW-41D	09/14/2021	ND	2.0000	
Thallium, total	ug/L	MW-41D	03/28/2022	ND	2.0000	
Thallium, total	ug/L	MW-41D	09/13/2022	ND	2.0000	
Thallium, total	ug/L	MW-41D	03/23/2023	ND	2.0000	
Thallium, total	ug/L	MW-41D	09/05/2023	ND	2.0000	
Vanadium, total	ug/L	MW-41D	09/02/2020	ND	20.0000	
Vanadium, total	ug/L	MW-41D	03/08/2021	ND	20.0000	
Vanadium, total	ug/L	MW-41D	09/14/2021	ND	20.0000	
Vanadium, total	ug/L	MW-41D	03/28/2022	ND	20.0000	
Vanadium, total	ug/L	MW-41D	09/13/2022	ND	20.0000	
Vanadium, total	ug/L	MW-41D	03/23/2023	ND	20.0000	
Vanadium, total	ug/L	MW-41D	09/05/2023	ND	20.0000	
Zinc, total	ug/L	MW-41D	09/02/2020	ND	20.0000	

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted
Zinc, total	ug/L	MW-41D	03/08/2021	ND	20.0000	
Zinc, total	ug/L	MW-41D	09/14/2021	ND	20.0000	
Zinc, total	ug/L	MW-41D	03/28/2022	ND	20.0000	
Zinc, total	ug/L	MW-41D	09/13/2022	ND	20.0000	
Zinc, total	ug/L	MW-41D	03/23/2023	ND	20.0000	
Zinc, total	ug/L	MW-41D	09/05/2023	ND	20.0000	
Antimony, total	ug/L	MW-42D	09/02/2020		10.9000	
Antimony, total	ug/L	MW-42D	03/08/2021		8.9000	
Antimony, total	ug/L	MW-42D	09/14/2021		9.4000	
Antimony, total	ug/L	MW-42D	03/28/2022		7.4000	
Antimony, total	ug/L	MW-42D	09/13/2022	ND	2.0000	
Antimony, total	ug/L	MW-42D	03/23/2023	ND	2.0000	
Antimony, total	ug/L	MW-42D	09/05/2023	ND	2.0000	
Arsenic, total	ug/L	MW-42D	09/02/2020	ND	4.0000	
Arsenic, total	ug/L	MW-42D	03/08/2021	ND	4.0000	
Arsenic, total	ug/L	MW-42D	09/14/2021		4.3000	
Arsenic, total	ug/L	MW-42D	03/28/2022		5.0000	
Arsenic, total	ug/L	MW-42D	09/13/2022		5.7000	
Arsenic, total	ug/L	MW-42D	03/23/2023	ND	4.0000	
Arsenic, total	ug/L	MW-42D	09/05/2023		4.3000	
Barium, total	ug/L	MW-42D	09/02/2020		58.3000	
Barium, total	ug/L	MW-42D	03/08/2021		53.5000	
Barium, total	ug/L	MW-42D	09/14/2021		55.5000	
Barium, total	ug/L	MW-42D	03/28/2022		52.3000	
Barium, total	ug/L	MW-42D	09/13/2022		44.7000	
Barium, total	ug/L	MW-42D	03/23/2023		40.1000	
Barium, total	ug/L	MW-42D	09/05/2023		36.6000	
Beryllium, total	ug/L	MW-42D	09/02/2020	ND	4.0000	
Beryllium, total	ug/L	MW-42D	03/08/2021	ND	4.0000	
Beryllium, total	ug/L	MW-42D	09/14/2021	ND	4.0000	
Beryllium, total	ug/L	MW-42D	03/28/2022	ND	4.0000	
Beryllium, total	ug/L	MW-42D	09/13/2022	ND	4.0000	
Beryllium, total	ug/L	MW-42D	03/23/2023	ND	4.0000	
Beryllium, total	ug/L	MW-42D	09/05/2023	ND	4.0000	
Cadmium, total	ug/L	MW-42D	09/02/2020	ND	0.8000	
Cadmium, total	ug/L	MW-42D	03/08/2021	ND	0.8000	
Cadmium, total	ug/L	MW-42D	09/14/2021	ND	0.8000	
Cadmium, total	ug/L	MW-42D	03/28/2022	ND	0.8000	
Cadmium, total	ug/L	MW-42D	09/13/2022	ND	0.8000	
Cadmium, total	ug/L	MW-42D	03/23/2023	ND	0.8000	
Cadmium, total	ug/L	MW-42D	09/05/2023	ND	0.8000	
Chromium, total	ug/L	MW-42D	09/02/2020	ND	8.0000	
Chromium, total	ug/L	MW-42D	03/08/2021	ND	8.0000	
Chromium, total	ug/L	MW-42D	09/14/2021	ND	8.0000	
Chromium, total	ug/L	MW-42D	03/28/2022	ND	8.0000	
Chromium, total	ug/L	MW-42D	09/13/2022	ND	8.0000	
Chromium, total	ug/L	MW-42D	03/23/2023	ND	8.0000	
Chromium, total	ug/L	MW-42D	09/05/2023	ND	8.0000	
Cobalt, total	ug/L	MW-42D	09/02/2020	ND	0.4000	
Cobalt, total	ug/L	MW-42D	03/08/2021	ND	0.4000	
Cobalt, total	ug/L	MW-42D	09/14/2021	ND	0.4000	
Cobalt, total	ug/L	MW-42D	03/28/2022		0.5000	
Cobalt, total	ug/L	MW-42D	09/13/2022		3.4000	*
Cobalt, total	ug/L	MW-42D	03/23/2023	ND	0.4000	
Cobalt, total	ug/L	MW-42D	09/05/2023	ND	0.4000	
Copper, total	ug/L	MW-42D	09/02/2020		6.5000	
Copper, total	ug/L	MW-42D	03/08/2021	ND	4.0000	
Copper, total	ug/L	MW-42D	09/14/2021	ND	4.0000	
Copper, total	ug/L	MW-42D	03/28/2022	ND	4.0000	
Copper, total	ug/L	MW-42D	09/13/2022	ND	4.0000	
Copper, total	ug/L	MW-42D	03/23/2023	ND	4.0000	
Copper, total	ug/L	MW-42D	09/05/2023	ND	4.0000	
Lead, total	ug/L	MW-42D	09/02/2020	ND	4.0000	
Lead, total	ug/L	MW-42D	03/08/2021	ND	4.0000	
Lead, total	ug/L	MW-42D	09/14/2021	ND	4.0000	
Lead, total	ug/L	MW-42D	03/28/2022	ND	4.0000	
Lead, total	ug/L	MW-42D	09/13/2022	ND	4.0000	
Lead, total	ug/L	MW-42D	03/23/2023	ND	4.0000	
Lead, total	ug/L	MW-42D	09/05/2023	ND	4.0000	
Nickel, total	ug/L	MW-42D	09/02/2020	ND	4.0000	
Nickel, total	ug/L	MW-42D	03/08/2021	ND	4.0000	
Nickel, total	ug/L	MW-42D	09/14/2021	ND	4.0000	
Nickel, total	ug/L	MW-42D	03/28/2022	ND	4.0000	
Nickel, total	ug/L	MW-42D	09/13/2022	ND	4.0000	

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 1

Upgradient Data

Constituent	Units	Well	Date		Result	Adjusted	
Nickel, total	ug/L	MW-42D	03/23/2023	ND	4.0000		
Nickel, total	ug/L	MW-42D	09/05/2023	ND	4.0000		
Selenium, total	ug/L	MW-42D	09/02/2020	ND	4.0000		
Selenium, total	ug/L	MW-42D	03/08/2021	ND	4.0000		
Selenium, total	ug/L	MW-42D	09/14/2021	ND	4.0000		
Selenium, total	ug/L	MW-42D	03/28/2022	ND	4.0000		
Selenium, total	ug/L	MW-42D	09/13/2022	ND	4.0000		
Selenium, total	ug/L	MW-42D	03/23/2023	ND	4.0000		
Selenium, total	ug/L	MW-42D	09/05/2023	ND	4.0000		
Silver, total	ug/L	MW-42D	09/02/2020	ND	4.0000		
Silver, total	ug/L	MW-42D	03/08/2021	ND	4.0000		
Silver, total	ug/L	MW-42D	09/14/2021	ND	4.0000		
Silver, total	ug/L	MW-42D	03/28/2022	ND	4.0000		
Silver, total	ug/L	MW-42D	09/13/2022	ND	4.0000		
Silver, total	ug/L	MW-42D	03/23/2023	ND	4.0000		
Silver, total	ug/L	MW-42D	09/05/2023	ND	4.0000		
Thallium, total	ug/L	MW-42D	09/02/2020	ND	2.0000		
Thallium, total	ug/L	MW-42D	03/08/2021	ND	2.0000		
Thallium, total	ug/L	MW-42D	09/14/2021	ND	2.0000		
Thallium, total	ug/L	MW-42D	03/28/2022	ND	2.0000		
Thallium, total	ug/L	MW-42D	09/13/2022	ND	2.0000		
Thallium, total	ug/L	MW-42D	03/23/2023	ND	2.0000		
Thallium, total	ug/L	MW-42D	09/05/2023	ND	2.0000		
Vanadium, total	ug/L	MW-42D	09/02/2020	ND	20.0000		
Vanadium, total	ug/L	MW-42D	03/08/2021	ND	20.0000		
Vanadium, total	ug/L	MW-42D	09/14/2021	ND	20.0000		
Vanadium, total	ug/L	MW-42D	03/28/2022	ND	20.0000		
Vanadium, total	ug/L	MW-42D	09/13/2022	ND	20.0000		
Vanadium, total	ug/L	MW-42D	03/23/2023	ND	20.0000		
Vanadium, total	ug/L	MW-42D	09/05/2023	ND	20.0000		
Zinc, total	ug/L	MW-42D	09/02/2020		34.5000		
Zinc, total	ug/L	MW-42D	03/08/2021	ND	20.0000		
Zinc, total	ug/L	MW-42D	09/14/2021	ND	20.0000		
Zinc, total	ug/L	MW-42D	03/28/2022	ND	20.0000		
Zinc, total	ug/L	MW-42D	09/13/2022	ND	20.0000		
Zinc, total	ug/L	MW-42D	03/23/2023	ND	20.0000		
Zinc, total	ug/L	MW-42D	09/05/2023	ND	20.0000		

* - Outlier for that well and constituent.
 ** - ND value replaced with median RL.
 *** - ND value replaced with manual RL.
 ND = Not detected, Result = detection limit.

Table 2

Most Current Downgradient Monitoring Data

Constituent	Units	Well	Date		Result		Pred. Limit
Antimony, total	ug/L	MW-14D	09/05/2023		2.3000		10.9000
Arsenic, total	ug/L	MW-14D	09/05/2023	ND	4.0000		5.8000
Barium, total	ug/L	MW-14D	09/05/2023		18.3000		107.4794
Beryllium, total	ug/L	MW-14D	09/05/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-14D	09/05/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-14D	09/05/2023	ND	8.0000		13.2000
Cobalt, total	ug/L	MW-14D	09/05/2023		5.9000	*	5.4000
Copper, total	ug/L	MW-14D	09/05/2023	ND	4.0000		6.5000
Lead, total	ug/L	MW-14D	09/05/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-14D	09/05/2023	ND	4.0000		11.8000
Selenium, total	ug/L	MW-14D	09/05/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-14D	09/05/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-14D	09/05/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-14D	09/05/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-14D	09/05/2023	ND	20.0000		34.5000
Antimony, total	ug/L	MW-17R	09/05/2023	ND	2.0000		10.9000
Arsenic, total	ug/L	MW-17R	09/05/2023	ND	4.0000		5.8000
Barium, total	ug/L	MW-17R	09/05/2023		422.0000	***	107.4794
Beryllium, total	ug/L	MW-17R	09/05/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-17R	09/05/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-17R	09/05/2023	ND	8.0000		13.2000
Cobalt, total	ug/L	MW-17R	09/05/2023		1.8000		5.4000
Copper, total	ug/L	MW-17R	09/05/2023	ND	4.0000		6.5000
Lead, total	ug/L	MW-17R	09/05/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-17R	09/05/2023		21.4000	***	11.8000
Selenium, total	ug/L	MW-17R	09/05/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-17R	09/05/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-17R	09/05/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-17R	09/05/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-17R	09/05/2023	ND	20.0000		34.5000
Antimony, total	ug/L	MW-28	09/05/2023	ND	2.0000		10.9000
Arsenic, total	ug/L	MW-28	09/05/2023		8.8000	***	5.8000
Barium, total	ug/L	MW-28	09/05/2023		647.0000	***	107.4794
Beryllium, total	ug/L	MW-28	09/05/2023	ND	4.0000		4.0000
Cadmium, total	ug/L	MW-28	09/05/2023	ND	0.8000		0.8000
Chromium, total	ug/L	MW-28	09/05/2023	ND	8.0000		13.2000
Cobalt, total	ug/L	MW-28	09/05/2023		28.6000	***	5.4000
Copper, total	ug/L	MW-28	09/05/2023	ND	4.0000		6.5000
Lead, total	ug/L	MW-28	09/05/2023	ND	4.0000		4.0000
Nickel, total	ug/L	MW-28	09/05/2023		19.1000	***	11.8000
Selenium, total	ug/L	MW-28	09/05/2023	ND	4.0000		4.0000
Silver, total	ug/L	MW-28	09/05/2023	ND	4.0000		4.0000
Thallium, total	ug/L	MW-28	09/05/2023	ND	2.0000		2.0000
Vanadium, total	ug/L	MW-28	09/05/2023	ND	20.0000		20.0000
Zinc, total	ug/L	MW-28	09/05/2023	ND	20.0000		34.5000

* - Current value failed - awaiting verification.
 ** - Current value passed - previous exceedance not verified.
 *** - Current value failed - exceedance verified.
 **** - Current value passed - awaiting one more verification.
 ***** - Insufficient background data to compute prediction limit.
 ND = Not Detected, Result = detection limit.

Table 3

Detection Frequencies in Upgradient and Downgradient Wells

Constituent	Upgradient			Downgradient		
	Detect	N	Proportion	Detect	N	Proportion
Antimony, total	9	37	0.243	12	41	0.293
Arsenic, total	7	37	0.189	10	40	0.250
Barium, total	37	37	1.000	40	40	1.000
Beryllium, total	0	37	0.000	0	40	0.000
Cadmium, total	0	37	0.000	0	40	0.000
Chromium, total	1	37	0.027	0	40	0.000
Cobalt, total	10	34	0.294	34	40	0.850
Copper, total	2	37	0.054	0	40	0.000
Lead, total	0	37	0.000	0	40	0.000
Nickel, total	11	37	0.297	26	41	0.634
Selenium, total	0	37	0.000	10	45	0.222
Silver, total	0	37	0.000	0	40	0.000
Thallium, total	0	37	0.000	0	40	0.000
Vanadium, total	1	37	0.027	0	40	0.000
Zinc, total	6	37	0.162	2	40	0.050

N = Total number of measurements in all wells.

Detect = Total number of detections in all wells.

Proportion = Detect/N.

Table 4

Shapiro-Wilk Multiple Group Test of Normality

Constituent	Detect	N	Detect Freq	G raw	G log	G cbrt	G sqrt	G sqr	G cub	Crit Value	Dist Form	Model Type
Antimony, total	9	37	0.243	1.683	1.643					2.326	normal	nonpar
Arsenic, total	7	37	0.189	0.614	0.603					2.326	normal	nonpar
Barium, total	37	37	1.000	2.255	1.424					2.326	normal	normal
Beryllium, total	0	37	0.000									nonpar
Cadmium, total	0	37	0.000									nonpar
Chromium, total	1	37	0.027									nonpar
Cobalt, total	10	34	0.294	0.132	0.340					2.326	normal	nonpar
Copper, total	2	37	0.054									nonpar
Lead, total	0	37	0.000									nonpar
Nickel, total	11	37	0.297	1.049	0.680					2.326	normal	nonpar
Selenium, total	0	37	0.000									nonpar
Silver, total	0	37	0.000									nonpar
Thallium, total	0	37	0.000									nonpar
Vanadium, total	1	37	0.027									nonpar
Zinc, total	6	37	0.162	1.143	1.913					2.326	normal	nonpar

* - Distribution override for that constituent.

Fit to distribution is confirmed if G <= critical value.

Model type may not match distributional form when detection frequency < 50%.

Table 5

Summary Statistics and Prediction Limits

Constituent	Units	Detect	N	Mean	SD	alpha	Factor	Pred Limit	Type		Conf
Antimony, total	ug/L	9	37					10.9000	nonpar		0.99
Arsenic, total	ug/L	7	37					5.8000	nonpar		0.99
Barium, total	ug/L	37	37	55.2405	21.1748	0.0100	2.4670	107.4794	normal		
Beryllium, total	ug/L	0	37					4.0000	nonpar	***	0.99
Cadmium, total	ug/L	0	37					0.8000	nonpar	***	0.99
Chromium, total	ug/L	1	37					13.2000	nonpar		0.99
Cobalt, total	ug/L	10	34					5.4000	nonpar		0.99
Copper, total	ug/L	2	37					6.5000	nonpar		0.99
Lead, total	ug/L	0	37					4.0000	nonpar	***	0.99
Nickel, total	ug/L	11	37					11.8000	nonpar		0.99
Selenium, total	ug/L	0	37					4.0000	nonpar	***	0.99
Silver, total	ug/L	0	37					4.0000	nonpar	***	0.99
Thallium, total	ug/L	0	37					2.0000	nonpar	***	0.99
Vanadium, total	ug/L	1	37					20.0000	nonpar	***	0.99
Zinc, total	ug/L	6	37					34.5000	nonpar		0.99

Conf = confidence level for passing initial test or one verification resample at all downgradient wells for a single constituent (nonparametric test only).

* - Insufficient Data.

** - Calculated limit raised to Manual Reporting Limit.

*** - Nonparametric limit based on ND value.

For transformed data, mean and SD in transformed units and prediction limit in original units.

All sample sizes and statistics are based on outlier free data.

For nonparametric limits, median reporting limits are substituted for extreme reporting limit values.

Table 6

**Dixon's Test Outliers
1% Significance Level**

Constituent	Units	Well	Date	Result	ND Qualifier	Date Range	N	Critical Value
Cobalt, total	ug/L	MW-39D	03/08/2021	2.6000		09/02/2020-09/05/2023	7	0.6987
Cobalt, total	ug/L	MW-39D	09/13/2022	3.3000		09/02/2020-09/05/2023	7	0.6987
Cobalt, total	ug/L	MW-42D	09/13/2022	3.4000		09/02/2020-09/05/2023	7	0.6371

N = Total number of independent measurements in background at each well.

Date Range = Dates of the first and last measurements included in background at each well.

Critical Value depends on the significance level and on N-1 when the two most extreme values are tested or N for the most extreme value.

Table 8

Historical Downgradient Data for Constituent-Well Combinations that Failed the Current Statistical Evaluation or are in Verification Resampling Mode

Constituent	Units	Well	Date		Result	Pred. Limit
Cobalt, total	ug/L	MW-14D	09/21/2016	ND	0.8000	5.4000
Cobalt, total	ug/L	MW-14D	03/09/2017	ND	0.8000	5.4000
Cobalt, total	ug/L	MW-14D	09/14/2017	ND	0.8000	5.4000
Cobalt, total	ug/L	MW-14D	03/12/2018		3.1000	5.4000
Cobalt, total	ug/L	MW-14D	09/10/2018		2.7000	5.4000
Cobalt, total	ug/L	MW-14D	03/26/2019		4.2000	5.4000
Cobalt, total	ug/L	MW-14D	09/16/2019		3.9000	5.4000
Cobalt, total	ug/L	MW-14D	03/24/2020		3.8000	5.4000
Cobalt, total	ug/L	MW-14D	09/02/2020		2.3000	5.4000
Cobalt, total	ug/L	MW-14D	03/08/2021		3.0000	5.4000
Cobalt, total	ug/L	MW-14D	09/14/2021		4.6000	5.4000
Cobalt, total	ug/L	MW-14D	03/28/2022		0.9000	5.4000
Cobalt, total	ug/L	MW-14D	09/13/2022		8.5000 *	5.4000
Cobalt, total	ug/L	MW-14D	03/23/2023		1.5000	5.4000
Cobalt, total	ug/L	MW-14D	09/05/2023		5.9000 *	5.4000
Barium, total	ug/L	MW-17R	09/23/2014		344.0000 *	107.4794
Barium, total	ug/L	MW-17R	03/03/2016		378.0000 *	107.4794
Barium, total	ug/L	MW-17R	09/21/2016		369.0000 *	107.4794
Barium, total	ug/L	MW-17R	03/09/2017		369.0000 *	107.4794
Barium, total	ug/L	MW-17R	09/14/2017		411.0000 *	107.4794
Barium, total	ug/L	MW-17R	03/12/2018		408.0000 *	107.4794
Barium, total	ug/L	MW-17R	09/10/2018		406.0000 *	107.4794
Barium, total	ug/L	MW-17R	03/26/2019		430.0000 *	107.4794
Barium, total	ug/L	MW-17R	09/16/2019		533.0000 *	107.4794
Barium, total	ug/L	MW-17R	03/24/2020		429.0000 *	107.4794
Barium, total	ug/L	MW-17R	09/02/2020		398.0000 *	107.4794
Barium, total	ug/L	MW-17R	03/08/2021		416.0000 *	107.4794
Barium, total	ug/L	MW-17R	09/14/2021		442.0000 *	107.4794
Barium, total	ug/L	MW-17R	03/28/2022		446.0000 *	107.4794
Barium, total	ug/L	MW-17R	09/13/2022		587.0000 *	107.4794
Barium, total	ug/L	MW-17R	03/23/2023		446.0000 *	107.4794
Barium, total	ug/L	MW-17R	09/05/2023		422.0000 *	107.4794
Nickel, total	ug/L	MW-17R	09/23/2014		14.9000 *	11.8000
Nickel, total	ug/L	MW-17R	03/03/2016		16.3000 *	11.8000
Nickel, total	ug/L	MW-17R	09/21/2016		15.2000 *	11.8000
Nickel, total	ug/L	MW-17R	03/09/2017		16.6000 *	11.8000
Nickel, total	ug/L	MW-17R	09/14/2017		20.1000 *	11.8000
Nickel, total	ug/L	MW-17R	12/13/2017		17.2000 *	11.8000
Nickel, total	ug/L	MW-17R	03/12/2018		17.6000 *	11.8000
Nickel, total	ug/L	MW-17R	09/10/2018		18.1000 *	11.8000
Nickel, total	ug/L	MW-17R	03/26/2019		20.3000 *	11.8000
Nickel, total	ug/L	MW-17R	09/16/2019		21.4000 *	11.8000
Nickel, total	ug/L	MW-17R	03/24/2020		19.2000 *	11.8000
Nickel, total	ug/L	MW-17R	09/02/2020		19.0000 *	11.8000
Nickel, total	ug/L	MW-17R	03/08/2021		20.8000 *	11.8000
Nickel, total	ug/L	MW-17R	09/14/2021		21.8000 *	11.8000
Nickel, total	ug/L	MW-17R	03/28/2022		22.3000 *	11.8000
Nickel, total	ug/L	MW-17R	09/13/2022		28.9000 *	11.8000
Nickel, total	ug/L	MW-17R	03/23/2023		22.2000 *	11.8000
Nickel, total	ug/L	MW-17R	09/05/2023		21.4000 *	11.8000
Arsenic, total	ug/L	MW-28	03/24/2020		72.8000 *	5.8000
Arsenic, total	ug/L	MW-28	09/02/2020	ND	4.0000	5.8000
Arsenic, total	ug/L	MW-28	03/08/2021		13.8000 *	5.8000
Arsenic, total	ug/L	MW-28	10/15/2021		4.3000	5.8000
Arsenic, total	ug/L	MW-28	03/28/2022		38.7000 *	5.8000
Arsenic, total	ug/L	MW-28	09/13/2022		8.2000 *	5.8000
Arsenic, total	ug/L	MW-28	03/23/2023		100.0000 *	5.8000
Arsenic, total	ug/L	MW-28	09/05/2023		8.8000 *	5.8000
Barium, total	ug/L	MW-28	03/24/2020		1030.0000 *	107.4794
Barium, total	ug/L	MW-28	09/02/2020		655.0000 *	107.4794
Barium, total	ug/L	MW-28	03/08/2021		735.0000 *	107.4794
Barium, total	ug/L	MW-28	10/15/2021		679.0000 *	107.4794
Barium, total	ug/L	MW-28	03/28/2022		1080.0000 *	107.4794
Barium, total	ug/L	MW-28	09/13/2022		865.0000 *	107.4794
Barium, total	ug/L	MW-28	03/23/2023		1570.0000 *	107.4794
Barium, total	ug/L	MW-28	09/05/2023		647.0000 *	107.4794
Cobalt, total	ug/L	MW-28	03/24/2020		38.2000 *	5.4000
Cobalt, total	ug/L	MW-28	09/02/2020		41.9000 *	5.4000
Cobalt, total	ug/L	MW-28	03/08/2021		47.3000 *	5.4000
Cobalt, total	ug/L	MW-28	10/15/2021		40.7000 *	5.4000
Cobalt, total	ug/L	MW-28	03/28/2022		79.3000 *	5.4000

* - Significantly increased over background.
 ** - Detect at limit for 100% NDs in background (NPPL only).
 *** - Manual exclusion.
 ND = Not Detected, Result = detection limit.

Table 8

**Historical Downgradient Data for Constituent-Well Combinations
that Failed the Current Statistical Evaluation or
are in Verification Resampling Mode**

Constituent	Units	Well	Date		Result		Pred. Limit
Cobalt, total	ug/L	MW-28	09/13/2022		54.2000	*	5.4000
Cobalt, total	ug/L	MW-28	03/23/2023		82.1000	*	5.4000
Cobalt, total	ug/L	MW-28	09/05/2023		28.6000	*	5.4000
Nickel, total	ug/L	MW-28	03/24/2020		20.2000	*	11.8000
Nickel, total	ug/L	MW-28	09/02/2020		21.5000	*	11.8000
Nickel, total	ug/L	MW-28	03/08/2021		23.7000	*	11.8000
Nickel, total	ug/L	MW-28	10/15/2021		18.8000	*	11.8000
Nickel, total	ug/L	MW-28	03/28/2022		29.0000	*	11.8000
Nickel, total	ug/L	MW-28	09/13/2022		22.0000	*	11.8000
Nickel, total	ug/L	MW-28	03/23/2023		29.8000	*	11.8000
Nickel, total	ug/L	MW-28	09/05/2023		19.1000	*	11.8000

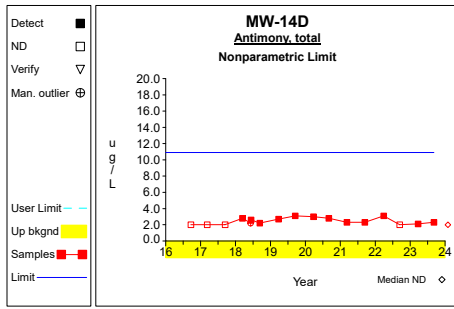
* - Significantly increased over background.

** - Detect at limit for 100% NDs in background (NPPL only).

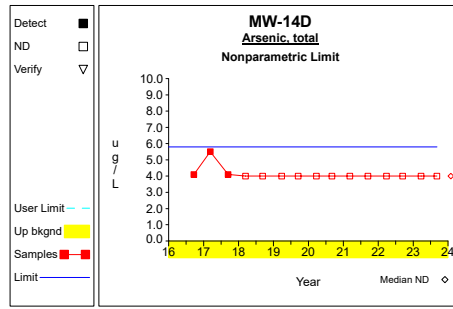
*** - Manual exclusion.

ND = Not Detected, Result = detection limit.

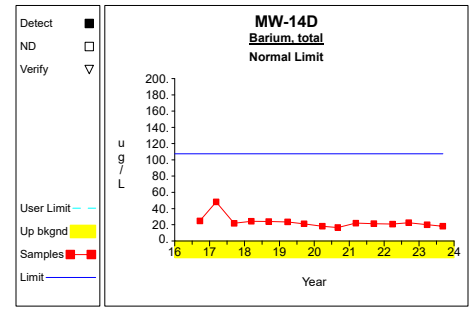
Up vs. Down Prediction Limits



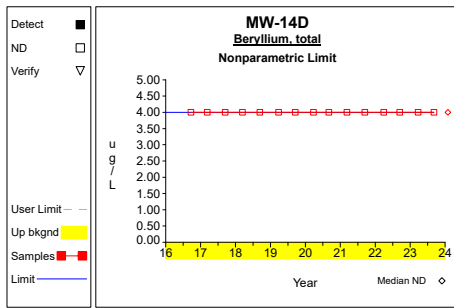
Graph 1



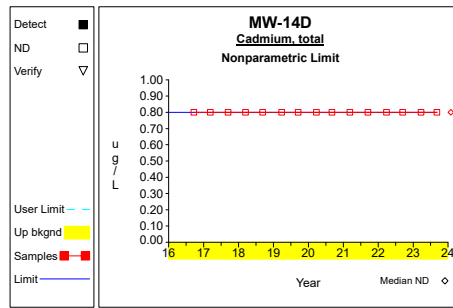
Graph 2



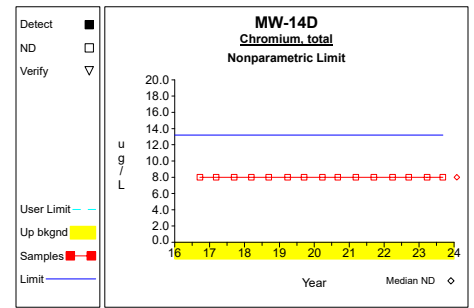
Graph 3



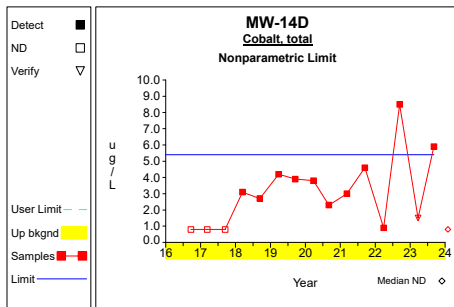
Graph 4



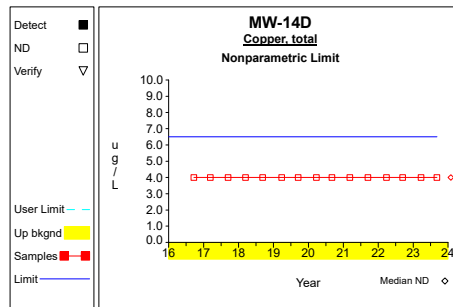
Graph 5



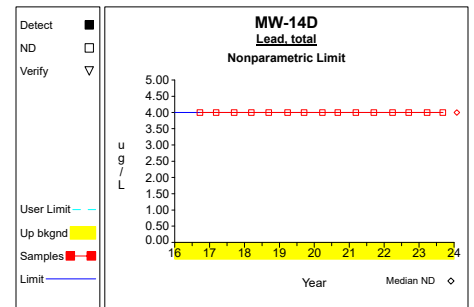
Graph 6



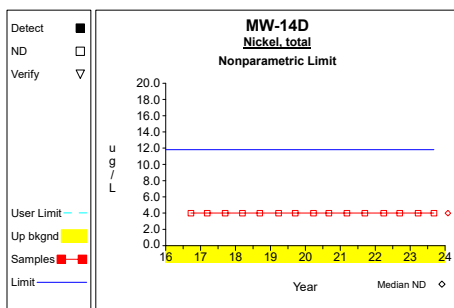
Graph 7



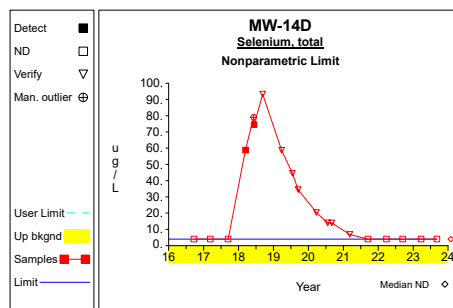
Graph 8



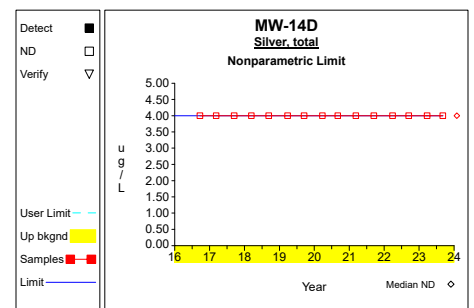
Graph 9



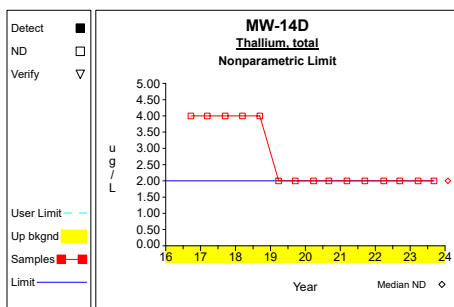
Graph 10



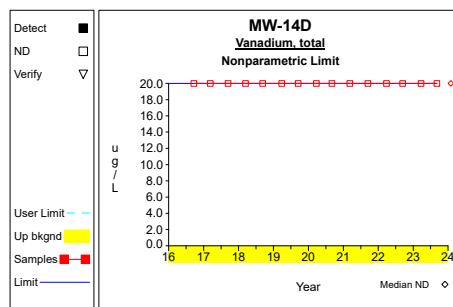
Graph 11



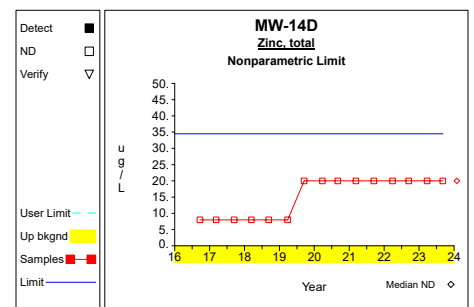
Graph 12



Graph 13

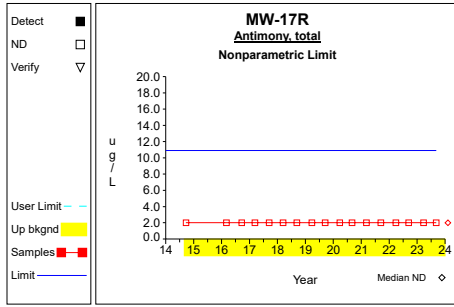


Graph 14

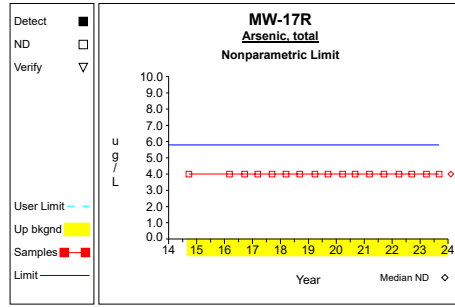


Graph 15

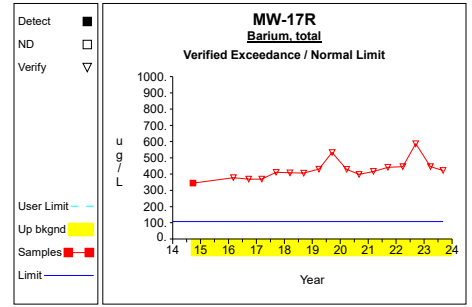
Up vs. Down Prediction Limits



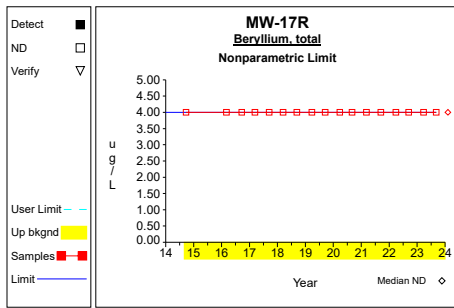
Graph 16



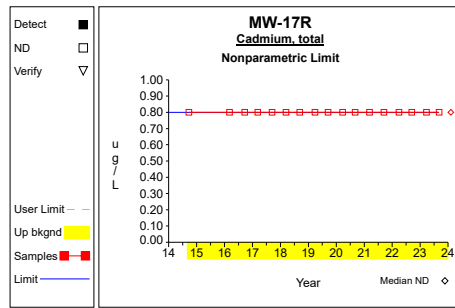
Graph 17



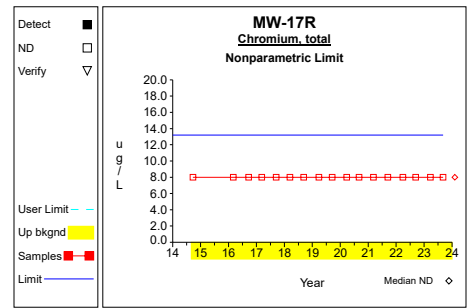
Graph 18



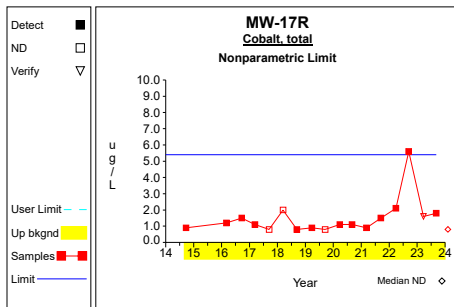
Graph 19



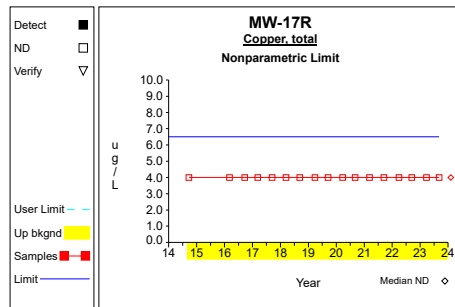
Graph 20



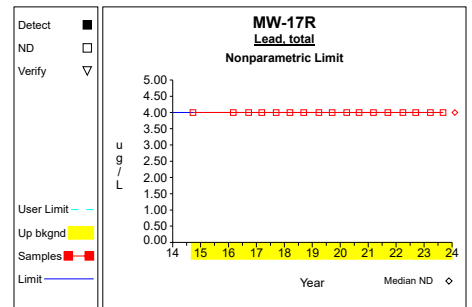
Graph 21



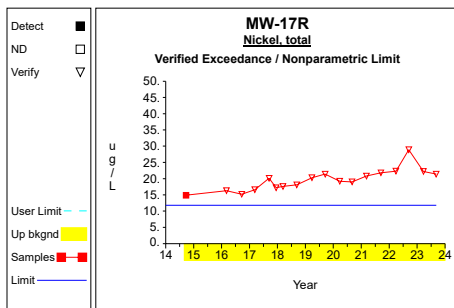
Graph 22



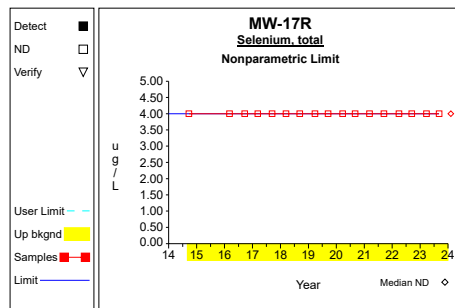
Graph 23



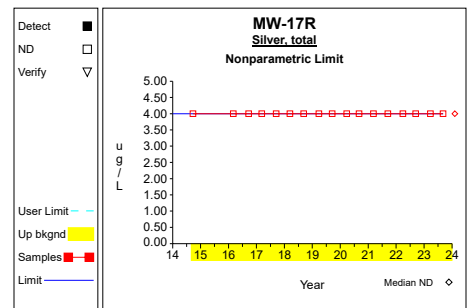
Graph 24



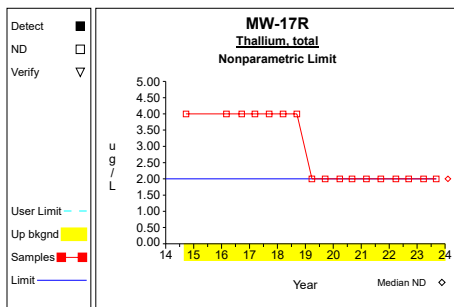
Graph 25



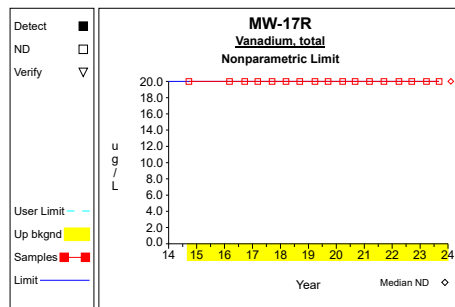
Graph 26



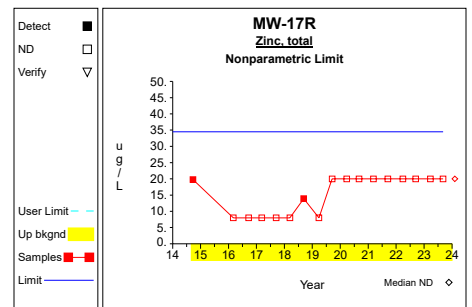
Graph 27



Graph 28

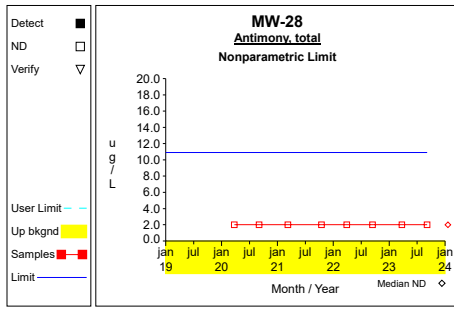


Graph 29

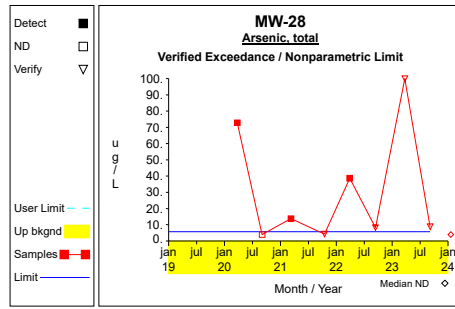


Graph 30

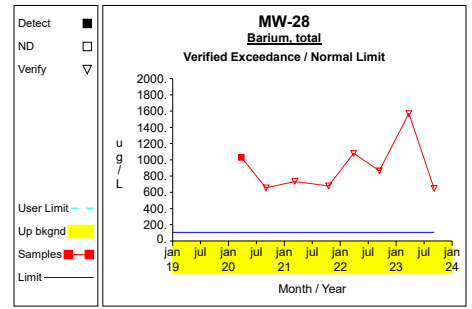
Up vs. Down Prediction Limits



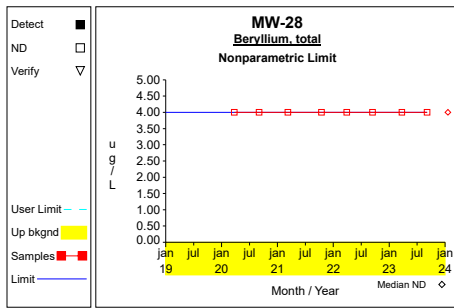
Graph 31



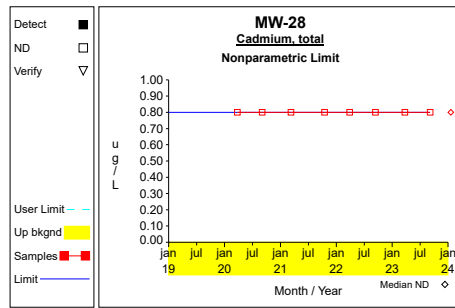
Graph 32



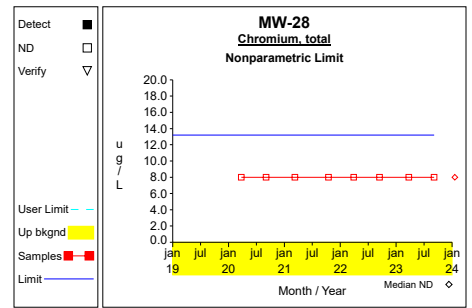
Graph 33



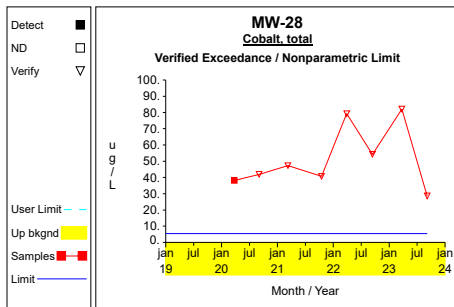
Graph 34



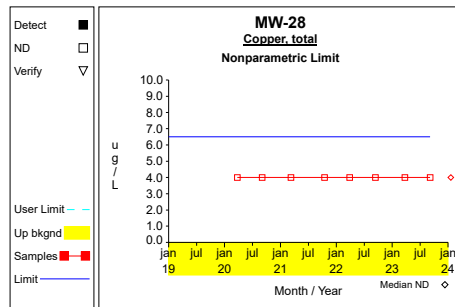
Graph 35



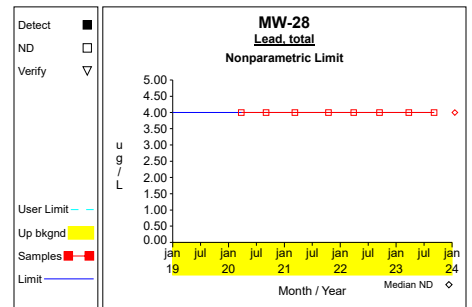
Graph 36



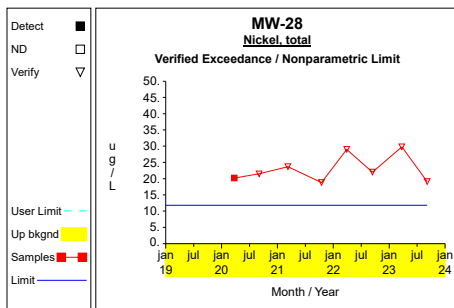
Graph 37



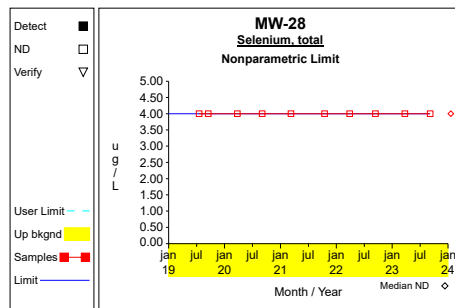
Graph 38



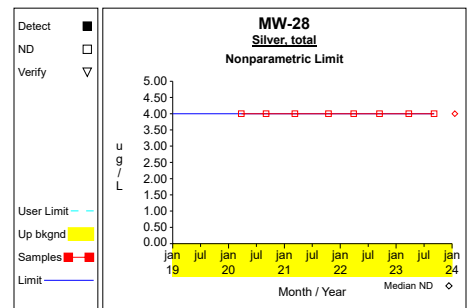
Graph 39



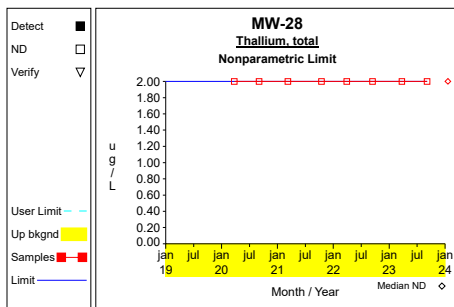
Graph 40



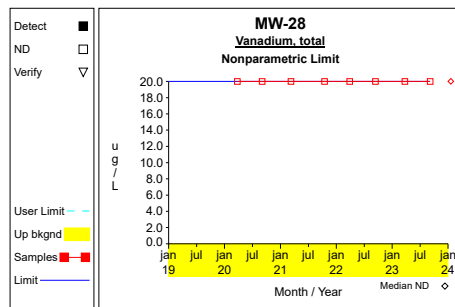
Graph 41



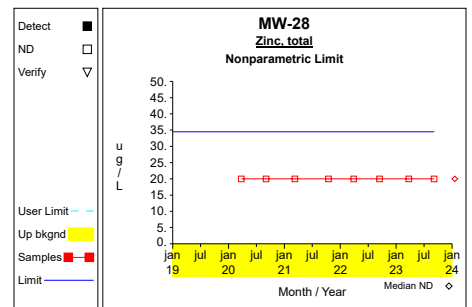
Graph 42



Graph 43

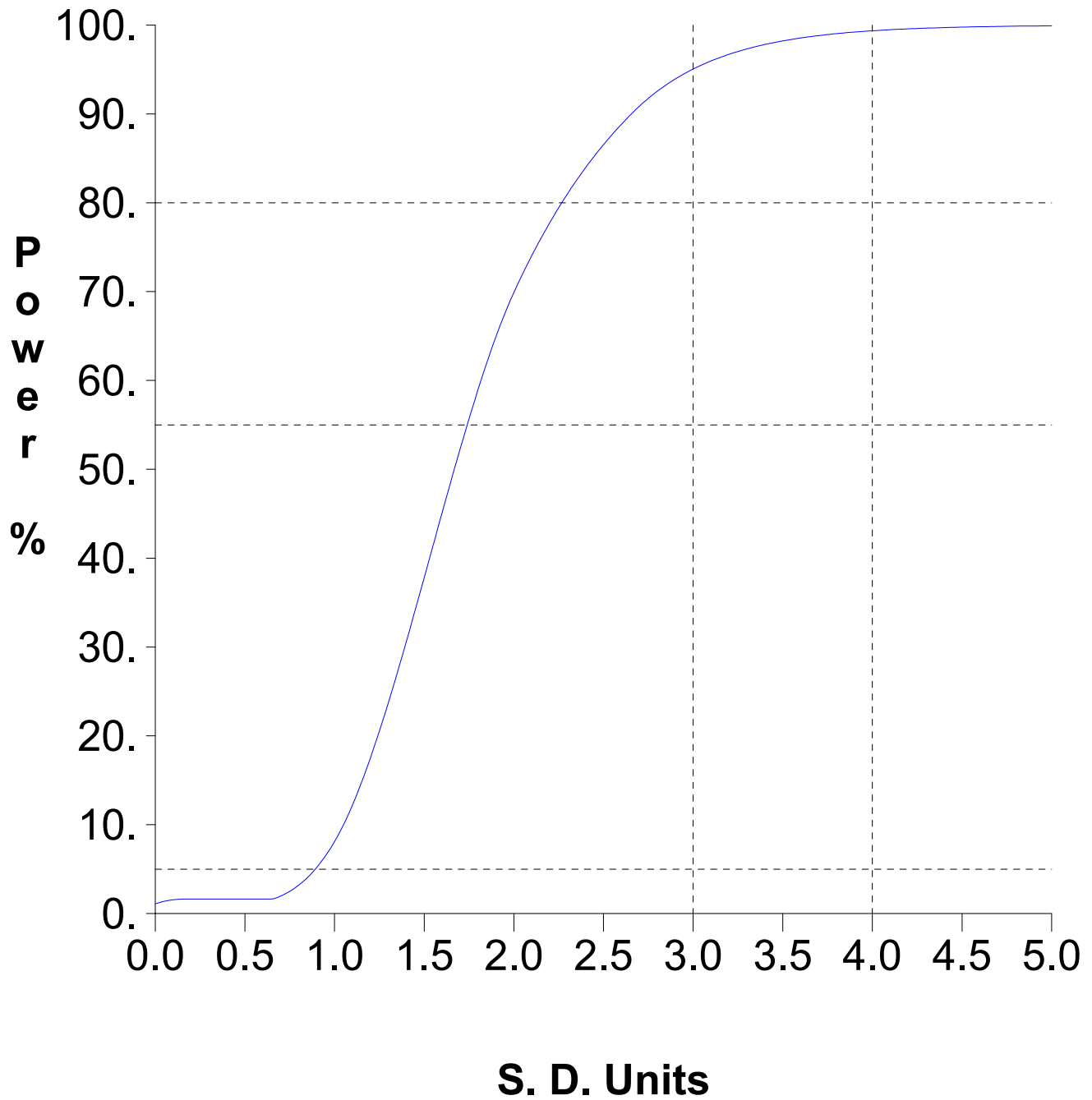


Graph 44



Graph 45

False Positive and False Negative Rates for Current Upgradient vs. Downgradient Monitoring Program



Attachment E

Assessment Statistics for Verified Trace Metals
Deep Ground Water

Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend	
Arsenic, total	ug/L	MW-14D	4	2.000	0.000	1.176	2.000	2.000	10.000		
Barium, total	ug/L	MW-14D	4	20.450	1.746	1.176	18.396	22.504	2000.000	dec	
Cobalt, total	ug/L	MW-14D	4	4.200	3.631	1.176	0.000	8.472	2.100		
Nickel, total	ug/L	MW-14D	4	2.000	0.000	1.176	2.000	2.000	100.000		
Arsenic, total	ug/L	MW-17R	4	2.000	0.000	1.176	2.000	2.000	10.000		
Barium, total	ug/L	MW-17R	4	475.250	75.354	1.176	386.612	563.888	2000.000	inc	
Cobalt, total	ug/L	MW-17R	4	2.775	1.895	1.176	0.547	5.003	2.100		
Nickel, total	ug/L	MW-17R	4	23.700	3.490	1.176	19.595	27.805	100.000	inc	
Arsenic, total	ug/L	MW-28	4	38.925	43.134	1.176	0.000	89.664	10.000		
Barium, total	ug/L	MW-28	4	1040.500	394.788	1.176	576.115	1504.885	2000.000		**
Cobalt, total	ug/L	MW-28	4	61.050	25.007	1.176	31.634	90.466	2.100		
Nickel, total	ug/L	MW-28	4	24.975	5.255	1.176	18.794	31.156	100.000		

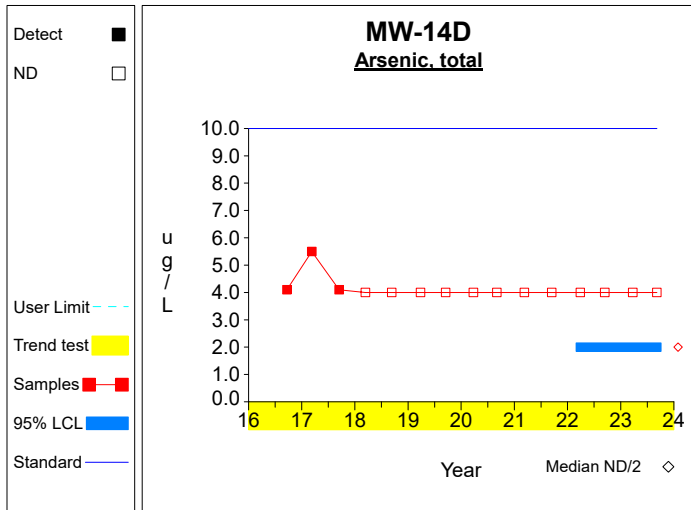
* - Insufficient Data

** - Significant Exceedance

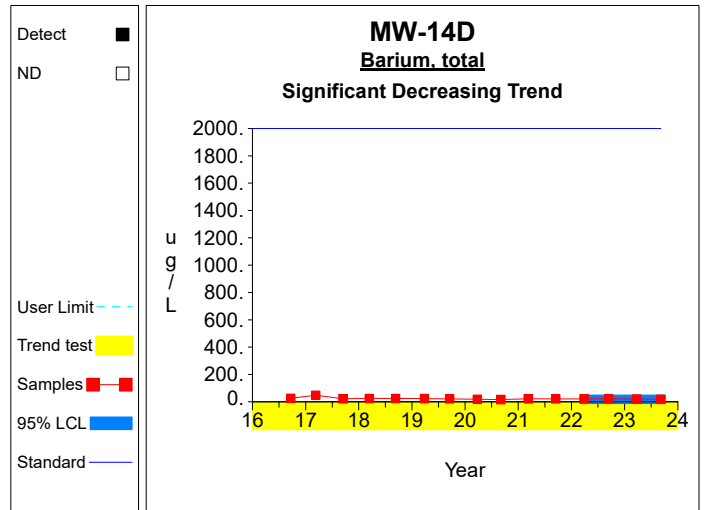
LCL = Lower Confidence Limit

UCL = Upper Confidence Limit

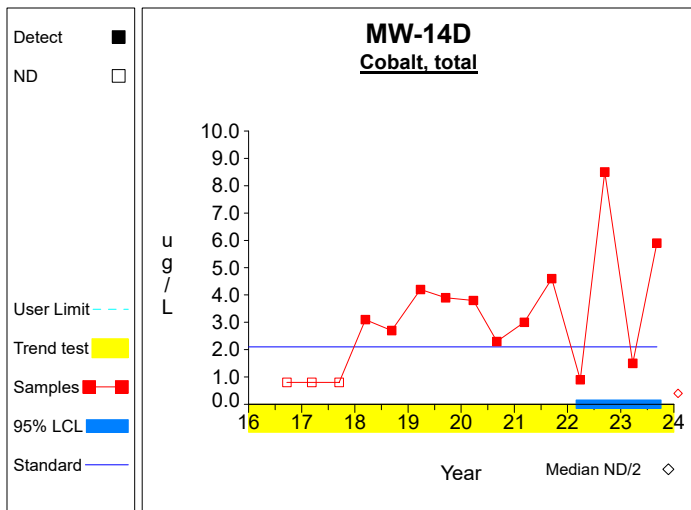
Confidence Limits (Assessment)



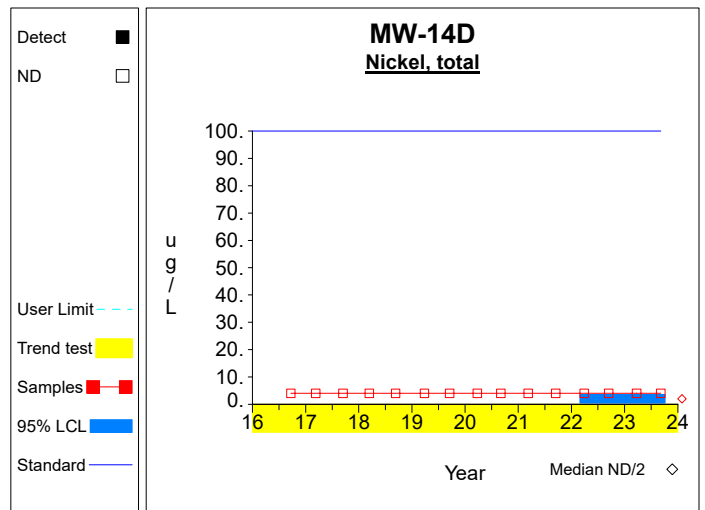
Graph 1



Graph 2

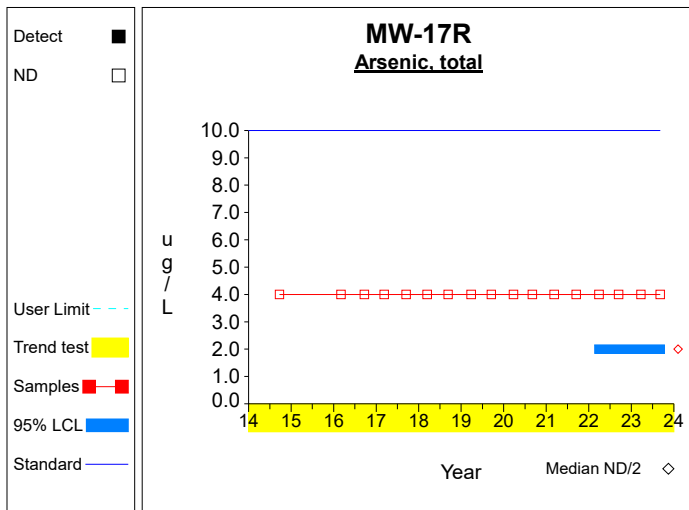


Graph 3

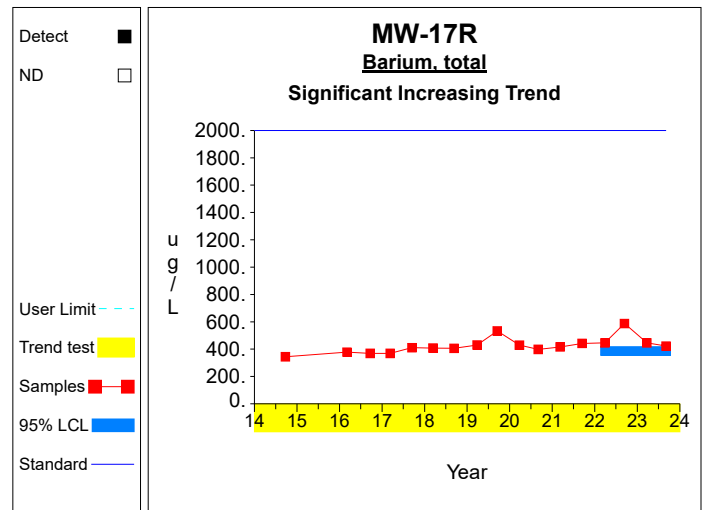


Graph 4

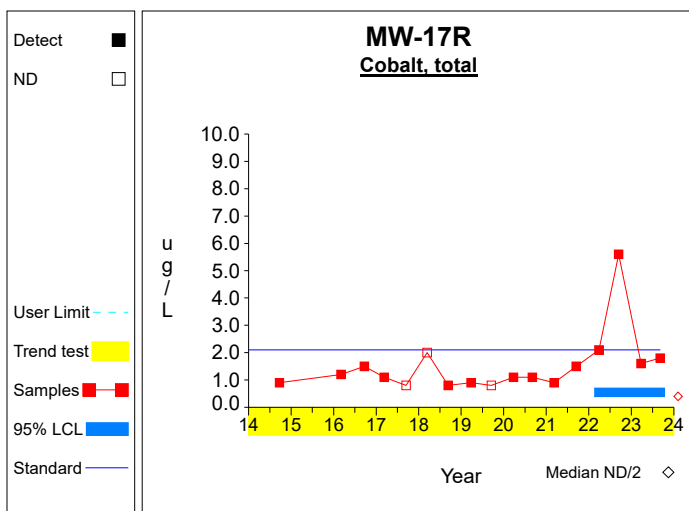
Confidence Limits (Assessment)



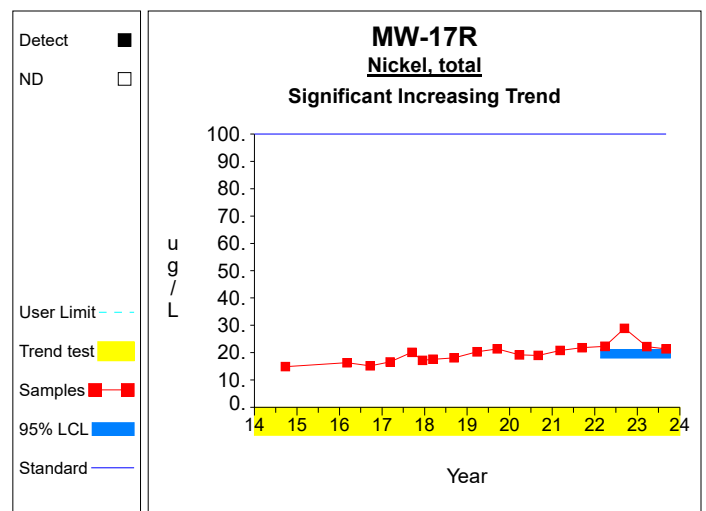
Graph 5



Graph 6

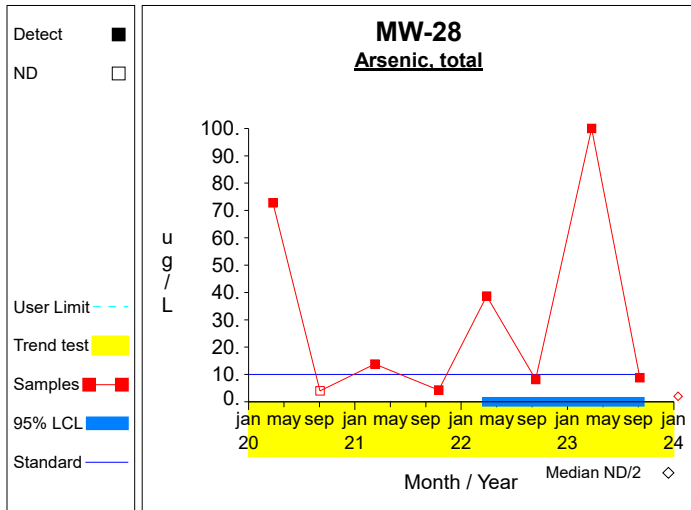


Graph 7

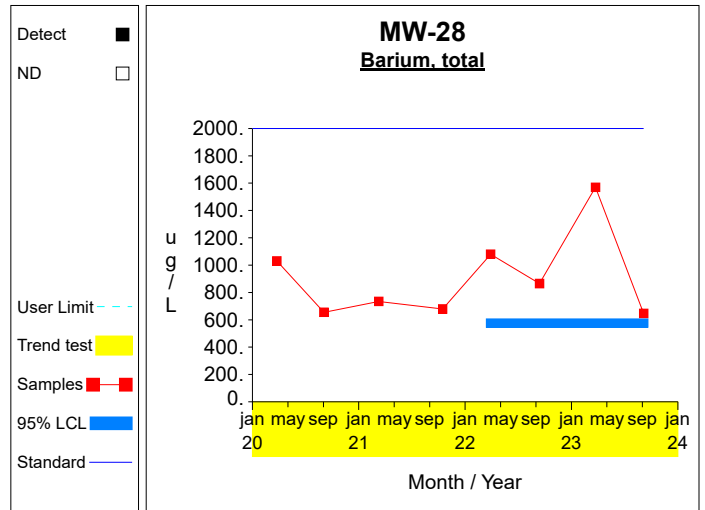


Graph 8

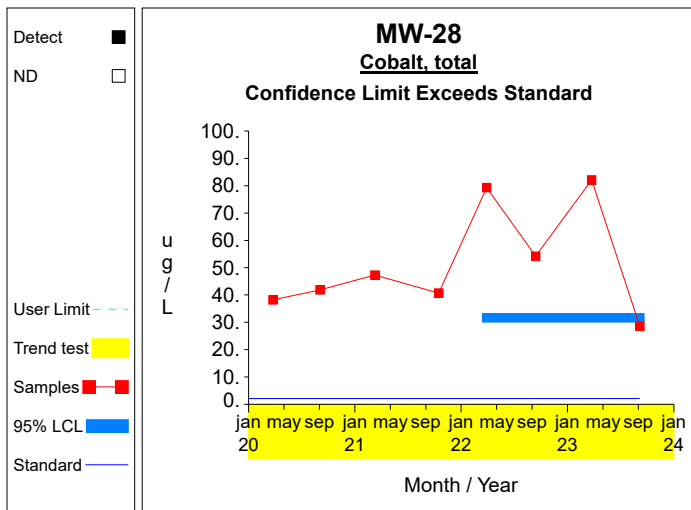
Confidence Limits (Assessment)



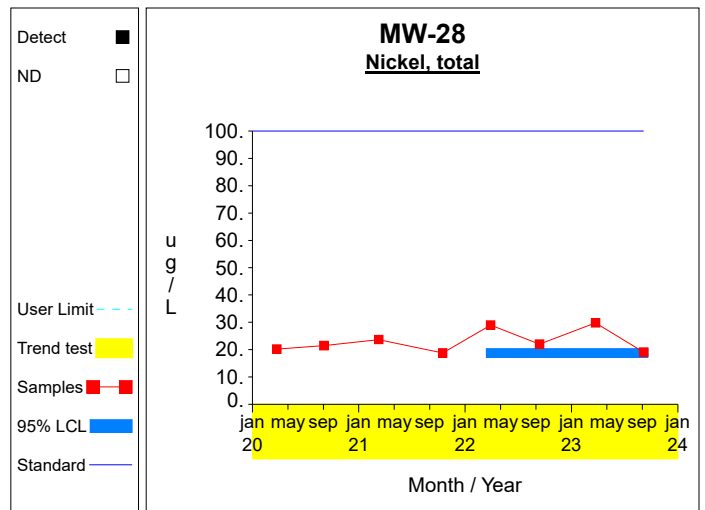
Graph 9



Graph 10



Graph 11

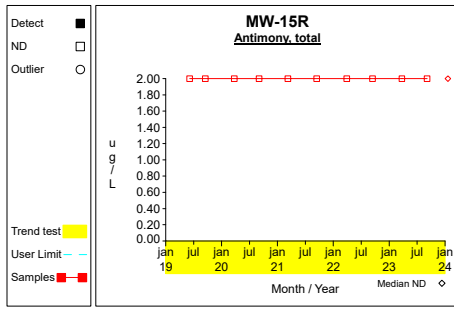


Graph 12

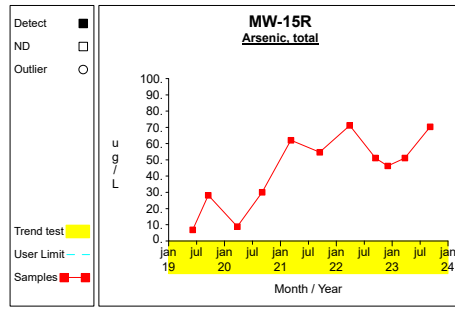
Attachment F

Time Series of Trace Metals at Downgradient Attenuation Zone Wells

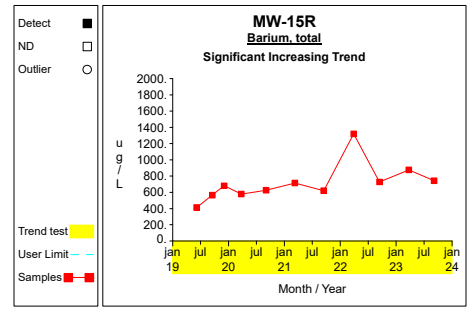
Time Series



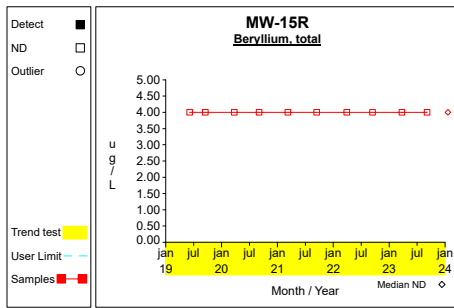
Graph 1



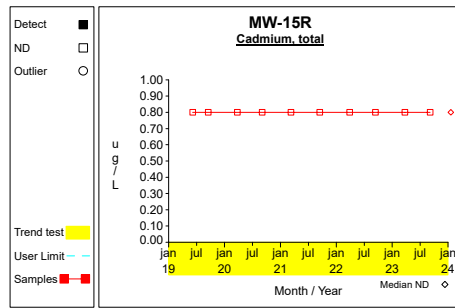
Graph 2



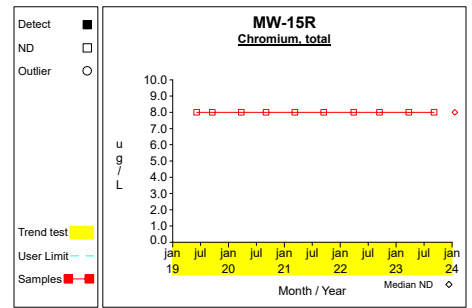
Graph 3



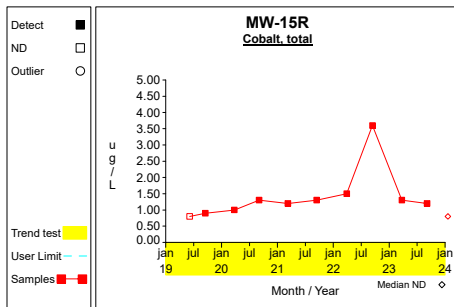
Graph 4



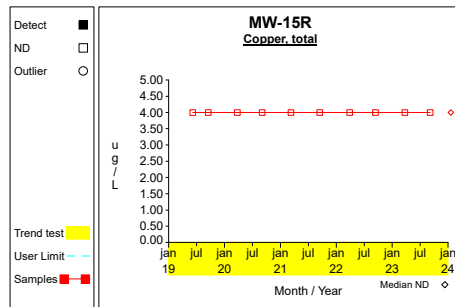
Graph 5



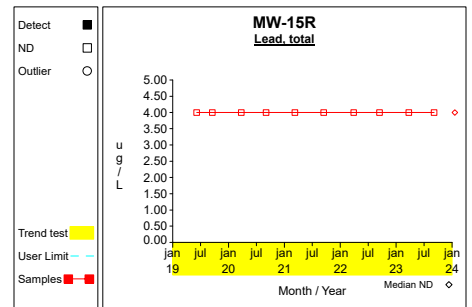
Graph 6



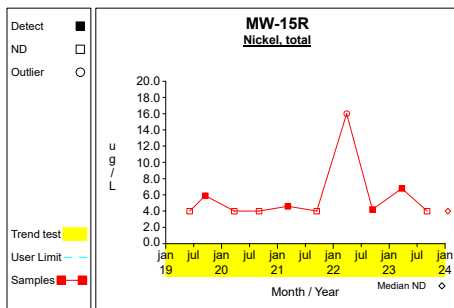
Graph 7



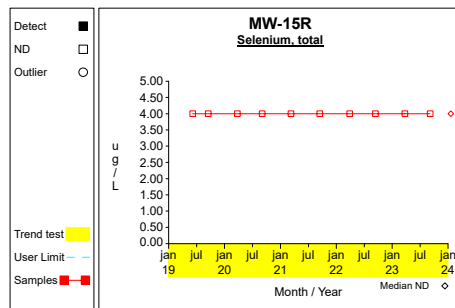
Graph 8



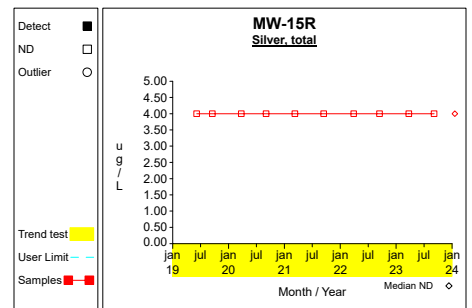
Graph 9



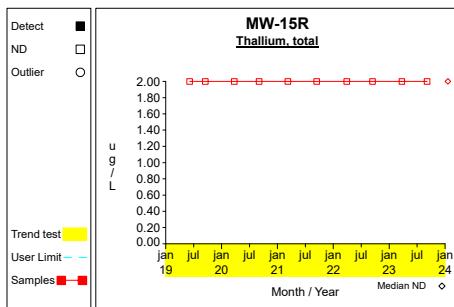
Graph 10



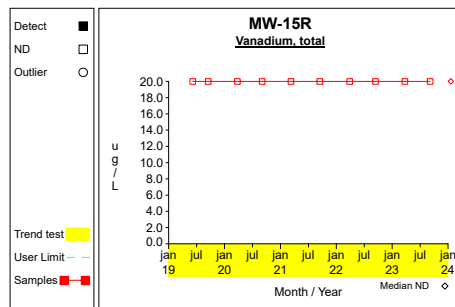
Graph 11



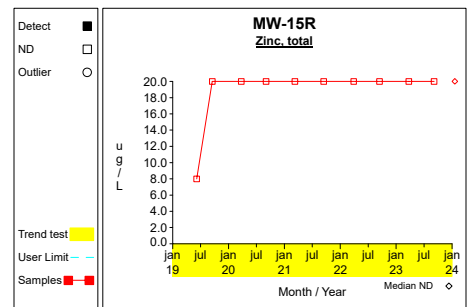
Graph 12



Graph 13

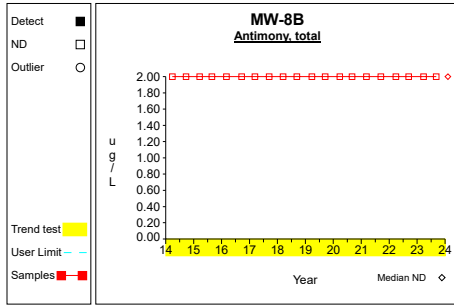


Graph 14

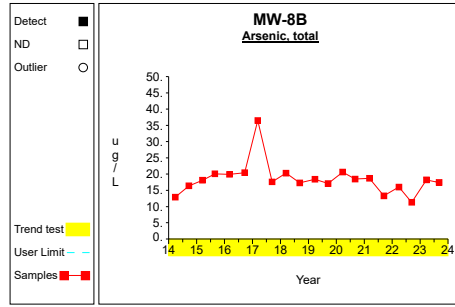


Graph 15

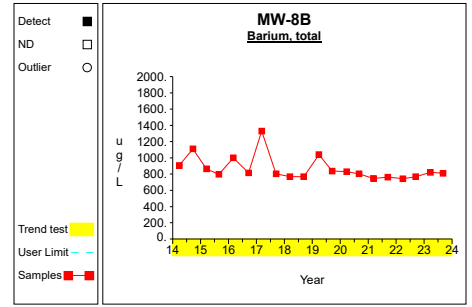
Time Series



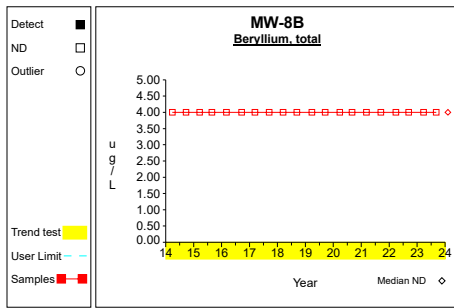
Graph 16



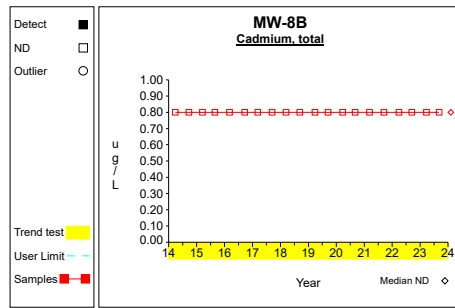
Graph 17



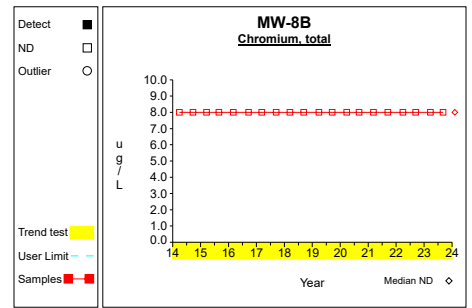
Graph 18



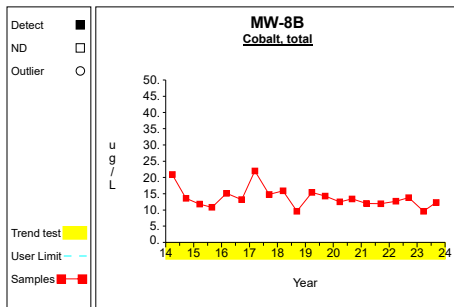
Graph 19



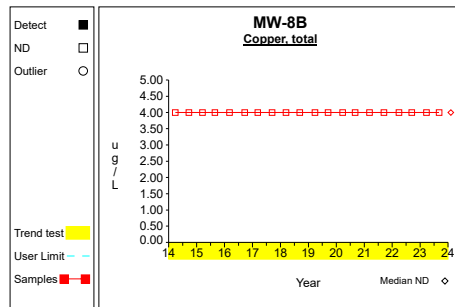
Graph 20



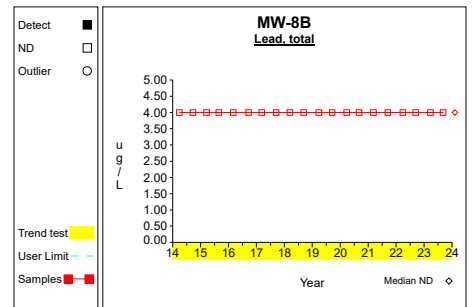
Graph 21



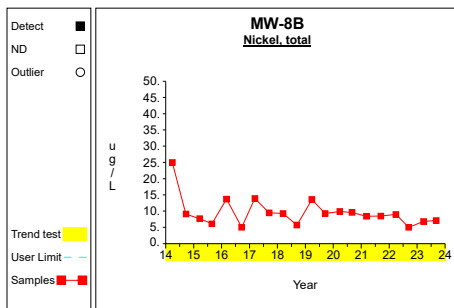
Graph 22



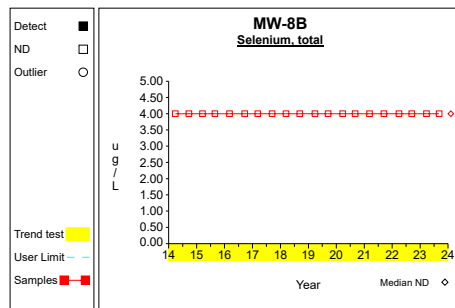
Graph 23



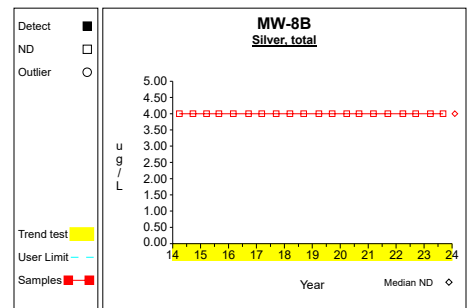
Graph 24



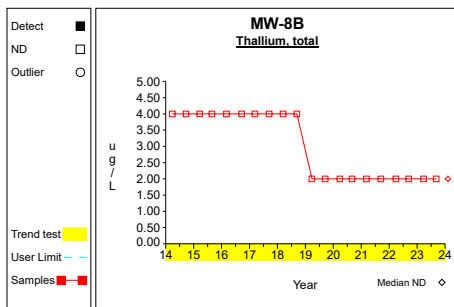
Graph 25



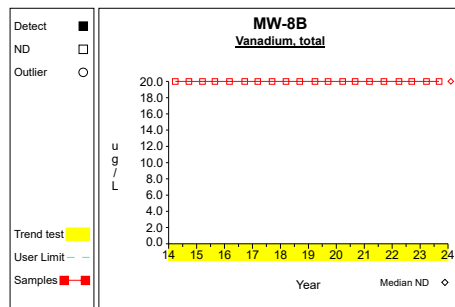
Graph 26



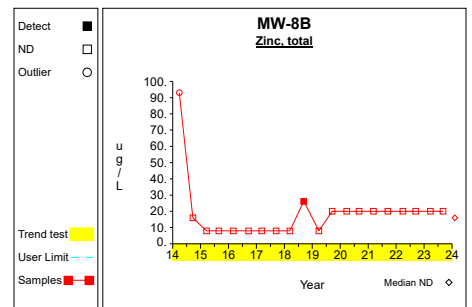
Graph 27



Graph 28

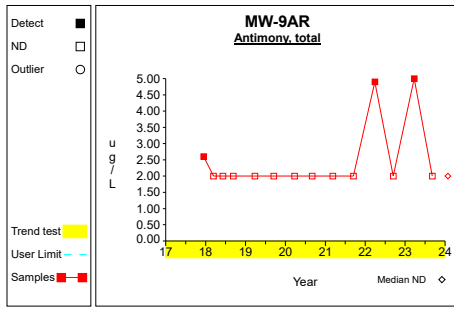


Graph 29

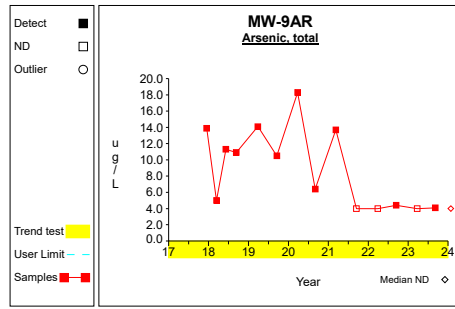


Graph 30

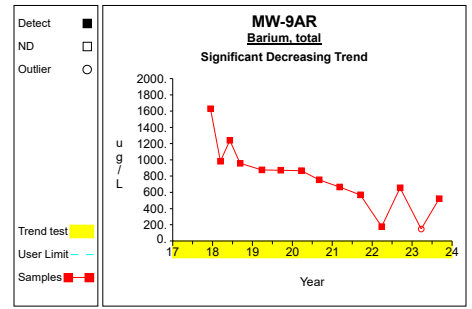
Time Series



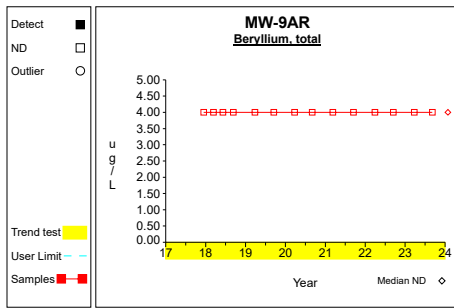
Graph 31



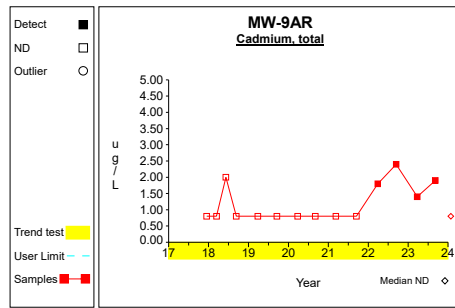
Graph 32



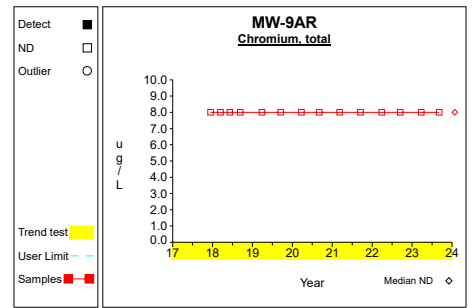
Graph 33



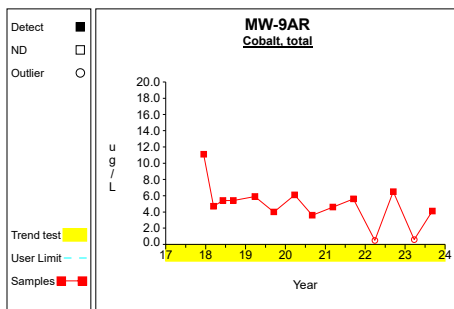
Graph 34



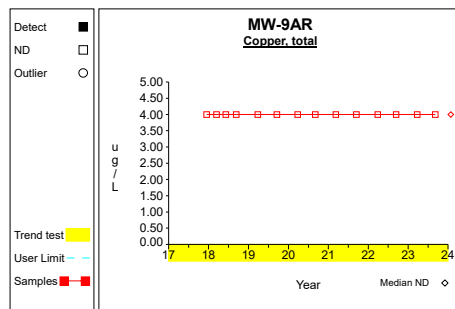
Graph 35



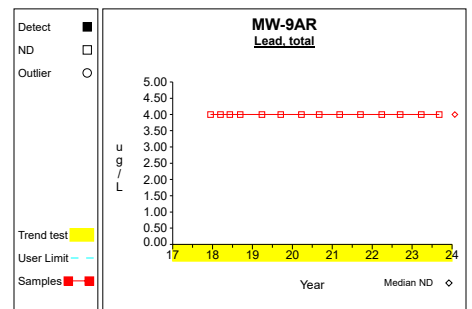
Graph 36



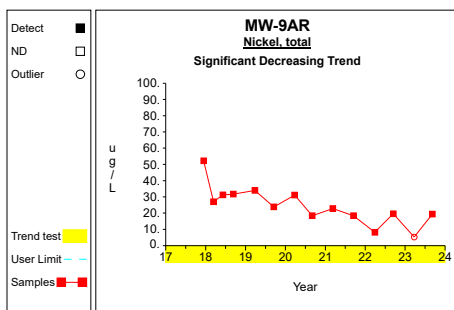
Graph 37



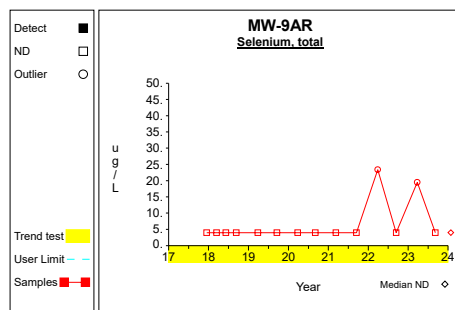
Graph 38



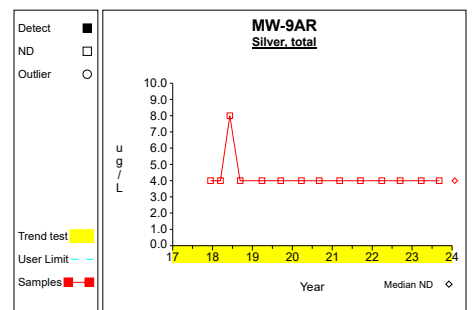
Graph 39



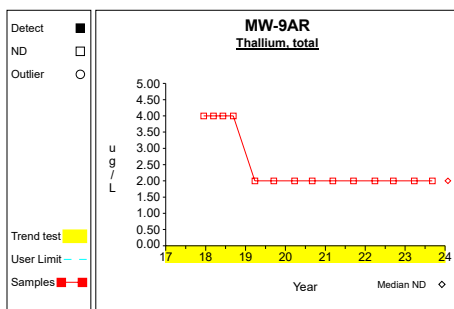
Graph 40



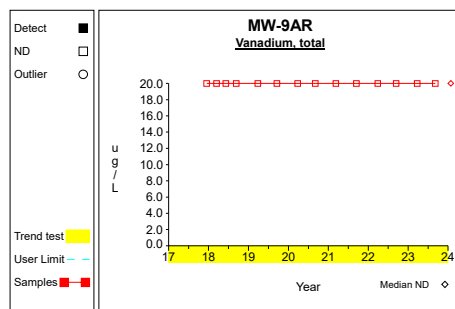
Graph 41



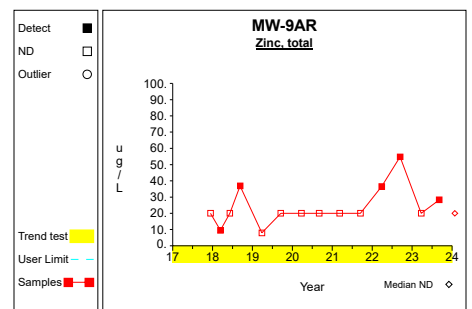
Graph 42



Graph 43



Graph 44



Graph 45

Attachment G

Summary of Historical VOC Detections

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
1,4-dichlorobenzene	L-26	9/02/2020		14.0	1.0	ug/L
1,4-dichlorobenzene	L-26	3/08/2021		8.2	1.0	ug/L
2-butanone (mek)	L-26	9/02/2020		9.4	5.0	ug/L
Acetone	L-26	3/08/2021		13.1	10.0	ug/L
Benzene	L-26	9/02/2020		4.1	1.0	ug/L
Benzene	L-26	3/08/2021		3.3	1.0	ug/L
Chlorobenzene	L-26	9/02/2020		23.9	1.0	ug/L
Chlorobenzene	L-26	3/08/2021		13.3	1.0	ug/L
Ethylbenzene	L-26	9/02/2020		1	1	ug/L
Xylenes, total	L-26	9/02/2020		3.7	2.0	ug/L
Xylenes, total	L-26	3/08/2021		2.6	2.0	ug/L
1,4-dichlorobenzene	LW26	3/28/2022		7.1	1.0	ug/L
1,4-dichlorobenzene	LW26	3/23/2023		5.6	1.0	ug/L
Benzene	LW26	3/28/2022		2.3	1.0	ug/L
Benzene	LW26	3/23/2023		2.4	1.0	ug/L
Chlorobenzene	LW26	3/28/2022		11.5	1.0	ug/L
Chlorobenzene	LW26	3/23/2023		9.2	1.0	ug/L
Toluene	LW26	3/23/2023		1.5	1.0	ug/L
Xylenes, total	LW26	3/23/2023		2.8	2.0	ug/L
Acetone	MW-11C	9/14/2017		14.2	10.0	ug/L
Chloroform	MW-14D	9/24/2014		1.6	1.0	ug/L
Chloroform	MW-14D	12/02/2014		1.5	1.0	ug/L
Chloroform	MW-14D	9/05/2023		1.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-14D	9/24/2014		1.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-14D	12/02/2014		8.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-14D	3/03/2016		1.4	1.0	ug/L
(3 + 4)-methylphenol	MW-15	3/09/2017		31	8	ug/L
Acetone	MW-15	9/23/2014		11.3	10.0	ug/L
Acetone	MW-15	3/09/2017		10.5	10.0	ug/L
Acetone	MW-15	9/14/2017		18.2	10.0	ug/L
Benzene	MW-15	3/09/2017		1.7	1.0	ug/L
Benzene	MW-15	9/14/2017		1.3	1.0	ug/L
Bis(2-ethylhexyl) phthalate	MW-15	3/09/2017		12	8	ug/L
Toluene	MW-15	3/09/2017		1	1	ug/L
Xylenes, total	MW-15	9/14/2017		3.3	2.0	ug/L
Acetone	MW-17R	9/14/2017		13.3	10.0	ug/L
Bis(2-ethylhexyl) phthalate	MW-17R	3/28/2022		13	6	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/23/2014		1.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/18/2015		6.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	8/27/2015		3.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/03/2016		3.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/21/2016		2.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/09/2017		6.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/14/2017		2.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/12/2018		3.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/10/2018		2.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/26/2019		3.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/16/2019		4.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/24/2020		4.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/02/2020		3.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/08/2021		3.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/14/2021		4.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/28/2022		4.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/13/2022		3.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	3/23/2023		2.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-17R	9/05/2023		3.7	1.0	ug/L
Trans-1,2-dichloroethylene	MW-17R	3/12/2018		3.3	1.0	ug/L
Acetone	MW-21	9/14/2017		12	10	ug/L
Acetone	MW-23B	9/14/2017		13	10	ug/L
Cis-1,2-dichloroethylene	MW-28	9/24/2014		4.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	12/02/2014		3.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/19/2015		3.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	8/27/2015		2.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	12/10/2015		3.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	2/11/2016		5.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/04/2016		14.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	5/10/2016		7.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	9/20/2016		5.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/09/2017		15.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	9/14/2017		15.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/12/2018		21.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	9/10/2018		12.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/26/2019		17.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	9/16/2019		13.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/24/2020		15.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	9/02/2020		17.1	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Cis-1,2-dichloroethylene	MW-28	3/08/2021		10.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	10/15/2021		21.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/28/2022		15.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	9/13/2022		14.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	3/23/2023		10.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-28	9/05/2023		12.2	1.0	ug/L
Trans-1,2-dichloroethylene	MW-28	3/12/2018		20.2	1.0	ug/L
Trans-1,2-dichloroethylene	MW-28	9/02/2020		1.1	1.0	ug/L
Vinyl chloride	MW-28	3/04/2016		1.4	1.0	ug/L
Vinyl chloride	MW-28	3/09/2017		1.8	1.0	ug/L
Vinyl chloride	MW-28	9/14/2017		1.1	1.0	ug/L
Vinyl chloride	MW-28	3/12/2018		2.0	1.0	ug/L
Vinyl chloride	MW-28	3/26/2019		1.4	1.0	ug/L
Vinyl chloride	MW-28	9/02/2020		1.5	1.0	ug/L
Vinyl chloride	MW-28	10/15/2021		1.6	1.0	ug/L
Vinyl chloride	MW-28	3/28/2022		1.5	1.0	ug/L
Vinyl chloride	MW-28	3/23/2023		1.2	1.0	ug/L
1,4-dichlorobenzene	MW-31	9/24/2014		4.8	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/19/2015		5.4	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/03/2016		5.5	1.0	ug/L
1,4-dichlorobenzene	MW-31	9/20/2016		5.2	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/09/2017		6.2	1.0	ug/L
1,4-dichlorobenzene	MW-31	9/14/2017		6.1	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/12/2018		6.3	1.0	ug/L
1,4-dichlorobenzene	MW-31	9/10/2018		3.8	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/26/2019		6.0	1.0	ug/L
1,4-dichlorobenzene	MW-31	9/16/2019		5.0	1.0	ug/L
1,4-dichlorobenzene	MW-31	9/02/2020		4.8	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/08/2021		4.6	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/28/2022		4.8	1.0	ug/L
1,4-dichlorobenzene	MW-31	3/23/2023		3.5	1.0	ug/L
Acetone	MW-31	9/14/2017		15	10	ug/L
Benzene	MW-31	9/24/2014		3.9	1.0	ug/L
Benzene	MW-31	3/19/2015		5.2	1.0	ug/L
Benzene	MW-31	3/03/2016		4.0	1.0	ug/L
Benzene	MW-31	9/20/2016		3.3	1.0	ug/L
Benzene	MW-31	3/09/2017		5.0	1.0	ug/L
Benzene	MW-31	9/14/2017		4.0	1.0	ug/L
Benzene	MW-31	3/12/2018		5.0	1.0	ug/L
Benzene	MW-31	9/10/2018		2.1	1.0	ug/L
Benzene	MW-31	3/26/2019		1.5	1.0	ug/L
Benzene	MW-31	9/16/2019		1.5	1.0	ug/L
Benzene	MW-31	9/02/2020		1.3	1.0	ug/L
Benzene	MW-31	3/08/2021		1.2	1.0	ug/L
Benzene	MW-31	3/28/2022		1.4	1.0	ug/L
Benzene	MW-31	3/23/2023		1.4	1.0	ug/L
Chlorobenzene	MW-31	9/24/2014		7.1	1.0	ug/L
Chlorobenzene	MW-31	3/19/2015		7.9	1.0	ug/L
Chlorobenzene	MW-31	3/03/2016		7.6	1.0	ug/L
Chlorobenzene	MW-31	9/20/2016		7.0	1.0	ug/L
Chlorobenzene	MW-31	3/09/2017		8.4	1.0	ug/L
Chlorobenzene	MW-31	9/14/2017		8.6	1.0	ug/L
Chlorobenzene	MW-31	3/12/2018		8.6	1.0	ug/L
Chlorobenzene	MW-31	9/10/2018		6.2	1.0	ug/L
Chlorobenzene	MW-31	3/26/2019		5.9	1.0	ug/L
Chlorobenzene	MW-31	9/16/2019		4.5	1.0	ug/L
Chlorobenzene	MW-31	9/02/2020		2.7	1.0	ug/L
Chlorobenzene	MW-31	3/08/2021		3.0	1.0	ug/L
Chlorobenzene	MW-31	3/28/2022		2.9	1.0	ug/L
Chlorobenzene	MW-31	3/23/2023		1.9	1.0	ug/L
Chloroethane	MW-31	9/14/2017		1.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-31	3/12/2018		2.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-31	3/26/2019		4.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-31	9/16/2019		2.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-31	3/08/2021		1.7	1.0	ug/L
Vinyl chloride	MW-31	9/14/2017		1.6	1.0	ug/L
Vinyl chloride	MW-31	3/12/2018		2.2	1.0	ug/L
Vinyl chloride	MW-31	3/26/2019		2.1	1.0	ug/L
Vinyl chloride	MW-31	9/16/2019		1.0	1.0	ug/L
Vinyl chloride	MW-31	3/08/2021		1.9	1.0	ug/L
Xylenes, total	MW-31	3/09/2017		3	2	ug/L
Xylenes, total	MW-31	3/26/2019		2	2	ug/L
Chlorobenzene	MW-32	3/03/2016		1.8	1.0	ug/L
Chlorobenzene	MW-32	9/20/2016		1.6	1.0	ug/L
Chlorobenzene	MW-32	3/09/2017		2.7	1.0	ug/L
Chlorobenzene	MW-32	9/14/2017		2.7	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Chlorobenzene	MW-32	3/12/2018		3.9	1.0	ug/L
Chlorobenzene	MW-32	9/10/2018		1.7	1.0	ug/L
Chlorobenzene	MW-32	3/26/2019		1.1	1.0	ug/L
Chlorobenzene	MW-32	9/16/2019		3.0	1.0	ug/L
Chlorobenzene	MW-32	3/24/2020		2.8	1.0	ug/L
Chlorobenzene	MW-32	9/02/2020		2.0	1.0	ug/L
Chlorobenzene	MW-32	3/08/2021		1.2	1.0	ug/L
Chlorobenzene	MW-32	3/28/2022		2.5	1.0	ug/L
Chloromethane	MW-32	9/14/2017		1.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	9/24/2014		2.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	3/19/2015		2.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	3/03/2016		2.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	9/20/2016		1.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	3/09/2017		2.4	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	9/14/2017		1.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	3/26/2019		1.6	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	9/16/2019		2.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	3/24/2020		1.5	1.0	ug/L
Cis-1,2-dichloroethylene	MW-32	3/28/2022		1.0	1.0	ug/L
Vinyl chloride	MW-32	9/24/2014		2.1	1.0	ug/L
Vinyl chloride	MW-32	3/19/2015		2.2	1.0	ug/L
Vinyl chloride	MW-32	3/03/2016		1.8	1.0	ug/L
Vinyl chloride	MW-32	3/09/2017		1.2	1.0	ug/L
Acetone	MW-44	7/12/2023		11.1	10.0	ug/L
Toluene	MW-44	9/05/2023		2.2	1.0	ug/L
Trichloroethylene	MW-4A	10/28/1994		5.10	.17	ug/L
Bis(2-ethylhexyl) phthalate	MW-6A	3/26/2019		55	6	ug/L
Bis(2-ethylhexyl) phthalate	MW-6A	3/24/2020		7	6	ug/L
2-butanone (mek)	MW-7B	3/28/2014		391	5	ug/L
2-butanone (mek)	MW-7B	9/23/2014		698	25	ug/L
Acetone	MW-7B	3/28/2014		648	10	ug/L
Acetone	MW-7B	9/23/2014		2060	50	ug/L
Acetone	MW-7B	9/14/2017		15	10	ug/L
Acetone	MW-8B	9/20/2013		11.7	10.0	ug/L
Acetone	MW-8B	3/23/2023		12.2	10.0	ug/L
Cis-1,2-dichloroethylene	MW-8B	4/22/2009		1.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8B	1/27/2010		1.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8B	3/19/2010		1.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8B	9/14/2010		1.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-8B	3/28/2014		1.1	1.0	ug/L
Trichloroethylene	MW-8B	7/21/1992		2.10	.17	ug/L
Trichloroethylene	MW-8B	10/21/1992		2.10	.17	ug/L
1,1-dichloroethane	MW-9AR	12/13/2017		2.1	1.0	ug/L
1,1-dichloroethane	MW-9AR	3/12/2018		2.1	1.0	ug/L
1,1-dichloroethane	MW-9AR	6/06/2018		1.6	1.0	ug/L
1,1-dichloroethane	MW-9AR	9/10/2018		1.9	1.0	ug/L
1,1-dichloroethane	MW-9AR	3/26/2019		1.7	1.0	ug/L
1,1-dichloroethane	MW-9AR	9/16/2019		1.5	1.0	ug/L
1,1-dichloroethane	MW-9AR	3/24/2020		1.5	1.0	ug/L
1,1-dichloroethane	MW-9AR	9/02/2020		1.4	1.0	ug/L
1,1-dichloroethane	MW-9AR	3/08/2021		1.4	1.0	ug/L
1,1-dichloroethane	MW-9AR	9/14/2021		1.4	1.0	ug/L
1,1-dichloroethane	MW-9AR	3/28/2022		1.3	1.0	ug/L
1,1-dichloroethane	MW-9AR	9/13/2022		1.2	1.0	ug/L
1,1-dichloroethane	MW-9AR	9/05/2023		1.5	1.0	ug/L
1,2-dichloropropane	MW-9AR	3/12/2018		1.1	1.0	ug/L
1,2-dichloropropane	MW-9AR	9/14/2021		1.0	1.0	ug/L
1,2-dichloropropane	MW-9AR	3/28/2022		1.4	1.0	ug/L
1,2-dichloropropane	MW-9AR	3/23/2023		1.3	1.0	ug/L
1,4-dichlorobenzene	MW-9AR	6/06/2018		1.4	1.0	ug/L
1,4-dichlorobenzene	MW-9AR	9/10/2018		1.4	1.0	ug/L
1,4-dichlorobenzene	MW-9AR	3/26/2019		1.2	1.0	ug/L
Benzene	MW-9AR	12/13/2017		2.4	1.0	ug/L
Benzene	MW-9AR	3/12/2018		2.6	1.0	ug/L
Benzene	MW-9AR	6/06/2018		2.8	1.0	ug/L
Benzene	MW-9AR	9/10/2018		3.2	1.0	ug/L
Benzene	MW-9AR	3/26/2019		2.0	1.0	ug/L
Benzene	MW-9AR	9/16/2019		1.6	1.0	ug/L
Benzene	MW-9AR	3/24/2020		1.5	1.0	ug/L
Benzene	MW-9AR	9/02/2020		2.0	1.0	ug/L
Benzene	MW-9AR	3/08/2021		1.4	1.0	ug/L
Benzene	MW-9AR	9/14/2021		1.2	1.0	ug/L
Benzene	MW-9AR	9/13/2022		2.1	1.0	ug/L
Benzene	MW-9AR	9/05/2023		2.0	1.0	ug/L
Carbon disulfide	MW-9AR	3/24/2020		1.2	1.0	ug/L
Chlorobenzene	MW-9AR	12/13/2017		1.7	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Chlorobenzene	MW-9AR	3/12/2018		1.5	1.0	ug/L
Chlorobenzene	MW-9AR	6/06/2018		4.4	1.0	ug/L
Chlorobenzene	MW-9AR	9/10/2018		4.7	1.0	ug/L
Chlorobenzene	MW-9AR	3/26/2019		4.3	1.0	ug/L
Chlorobenzene	MW-9AR	9/16/2019		5.5	1.0	ug/L
Chlorobenzene	MW-9AR	3/24/2020		3.8	1.0	ug/L
Chlorobenzene	MW-9AR	9/02/2020		5.9	1.0	ug/L
Chlorobenzene	MW-9AR	3/08/2021		3.6	1.0	ug/L
Chlorobenzene	MW-9AR	9/14/2021		3.4	1.0	ug/L
Chlorobenzene	MW-9AR	9/13/2022		3.0	1.0	ug/L
Chlorobenzene	MW-9AR	9/05/2023		5.8	1.0	ug/L
Chloroethane	MW-9AR	9/10/2018		2.6	1.0	ug/L
Chloroethane	MW-9AR	3/26/2019		1.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	12/13/2017		120.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	3/12/2018		94.3	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	6/06/2018		58.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	9/10/2018		69.2	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	3/26/2019		58.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	9/16/2019		82.7	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	3/24/2020		70.1	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	9/02/2020		83.9	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	3/08/2021		99.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	9/14/2021		102.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	3/28/2022		148.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	9/13/2022		88.8	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	3/23/2023		70.0	1.0	ug/L
Cis-1,2-dichloroethylene	MW-9AR	9/05/2023		70.8	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	12/13/2017		6.8	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	3/12/2018		86.4	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	6/06/2018		4.2	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	9/10/2018		5.3	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	3/26/2019		3.3	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	9/16/2019		4.5	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	3/24/2020		4.3	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	9/02/2020		5.8	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	3/08/2021		4.4	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	9/14/2021		4.0	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	3/28/2022		4.6	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	9/13/2022		6.8	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	3/23/2023		4.4	1.0	ug/L
Trans-1,2-dichloroethylene	MW-9AR	9/05/2023		5.0	1.0	ug/L
Trichloroethylene	MW-9AR	3/12/2018		1.7	1.0	ug/L
Trichloroethylene	MW-9AR	6/06/2018		1.3	1.0	ug/L
Trichloroethylene	MW-9AR	9/10/2018		1.3	1.0	ug/L
Trichloroethylene	MW-9AR	3/26/2019		1.9	1.0	ug/L
Trichloroethylene	MW-9AR	3/24/2020		1.4	1.0	ug/L
Trichloroethylene	MW-9AR	9/02/2020		1.9	1.0	ug/L
Trichloroethylene	MW-9AR	3/08/2021		2.2	1.0	ug/L
Trichloroethylene	MW-9AR	9/14/2021		2.7	1.0	ug/L
Trichloroethylene	MW-9AR	3/28/2022		9.0	1.0	ug/L
Trichloroethylene	MW-9AR	9/13/2022		1.7	1.0	ug/L
Trichloroethylene	MW-9AR	3/23/2023		7.4	1.0	ug/L
Trichloroethylene	MW-9AR	9/05/2023		2.4	1.0	ug/L
Vinyl chloride	MW-9AR	12/13/2017		19.7	1.0	ug/L
Vinyl chloride	MW-9AR	3/12/2018		31.5	1.0	ug/L
Vinyl chloride	MW-9AR	6/06/2018		39.2	1.0	ug/L
Vinyl chloride	MW-9AR	9/10/2018		50.7	1.0	ug/L
Vinyl chloride	MW-9AR	3/26/2019		24.7	1.0	ug/L
Vinyl chloride	MW-9AR	9/16/2019		27.6	1.0	ug/L
Vinyl chloride	MW-9AR	3/24/2020		30.4	1.0	ug/L
Vinyl chloride	MW-9AR	9/02/2020		33.5	1.0	ug/L
Vinyl chloride	MW-9AR	3/08/2021		24.4	1.0	ug/L
Vinyl chloride	MW-9AR	9/14/2021		24.1	1.0	ug/L
Vinyl chloride	MW-9AR	3/28/2022		1.4	1.0	ug/L
Vinyl chloride	MW-9AR	9/13/2022		39.3	1.0	ug/L
Vinyl chloride	MW-9AR	3/23/2023		1.2	1.0	ug/L
Vinyl chloride	MW-9AR	9/05/2023		32.8	1.0	ug/L
Cis-1,2-dichloroethylene	SW-1	9/16/2019		1.2	1.0	ug/L
Acetone	SW-101	9/14/2017		13.7	10.0	ug/L
Bis(2-ethylhexyl) phthalate	SW-101	3/09/2017		25	8	ug/L
Acetone	SW-102	9/14/2017		12.3	10.0	ug/L
Cis-1,2-dichloroethylene	SW-102	9/26/2011		2	1	ug/L
Acetone	SW-103	9/14/2017		16.6	10.0	ug/L
Cis-1,2-dichloroethylene	SW-103	9/24/2014		1.0	1.0	ug/L
Cis-1,2-dichloroethylene	SW-103	12/02/2014		6.8	1.0	ug/L
Cis-1,2-dichloroethylene	SW-103	3/19/2015		1.0	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Cis-1,2-dichloroethylene	SW-103	3/04/2016		25.2	1.0	ug/L
Cis-1,2-dichloroethylene	SW-103	5/10/2016		6.6	1.0	ug/L
Cis-1,2-dichloroethylene	SW-103	3/09/2017		1.7	1.0	ug/L
Cis-1,2-dichloroethylene	SW-103	9/14/2017		2.2	1.0	ug/L
Cis-1,2-dichloroethylene	SW-103	3/12/2018		4.5	1.0	ug/L
Vinyl chloride	SW-103	12/02/2014		11.5	1.0	ug/L
Vinyl chloride	SW-103	3/04/2016		10.7	1.0	ug/L
Vinyl chloride	SW-103	3/09/2017		1.6	1.0	ug/L
Vinyl chloride	SW-103	9/14/2017		5.4	1.0	ug/L
Vinyl chloride	SW-103	3/12/2018		3.2	1.0	ug/L
Cis-1,2-dichloroethylene	SW-106	3/03/2016		1	1	ug/L
2-butanone (mek)	SW-2B	10/29/2009		237	5	ug/L
Acetone	SW-2B	10/29/2009		124	10	ug/L
Trichloroethylene	SW-2B	6/15/2005		1.61	.17	ug/L
1,4-dichlorobenzene	TILE 1	9/20/2016		1.3	1.0	ug/L
1,4-dichlorobenzene	TILE 1	11/09/2016		1.8	1.0	ug/L
1,4-dichlorobenzene	TILE 1	3/09/2017		2.6	1.0	ug/L
1,4-dichlorobenzene	TILE 1	9/14/2017		4.5	1.0	ug/L
1,4-dichlorobenzene	TILE 1	3/12/2018		5.6	1.0	ug/L
1,4-dichlorobenzene	TILE 1	9/10/2018		1.7	1.0	ug/L
1,4-dichlorobenzene	TILE 1	3/26/2019		1.8	1.0	ug/L
1,4-dichlorobenzene	TILE 1	3/24/2020		1.8	1.0	ug/L
1,4-dichlorobenzene	TILE 1	9/02/2020		3.7	1.0	ug/L
1,4-dichlorobenzene	TILE 1	3/08/2021		1.6	1.0	ug/L
1,4-dichlorobenzene	TILE 1	9/14/2021		2.5	1.0	ug/L
1,4-dichlorobenzene	TILE 1	3/28/2022		1.4	1.0	ug/L
1,4-dichlorobenzene	TILE 1	9/13/2022		2.3	1.0	ug/L
1,4-dichlorobenzene	TILE 1	3/23/2023		1.6	1.0	ug/L
1,4-dichlorobenzene	TILE 1	9/05/2023		4.5	1.0	ug/L
Acetone	TILE 1	9/14/2017		18.1	10.0	ug/L
Benzene	TILE 1	11/09/2016		1.6	1.0	ug/L
Benzene	TILE 1	3/09/2017		2.2	1.0	ug/L
Benzene	TILE 1	9/14/2017		2.7	1.0	ug/L
Benzene	TILE 1	3/12/2018		3.7	1.0	ug/L
Benzene	TILE 1	9/02/2020		1.9	1.0	ug/L
Benzene	TILE 1	9/14/2021		1.1	1.0	ug/L
Benzene	TILE 1	9/13/2022		2.1	1.0	ug/L
Benzene	TILE 1	9/05/2023		3.0	1.0	ug/L
Chlorobenzene	TILE 1	9/20/2016		3.4	1.0	ug/L
Chlorobenzene	TILE 1	11/09/2016		3.6	1.0	ug/L
Chlorobenzene	TILE 1	3/09/2017		7.9	1.0	ug/L
Chlorobenzene	TILE 1	9/14/2017		5.8	1.0	ug/L
Chlorobenzene	TILE 1	3/12/2018		7.2	1.0	ug/L
Chlorobenzene	TILE 1	9/10/2018		4.3	1.0	ug/L
Chlorobenzene	TILE 1	3/26/2019		3.0	1.0	ug/L
Chlorobenzene	TILE 1	6/05/2019		4.9	1.0	ug/L
Chlorobenzene	TILE 1	9/16/2019		4.1	1.0	ug/L
Chlorobenzene	TILE 1	3/24/2020		3.9	1.0	ug/L
Chlorobenzene	TILE 1	9/02/2020		4.4	1.0	ug/L
Chlorobenzene	TILE 1	3/08/2021		2.7	1.0	ug/L
Chlorobenzene	TILE 1	9/14/2021		2.7	1.0	ug/L
Chlorobenzene	TILE 1	3/28/2022		2.9	1.0	ug/L
Chlorobenzene	TILE 1	9/13/2022		3.0	1.0	ug/L
Chlorobenzene	TILE 1	3/23/2023		2.9	1.0	ug/L
Chlorobenzene	TILE 1	9/05/2023		5.6	1.0	ug/L
Chloroform	TILE 1	9/16/2019		1.4	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	9/20/2016		7.0	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	11/09/2016		2.8	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	3/09/2017		3.9	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	3/12/2018		1.0	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	3/26/2019		3.6	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	6/05/2019		5.7	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	9/16/2019		3.9	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	3/24/2020		3.2	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	9/02/2020		1.7	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 1	9/14/2021		1.0	1.0	ug/L
Trans-1,2-dichloroethylene	TILE 1	3/12/2018		1.1	1.0	ug/L
Vinyl chloride	TILE 1	9/20/2016		3.0	1.0	ug/L
Vinyl chloride	TILE 1	11/09/2016		3.6	1.0	ug/L
Vinyl chloride	TILE 1	3/09/2017		4.0	1.0	ug/L
Vinyl chloride	TILE 1	9/02/2020		1.2	1.0	ug/L
1,4-dichlorobenzene	TILE 2	3/26/2019		1	1	ug/L
Chlorobenzene	TILE 2	3/26/2019		2.0	1.0	ug/L
Chlorobenzene	TILE 2	6/05/2019		1.2	1.0	ug/L
Chlorobenzene	TILE 2	9/16/2019		2.2	1.0	ug/L
Chlorobenzene	TILE 2	3/24/2020		1.0	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Table 1

Historical Volatile Organic Compound Detections

Constituent	Well	Date	Identifier	Result	Limit	Units
Chlorobenzene	TILE 2	9/02/2020		1.1	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	9/10/2018		6.6	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	3/26/2019		19.9	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	6/05/2019		18.2	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	9/16/2019		5.6	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	3/24/2020		10.6	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	9/02/2020		1.3	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	3/08/2021		8.1	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	9/14/2021		3.8	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	3/28/2022		2.7	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	9/13/2022		4.1	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	3/23/2023		6.2	1.0	ug/L
Cis-1,2-dichloroethylene	TILE 2	9/05/2023		2.3	1.0	ug/L
Vinyl chloride	TILE 2	3/26/2019		6.2	1.0	ug/L
Vinyl chloride	TILE 2	9/16/2019		8.3	1.0	ug/L
Vinyl chloride	TILE 2	3/24/2020		3.5	1.0	ug/L
Vinyl chloride	TILE 2	9/02/2020		4.7	1.0	ug/L
Vinyl chloride	TILE 2	3/08/2021		2.4	1.0	ug/L
Vinyl chloride	TILE 2	9/14/2021		3.3	1.0	ug/L
Vinyl chloride	TILE 2	3/28/2022		1.3	1.0	ug/L
Vinyl chloride	TILE 2	9/13/2022		1.6	1.0	ug/L
Vinyl chloride	TILE 2	3/23/2023		1.9	1.0	ug/L
Vinyl chloride	TILE 2	9/05/2023		1.6	1.0	ug/L

Detections are shown for the constituents and sample points selected for the analysis
 The Limit column refers to the laboratory reporting limit

Attachment H

Assessment Statistics for Verified VOCs

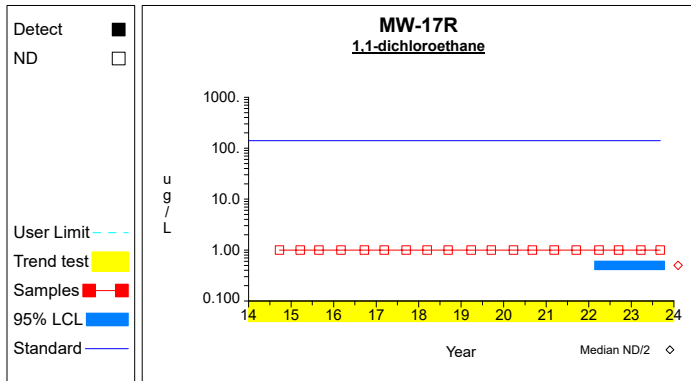
Table 1

Confidence Intervals for Comparing the Mean of the Last 4 Measurements to an Assessment Monitoring Standard

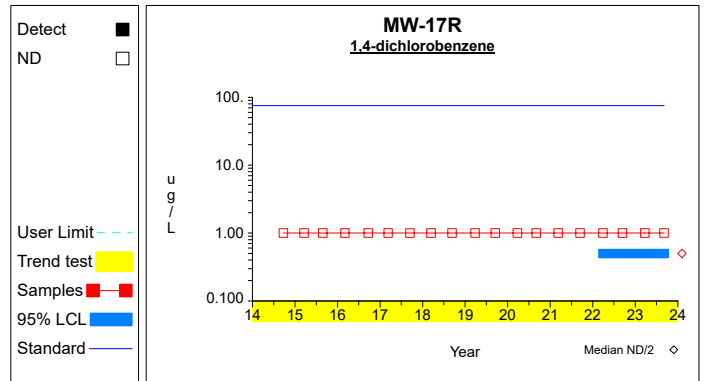
Constituent	Units	Well	N	Mean	SD	Factor	95% LCL	95% UCL	Standard	Trend
1,1-dichloroethane	ug/L	MW-17R	4	0.500	0.000	1.176	0.500	0.500	140.000	
1,4-dichlorobenzene	ug/L	MW-17R	4	0.500	0.000	1.176	0.500	0.500	75.000	
Benzene	ug/L	MW-17R	4	0.500	0.000	1.176	0.500	0.500	5.000	
Chlorobenzene	ug/L	MW-17R	4	0.500	0.000	1.176	0.500	0.500	100.000	
Cis-1,2-dichloroethylene	ug/L	MW-17R	4	3.350	0.819	1.176	2.387	4.313	70.000	
Trans-1,2-dichloroethylene	ug/L	MW-17R	4	0.500	0.000	1.176	0.500	0.500	100.000	
Trichloroethylene	ug/L	MW-17R	4	0.500	0.000	1.176	0.500	0.500	5.000	
Vinyl chloride	ug/L	MW-17R	4	0.500	0.000	1.176	0.500	0.500	2.000	
1,1-dichloroethane	ug/L	MW-28	4	0.500	0.000	1.176	0.500	0.500	140.000	
1,4-dichlorobenzene	ug/L	MW-28	4	0.500	0.000	1.176	0.500	0.500	75.000	
Benzene	ug/L	MW-28	4	0.500	0.000	1.176	0.500	0.500	5.000	
Chlorobenzene	ug/L	MW-28	4	0.500	0.000	1.176	0.500	0.500	100.000	
Cis-1,2-dichloroethylene	ug/L	MW-28	4	13.000	2.459	1.176	10.108	15.892	70.000	inc
Trans-1,2-dichloroethylene	ug/L	MW-28	4	0.500	0.000	1.176	0.500	0.500	100.000	
Trichloroethylene	ug/L	MW-28	4	0.500	0.000	1.176	0.500	0.500	5.000	
Vinyl chloride	ug/L	MW-28	4	0.925	0.506	1.176	0.330	1.520	2.000	
1,1-dichloroethane	ug/L	MW-9AR	4	1.125	0.435	1.176	0.613	1.637	140.000	dec
1,4-dichlorobenzene	ug/L	MW-9AR	4	0.500	0.000	1.176	0.500	0.500	75.000	
Benzene	ug/L	MW-9AR	4	1.275	0.896	1.176	0.221	2.329	5.000	
Chlorobenzene	ug/L	MW-9AR	4	2.450	2.525	1.176	0.000	5.420	100.000	
Cis-1,2-dichloroethylene	ug/L	MW-9AR	4	94.400	36.772	1.176	51.145	137.655	70.000	
Trans-1,2-dichloroethylene	ug/L	MW-9AR	4	5.200	1.095	1.176	3.911	6.489	100.000	
Trichloroethylene	ug/L	MW-9AR	4	5.125	3.622	1.176	0.865	9.385	5.000	inc
Vinyl chloride	ug/L	MW-9AR	4	18.675	20.238	1.176	0.000	42.481	2.000	
1,1-dichloroethane	ug/L	TILE 1	4	0.500	0.000	1.176	0.500	0.500	140.000	
1,4-dichlorobenzene	ug/L	TILE 1	4	2.450	1.420	1.176	0.780	4.120	75.000	
Benzene	ug/L	TILE 1	4	1.525	1.239	1.176	0.067	2.983	5.000	
Chlorobenzene	ug/L	TILE 1	4	3.600	1.334	1.176	2.031	5.169	100.000	
Cis-1,2-dichloroethylene	ug/L	TILE 1	4	0.500	0.000	1.176	0.500	0.500	70.000	
Trans-1,2-dichloroethylene	ug/L	TILE 1	4	0.500	0.000	1.176	0.500	0.500	100.000	
Trichloroethylene	ug/L	TILE 1	4	0.500	0.000	1.176	0.500	0.500	5.000	
Vinyl chloride	ug/L	TILE 1	4	0.500	0.000	1.176	0.500	0.500	2.000	
1,1-dichloroethane	ug/L	TILE 2	4	0.500	0.000	1.176	0.500	0.500	140.000	
1,4-dichlorobenzene	ug/L	TILE 2	4	0.500	0.000	1.176	0.500	0.500	75.000	
Benzene	ug/L	TILE 2	4	0.500	0.000	1.176	0.500	0.500	5.000	
Chlorobenzene	ug/L	TILE 2	4	0.500	0.000	1.176	0.500	0.500	100.000	
Cis-1,2-dichloroethylene	ug/L	TILE 2	4	3.825	1.761	1.176	1.753	5.897	70.000	
Trans-1,2-dichloroethylene	ug/L	TILE 2	4	0.500	0.000	1.176	0.500	0.500	100.000	
Trichloroethylene	ug/L	TILE 2	4	0.500	0.000	1.176	0.500	0.500	5.000	
Vinyl chloride	ug/L	TILE 2	4	1.600	0.245	1.176	1.312	1.888	2.000	

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

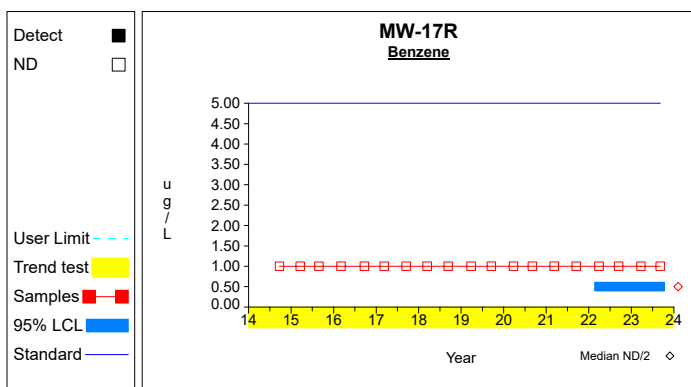
Confidence Limits (Assessment)



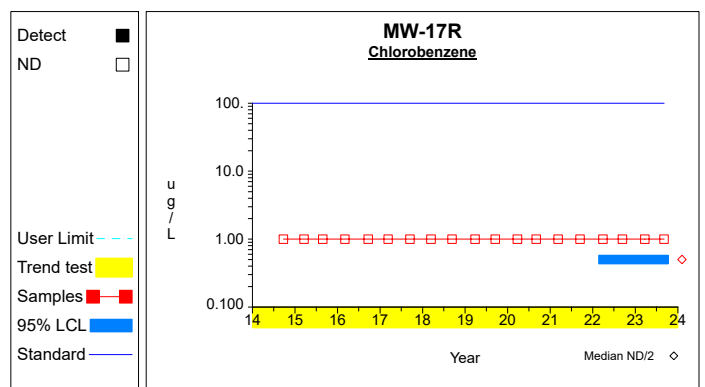
Graph 1



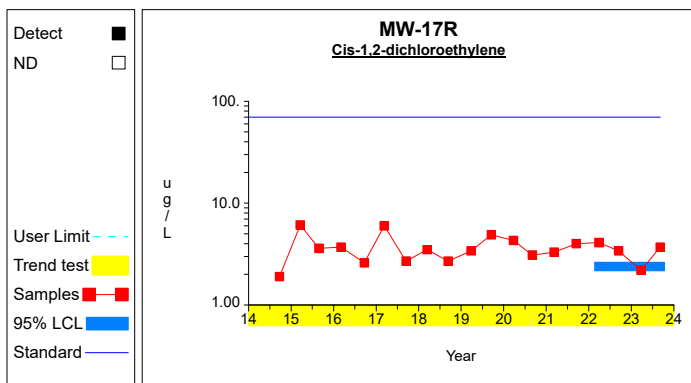
Graph 2



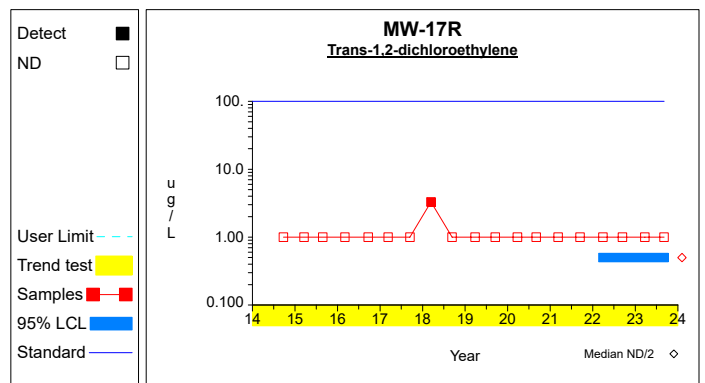
Graph 3



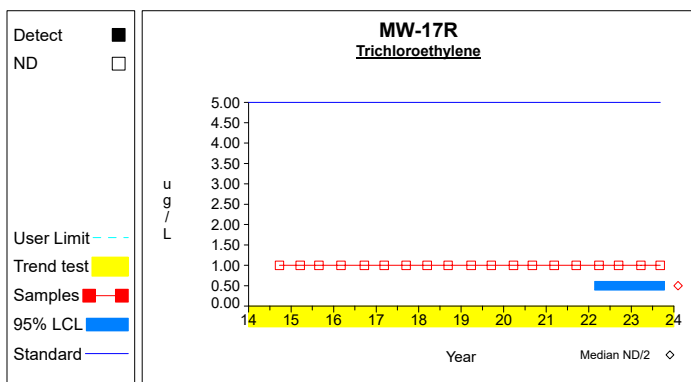
Graph 4



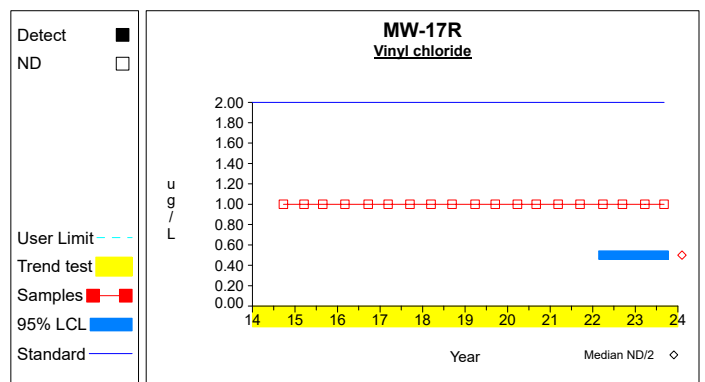
Graph 5



Graph 6

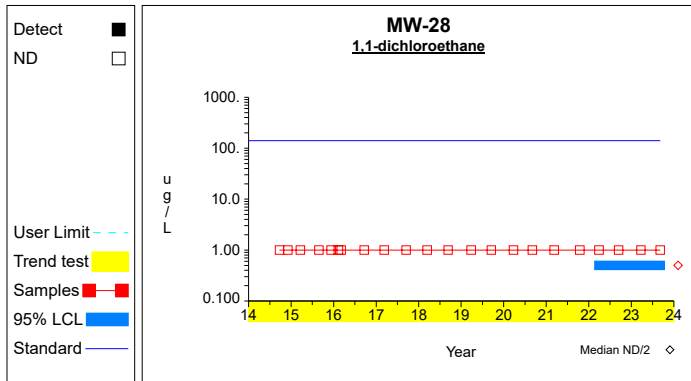


Graph 7

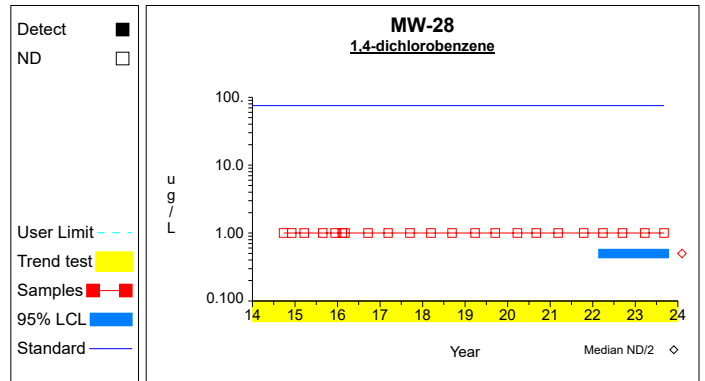


Graph 8

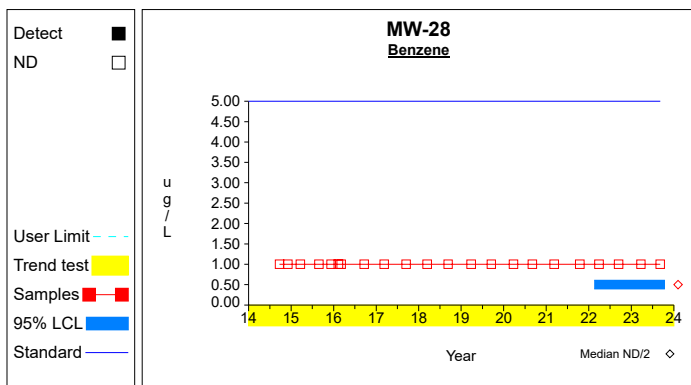
Confidence Limits (Assessment)



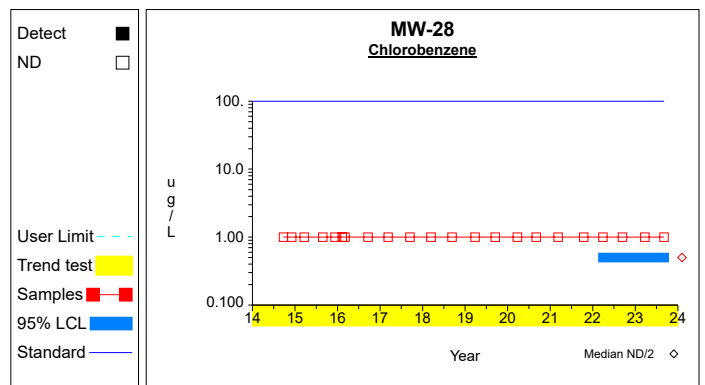
Graph 9



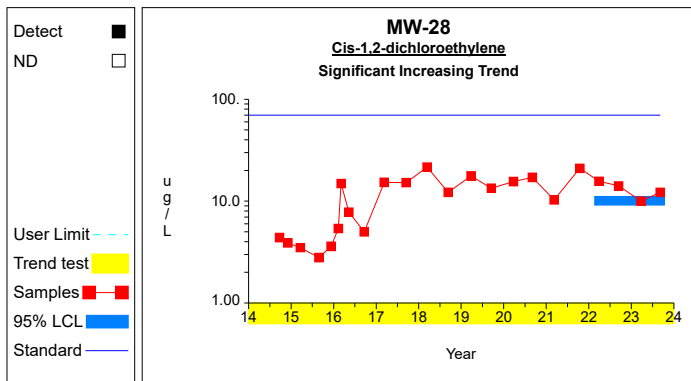
Graph 10



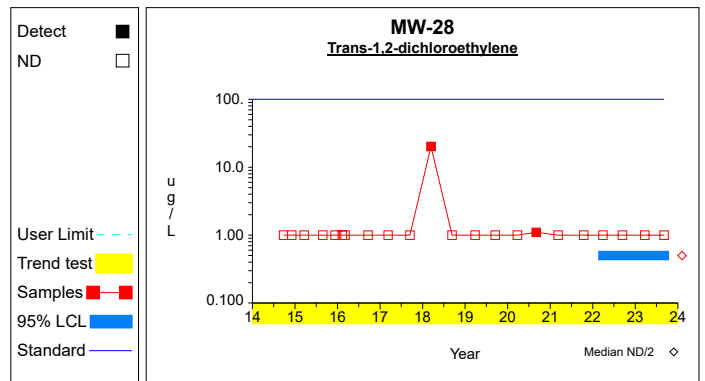
Graph 11



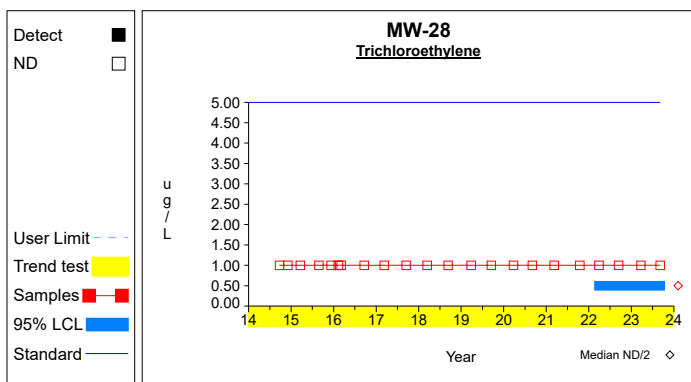
Graph 12



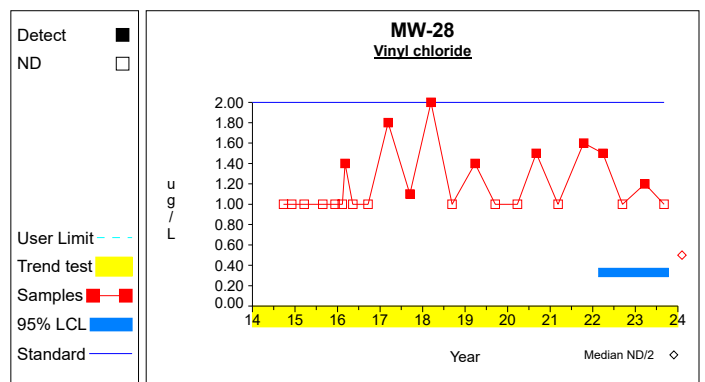
Graph 13



Graph 14

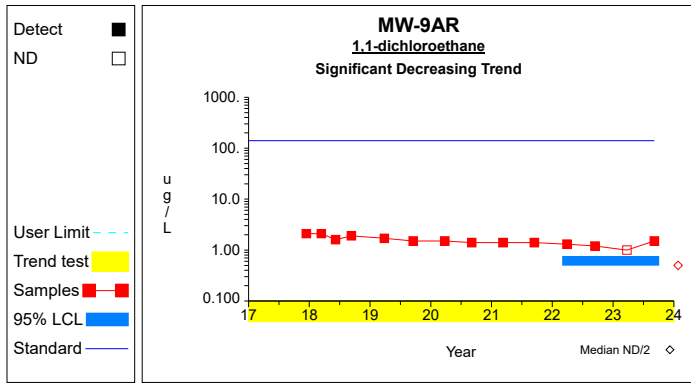


Graph 15

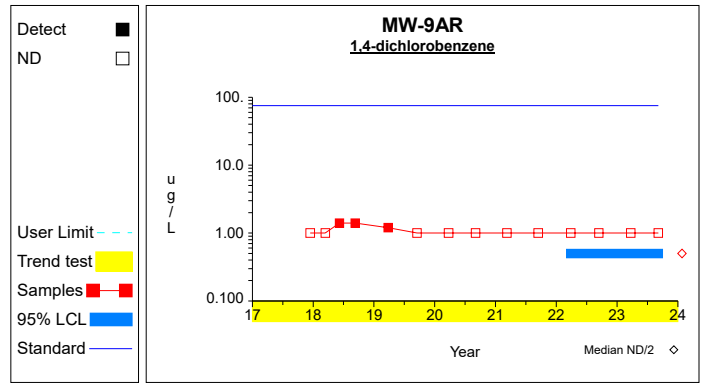


Graph 16

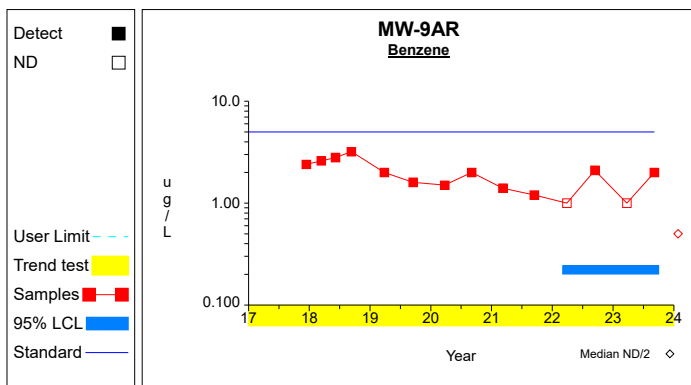
Confidence Limits (Assessment)



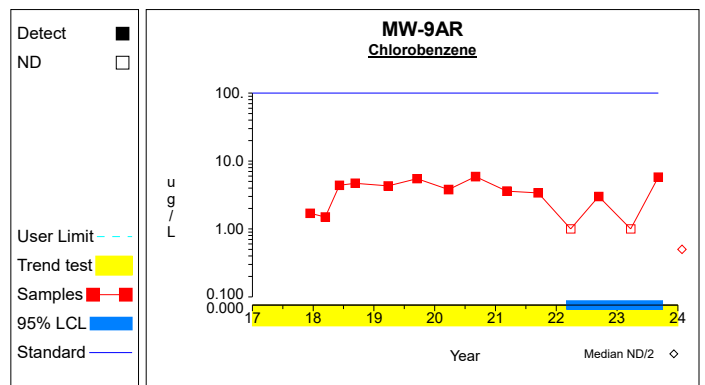
Graph 17



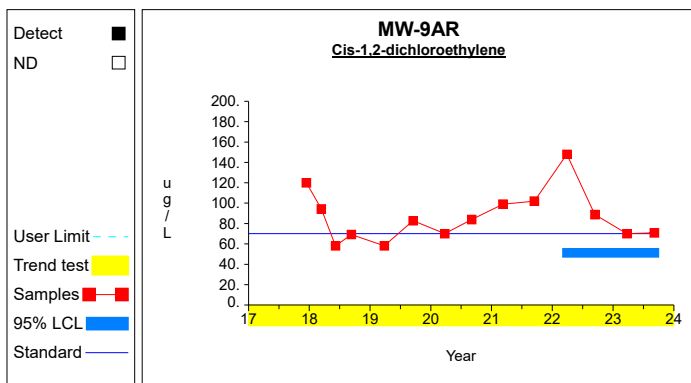
Graph 18



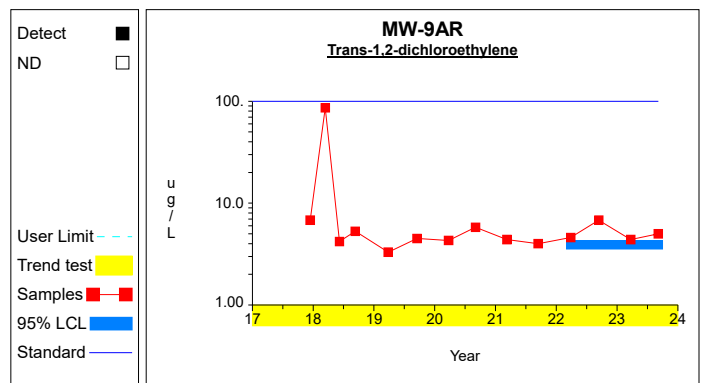
Graph 19



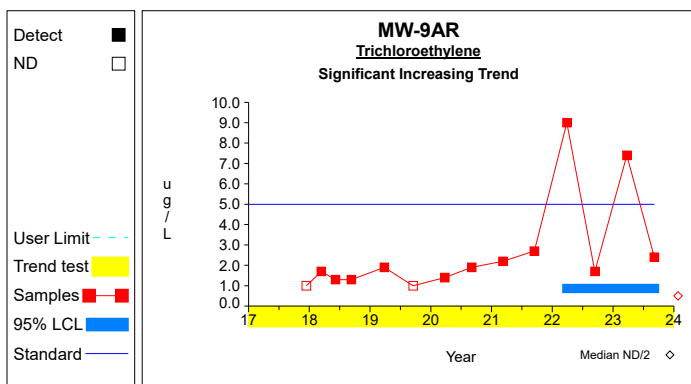
Graph 20



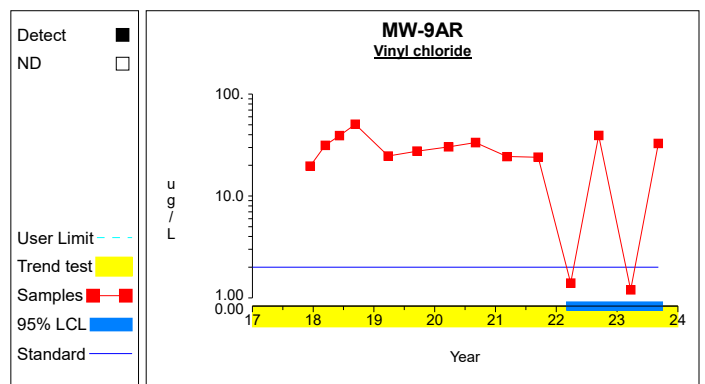
Graph 21



Graph 22

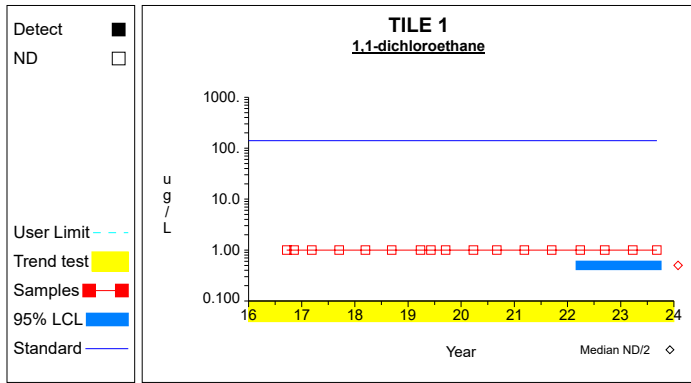


Graph 23

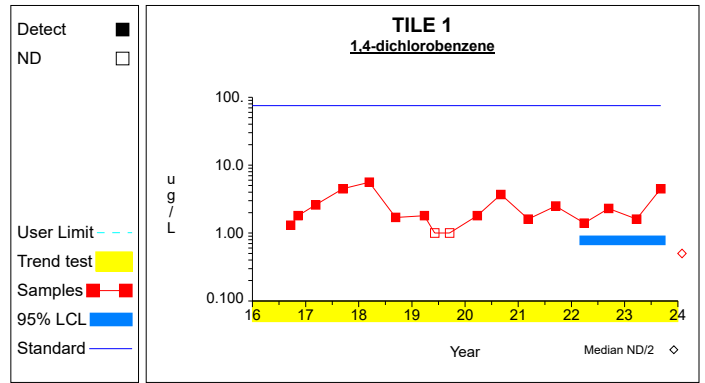


Graph 24

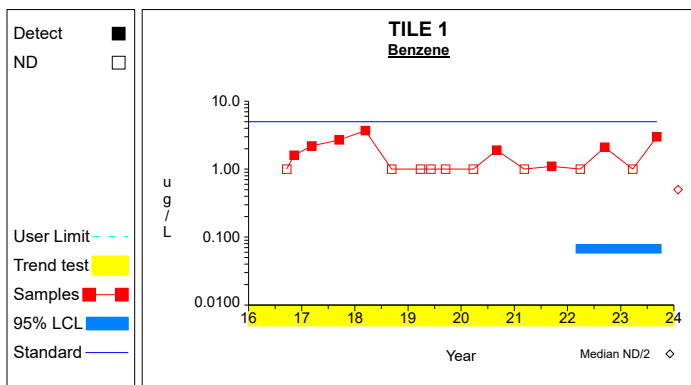
Confidence Limits (Assessment)



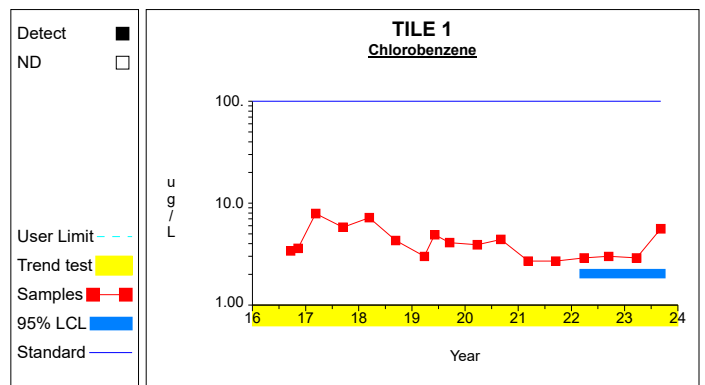
Graph 25



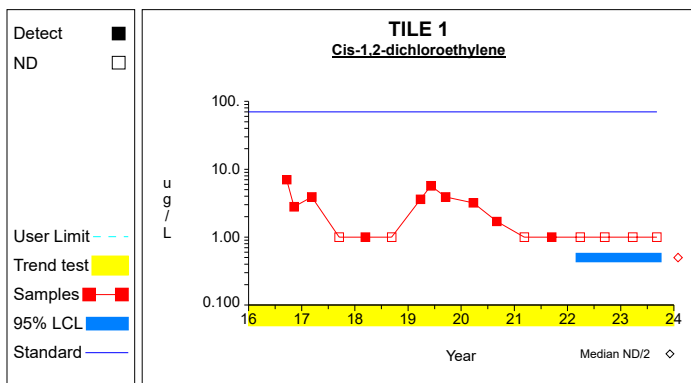
Graph 26



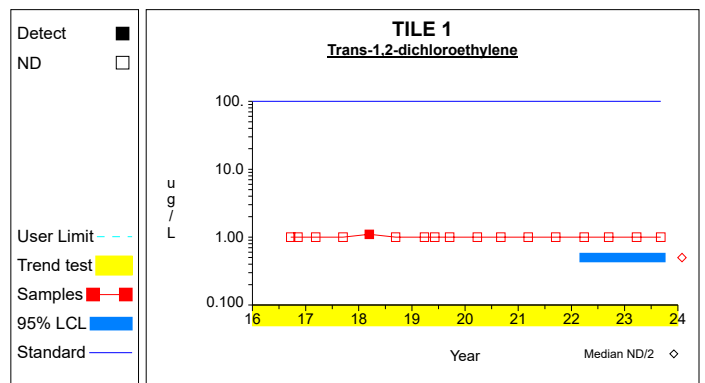
Graph 27



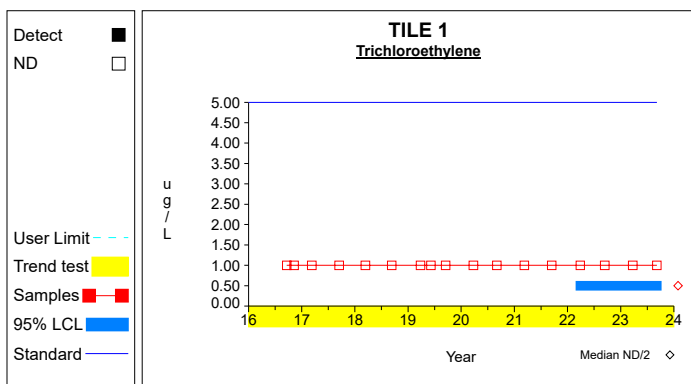
Graph 28



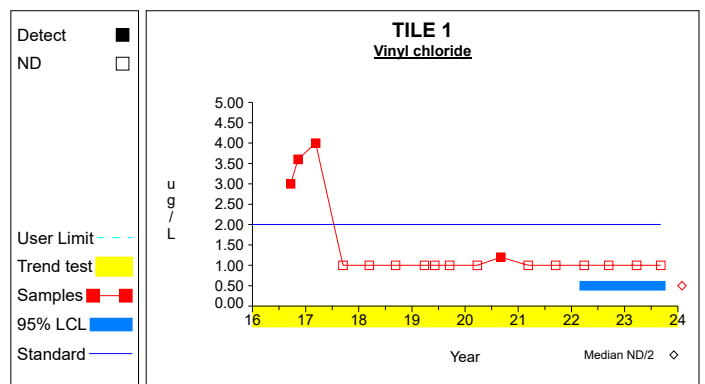
Graph 29



Graph 30

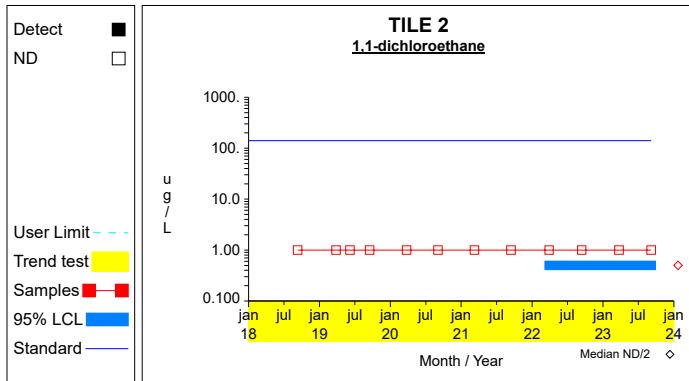


Graph 31

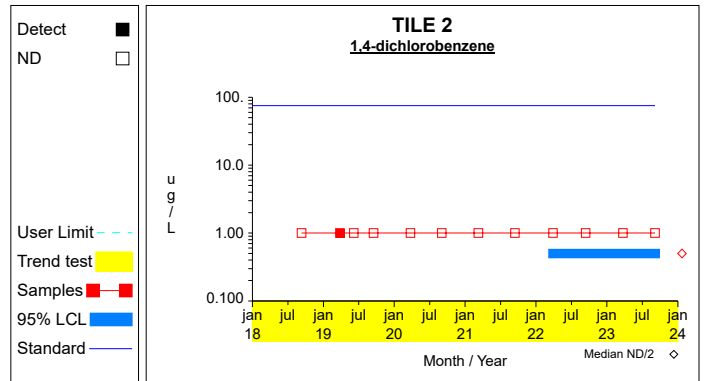


Graph 32

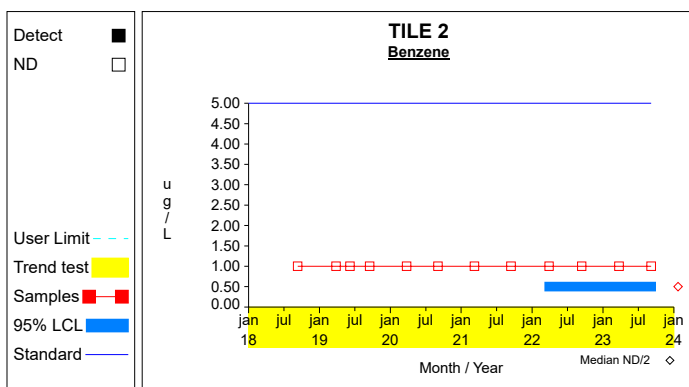
Confidence Limits (Assessment)



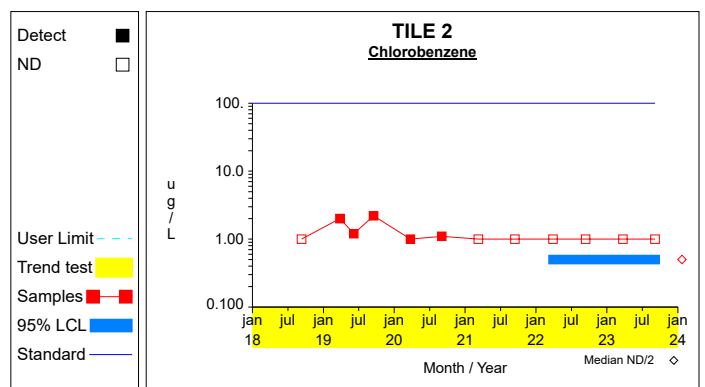
Graph 33



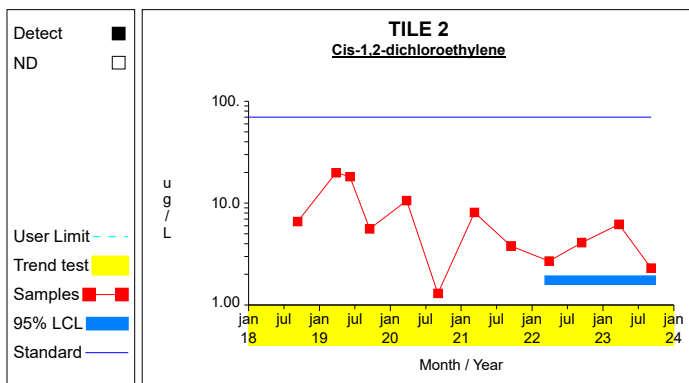
Graph 34



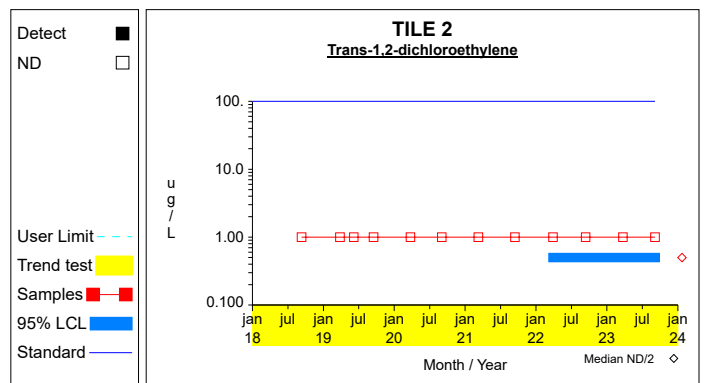
Graph 35



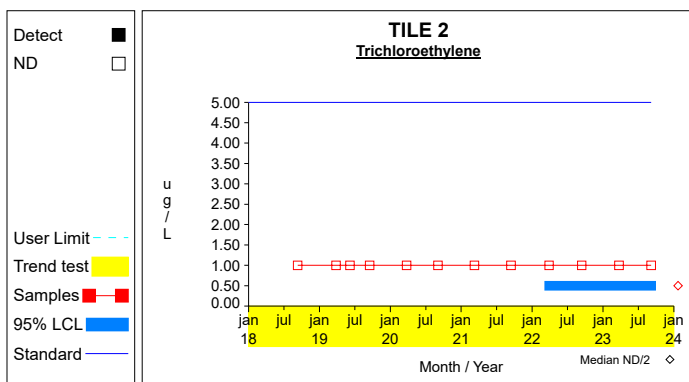
Graph 36



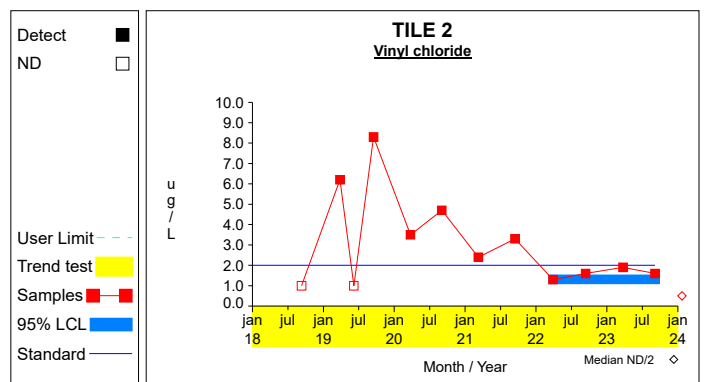
Graph 37



Graph 38



Graph 39



Graph 40

Appendix D

Laboratory Reports for Reporting Period *With Chain of Custody*

ANALYTICAL REPORT

April 13, 2023

Work Order: 1GC2550

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Report To
Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

Work Order Information
Date Received: 3/24/2023 10:00:00AM
Collector: Whipple, Todd
Phone: (515) 733-4144
PO Number: SCILA - New Regs

Project: SCILA - New Regs

Project Number: 6022

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-01	MW-18			Matrix: Water		Collected: 03/23/23 09:39	
Acrylonitrile	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
<i>Surrogate: Dibromofluoromethane</i>	101 %			80-126	MSV	03/28/23 1:09	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	95.6 %			63-138	MSV	03/28/23 1:09	
<i>Surrogate: Toluene-d8</i>	102 %			87-116	MSV	03/28/23 1:09	
<i>Surrogate: 4-Bromofluorobenzene</i>	102 %			85-111	MSV	03/28/23 1:09	
Chloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Vinyl Chloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Bromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Chloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Acetone	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Methyl Iodide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Methylene Chloride	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Bromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Chloroform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Benzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Trichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL = Method Reporting Limit.

HLW Engineering
PO Box 314
Story City, IA 50248

April 13, 2023
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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-01	MW-18			Matrix: Water		Collected: 03/23/23 09:39	
Dibromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Toluene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Chlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Ethylbenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Xylenes, total	<2.0 ug/L	2.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Styrene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
Bromoform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 1:09	
<i>Surrogate: Dibromofluoromethane</i>	101 %			75-136	MSV	03/28/23 1:09	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	95.6 %			61-142	MSV	03/28/23 1:09	
<i>Surrogate: Toluene-d8</i>	102 %			82-121	MSV	03/28/23 1:09	
<i>Surrogate: 4-Bromofluorobenzene</i>	102 %			80-116	MSV	03/28/23 1:09	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:00	
Arsenic, total	0.0794 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:00	
Barium, total	0.655 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:00	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:00	
Cadmium, total	0.0039 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 20:00	
Cobalt, total	0.0029 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 20:00	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 20:00	
Copper, total	0.0099 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:00	
Nickel, total	0.0238 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:00	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:00	
Antimony, total	0.0042 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 20:00	
Selenium, total	0.0162 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:00	

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Story City, IA 50248

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-01	MW-18			Matrix: Water		Collected: 03/23/23 09:39	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 20:00	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 20:00	
Zinc, total	0.0512 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 20:00	
1GC2550-02	MW-6A			Matrix: Water		Collected: 03/23/23 12:33	
Acrylonitrile	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Surrogate: Dibromofluoromethane	108 %			80-126	MSV	03/28/23 1:45	
Surrogate: 1,2-Dichloroethane-d4	106 %			63-138	MSV	03/28/23 1:45	
Surrogate: Toluene-d8	98.0 %			87-116	MSV	03/28/23 1:45	
Surrogate: 4-Bromofluorobenzene	100 %			85-111	MSV	03/28/23 1:45	
Chloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Vinyl Chloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Bromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Chloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Acetone	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Methyl Iodide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Methylene Chloride	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Bromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Chloroform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Benzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Trichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Dibromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Toluene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	

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HLW Engineering
PO Box 314
Story City, IA 50248

April 13, 2023
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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-02	MW-6A			Matrix: Water		Collected: 03/23/23 12:33	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Chlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Ethylbenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Xylenes, total	<2.0 ug/L	2.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Styrene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
Bromoform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
1,1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 1:45	
<i>Surrogate: Dibromofluoromethane</i>	108 %			75-136	MSV	03/28/23 1:45	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	106 %			61-142	MSV	03/28/23 1:45	
<i>Surrogate: Toluene-d8</i>	98.0 %			82-121	MSV	03/28/23 1:45	
<i>Surrogate: 4-Bromofluorobenzene</i>	100 %			80-116	MSV	03/28/23 1:45	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:25	
Arsenic, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:25	
Barium, total	0.119 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:25	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:25	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 20:25	
Cobalt, total	<0.0004 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 20:25	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 20:25	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:25	
Nickel, total	0.0180 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:25	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:25	
Antimony, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 20:25	
Selenium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:25	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 20:25	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 20:25	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 20:25	

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Story City, IA 50248

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-03	MW-21			Matrix: Water		Collected: 03/23/23 13:51	
Acrylonitrile	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Surrogate: Dibromofluoromethane	99.0 %			80-126	MSV	03/28/23 2:21	
Surrogate: 1,2-Dichloroethane-d4	107 %			63-138	MSV	03/28/23 2:21	
Surrogate: Toluene-d8	95.8 %			87-116	MSV	03/28/23 2:21	
Surrogate: 4-Bromofluorobenzene	108 %			85-111	MSV	03/28/23 2:21	
Chloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Vinyl Chloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Bromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Chloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Acetone	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Methyl Iodide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Methylene Chloride	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Bromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Chloroform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Benzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Trichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Dibromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Toluene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-03	MW-21			Matrix: Water		Collected: 03/23/23 13:51	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Chlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Ethylbenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Xylenes, total	<2.0 ug/L	2.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Styrene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
Bromoform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 2:21	
<i>Surrogate: Dibromofluoromethane</i>	99.0 %			75-136	MSV	03/28/23 2:21	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	107 %			61-142	MSV	03/28/23 2:21	
<i>Surrogate: Toluene-d8</i>	95.8 %			82-121	MSV	03/28/23 2:21	
<i>Surrogate: 4-Bromofluorobenzene</i>	108 %			80-116	MSV	03/28/23 2:21	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:31	
Arsenic, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:31	
Barium, total	0.168 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:31	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:31	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 20:31	
Cobalt, total	<0.0004 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 20:31	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 20:31	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:31	
Nickel, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:31	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:31	
Antimony, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 20:31	
Selenium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:31	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 20:31	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 20:31	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 20:31	

1GC2550-04	TILE-1			Matrix: Water		Collected: 03/23/23 09:12	
Acrylonitrile	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
<i>Surrogate: Dibromofluoromethane</i>	104 %			80-126	MSV	03/28/23 2:57	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	106 %			63-138	MSV	03/28/23 2:57	
<i>Surrogate: Toluene-d8</i>	96.0 %			87-116	MSV	03/28/23 2:57	
<i>Surrogate: 4-Bromofluorobenzene</i>	97.7 %			85-111	MSV	03/28/23 2:57	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-04	TILE-1			Matrix: Water		Collected: 03/23/23 09:12	
Chloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Vinyl Chloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Bromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Chloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Acetone	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Methyl Iodide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Methylene Chloride	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Bromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Chloroform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Benzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Trichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Dibromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Toluene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Chlorobenzene	2.9 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Ethylbenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-04	TILE-1			Matrix: Water		Collected: 03/23/23 09:12	
Xylenes, total	<2.0 ug/L	2.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Styrene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
Bromoform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
1,4-Dichlorobenzene	1.6 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 2:57	
<i>Surrogate: Dibromofluoromethane</i>	104 %			75-136	MSV	03/28/23 2:57	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	106 %			61-142	MSV	03/28/23 2:57	
<i>Surrogate: Toluene-d8</i>	96.0 %			82-121	MSV	03/28/23 2:57	
<i>Surrogate: 4-Bromofluorobenzene</i>	97.7 %			80-116	MSV	03/28/23 2:57	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:37	
Arsenic, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:37	
Barium, total	0.953 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:37	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:37	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 20:37	
Cobalt, total	0.0024 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 20:37	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 20:37	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:37	
Nickel, total	0.0134 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:37	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:37	
Antimony, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 20:37	
Selenium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:37	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 20:37	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 20:37	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 20:37	
1GC2550-05	TILE 2			Matrix: Water		Collected: 03/23/23 09:04	
Acrylonitrile	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
<i>Surrogate: Dibromofluoromethane</i>	101 %			80-126	MSV	03/28/23 3:33	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	102 %			63-138	MSV	03/28/23 3:33	
<i>Surrogate: Toluene-d8</i>	98.9 %			87-116	MSV	03/28/23 3:33	
<i>Surrogate: 4-Bromofluorobenzene</i>	102 %			85-111	MSV	03/28/23 3:33	
Chloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Vinyl Chloride	1.9 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Bromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Chloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-05	TILE 2			Matrix: Water		Collected: 03/23/23 09:04	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Acetone	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Methyl Iodide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Methylene Chloride	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
cis-1,2-Dichloroethylene	6.2 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Bromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Chloroform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Benzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Trichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Dibromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Toluene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Chlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Ethylbenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Xylenes, total	<2.0 ug/L	2.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Styrene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Bromoform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-05	TILE 2			Matrix: Water		Collected: 03/23/23 09:04	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 3:33	
Surrogate: Dibromofluoromethane	101 %			75-136	MSV	03/28/23 3:33	
Surrogate: 1,2-Dichloroethane-d4	102 %			61-142	MSV	03/28/23 3:33	
Surrogate: Toluene-d8	98.9 %			82-121	MSV	03/28/23 3:33	
Surrogate: 4-Bromofluorobenzene	102 %			80-116	MSV	03/28/23 3:33	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:44	
Arsenic, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:44	
Barium, total	0.481 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:44	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:44	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 20:44	
Cobalt, total	0.0006 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 20:44	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 20:44	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:44	
Nickel, total	0.0043 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:44	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:44	
Antimony, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 20:44	
Selenium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:44	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 20:44	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 20:44	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 20:44	
1GC2550-06	MW-11C			Matrix: Water		Collected: 03/23/23 12:06	
Acrylonitrile	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Surrogate: Dibromofluoromethane	96.9 %			80-126	MSV	03/28/23 4:09	
Surrogate: 1,2-Dichloroethane-d4	96.0 %			63-138	MSV	03/28/23 4:09	
Surrogate: Toluene-d8	101 %			87-116	MSV	03/28/23 4:09	
Surrogate: 4-Bromofluorobenzene	103 %			85-111	MSV	03/28/23 4:09	
Chloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Vinyl Chloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Bromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Chloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Acetone	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Methyl Iodide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	

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Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-06	MW-11C			Matrix: Water		Collected: 03/23/23 12:06	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Methylene Chloride	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Bromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Chloroform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Benzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Trichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Dibromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Toluene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Chlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Ethylbenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Xylenes, total	<2.0 ug/L	2.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Styrene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Bromoform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-06	MW-11C			Matrix: Water		Collected: 03/23/23 12:06	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 4:09	
Surrogate: Dibromofluoromethane	96.9 %			75-136	MSV	03/28/23 4:09	
Surrogate: 1,2-Dichloroethane-d4	96.0 %			61-142	MSV	03/28/23 4:09	
Surrogate: Toluene-d8	101 %			82-121	MSV	03/28/23 4:09	
Surrogate: 4-Bromofluorobenzene	103 %			80-116	MSV	03/28/23 4:09	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:50	
Arsenic, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:50	
Barium, total	0.0692 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:50	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:50	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 20:50	
Cobalt, total	<0.0004 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 20:50	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 20:50	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:50	
Nickel, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:50	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:50	
Antimony, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 20:50	
Selenium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 20:50	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 20:50	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 20:50	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 20:50	
1GC2550-07	MW-39D			Matrix: Water		Collected: 03/23/23 10:44	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:09	
Arsenic, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:09	
Barium, total	0.0348 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:09	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:09	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 21:09	
Cobalt, total	<0.0004 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 21:09	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 21:09	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:09	
Nickel, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:09	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:09	
Antimony, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:09	
Selenium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:09	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:09	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:09	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:09	
1GC2550-08	MW-41D			Matrix: Water		Collected: 03/23/23 11:09	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-08	MW-41D			Matrix: Water		Collected: 03/23/23 11:09	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:15	
Arsenic, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:15	
Barium, total	0.0322 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:15	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:15	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 21:15	
Cobalt, total	0.0012 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 21:15	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 21:15	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:15	
Nickel, total	0.0085 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:15	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:15	
Antimony, total	0.0028 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:15	
Selenium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:15	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:15	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:15	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:15	
1GC2550-09	MW-42D			Matrix: Water		Collected: 03/23/23 11:33	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:21	
Arsenic, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:21	
Barium, total	0.0401 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:21	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:21	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 21:21	
Cobalt, total	<0.0004 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 21:21	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 21:21	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:21	
Nickel, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:21	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:21	
Antimony, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:21	
Selenium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:21	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:21	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:21	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:21	
1GC2550-10	MW-17R			Matrix: Water		Collected: 03/23/23 13:10	
Acrylonitrile	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 4:46	
Surrogate: Dibromofluoromethane	103 %			80-126	MSV	03/28/23 4:46	
Surrogate: 1,2-Dichloroethane-d4	98.9 %			63-138	MSV	03/28/23 4:46	
Surrogate: Toluene-d8	97.3 %			87-116	MSV	03/28/23 4:46	
Surrogate: 4-Bromofluorobenzene	102 %			85-111	MSV	03/28/23 4:46	

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Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-10	MW-17R			Matrix: Water		Collected: 03/23/23 13:10	
Chloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Vinyl Chloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Bromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Chloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Acetone	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Methyl Iodide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Carbon Disulfide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Methylene Chloride	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Vinyl Acetate	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
cis-1,2-Dichloroethylene	2.2 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Bromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Chloroform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Benzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Trichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Dibromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Bromodichloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Toluene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Dibromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Chlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46
Ethylbenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23	4:46

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-10	MW-17R			Matrix: Water		Collected: 03/23/23 13:10	
Xylenes, total	<2.0 ug/L	2.0	1GC1383	EPA 8260B	MSV	03/28/23 4:46	
Styrene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:46	
Bromoform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:46	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:46	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 4:46	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:46	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:46	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 4:46	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 4:46	
Surrogate: Dibromofluoromethane	103 %			75-136	MSV	03/28/23 4:46	
Surrogate: 1,2-Dichloroethane-d4	98.9 %			61-142	MSV	03/28/23 4:46	
Surrogate: Toluene-d8	97.3 %			82-121	MSV	03/28/23 4:46	
Surrogate: 4-Bromofluorobenzene	102 %			80-116	MSV	03/28/23 4:46	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:27	
Arsenic, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:27	
Barium, total	0.446 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:27	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:27	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 21:27	
Cobalt, total	0.0016 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 21:27	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 21:27	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:27	
Nickel, total	0.0222 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:27	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:27	
Antimony, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:27	
Selenium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:27	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:27	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:27	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:27	
1GC2550-11	MW-28			Matrix: Water		Collected: 03/23/23 14:13	
Acrylonitrile	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Surrogate: Dibromofluoromethane	101 %			80-126	MSV	03/28/23 5:22	
Surrogate: 1,2-Dichloroethane-d4	99.3 %			63-138	MSV	03/28/23 5:22	
Surrogate: Toluene-d8	95.2 %			87-116	MSV	03/28/23 5:22	
Surrogate: 4-Bromofluorobenzene	96.2 %			85-111	MSV	03/28/23 5:22	
Chloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Vinyl Chloride	1.2 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Bromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Chloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-11	MW-28			Matrix: Water		Collected: 03/23/23 14:13	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Acetone	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Methyl Iodide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Methylene Chloride	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
cis-1,2-Dichloroethylene	10.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Bromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Chloroform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Benzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Trichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Dibromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Toluene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Chlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Ethylbenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Xylenes, total	<2.0 ug/L	2.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Styrene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Bromoform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-11	MW-28			Matrix: Water		Collected: 03/23/23 14:13	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 5:22	
Surrogate: Dibromofluoromethane	101 %			75-136	MSV	03/28/23 5:22	
Surrogate: 1,2-Dichloroethane-d4	99.3 %			61-142	MSV	03/28/23 5:22	
Surrogate: Toluene-d8	95.2 %			82-121	MSV	03/28/23 5:22	
Surrogate: 4-Bromofluorobenzene	96.2 %			80-116	MSV	03/28/23 5:22	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:34	
Arsenic, total	0.100 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:34	
Barium, total	1.57 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:34	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:34	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 21:34	
Cobalt, total	0.0821 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 21:34	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 21:34	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:34	
Nickel, total	0.0298 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:34	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:34	
Antimony, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:34	
Selenium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:34	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:34	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:34	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:34	
1GC2550-12	MW-8B			Matrix: Water		Collected: 03/23/23 13:30	
Acrylonitrile	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Surrogate: Dibromofluoromethane	101 %			80-126	MSV	03/28/23 5:58	
Surrogate: 1,2-Dichloroethane-d4	99.3 %			63-138	MSV	03/28/23 5:58	
Surrogate: Toluene-d8	94.3 %			87-116	MSV	03/28/23 5:58	
Surrogate: 4-Bromofluorobenzene	103 %			85-111	MSV	03/28/23 5:58	
Chloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Vinyl Chloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Bromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Chloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Acetone	12.2 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Methyl Iodide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-12	MW-8B			Matrix: Water		Collected: 03/23/23 13:30	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Methylene Chloride	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Bromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Chloroform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Benzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Trichloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Dibromomethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Toluene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Chlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Ethylbenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Xylenes, total	<2.0 ug/L	2.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Styrene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
Bromoform	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-12	MW-8B			Matrix: Water		Collected: 03/23/23 13:30	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1383	EPA 8260B	MSV	03/28/23 5:58	
<i>Surrogate: Dibromofluoromethane</i>	101 %			75-136	MSV	03/28/23 5:58	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	99.3 %			61-142	MSV	03/28/23 5:58	
<i>Surrogate: Toluene-d8</i>	94.3 %			82-121	MSV	03/28/23 5:58	
<i>Surrogate: 4-Bromofluorobenzene</i>	103 %			80-116	MSV	03/28/23 5:58	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:40	
Arsenic, total	0.0182 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:40	
Barium, total	0.821 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:40	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:40	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 21:40	
Cobalt, total	0.0096 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 21:40	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 21:40	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:40	
Nickel, total	0.0068 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:40	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:40	
Antimony, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:40	
Selenium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:40	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:40	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:40	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:40	
1GC2550-13	MW-9AR			Matrix: Water		Collected: 03/23/23 15:07	
Acrylonitrile	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
<i>Surrogate: Dibromofluoromethane</i>	104 %			80-126	MSV	03/28/23 13:14	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	108 %			63-138	MSV	03/28/23 13:14	
<i>Surrogate: Toluene-d8</i>	106 %			87-116	MSV	03/28/23 13:14	
<i>Surrogate: 4-Bromofluorobenzene</i>	99.6 %			85-111	MSV	03/28/23 13:14	
Chloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Vinyl Chloride	1.2 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Bromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Chloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Acetone	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Methyl Iodide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Methylene Chloride	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
trans-1,2-Dichloroethylene	4.4 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	

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Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-13	MW-9AR			Matrix: Water		Collected: 03/23/23 15:07	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
cis-1,2-Dichloroethylene	70.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Bromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Chloroform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Benzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Trichloroethylene	7.4 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
1,2-Dichloropropane	1.3 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Dibromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Toluene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Chlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Ethylbenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Xylenes, total	<2.0 ug/L	2.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Styrene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Bromoform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 13:14	
Surrogate: Dibromofluoromethane	104 %			75-136	MSV	03/28/23 13:14	
Surrogate: 1,2-Dichloroethane-d4	108 %			61-142	MSV	03/28/23 13:14	
Surrogate: Toluene-d8	106 %			82-121	MSV	03/28/23 13:14	
Surrogate: 4-Bromofluorobenzene	99.6 %			80-116	MSV	03/28/23 13:14	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-13	MW-9AR			Matrix: Water		Collected: 03/23/23 15:07	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:46	
Arsenic, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:46	
Barium, total	0.148 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:46	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:46	
Cadmium, total	0.0014 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 21:46	
Cobalt, total	0.0006 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 21:46	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 21:46	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:46	
Nickel, total	0.0053 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:46	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:46	
Antimony, total	0.0050 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:46	
Selenium, total	0.0195 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:46	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:46	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:46	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:46	

1GC2550-14	MW-14D			Matrix: Water		Collected: 03/23/23 15:40	
Acrylonitrile	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>			<i>80-126</i>	MSV	03/28/23 13:50	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>101 %</i>			<i>63-138</i>	MSV	03/28/23 13:50	
<i>Surrogate: Toluene-d8</i>	<i>92.5 %</i>			<i>87-116</i>	MSV	03/28/23 13:50	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>97.5 %</i>			<i>85-111</i>	MSV	03/28/23 13:50	
Chloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Vinyl Chloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Bromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Chloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Acetone	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Methyl Iodide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Methylene Chloride	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Bromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Chloroform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-14	MW-14D			Matrix: Water		Collected: 03/23/23 15:40	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Benzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Trichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Dibromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Toluene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Chlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Ethylbenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Xylenes, total	<2.0 ug/L	2.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Styrene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Bromoform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 13:50	
Surrogate: Dibromofluoromethane	101 %			75-136	MSV	03/28/23 13:50	
Surrogate: 1,2-Dichloroethane-d4	101 %			61-142	MSV	03/28/23 13:50	
Surrogate: Toluene-d8	92.5 %			82-121	MSV	03/28/23 13:50	
Surrogate: 4-Bromofluorobenzene	97.5 %			80-116	MSV	03/28/23 13:50	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:52	
Arsenic, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:52	
Barium, total	0.0201 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:52	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:52	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 21:52	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-14	MW-14D			Matrix: Water		Collected: 03/23/23 15:40	
Cobalt, total	0.0015 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 21:52	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 21:52	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:52	
Nickel, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:52	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:52	
Antimony, total	0.0021 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:52	
Selenium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:52	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:52	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:52	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:52	
1GC2550-15	MW-15R			Matrix: Water		Collected: 03/23/23 14:35	
Acrylonitrile	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
<i>Surrogate: Dibromofluoromethane</i>	<i>99.7 %</i>			<i>80-126</i>	MSV	03/28/23 14:26	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>99.0 %</i>			<i>63-138</i>	MSV	03/28/23 14:26	
<i>Surrogate: Toluene-d8</i>	<i>101 %</i>			<i>87-116</i>	MSV	03/28/23 14:26	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>102 %</i>			<i>85-111</i>	MSV	03/28/23 14:26	
Chloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Vinyl Chloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Bromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Chloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Acetone	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Methyl Iodide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Methylene Chloride	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Bromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Chloroform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Benzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-15	MW-15R			Matrix: Water		Collected: 03/23/23 14:35	
Trichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Dibromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Toluene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Chlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Ethylbenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Xylenes, total	<2.0 ug/L	2.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Styrene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Bromoform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 14:26	
Surrogate: Dibromofluoromethane	99.7 %			75-136	MSV	03/28/23 14:26	
Surrogate: 1,2-Dichloroethane-d4	99.0 %			61-142	MSV	03/28/23 14:26	
Surrogate: Toluene-d8	101 %			82-121	MSV	03/28/23 14:26	
Surrogate: 4-Bromofluorobenzene	102 %			80-116	MSV	03/28/23 14:26	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:59	
Arsenic, total	0.0511 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:59	
Barium, total	0.876 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:59	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:59	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 21:59	
Cobalt, total	0.0013 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 21:59	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 21:59	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:59	
Nickel, total	0.0068 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:59	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-15	MW-15R			Matrix: Water		Collected: 03/23/23 14:35	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:59	
Antimony, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:59	
Selenium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 21:59	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 21:59	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:59	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 21:59	
1GC2550-16	SW-1			Matrix: Water		Collected: 03/23/23 08:26	
Acrylonitrile	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
<i>Surrogate: Dibromofluoromethane</i>	102 %			80-126	MSV	03/28/23 15:03	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	99.4 %			63-138	MSV	03/28/23 15:03	
<i>Surrogate: Toluene-d8</i>	99.3 %			87-116	MSV	03/28/23 15:03	
<i>Surrogate: 4-Bromofluorobenzene</i>	98.2 %			85-111	MSV	03/28/23 15:03	
Chloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Vinyl Chloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Bromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Chloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Acetone	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Methyl Iodide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Methylene Chloride	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Bromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Chloroform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Benzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Trichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Dibromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-16	SW-1			Matrix: Water		Collected: 03/23/23 08:26	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Toluene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Chlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Ethylbenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Xylenes, total	<2.0 ug/L	2.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Styrene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Bromoform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 15:03	
Surrogate: Dibromofluoromethane	102 %			75-136	MSV	03/28/23 15:03	
Surrogate: 1,2-Dichloroethane-d4	99.4 %			61-142	MSV	03/28/23 15:03	
Surrogate: Toluene-d8	99.3 %			82-121	MSV	03/28/23 15:03	
Surrogate: 4-Bromofluorobenzene	98.2 %			80-116	MSV	03/28/23 15:03	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:05	
Arsenic, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:05	
Barium, total	0.191 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:05	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:05	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 22:05	
Cobalt, total	<0.0004 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 22:05	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 22:05	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:05	
Nickel, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:05	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:05	
Antimony, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 22:05	
Selenium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:05	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 22:05	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-16	SW-1			Matrix: Water		Collected: 03/23/23 08:26	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 22:05	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 22:05	
1GC2550-17	SW-2B			Matrix: Water		Collected: 03/23/23 08:05	
Acrylonitrile	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
<i>Surrogate: Dibromofluoromethane</i>	103 %			80-126	MSV	03/28/23 15:39	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	109 %			63-138	MSV	03/28/23 15:39	
<i>Surrogate: Toluene-d8</i>	103 %			87-116	MSV	03/28/23 15:39	
<i>Surrogate: 4-Bromofluorobenzene</i>	95.8 %			85-111	MSV	03/28/23 15:39	
Chloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Vinyl Chloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Bromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Chloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Acetone	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Methyl Iodide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Methylene Chloride	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Bromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Chloroform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Benzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Trichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Dibromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Toluene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-17	SW-2B			Matrix: Water		Collected: 03/23/23 08:05	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Chlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Ethylbenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Xylenes, total	<2.0 ug/L	2.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Styrene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Bromoform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 15:39	
Surrogate: Dibromofluoromethane	103 %			75-136	MSV	03/28/23 15:39	
Surrogate: 1,2-Dichloroethane-d4	109 %			61-142	MSV	03/28/23 15:39	
Surrogate: Toluene-d8	103 %			82-121	MSV	03/28/23 15:39	
Surrogate: 4-Bromofluorobenzene	95.8 %			80-116	MSV	03/28/23 15:39	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:24	
Arsenic, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:24	
Barium, total	0.197 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:24	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:24	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 22:24	
Cobalt, total	<0.0004 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 22:24	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 22:24	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:24	
Nickel, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:24	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:24	
Antimony, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 22:24	
Selenium, total	0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:24	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 22:24	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 22:24	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 22:24	

1GC2550-18 MW-31 Matrix: Water Collected: 03/23/23 15:27

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-18	MW-31			Matrix: Water		Collected: 03/23/23 15:27	
Acrylonitrile	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Surrogate: Dibromofluoromethane	102 %			80-126	MSV	03/28/23 16:15	
Surrogate: 1,2-Dichloroethane-d4	92.4 %			63-138	MSV	03/28/23 16:15	
Surrogate: Toluene-d8	92.4 %			87-116	MSV	03/28/23 16:15	
Surrogate: 4-Bromofluorobenzene	96.8 %			85-111	MSV	03/28/23 16:15	
Chloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Vinyl Chloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Bromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Chloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Acetone	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Methyl Iodide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Methylene Chloride	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Bromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Chloroform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Benzene	1.4 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Trichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Dibromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Toluene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-18	MW-31			Matrix: Water		Collected: 03/23/23 15:27	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Chlorobenzene	1.9 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Ethylbenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Xylenes, total	<2.0 ug/L	2.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Styrene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
Bromoform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
1,4-Dichlorobenzene	3.5 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 16:15	
<i>Surrogate: Dibromofluoromethane</i>	<i>102 %</i>			<i>75-136</i>	MSV	03/28/23 16:15	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>92.4 %</i>			<i>61-142</i>	MSV	03/28/23 16:15	
<i>Surrogate: Toluene-d8</i>	<i>92.4 %</i>			<i>82-121</i>	MSV	03/28/23 16:15	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>96.8 %</i>			<i>80-116</i>	MSV	03/28/23 16:15	
1GC2550-19	MW-32			Matrix: Water		Collected: 03/23/23 14:51	
Acrylonitrile	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
<i>Surrogate: Dibromofluoromethane</i>	<i>101 %</i>			<i>80-126</i>	MSV	03/28/23 16:51	
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>98.4 %</i>			<i>63-138</i>	MSV	03/28/23 16:51	
<i>Surrogate: Toluene-d8</i>	<i>103 %</i>			<i>87-116</i>	MSV	03/28/23 16:51	
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>106 %</i>			<i>85-111</i>	MSV	03/28/23 16:51	
Chloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Vinyl Chloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Bromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Chloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Acetone	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Methyl Iodide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Methylene Chloride	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-19	MW-32			Matrix: Water		Collected: 03/23/23 14:51	
Bromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Chloroform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Benzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Trichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Dibromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Toluene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Chlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Ethylbenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Xylenes, total	<2.0 ug/L	2.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Styrene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Bromoform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 16:51	
Surrogate: Dibromofluoromethane	101 %			75-136	MSV	03/28/23 16:51	
Surrogate: 1,2-Dichloroethane-d4	98.4 %			61-142	MSV	03/28/23 16:51	
Surrogate: Toluene-d8	103 %			82-121	MSV	03/28/23 16:51	
Surrogate: 4-Bromofluorobenzene	106 %			80-116	MSV	03/28/23 16:51	

1GC2550-20	LW-26			Matrix: Water		Collected: 03/23/23 16:11	
Chloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-20	LW-26			Matrix: Water		Collected: 03/23/23 16:11	
Vinyl Chloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Bromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Chloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Acetone	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Methyl Iodide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Methylene Chloride	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Bromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Chloroform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Benzene	2.4 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Trichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Dibromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Toluene	1.5 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Chlorobenzene	9.2 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Ethylbenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Xylenes, total	2.8 ug/L	2.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Styrene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-20	LW-26			Matrix: Water		Collected: 03/23/23 16:11	
Bromoform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,4-Dichlorobenzene	5.6 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Surrogate: Dibromofluoromethane	101 %			75-136	MSV	03/28/23 17:27	
Surrogate: 1,2-Dichloroethane-d4	98.6 %			61-142	MSV	03/28/23 17:27	
Surrogate: Toluene-d8	96.8 %			82-121	MSV	03/28/23 17:27	
Surrogate: 4-Bromofluorobenzene	100 %			80-116	MSV	03/28/23 17:27	
Alkalinity, as CaCO3	473 mg/L	50	1GC1325	2320B	BSS	03/27/23 10:40	
BOD (5 day)	24 mg/L	4	1GC1304	SM 5210 B	TJB	03/24/23 16:45	
Nitrogen, Ammonia	38.2 mg/L	10.0	1GD0265	TIMBERLINE	TJB	04/06/23 12:12	
pH	6.7 pH	0.5	1GC1324	SM 4500 H+ B	BSS	03/24/23 16:44	I-03
Solids, total dissolved	732 mg/L	5	1GC1404	USGS I-1750-85	MEAH	03/29/23 10:15	
Chloride	259 mg/L	10.0	1GC1527	EPA 9056	MID	03/28/23 13:01	
Sulfate	4.0 mg/L	1.0	1GC1527	EPA 9056	MID	03/28/23 21:11	
Cobalt, total	0.0056 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 22:30	
1GC2550-21	SW-102			Matrix: Water		Collected: 03/23/23 08:12	
Acrylonitrile	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Surrogate: Dibromofluoromethane	102 %			80-126	MSV	03/28/23 18:03	
Surrogate: 1,2-Dichloroethane-d4	97.7 %			63-138	MSV	03/28/23 18:03	
Surrogate: Toluene-d8	99.5 %			87-116	MSV	03/28/23 18:03	
Surrogate: 4-Bromofluorobenzene	104 %			85-111	MSV	03/28/23 18:03	
Chloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Vinyl Chloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Bromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Chloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Acetone	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Methyl Iodide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Methylene Chloride	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-21	SW-102			Matrix: Water		Collected: 03/23/23 08:12	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Bromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Chloroform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Benzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Trichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Dibromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Toluene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Chlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Ethylbenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Xylenes, total	<2.0 ug/L	2.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Styrene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Bromoform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 18:03	
Surrogate: Dibromofluoromethane	102 %			75-136	MSV	03/28/23 18:03	
Surrogate: 1,2-Dichloroethane-d4	97.7 %			61-142	MSV	03/28/23 18:03	
Surrogate: Toluene-d8	99.5 %			82-121	MSV	03/28/23 18:03	
Surrogate: 4-Bromofluorobenzene	104 %			80-116	MSV	03/28/23 18:03	

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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-22	Duplicate			Matrix: Water		Collected: 03/23/23 00:00	
Silver, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:36	
Arsenic, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:36	
Barium, total	0.0382 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:36	
Beryllium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:36	
Cadmium, total	<0.0008 mg/L	0.0008	1GC1453	EPA 6020A	RVV	03/31/23 22:36	
Cobalt, total	<0.0004 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 22:36	
Chromium, total	<0.0080 mg/L	0.0080	1GC1453	EPA 6020A	RVV	03/31/23 22:36	
Nickel, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:36	
Lead, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:36	
Antimony, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 22:36	
Selenium, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:36	
Thallium, total	<0.0020 mg/L	0.0020	1GC1453	EPA 6020A	RVV	03/31/23 22:36	
Vanadium, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 22:36	
Zinc, total	<0.0200 mg/L	0.0200	1GC1453	EPA 6020A	RVV	03/31/23 22:36	
1GC2550-22RE1	Duplicate			Matrix: Water		Collected: 03/23/23 00:00	
Copper, total	<0.0040 mg/L	0.0040	1GC1453	EPA 6020A	RVV	04/11/23 15:04	

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1383 - EPA 5030B

Blank (1GC1383-BLK1)

Prepared & Analyzed: 03/27/23

Surrogate: Dibromofluoromethane	51.9		ug/L	50.3520		103	80-126			
Surrogate: Dibromofluoromethane	51.9		"	50.3520		103	75-136			
Surrogate: 1,2-Dichloroethane-d4	55.8		"	50.4080		111	63-138			
Surrogate: 1,2-Dichloroethane-d4	55.8		"	50.4080		111	61-142			
Surrogate: Toluene-d8	50.9		"	50.2360		101	82-121			
Surrogate: Toluene-d8	50.9		"	50.2360		101	87-116			
Surrogate: 4-Bromofluorobenzene	50.5		"	50.4200		100	85-111			
Surrogate: 4-Bromofluorobenzene	50.5		"	50.4200		100	80-116			
Chloromethane	ND	1.0	"							
Vinyl Chloride	ND	1.0	"							
Bromomethane	ND	1.0	"							
Chloroethane	ND	1.0	"							
Trichlorofluoromethane	ND	1.0	"							
1,1-Dichloroethylene	ND	1.0	"							
Acetone	ND	10.0	"							
Methyl Iodide	ND	1.0	"							
Carbon Disulfide	ND	1.0	"							
Methylene Chloride	ND	5.0	"							
Acrylonitrile	ND	5.0	"							
trans-1,2-Dichloroethylene	ND	1.0	"							
1,1-Dichloroethane	ND	1.0	"							
Vinyl Acetate	ND	5.0	"							
cis-1,2-Dichloroethylene	ND	1.0	"							
2-Butanone (MEK)	ND	10.0	"							
Bromochloromethane	ND	1.0	"							
Chloroform	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
Carbon Tetrachloride	ND	1.0	"							
Benzene	ND	1.0	"							
1,2-Dichloroethane	ND	1.0	"							
Trichloroethylene	ND	1.0	"							
1,2-Dichloropropane	ND	1.0	"							
Dibromomethane	ND	1.0	"							
Bromodichloromethane	ND	1.0	"							
cis-1,3-Dichloropropene	ND	1.0	"							
4-Methyl-2-pentanone (MIBK)	ND	5.0	"							
Toluene	ND	1.0	"							
trans-1,3-Dichloropropene	ND	1.0	"							

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1383 - EPA 5030B

Blank (1GC1383-BLK1)

Prepared & Analyzed: 03/27/23

1,1,2-Trichloroethane	ND	1.0	ug/L							
Tetrachloroethylene	ND	1.0	"							
2-Hexanone (MBK)	ND	5.0	"							
Dibromochloromethane	ND	1.0	"							
1,2-Dibromoethane	ND	1.0	"							
Chlorobenzene	ND	1.0	"							
1,1,1,2-Tetrachloroethane	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	2.0	"							
Styrene	ND	1.0	"							
Bromoform	ND	1.0	"							
1,2,3-Trichloropropane	ND	1.0	"							
trans-1,4-Dichloro-2-butene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
1,2-Dichlorobenzene	ND	1.0	"							
1,2-Dibromo-3-chloropropane	ND	5.0	"							

LCS (1GC1383-BS1)

Prepared & Analyzed: 03/27/23

Surrogate: Dibromofluoromethane	51.9		ug/L	50.3520		103	80-126			
Surrogate: Dibromofluoromethane	51.9		"	50.3520		103	75-136			
Surrogate: 1,2-Dichloroethane-d4	53.3		"	50.4080		106	61-142			
Surrogate: 1,2-Dichloroethane-d4	53.3		"	50.4080		106	63-138			
Surrogate: Toluene-d8	52.3		"	50.2360		104	82-121			
Surrogate: Toluene-d8	52.3		"	50.2360		104	87-116			
Surrogate: 4-Bromofluorobenzene	49.5		"	50.4200		98.2	80-116			
Surrogate: 4-Bromofluorobenzene	49.5		"	50.4200		98.2	85-111			
Chloromethane	28.79	1.0	"	30.0000		96.0	63-155			
Vinyl Chloride	28.18	1.0	"	30.0000		93.9	70-154			
Bromomethane	29.22	1.0	"	30.0000		97.4	52-176			
Chloroethane	25.66	1.0	"	30.0000		85.5	72-148			
Trichlorofluoromethane	31.01	1.0	"	30.0000		103	70-152			
1,1-Dichloroethylene	49.46	1.0	"	50.0000		98.9	70-148			
Acetone	75.37	10.0	"	108.800		69.3	43-172			
Methyl Iodide	129.2	1.0	"	99.6930		130	69-170			
Carbon Disulfide	110.1	1.0	"	104.600		105	72-162			
Methylene Chloride	39.93	5.0	"	50.0000		79.9	68-142			
Acrylonitrile	83.50	5.0	"	100.500		83.1	67-144			
trans-1,2-Dichloroethylene	46.49	1.0	"	50.0000		93.0	66-148			

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1383 - EPA 5030B

LCS (1GC1383-BS1)

Prepared & Analyzed: 03/27/23

1,1-Dichloroethane	43.78	1.0	ug/L	50.0000		87.6	66-143			
Vinyl Acetate	59.28	5.0	"	115.300		51.4	43-153			
cis-1,2-Dichloroethylene	44.88	1.0	"	50.0000		89.8	71-149			
2-Butanone (MEK)	69.61	10.0	"	105.600		65.9	52-159			
Bromochloromethane	46.25	1.0	"	50.0000		92.5	69-143			
Chloroform	48.87	1.0	"	50.0000		97.7	69-144			
1,1,1-Trichloroethane	43.14	1.0	"	49.9750		86.3	62-129			
Carbon Tetrachloride	50.64	1.0	"	50.0000		101	63-141			
Benzene	44.07	1.0	"	50.0000		88.1	71-134			
1,2-Dichloroethane	43.67	1.0	"	50.0000		87.3	72-132			
Trichloroethylene	42.31	1.0	"	50.0000		84.6	71-135			
1,2-Dichloropropane	42.10	1.0	"	50.0000		84.2	69-136			
Dibromomethane	45.59	1.0	"	50.0000		91.2	73-147			
Bromodichloromethane	43.01	1.0	"	50.0000		86.0	68-129			
cis-1,3-Dichloropropene	42.94	1.0	"	50.3250		85.3	65-134			
4-Methyl-2-pentanone (MIBK)	85.96	5.0	"	106.400		80.8	58-147			
Toluene	43.90	1.0	"	50.0000		87.8	72-133			
trans-1,3-Dichloropropene	45.35	1.0	"	50.4250		89.9	67-130			
1,1,2-Trichloroethane	44.18	1.0	"	50.0000		88.4	69-135			
Tetrachloroethylene	35.95	1.0	"	50.0000		71.9	69-130			
2-Hexanone (MBK)	85.90	5.0	"	105.000		81.8	55-144			
Dibromochloromethane	47.16	1.0	"	49.5000		95.3	73-127			
1,2-Dibromoethane	46.37	1.0	"	50.0000		92.7	67-132			
Chlorobenzene	42.43	1.0	"	50.0000		84.9	72-123			
1,1,1,2-Tetrachloroethane	45.93	1.0	"	50.0000		91.9	73-127			
Ethylbenzene	43.41	1.0	"	50.0000		86.8	71-127			
Xylenes, total	135.9	2.0	"	150.000		90.6	74-127			
Styrene	42.96	1.0	"	50.0000		85.9	66-126			
Bromoform	48.60	1.0	"	50.0000		97.2	68-130			
1,2,3-Trichloropropane	47.51	1.0	"	50.0000		95.0	63-136			
trans-1,4-Dichloro-2-butene	82.76	5.0	"	116.300		71.2	54-134			
1,1,2,2-Tetrachloroethane	41.96	1.0	"	49.8500		84.2	61-131			
1,4-Dichlorobenzene	41.72	1.0	"	50.0000		83.4	70-129			
1,2-Dichlorobenzene	44.51	1.0	"	50.0000		89.0	69-126			
1,2-Dibromo-3-chloropropane	51.25	5.0	"	50.0000		102	50-143			

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1383 - EPA 5030B

LCS Dup (1GC1383-BSD1)

Prepared & Analyzed: 03/27/23

Surrogate: Dibromofluoromethane	53.0		ug/L	50.3520		105	75-136			
Surrogate: Dibromofluoromethane	53.0		"	50.3520		105	80-126			
Surrogate: 1,2-Dichloroethane-d4	54.5		"	50.4080		108	61-142			
Surrogate: 1,2-Dichloroethane-d4	54.5		"	50.4080		108	63-138			
Surrogate: Toluene-d8	49.3		"	50.2360		98.1	87-116			
Surrogate: Toluene-d8	49.3		"	50.2360		98.1	82-121			
Surrogate: 4-Bromofluorobenzene	53.8		"	50.4200		107	85-111			
Surrogate: 4-Bromofluorobenzene	53.8		"	50.4200		107	80-116			
Chloromethane	29.79	1.0	"	30.0000		99.3	63-155	3.41	24	
Vinyl Chloride	27.68	1.0	"	30.0000		92.3	70-154	1.79	25	
Bromomethane	28.21	1.0	"	30.0000		94.0	52-176	3.52	27	
Chloroethane	26.98	1.0	"	30.0000		89.9	72-148	5.02	25	
Trichlorofluoromethane	31.17	1.0	"	30.0000		104	70-152	0.515	26	
1,1-Dichloroethylene	52.16	1.0	"	50.0000		104	70-148	5.31	24	
Acetone	92.13	10.0	"	108.800		84.7	43-172	20.0	30	
Methyl Iodide	128.8	1.0	"	99.6930		129	69-170	0.318	30	
Carbon Disulfide	113.5	1.0	"	104.600		109	72-162	3.01	24	
Methylene Chloride	43.50	5.0	"	50.0000		87.0	68-142	8.56	21	
Acrylonitrile	97.24	5.0	"	100.500		96.8	67-144	15.2	24	
trans-1,2-Dichloroethylene	49.16	1.0	"	50.0000		98.3	66-148	5.58	27	
1,1-Dichloroethane	46.86	1.0	"	50.0000		93.7	66-143	6.80	24	
Vinyl Acetate	110.0	5.0	"	115.300		95.4	43-153	59.9	30	QR-02
cis-1,2-Dichloroethylene	46.70	1.0	"	50.0000		93.4	71-149	3.97	26	
2-Butanone (MEK)	101.0	10.0	"	105.600		95.6	52-159	36.8	27	QR-02
Bromochloromethane	50.07	1.0	"	50.0000		100	69-143	7.93	23	
Chloroform	51.29	1.0	"	50.0000		103	69-144	4.83	23	
1,1,1-Trichloroethane	46.96	1.0	"	49.9750		94.0	62-129	8.48	24	
Carbon Tetrachloride	54.24	1.0	"	50.0000		108	63-141	6.86	25	
Benzene	44.75	1.0	"	50.0000		89.5	71-134	1.53	24	
1,2-Dichloroethane	48.82	1.0	"	50.0000		97.6	72-132	11.1	24	
Trichloroethylene	44.31	1.0	"	50.0000		88.6	71-135	4.62	24	
1,2-Dichloropropane	45.04	1.0	"	50.0000		90.1	69-136	6.75	24	
Dibromomethane	49.14	1.0	"	50.0000		98.3	73-147	7.49	25	
Bromodichloromethane	48.03	1.0	"	50.0000		96.1	68-129	11.0	22	
cis-1,3-Dichloropropene	45.35	1.0	"	50.3250		90.1	65-134	5.46	23	
4-Methyl-2-pentanone (MIBK)	97.23	5.0	"	106.400		91.4	58-147	12.3	27	
Toluene	47.24	1.0	"	50.0000		94.5	72-133	7.33	24	
trans-1,3-Dichloropropene	49.61	1.0	"	50.4250		98.4	67-130	8.97	24	

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1383 - EPA 5030B

LCS Dup (1GC1383-BSD1)				Prepared & Analyzed: 03/27/23						
1,1,2-Trichloroethane	48.70	1.0	ug/L	50.0000	97.4	69-135	9.73	23		
Tetrachloroethylene	38.66	1.0	"	50.0000	77.3	69-130	7.26	25		
2-Hexanone (MBK)	98.19	5.0	"	105.000	93.5	55-144	13.4	25		
Dibromochloromethane	51.27	1.0	"	49.5000	104	73-127	8.35	22		
1,2-Dibromoethane	53.73	1.0	"	50.0000	107	67-132	14.7	24		
Chlorobenzene	47.66	1.0	"	50.0000	95.3	72-123	11.6	23		
1,1,1,2-Tetrachloroethane	51.18	1.0	"	50.0000	102	73-127	10.8	24		
Ethylbenzene	46.99	1.0	"	50.0000	94.0	71-127	7.92	26		
Xylenes, total	149.4	2.0	"	150.000	99.6	74-127	9.47	25		
Styrene	42.60	1.0	"	50.0000	85.2	66-126	0.842	23		
Bromoform	57.26	1.0	"	50.0000	115	68-130	16.4	23		
1,2,3-Trichloropropane	53.59	1.0	"	50.0000	107	63-136	12.0	24		
trans-1,4-Dichloro-2-butene	92.66	5.0	"	116.300	79.7	54-134	11.3	27		
1,1,2,2-Tetrachloroethane	47.07	1.0	"	49.8500	94.4	61-131	11.5	29		
1,4-Dichlorobenzene	46.36	1.0	"	50.0000	92.7	70-129	10.5	24		
1,2-Dichlorobenzene	49.26	1.0	"	50.0000	98.5	69-126	10.1	26		
1,2-Dibromo-3-chloropropane	56.93	5.0	"	50.0000	114	50-143	10.5	30		

Matrix Spike (1GC1383-MS1)		Source: 1GC2194-01		Prepared & Analyzed: 03/27/23						
Surrogate: Dibromofluoromethane	511		ug/L	503.520	101	75-136				
Surrogate: Dibromofluoromethane	511		"	503.520	101	80-126				
Surrogate: 1,2-Dichloroethane-d4	524		"	504.080	104	61-142				
Surrogate: 1,2-Dichloroethane-d4	524		"	504.080	104	63-138				
Surrogate: Toluene-d8	528		"	502.360	105	87-116				
Surrogate: Toluene-d8	528		"	502.360	105	82-121				
Surrogate: 4-Bromofluorobenzene	516		"	504.200	102	80-116				
Surrogate: 4-Bromofluorobenzene	516		"	504.200	102	85-111				
Chloromethane	357.4	10.0	"	300.000	ND	119	61-152			
Vinyl Chloride	320.2	10.0	"	300.000	ND	107	66-149			
Bromomethane	322.3	10.0	"	300.000	ND	107	43-171			
Chloroethane	302.6	10.0	"	300.000	ND	101	69-148			
Trichlorofluoromethane	332.2	10.0	"	300.000	ND	111	62-163			
1,1-Dichloroethylene	565.8	10.0	"	500.000	ND	113	70-148			
Acetone	810.1	100	"	1088.00	ND	74.5	45-173			
Methyl Iodide	1423	10.0	"	996.930	ND	143	62-167			
Carbon Disulfide	1328	10.0	"	1046.00	ND	127	71-163			
Methylene Chloride	450.6	50.0	"	500.000	ND	90.1	69-140			
Acrylonitrile	1086	50.0	"	1005.00	ND	108	58-151			
trans-1,2-Dichloroethylene	536.1	10.0	"	500.000	ND	107	69-144			

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Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1383 - EPA 5030B

Matrix Spike (1GC1383-MS1)	Source: 1GC2194-01			Prepared & Analyzed: 03/27/23						
1,1-Dichloroethane	495.7	10.0	ug/L	500.000	ND	99.1	70-138			
Vinyl Acetate	1018	50.0	"	1153.00	ND	88.3	58-142			
cis-1,2-Dichloroethylene	503.4	10.0	"	500.000	ND	101	68-151			
2-Butanone (MEK)	900.9	100	"	1056.00	ND	85.3	50-160			
Bromochloromethane	539.8	10.0	"	500.000	ND	108	65-143			
Chloroform	526.2	10.0	"	500.000	ND	105	71-143			
1,1,1-Trichloroethane	499.8	10.0	"	499.750	ND	100	63-133			
Carbon Tetrachloride	563.5	10.0	"	500.000	ND	113	63-142			
Benzene	456.7	10.0	"	500.000	ND	91.3	69-133			
1,2-Dichloroethane	534.1	10.0	"	500.000	ND	107	63-138			
Trichloroethylene	520.6	10.0	"	500.000	ND	104	71-133			
1,2-Dichloropropane	554.7	10.0	"	500.000	ND	111	69-132			
Dibromomethane	554.9	10.0	"	500.000	ND	111	70-147			
Bromodichloromethane	516.9	10.0	"	500.000	ND	103	67-130			
cis-1,3-Dichloropropene	482.9	10.0	"	503.250	ND	96.0	61-126			
4-Methyl-2-pentanone (MIBK)	1082	50.0	"	1064.00	ND	102	55-147			
Toluene	548.1	10.0	"	500.000	ND	110	71-133			
trans-1,3-Dichloropropene	532.4	10.0	"	504.250	ND	106	63-124			
1,1,2-Trichloroethane	505.6	10.0	"	500.000	ND	101	69-133			
Tetrachloroethylene	410.4	10.0	"	500.000	ND	82.1	70-124			
2-Hexanone (MBK)	1023	50.0	"	1050.00	ND	97.4	53-141			
Dibromochloromethane	511.2	10.0	"	495.000	ND	103	74-122			
1,2-Dibromoethane	492.7	10.0	"	500.000	ND	98.5	66-127			
Chlorobenzene	489.8	10.0	"	500.000	ND	98.0	76-116			
1,1,1,2-Tetrachloroethane	485.3	10.0	"	500.000	ND	97.1	77-121			
Ethylbenzene	486.1	10.0	"	500.000	ND	97.2	73-124			
Xylenes, total	1544	20.0	"	1500.00	ND	103	75-123			
Styrene	509.7	10.0	"	500.000	ND	102	70-120			
Bromoform	527.1	10.0	"	500.000	ND	105	70-124			
1,2,3-Trichloropropane	532.0	10.0	"	500.000	ND	106	62-135			
trans-1,4-Dichloro-2-butene	901.3	50.0	"	1163.00	ND	77.5	50-120			
1,1,2,2-Tetrachloroethane	492.3	10.0	"	498.500	ND	98.8	63-126			
1,4-Dichlorobenzene	479.7	10.0	"	500.000	ND	95.9	72-119			
1,2-Dichlorobenzene	521.8	10.0	"	500.000	ND	104	71-117			
1,2-Dibromo-3-chloropropane	543.2	50.0	"	500.000	ND	109	49-134			

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1383 - EPA 5030B

Matrix Spike Dup (1GC1383-MSD1)	Source: 1GC2194-01			Prepared & Analyzed: 03/27/23						
Surrogate: Dibromofluoromethane	492		ug/L	503.520		97.8	80-126			
Surrogate: Dibromofluoromethane	492		"	503.520		97.8	75-136			
Surrogate: 1,2-Dichloroethane-d4	517		"	504.080		103	61-142			
Surrogate: 1,2-Dichloroethane-d4	517		"	504.080		103	63-138			
Surrogate: Toluene-d8	522		"	502.360		104	82-121			
Surrogate: Toluene-d8	522		"	502.360		104	87-116			
Surrogate: 4-Bromofluorobenzene	522		"	504.200		104	85-111			
Surrogate: 4-Bromofluorobenzene	522		"	504.200		104	80-116			
Chloromethane	358.9	10.0	"	300.000	ND	120	61-152	0.419	26	
Vinyl Chloride	329.9	10.0	"	300.000	ND	110	66-149	2.98	23	
Bromomethane	301.8	10.0	"	300.000	ND	101	43-171	6.57	29	
Chloroethane	298.8	10.0	"	300.000	ND	99.6	69-148	1.26	25	
Trichlorofluoromethane	326.4	10.0	"	300.000	ND	109	62-163	1.76	25	
1,1-Dichloroethylene	569.8	10.0	"	500.000	ND	114	70-148	0.704	22	
Acetone	834.8	100	"	1088.00	ND	76.7	45-173	3.00	30	
Methyl Iodide	1387	10.0	"	996.930	ND	139	62-167	2.53	24	
Carbon Disulfide	1248	10.0	"	1046.00	ND	119	71-163	6.23	22	
Methylene Chloride	464.0	50.0	"	500.000	ND	92.8	69-140	2.93	19	
Acrylonitrile	1015	50.0	"	1005.00	ND	101	58-151	6.80	15	
trans-1,2-Dichloroethylene	534.0	10.0	"	500.000	ND	107	69-144	0.392	22	
1,1-Dichloroethane	482.1	10.0	"	500.000	ND	96.4	70-138	2.78	20	
Vinyl Acetate	1033	50.0	"	1153.00	ND	89.6	58-142	1.40	24	
cis-1,2-Dichloroethylene	522.1	10.0	"	500.000	ND	104	68-151	3.65	22	
2-Butanone (MEK)	1013	100	"	1056.00	ND	95.9	50-160	11.7	23	
Bromochloromethane	526.1	10.0	"	500.000	ND	105	65-143	2.57	22	
Chloroform	522.9	10.0	"	500.000	ND	105	71-143	0.629	21	
1,1,1-Trichloroethane	474.2	10.0	"	499.750	ND	94.9	63-133	5.26	23	
Carbon Tetrachloride	556.0	10.0	"	500.000	ND	111	63-142	1.34	22	
Benzene	477.4	10.0	"	500.000	ND	95.5	69-133	4.43	18	
1,2-Dichloroethane	520.9	10.0	"	500.000	ND	104	63-138	2.50	20	
Trichloroethylene	509.1	10.0	"	500.000	ND	102	71-133	2.23	23	
1,2-Dichloropropane	494.1	10.0	"	500.000	ND	98.8	69-132	11.6	20	
Dibromomethane	534.9	10.0	"	500.000	ND	107	70-147	3.67	22	
Bromodichloromethane	526.6	10.0	"	500.000	ND	105	67-130	1.86	21	
cis-1,3-Dichloropropene	500.2	10.0	"	503.250	ND	99.4	61-126	3.52	21	
4-Methyl-2-pentanone (MIBK)	1076	50.0	"	1064.00	ND	101	55-147	0.547	23	
Toluene	525.5	10.0	"	500.000	ND	105	71-133	4.21	19	
trans-1,3-Dichloropropene	510.5	10.0	"	504.250	ND	101	63-124	4.20	21	

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1383 - EPA 5030B

Matrix Spike Dup (1GC1383-MSD1)	Source: 1GC2194-01			Prepared & Analyzed: 03/27/23						
1,1,2-Trichloroethane	495.3	10.0	ug/L	500.000	ND	99.1	69-133	2.06	19	
Tetrachloroethylene	419.5	10.0	"	500.000	ND	83.9	70-124	2.19	24	
2-Hexanone (MBK)	980.3	50.0	"	1050.00	ND	93.4	53-141	4.24	24	
Dibromochloromethane	495.9	10.0	"	495.000	ND	100	74-122	3.04	21	
1,2-Dibromoethane	502.5	10.0	"	500.000	ND	100	66-127	1.97	23	
Chlorobenzene	503.1	10.0	"	500.000	ND	101	76-116	2.68	21	
1,1,1,2-Tetrachloroethane	497.7	10.0	"	500.000	ND	99.5	77-121	2.52	25	
Ethylbenzene	493.0	10.0	"	500.000	ND	98.6	73-124	1.41	20	
Xylenes, total	1528	20.0	"	1500.00	ND	102	75-123	1.03	20	
Styrene	542.2	10.0	"	500.000	ND	108	70-120	6.18	23	
Bromoform	525.9	10.0	"	500.000	ND	105	70-124	0.228	22	
1,2,3-Trichloropropane	515.9	10.0	"	500.000	ND	103	62-135	3.07	28	
trans-1,4-Dichloro-2-butene	867.2	50.0	"	1163.00	ND	74.6	50-120	3.86	26	
1,1,2,2-Tetrachloroethane	470.5	10.0	"	498.500	ND	94.4	63-126	4.53	24	
1,4-Dichlorobenzene	444.0	10.0	"	500.000	ND	88.8	72-119	7.73	24	
1,2-Dichlorobenzene	496.0	10.0	"	500.000	ND	99.2	71-117	5.07	24	
1,2-Dibromo-3-chloropropane	530.4	50.0	"	500.000	ND	106	49-134	2.38	28	

Batch 1GC1422 - EPA 5030B

Blank (1GC1422-BLK1)	Prepared & Analyzed: 03/28/23									
Surrogate: Dibromofluoromethane	51.7		ug/L	50.3520		103	75-136			
Surrogate: Dibromofluoromethane	51.7		"	50.3520		103	80-126			
Surrogate: 1,2-Dichloroethane-d4	54.2		"	50.4080		108	61-142			
Surrogate: 1,2-Dichloroethane-d4	54.2		"	50.4080		108	63-138			
Surrogate: Toluene-d8	49.9		"	50.2360		99.3	82-121			
Surrogate: Toluene-d8	49.9		"	50.2360		99.3	87-116			
Surrogate: 4-Bromofluorobenzene	51.2		"	50.4200		102	85-111			
Surrogate: 4-Bromofluorobenzene	51.2		"	50.4200		102	80-116			
Chloromethane	ND	1.0	"							
Vinyl Chloride	ND	1.0	"							
Bromomethane	ND	1.0	"							
Chloroethane	ND	1.0	"							
Trichlorofluoromethane	ND	1.0	"							
1,1-Dichloroethylene	ND	1.0	"							
Acetone	ND	10.0	"							
Methyl Iodide	ND	1.0	"							
Carbon Disulfide	ND	1.0	"							
Methylene Chloride	ND	5.0	"							

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1422 - EPA 5030B

Blank (1GC1422-BLK1)

Prepared & Analyzed: 03/28/23

Acrylonitrile	ND	5.0	ug/L							
trans-1,2-Dichloroethylene	ND	1.0	"							
1,1-Dichloroethane	ND	1.0	"							
Vinyl Acetate	ND	5.0	"							
cis-1,2-Dichloroethylene	ND	1.0	"							
2-Butanone (MEK)	ND	10.0	"							
Bromochloromethane	ND	1.0	"							
Chloroform	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
Carbon Tetrachloride	ND	1.0	"							
Benzene	ND	1.0	"							
1,2-Dichloroethane	ND	1.0	"							
Trichloroethylene	ND	1.0	"							
1,2-Dichloropropane	ND	1.0	"							
Dibromomethane	ND	1.0	"							
Bromodichloromethane	ND	1.0	"							
cis-1,3-Dichloropropene	ND	1.0	"							
4-Methyl-2-pentanone (MIBK)	ND	5.0	"							
Toluene	ND	1.0	"							
trans-1,3-Dichloropropene	ND	1.0	"							
1,1,2-Trichloroethane	ND	1.0	"							
Tetrachloroethylene	ND	1.0	"							
2-Hexanone (MBK)	ND	5.0	"							
Dibromochloromethane	ND	1.0	"							
1,2-Dibromoethane	ND	1.0	"							
Chlorobenzene	ND	1.0	"							
1,1,1,2-Tetrachloroethane	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	2.0	"							
Styrene	ND	1.0	"							
Bromoform	ND	1.0	"							
1,2,3-Trichloropropane	ND	1.0	"							
trans-1,4-Dichloro-2-butene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
1,2-Dichlorobenzene	ND	1.0	"							
1,2-Dibromo-3-chloropropane	ND	5.0	"							

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1422 - EPA 5030B

LCS (1GC1422-BS1)

Prepared & Analyzed: 03/28/23

Surrogate: Dibromofluoromethane	50.4		ug/L	50.3520		100	80-126			
Surrogate: Dibromofluoromethane	50.4		"	50.3520		100	75-136			
Surrogate: 1,2-Dichloroethane-d4	52.6		"	50.4080		104	61-142			
Surrogate: 1,2-Dichloroethane-d4	52.6		"	50.4080		104	63-138			
Surrogate: Toluene-d8	53.4		"	50.2360		106	82-121			
Surrogate: Toluene-d8	53.4		"	50.2360		106	87-116			
Surrogate: 4-Bromofluorobenzene	54.2		"	50.4200		108	85-111			
Surrogate: 4-Bromofluorobenzene	54.2		"	50.4200		108	80-116			
Chloromethane	35.41	1.0	"	30.0000		118	63-155			
Vinyl Chloride	30.39	1.0	"	30.0000		101	70-154			
Bromomethane	30.65	1.0	"	30.0000		102	52-176			
Chloroethane	29.85	1.0	"	30.0000		99.5	72-148			
Trichlorofluoromethane	30.96	1.0	"	30.0000		103	70-152			
1,1-Dichloroethylene	53.56	1.0	"	50.0000		107	70-148			
Acetone	84.96	10.0	"	108.800		78.1	43-172			
Methyl Iodide	135.5	1.0	"	99.6930		136	69-170			
Carbon Disulfide	122.8	1.0	"	104.600		117	72-162			
Methylene Chloride	44.69	5.0	"	50.0000		89.4	68-142			
Acrylonitrile	96.45	5.0	"	100.500		96.0	67-144			
trans-1,2-Dichloroethylene	50.29	1.0	"	50.0000		101	66-148			
1,1-Dichloroethane	46.66	1.0	"	50.0000		93.3	66-143			
Vinyl Acetate	77.83	5.0	"	115.300		67.5	43-153			
cis-1,2-Dichloroethylene	50.17	1.0	"	50.0000		100	71-149			
2-Butanone (MEK)	80.60	10.0	"	105.600		76.3	52-159			
Bromochloromethane	50.28	1.0	"	50.0000		101	69-143			
Chloroform	52.03	1.0	"	50.0000		104	69-144			
1,1,1-Trichloroethane	46.70	1.0	"	49.9750		93.4	62-129			
Carbon Tetrachloride	52.42	1.0	"	50.0000		105	63-141			
Benzene	47.32	1.0	"	50.0000		94.6	71-134			
1,2-Dichloroethane	52.18	1.0	"	50.0000		104	72-132			
Trichloroethylene	48.05	1.0	"	50.0000		96.1	71-135			
1,2-Dichloropropane	51.59	1.0	"	50.0000		103	69-136			
Dibromomethane	54.00	1.0	"	50.0000		108	73-147			
Bromodichloromethane	50.71	1.0	"	50.0000		101	68-129			
cis-1,3-Dichloropropene	50.03	1.0	"	50.3250		99.4	65-134			
4-Methyl-2-pentanone (MIBK)	107.2	5.0	"	106.400		101	58-147			
Toluene	49.41	1.0	"	50.0000		98.8	72-133			
trans-1,3-Dichloropropene	52.27	1.0	"	50.4250		104	67-130			

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1422 - EPA 5030B

LCS (1GC1422-BS1)		Prepared & Analyzed: 03/28/23								
1,1,2-Trichloroethane	50.37	1.0	ug/L	50.0000	101	69-135				
Tetrachloroethylene	43.07	1.0	"	50.0000	86.1	69-130				
2-Hexanone (MBK)	105.0	5.0	"	105.000	100	55-144				
Dibromochloromethane	50.92	1.0	"	49.5000	103	73-127				
1,2-Dibromoethane	52.52	1.0	"	50.0000	105	67-132				
Chlorobenzene	50.00	1.0	"	50.0000	100	72-123				
1,1,1,2-Tetrachloroethane	51.87	1.0	"	50.0000	104	73-127				
Ethylbenzene	49.46	1.0	"	50.0000	98.9	71-127				
Xylenes, total	153.9	2.0	"	150.000	103	74-127				
Styrene	51.95	1.0	"	50.0000	104	66-126				
Bromoform	53.75	1.0	"	50.0000	108	68-130				
1,2,3-Trichloropropane	53.18	1.0	"	50.0000	106	63-136				
trans-1,4-Dichloro-2-butene	97.66	5.0	"	116.300	84.0	54-134				
1,1,2,2-Tetrachloroethane	47.66	1.0	"	49.8500	95.6	61-131				
1,4-Dichlorobenzene	46.54	1.0	"	50.0000	93.1	70-129				
1,2-Dichlorobenzene	47.50	1.0	"	50.0000	95.0	69-126				
1,2-Dibromo-3-chloropropane	52.12	5.0	"	50.0000	104	50-143				

LCS Dup (1GC1422-BSD1)		Prepared & Analyzed: 03/28/23								
Surrogate: Dibromofluoromethane	50.6		ug/L	50.3520	100	80-126				
Surrogate: Dibromofluoromethane	50.6		"	50.3520	100	75-136				
Surrogate: 1,2-Dichloroethane-d4	52.4		"	50.4080	104	61-142				
Surrogate: 1,2-Dichloroethane-d4	52.4		"	50.4080	104	63-138				
Surrogate: Toluene-d8	48.7		"	50.2360	97.0	87-116				
Surrogate: Toluene-d8	48.7		"	50.2360	97.0	82-121				
Surrogate: 4-Bromofluorobenzene	53.2		"	50.4200	106	85-111				
Surrogate: 4-Bromofluorobenzene	53.2		"	50.4200	106	80-116				
Chloromethane	35.34	1.0	"	30.0000	118	63-155	0.198		24	
Vinyl Chloride	28.96	1.0	"	30.0000	96.5	70-154	4.82		25	
Bromomethane	30.27	1.0	"	30.0000	101	52-176	1.25		27	
Chloroethane	26.72	1.0	"	30.0000	89.1	72-148	11.1		25	
Trichlorofluoromethane	29.53	1.0	"	30.0000	98.4	70-152	4.73		26	
1,1-Dichloroethylene	52.05	1.0	"	50.0000	104	70-148	2.86		24	
Acetone	88.82	10.0	"	108.800	81.6	43-172	4.44		30	
Methyl Iodide	135.5	1.0	"	99.6930	136	69-170	0.0517		30	
Carbon Disulfide	115.4	1.0	"	104.600	110	72-162	6.25		24	
Methylene Chloride	44.95	5.0	"	50.0000	89.9	68-142	0.580		21	
Acrylonitrile	98.85	5.0	"	100.500	98.4	67-144	2.46		24	
trans-1,2-Dichloroethylene	49.21	1.0	"	50.0000	98.4	66-148	2.17		27	

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1422 - EPA 5030B

LCS Dup (1GC1422-BSD1)

Prepared & Analyzed: 03/28/23

1,1-Dichloroethane	46.55	1.0	ug/L	50.0000	93.1	66-143	0.236	24	
Vinyl Acetate	58.69	5.0	"	115.300	50.9	43-153	28.0	30	
cis-1,2-Dichloroethylene	48.42	1.0	"	50.0000	96.8	71-149	3.55	26	
2-Butanone (MEK)	72.56	10.0	"	105.600	68.7	52-159	10.5	27	
Bromochloromethane	53.55	1.0	"	50.0000	107	69-143	6.30	23	
Chloroform	50.52	1.0	"	50.0000	101	69-144	2.94	23	
1,1,1-Trichloroethane	46.21	1.0	"	49.9750	92.5	62-129	1.05	24	
Carbon Tetrachloride	52.74	1.0	"	50.0000	105	63-141	0.609	25	
Benzene	44.11	1.0	"	50.0000	88.2	71-134	7.02	24	
1,2-Dichloroethane	48.14	1.0	"	50.0000	96.3	72-132	8.05	24	
Trichloroethylene	43.69	1.0	"	50.0000	87.4	71-135	9.51	24	
1,2-Dichloropropane	47.34	1.0	"	50.0000	94.7	69-136	8.59	24	
Dibromomethane	49.33	1.0	"	50.0000	98.7	73-147	9.04	25	
Bromodichloromethane	45.26	1.0	"	50.0000	90.5	68-129	11.4	22	
cis-1,3-Dichloropropene	46.14	1.0	"	50.3250	91.7	65-134	8.09	23	
4-Methyl-2-pentanone (MIBK)	100.6	5.0	"	106.400	94.6	58-147	6.34	27	
Toluene	46.63	1.0	"	50.0000	93.3	72-133	5.79	24	
trans-1,3-Dichloropropene	46.48	1.0	"	50.4250	92.2	67-130	11.7	24	
1,1,2-Trichloroethane	46.52	1.0	"	50.0000	93.0	69-135	7.95	23	
Tetrachloroethylene	38.99	1.0	"	50.0000	78.0	69-130	9.94	25	
2-Hexanone (MBK)	101.4	5.0	"	105.000	96.6	55-144	3.50	25	
Dibromochloromethane	50.26	1.0	"	49.5000	102	73-127	1.30	22	
1,2-Dibromoethane	52.07	1.0	"	50.0000	104	67-132	0.861	24	
Chlorobenzene	49.77	1.0	"	50.0000	99.5	72-123	0.461	23	
1,1,1,2-Tetrachloroethane	49.13	1.0	"	50.0000	98.3	73-127	5.43	24	
Ethylbenzene	46.73	1.0	"	50.0000	93.5	71-127	5.68	26	
Xylenes, total	143.5	2.0	"	150.000	95.7	74-127	7.01	25	
Styrene	43.82	1.0	"	50.0000	87.6	66-126	17.0	23	
Bromoform	53.42	1.0	"	50.0000	107	68-130	0.616	23	
1,2,3-Trichloropropane	52.15	1.0	"	50.0000	104	63-136	1.96	24	
trans-1,4-Dichloro-2-butene	93.60	5.0	"	116.300	80.5	54-134	4.25	27	
1,1,2,2-Tetrachloroethane	45.23	1.0	"	49.8500	90.7	61-131	5.23	29	
1,4-Dichlorobenzene	44.51	1.0	"	50.0000	89.0	70-129	4.46	24	
1,2-Dichlorobenzene	44.04	1.0	"	50.0000	88.1	69-126	7.56	26	
1,2-Dibromo-3-chloropropane	54.47	5.0	"	50.0000	109	50-143	4.41	30	

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1422 - EPA 5030B

Matrix Spike (1GC1422-MS1)	Source: 1GC2550-13			Prepared & Analyzed: 03/28/23						
Surrogate: Dibromofluoromethane	505		ug/L	503.520		100	75-136			
Surrogate: Dibromofluoromethane	505		"	503.520		100	80-126			
Surrogate: 1,2-Dichloroethane-d4	522		"	504.080		104	61-142			
Surrogate: 1,2-Dichloroethane-d4	522		"	504.080		104	63-138			
Surrogate: Toluene-d8	512		"	502.360		102	82-121			
Surrogate: Toluene-d8	512		"	502.360		102	87-116			
Surrogate: 4-Bromofluorobenzene	509		"	504.200		101	80-116			
Surrogate: 4-Bromofluorobenzene	509		"	504.200		101	85-111			
Chloromethane	421.0	10.0	"	300.000	ND	140	61-152			
Vinyl Chloride	376.4	10.0	"	300.000	ND	125	66-149			
Bromomethane	368.8	10.0	"	300.000	ND	123	43-171			
Chloroethane	353.0	10.0	"	300.000	ND	118	69-148			
Trichlorofluoromethane	372.0	10.0	"	300.000	ND	124	62-163			
1,1-Dichloroethylene	643.1	10.0	"	500.000	ND	129	70-148			
Acetone	1021	100	"	1088.00	ND	93.8	45-173			
Methyl Iodide	1552	10.0	"	996.930	ND	156	62-167			
Carbon Disulfide	1450	10.0	"	1046.00	ND	139	71-163			
Methylene Chloride	551.3	50.0	"	500.000	ND	110	69-140			
Acrylonitrile	1183	50.0	"	1005.00	ND	118	58-151			
trans-1,2-Dichloroethylene	596.1	10.0	"	500.000	ND	119	69-144			
1,1-Dichloroethane	530.6	10.0	"	500.000	ND	106	70-138			
Vinyl Acetate	1106	50.0	"	1153.00	ND	96.0	58-142			
cis-1,2-Dichloroethylene	636.4	10.0	"	500.000	69.97	113	68-151			
2-Butanone (MEK)	941.8	100	"	1056.00	ND	89.2	50-160			
Bromochloromethane	598.5	10.0	"	500.000	ND	120	65-143			
Chloroform	568.8	10.0	"	500.000	ND	114	71-143			
1,1,1-Trichloroethane	491.7	10.0	"	499.750	ND	98.4	63-133			
Carbon Tetrachloride	564.4	10.0	"	500.000	ND	113	63-142			
Benzene	608.6	10.0	"	500.000	ND	122	69-133			
1,2-Dichloroethane	532.8	10.0	"	500.000	ND	107	63-138			
Trichloroethylene	531.2	10.0	"	500.000	7.43	105	71-133			
1,2-Dichloropropane	555.1	10.0	"	500.000	ND	111	69-132			
Dibromomethane	571.8	10.0	"	500.000	ND	114	70-147			
Bromodichloromethane	538.8	10.0	"	500.000	ND	108	67-130			
cis-1,3-Dichloropropene	542.8	10.0	"	503.250	ND	108	61-126			
4-Methyl-2-pentanone (MIBK)	1108	50.0	"	1064.00	ND	104	55-147			
Toluene	569.8	10.0	"	500.000	ND	114	71-133			
trans-1,3-Dichloropropene	537.0	10.0	"	504.250	ND	106	63-124			

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1422 - EPA 5030B

Matrix Spike (1GC1422-MS1)	Source: 1GC2550-13			Prepared & Analyzed: 03/28/23						
1,1,2-Trichloroethane	524.0	10.0	ug/L	500.000	ND	105	69-133			
Tetrachloroethylene	444.4	10.0	"	500.000	ND	88.9	70-124			
2-Hexanone (MBK)	1044	50.0	"	1050.00	ND	99.4	53-141			
Dibromochloromethane	527.9	10.0	"	495.000	ND	107	74-122			
1,2-Dibromoethane	521.2	10.0	"	500.000	ND	104	66-127			
Chlorobenzene	521.4	10.0	"	500.000	ND	104	76-116			
1,1,1,2-Tetrachloroethane	534.2	10.0	"	500.000	ND	107	77-121			
Ethylbenzene	517.7	10.0	"	500.000	ND	104	73-124			
Xylenes, total	1566	20.0	"	1500.00	ND	104	75-123			
Styrene	488.2	10.0	"	500.000	ND	97.6	70-120			
Bromoform	560.6	10.0	"	500.000	ND	112	70-124			
1,2,3-Trichloropropane	514.1	10.0	"	500.000	ND	103	62-135			
trans-1,4-Dichloro-2-butene	984.3	50.0	"	1163.00	ND	84.6	50-120			
1,1,2,2-Tetrachloroethane	467.1	10.0	"	498.500	ND	93.7	63-126			
1,4-Dichlorobenzene	480.7	10.0	"	500.000	ND	96.1	72-119			
1,2-Dichlorobenzene	511.4	10.0	"	500.000	ND	102	71-117			
1,2-Dibromo-3-chloropropane	508.0	50.0	"	500.000	ND	102	49-134			

Matrix Spike Dup (1GC1422-MSD1)	Source: 1GC2550-13			Prepared & Analyzed: 03/28/23						
Surrogate: Dibromofluoromethane	482		ug/L	503.520		95.8	80-126			
Surrogate: Dibromofluoromethane	482		"	503.520		95.8	75-136			
Surrogate: 1,2-Dichloroethane-d4	504		"	504.080		100	63-138			
Surrogate: 1,2-Dichloroethane-d4	504		"	504.080		100	61-142			
Surrogate: Toluene-d8	493		"	502.360		98.1	87-116			
Surrogate: Toluene-d8	493		"	502.360		98.1	82-121			
Surrogate: 4-Bromofluorobenzene	529		"	504.200		105	85-111			
Surrogate: 4-Bromofluorobenzene	529		"	504.200		105	80-116			
Chloromethane	322.9	10.0	"	300.000	ND	108	61-152	26.4	26	QR-02
Vinyl Chloride	312.3	10.0	"	300.000	ND	104	66-149	18.6	23	
Bromomethane	277.2	10.0	"	300.000	ND	92.4	43-171	28.4	29	
Chloroethane	280.7	10.0	"	300.000	ND	93.6	69-148	22.8	25	
Trichlorofluoromethane	288.1	10.0	"	300.000	ND	96.0	62-163	25.4	25	QR-02
1,1-Dichloroethylene	507.6	10.0	"	500.000	ND	102	70-148	23.6	22	QR-02
Acetone	822.3	100	"	1088.00	ND	75.6	45-173	21.6	30	
Methyl Iodide	1335	10.0	"	996.930	ND	134	62-167	15.0	24	
Carbon Disulfide	1159	10.0	"	1046.00	ND	111	71-163	22.3	22	QR-02
Methylene Chloride	428.8	50.0	"	500.000	ND	85.8	69-140	25.0	19	QR-02
Acrylonitrile	956.8	50.0	"	1005.00	ND	95.2	58-151	21.2	15	QR-02
trans-1,2-Dichloroethylene	494.6	10.0	"	500.000	ND	98.9	69-144	18.6	22	

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1422 - EPA 5030B

Matrix Spike Dup (1GC1422-MSD1)	Source: 1GC2550-13			Prepared & Analyzed: 03/28/23						
1,1-Dichloroethane	434.4	10.0	ug/L	500.000	ND	86.9	70-138	19.9	20	
Vinyl Acetate	957.1	50.0	"	1153.00	ND	83.0	58-142	14.5	24	
cis-1,2-Dichloroethylene	526.9	10.0	"	500.000	69.97	91.4	68-151	18.8	22	
2-Butanone (MEK)	802.5	100	"	1056.00	ND	76.0	50-160	16.0	23	
Bromochloromethane	504.2	10.0	"	500.000	ND	101	65-143	17.1	22	
Chloroform	484.3	10.0	"	500.000	ND	96.9	71-143	16.0	21	
1,1,1-Trichloroethane	431.1	10.0	"	499.750	ND	86.3	63-133	13.1	23	
Carbon Tetrachloride	498.8	10.0	"	500.000	ND	99.8	63-142	12.3	22	
Benzene	442.4	10.0	"	500.000	ND	88.5	69-133	31.6	18	QR-02
1,2-Dichloroethane	488.2	10.0	"	500.000	ND	97.6	63-138	8.74	20	
Trichloroethylene	454.6	10.0	"	500.000	7.43	89.4	71-133	15.5	23	
1,2-Dichloropropane	456.3	10.0	"	500.000	ND	91.3	69-132	19.5	20	
Dibromomethane	508.4	10.0	"	500.000	ND	102	70-147	11.7	22	
Bromodichloromethane	461.6	10.0	"	500.000	ND	92.3	67-130	15.4	21	
cis-1,3-Dichloropropene	470.4	10.0	"	503.250	ND	93.5	61-126	14.3	21	
4-Methyl-2-pentanone (MIBK)	980.0	50.0	"	1064.00	ND	92.1	55-147	12.3	23	
Toluene	474.8	10.0	"	500.000	ND	95.0	71-133	18.2	19	
trans-1,3-Dichloropropene	484.9	10.0	"	504.250	ND	96.2	63-124	10.2	21	
1,1,2-Trichloroethane	473.6	10.0	"	500.000	ND	94.7	69-133	10.1	19	
Tetrachloroethylene	403.3	10.0	"	500.000	ND	80.7	70-124	9.70	24	
2-Hexanone (MBK)	1013	50.0	"	1050.00	ND	96.5	53-141	2.95	24	
Dibromochloromethane	494.1	10.0	"	495.000	ND	99.8	74-122	6.61	21	
1,2-Dibromoethane	505.3	10.0	"	500.000	ND	101	66-127	3.10	23	
Chlorobenzene	465.0	10.0	"	500.000	ND	93.0	76-116	11.4	21	
1,1,1,2-Tetrachloroethane	499.6	10.0	"	500.000	ND	99.9	77-121	6.69	25	
Ethylbenzene	482.2	10.0	"	500.000	ND	96.4	73-124	7.10	20	
Xylenes, total	1397	20.0	"	1500.00	ND	93.2	75-123	11.4	20	
Styrene	488.8	10.0	"	500.000	ND	97.8	70-120	0.123	23	
Bromoform	524.5	10.0	"	500.000	ND	105	70-124	6.65	22	
1,2,3-Trichloropropane	507.2	10.0	"	500.000	ND	101	62-135	1.35	28	
trans-1,4-Dichloro-2-butene	908.8	50.0	"	1163.00	ND	78.1	50-120	7.98	26	
1,1,2,2-Tetrachloroethane	441.1	10.0	"	498.500	ND	88.5	63-126	5.73	24	
1,4-Dichlorobenzene	436.8	10.0	"	500.000	ND	87.4	72-119	9.57	24	
1,2-Dichlorobenzene	471.0	10.0	"	500.000	ND	94.2	71-117	8.22	24	
1,2-Dibromo-3-chloropropane	480.4	50.0	"	500.000	ND	96.1	49-134	5.58	28	

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Work Order: 1GC2550

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1304 - General Prep Micro

Blank (1GC1304-BLK1)				Prepared & Analyzed: 03/24/23						
BOD (5 day)	ND	4	mg/L							B-06
Duplicate (1GC1304-DUP1)				Source: 1GC2515-03 Prepared & Analyzed: 03/24/23						
BOD (5 day)	88.0	4	mg/L		111			23.1	29	
Reference (1GC1304-SRM1)				Prepared & Analyzed: 03/24/23						
BOD (5 day)	227	4	mg/L	198.000		115	84.6-115.4			

Batch 1GC1324 - Wet Chem Preparation

Duplicate (1GC1324-DUP1)				Source: 1GC2498-01 Prepared & Analyzed: 03/24/23						
pH	10.5	0.5	pH		10.5			0.0382	10	
Reference (1GC1324-SRM1)				Prepared & Analyzed: 03/24/23						
pH	7.0	0.5	pH	7.00000		99.8	90-110			
Reference (1GC1324-SRM2)				Prepared & Analyzed: 03/24/23						
pH	7.0	0.5	pH	7.00000		99.8	90-110			
Reference (1GC1324-SRM3)				Prepared & Analyzed: 03/24/23						
pH	12.5	0.5	pH	12.4500		100	90-110			

Batch 1GC1325 - Wet Chem Preparation

Blank (1GC1325-BLK1)				Prepared: 03/24/23 Analyzed: 03/27/23						
Alkalinity, as CaCO3	ND	10	mg/L							

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Work Order: 1GC2550

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1325 - Wet Chem Preparation

LCS (1GC1325-BS1)				Prepared: 03/24/23 Analyzed: 03/27/23						
Alkalinity, as CaCO ₃	50.7	10	mg/L	50.0000		101	88-114			
Matrix Spike (1GC1325-MS1)				Source: 1GC2550-20 Prepared: 03/24/23 Analyzed: 03/27/23						
Alkalinity, as CaCO ₃	702	50	mg/L	250.000	473	91.8	74-122			
Matrix Spike Dup (1GC1325-MSD1)				Source: 1GC2550-20 Prepared: 03/24/23 Analyzed: 03/27/23						
Alkalinity, as CaCO ₃	725	50	mg/L	250.000	473	101	74-122	3.15	10	

Batch 1GC1404 - Wet Chem Preparation

Blank (1GC1404-BLK1)				Prepared: 03/28/23 Analyzed: 03/29/23						
Solids, total dissolved	ND	5	mg/L							
LCS (1GC1404-BS1)				Prepared: 03/28/23 Analyzed: 03/29/23						
Solids, total dissolved	100	5	mg/L	100.000		100	71-114			
Duplicate (1GC1404-DUP1)				Source: 1GC2553-01 Prepared: 03/28/23 Analyzed: 03/29/23						
Solids, total dissolved	1390	5	mg/L		1140			19.1	30	

Batch 1GD0265 - General Prep HPLC/IC

Blank (1GD0265-BLK1)				Prepared & Analyzed: 04/06/23						
Nitrogen, Ammonia	ND	1.00	mg/L							
LCS (1GD0265-BS1)				Prepared & Analyzed: 04/06/23						
Nitrogen, Ammonia	5.14	1.00	mg/L	5.00000		103	90-114			

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Work Order: 1GC2550

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0265 - General Prep HPLC/IC

Matrix Spike (1GD0265-MS1)	Source: 1GC2557-01			Prepared & Analyzed: 04/06/23						
Nitrogen, Ammonia	5.55	1.00	mg/L	5.00000	0.236	106	84-115			
Matrix Spike Dup (1GD0265-MSD1)	Source: 1GC2557-01			Prepared & Analyzed: 04/06/23						
Nitrogen, Ammonia	5.48	1.00	mg/L	5.00000	0.236	105	84-115	1.31	20	

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Work Order: 1GC2550

Determination of Inorganic Anions - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC1527 - General Prep HPLC/IC										
Blank (1GC1527-BLK1) Prepared & Analyzed: 03/28/23										
Chloride	ND	1.0	mg/L							
Sulfate	ND	1.0	"							
Blank (1GC1527-BLK2) Prepared & Analyzed: 03/28/23										
Chloride	ND	1.0	mg/L							
Sulfate	ND	1.0	"							
Blank (1GC1527-BLK3) Prepared & Analyzed: 03/28/23										
Chloride	ND	1.0	mg/L							
Sulfate	ND	1.0	"							
LCS (1GC1527-BS1) Prepared & Analyzed: 03/28/23										
Chloride	14.99	1.0	mg/L	15.5751		96.2	80-120			
Sulfate	33.30	1.0	"	34.2650		97.2	80-120			
LCS (1GC1527-BS2) Prepared & Analyzed: 03/28/23										
Chloride	15.02	1.0	mg/L	15.5751		96.4	80-120			
Sulfate	33.51	1.0	"	34.2650		97.8	80-120			
LCS Dup (1GC1527-BSD1) Prepared & Analyzed: 03/28/23										
Chloride	15.04	1.0	mg/L	15.5751		96.6	80-120	0.333	10	
Sulfate	32.97	1.0	"	34.2650		96.2	80-120	1.01	10	
LCS Dup (1GC1527-BSD2) Prepared & Analyzed: 03/28/23										
Chloride	15.16	1.0	mg/L	15.5751		97.3	80-120	0.935	10	
Sulfate	33.36	1.0	"	34.2650		97.4	80-120	0.446	10	
MRL Check (1GC1527-MRL1) Prepared & Analyzed: 03/28/23										
Chloride	0.61	1.0	mg/L	0.615300		99.1	50-150			
Sulfate	1.05	1.0	"	1.10748		94.9	0-200			

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Work Order: 1GC2550

Determination of Inorganic Anions - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1527 - General Prep HPLC/IC

Matrix Spike (1GC1527-MS1)		Source: 1GC2543-03			Prepared & Analyzed: 03/28/23					
Chloride	310.7	5.0	mg/L	77.8755	236.0	95.9	81-116			
Sulfate	212.5	5.0	"	171.325	43.93	98.4	87-113			
Matrix Spike (1GC1527-MS2)		Source: 1GC2226-01			Prepared & Analyzed: 03/28/23					
Chloride	15.24	1.0	mg/L	15.5751	0.52	94.5	81-116			
Sulfate	33.43	1.0	"	34.2650	1.03	94.6	87-113			
Matrix Spike Dup (1GC1527-MSD1)		Source: 1GC2543-03			Prepared & Analyzed: 03/28/23					
Chloride	309.3	5.0	mg/L	77.8755	236.0	94.2	81-116	0.442	10	
Sulfate	213.6	5.0	"	171.325	43.93	99.1	87-113	0.535	10	
Matrix Spike Dup (1GC1527-MSD2)		Source: 1GC2226-01			Prepared & Analyzed: 03/28/23					
Chloride	15.18	1.0	mg/L	15.5751	0.52	94.1	81-116	0.368	10	
Sulfate	33.64	1.0	"	34.2650	1.03	95.2	87-113	0.611	10	

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Work Order: 1GC2550

Determination of Total Metals - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1453 - EPA 3005A Total Recoverable Metals

Blank (1GC1453-BLK1)

Prepared: 03/28/23 Analyzed: 03/31/23

Antimony, total	ND	0.0020	mg/L							
Arsenic, total	ND	0.0040	"							
Barium, total	ND	0.0040	"							
Beryllium, total	ND	0.0040	"							
Cadmium, total	ND	0.0008	"							
Chromium, total	ND	0.0080	"							
Cobalt, total	ND	0.0004	"							
Copper, total	ND	0.0040	"							
Lead, total	ND	0.0040	"							
Nickel, total	ND	0.0040	"							
Selenium, total	ND	0.0040	"							
Silver, total	ND	0.0040	"							
Thallium, total	ND	0.0020	"							
Vanadium, total	ND	0.0200	"							
Zinc, total	ND	0.0200	"							

LCS (1GC1453-BS1)

Prepared: 03/28/23 Analyzed: 03/31/23

Antimony, total	0.0985	0.0020	mg/L	0.100000		98.5	80-120			
Arsenic, total	0.0980	0.0040	"	0.100000		98.0	80-120			
Barium, total	0.0967	0.0040	"	0.100000		96.7	80-120			
Beryllium, total	0.103	0.0040	"	0.100000		103	80-120			
Cadmium, total	0.0980	0.0008	"	0.100000		98.0	80-120			
Chromium, total	0.0999	0.0080	"	0.100000		99.9	80-120			
Cobalt, total	0.104	0.0004	"	0.100000		104	80-120			
Copper, total	0.102	0.0040	"	0.100000		102	80-120			
Lead, total	0.0982	0.0040	"	0.100000		98.2	80-120			
Nickel, total	0.102	0.0040	"	0.100000		102	80-120			
Selenium, total	0.0965	0.0040	"	0.100000		96.5	80-120			
Silver, total	0.0990	0.0040	"	0.100000		99.0	80-120			
Thallium, total	0.0973	0.0020	"	0.100000		97.3	80-120			
Vanadium, total	0.101	0.0200	"	0.100000		101	80-120			
Zinc, total	0.105	0.0200	"	0.100000		105	80-120			

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Work Order: 1GC2550

Determination of Total Metals - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1453 - EPA 3005A Total Recoverable Metals

Matrix Spike (1GC1453-MS1)	Source: 1GC2550-01			Prepared: 03/28/23 Analyzed: 03/31/23						
Antimony, total	0.103	0.0020	mg/L	0.100000	0.0042	98.5	75-125			
Arsenic, total	0.182	0.0040	"	0.100000	0.0794	103	75-125			
Barium, total	0.764	0.0040	"	0.100000	0.655	110	75-125			
Beryllium, total	0.0986	0.0040	"	0.100000	ND	98.6	75-125			
Cadmium, total	0.0989	0.0008	"	0.100000	0.0039	95.0	75-125			
Chromium, total	0.0949	0.0080	"	0.100000	0.0008	94.1	75-125			
Cobalt, total	0.103	0.0004	"	0.100000	0.0029	100	75-125			
Copper, total	0.102	0.0040	"	0.100000	0.0099	92.1	75-125			
Lead, total	0.0910	0.0040	"	0.100000	ND	91.0	75-125			
Nickel, total	0.121	0.0040	"	0.100000	0.0238	96.8	75-125			
Selenium, total	0.1069	0.0040	"	0.100000	0.0162	90.7	75-125			
Silver, total	0.0950	0.0040	"	0.100000	ND	95.0	75-125			
Thallium, total	0.0923	0.0020	"	0.100000	0.0004	91.9	75-125			
Vanadium, total	0.104	0.0200	"	0.100000	ND	104	75-125			
Zinc, total	0.146	0.0200	"	0.100000	0.0512	94.6	75-125			

Matrix Spike Dup (1GC1453-MSD1)	Source: 1GC2550-01			Prepared: 03/28/23 Analyzed: 03/31/23						
Antimony, total	0.103	0.0020	mg/L	0.100000	0.0042	99.3	75-125	0.767	20	
Arsenic, total	0.193	0.0040	"	0.100000	0.0794	114	75-125	6.10	20	
Barium, total	0.796	0.0040	"	0.100000	0.655	141	75-125	4.01	20	QM-07
Beryllium, total	0.0974	0.0040	"	0.100000	ND	97.4	75-125	1.31	20	
Cadmium, total	0.0986	0.0008	"	0.100000	0.0039	94.7	75-125	0.333	20	
Chromium, total	0.0956	0.0080	"	0.100000	0.0008	94.7	75-125	0.701	20	
Cobalt, total	0.102	0.0004	"	0.100000	0.0029	99.2	75-125	0.776	20	
Copper, total	0.102	0.0040	"	0.100000	0.0099	91.7	75-125	0.418	20	
Lead, total	0.0924	0.0040	"	0.100000	ND	92.4	75-125	1.62	20	
Nickel, total	0.120	0.0040	"	0.100000	0.0238	96.6	75-125	0.130	20	
Selenium, total	0.1152	0.0040	"	0.100000	0.0162	99.0	75-125	7.44	20	
Silver, total	0.0968	0.0040	"	0.100000	ND	96.8	75-125	1.86	20	
Thallium, total	0.0932	0.0020	"	0.100000	0.0004	92.8	75-125	1.01	20	
Vanadium, total	0.103	0.0200	"	0.100000	ND	103	75-125	0.554	20	
Zinc, total	0.147	0.0200	"	0.100000	0.0512	95.6	75-125	0.678	20	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

HLW Engineering
PO Box 314
Story City, IA 50248

April 13, 2023
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Work Order: 1GC2550

Determination of Total Metals - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1GC1453 - EPA 3005A Total Recoverable Metals

Post Spike (1GC1453-PS1)	Source: 1GC2550-01	Prepared: 03/28/23	Analyzed: 03/31/23
Antimony, total	0.0840	mg/L	0.0800000 0.0041 99.9 80-120
Arsenic, total	0.154	"	0.0800000 0.0778 95.1 80-120
Barium, total	0.727	"	0.0800000 0.641 107 80-120
Beryllium, total	0.0789	"	0.0800000 0.00005 98.5 80-120
Cadmium, total	0.0792	"	0.0800000 0.0038 94.2 80-120
Chromium, total	0.0767	"	0.0800000 0.0008 94.8 80-120
Cobalt, total	0.0820	"	0.0800000 0.0028 99.0 80-120
Copper, total	0.0810	"	0.0800000 0.0097 89.1 80-120
Lead, total	0.0745	"	0.0800000 0.0005 92.5 80-120
Nickel, total	0.0996	"	0.0800000 0.0233 95.4 80-120
Selenium, total	0.0844	"	0.0800000 0.0158 85.7 80-120
Silver, total	0.0775	"	0.0800000 0.0016 94.9 80-120
Thallium, total	0.0742	"	0.0800000 0.0004 92.3 80-120
Vanadium, total	0.0851	"	0.0800000 0.0079 96.5 80-120
Zinc, total	0.120	"	0.0800000 0.0501 87.6 80-120

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

HLW Engineering
PO Box 314
Story City, IA 50248

April 13, 2023
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Work Order: 1GC2550

Certified Analyses Included In This Report

Method/Matrix	Analyte	Certifications
2320B in Water	Alkalinity, as CaCO ₃	KS-NT,SIA1X
EPA 6020A in Water	Antimony, total	SIA1X,KS-NT
	Arsenic, total	SIA1X,KS-NT
	Barium, total	SIA1X,KS-NT
	Beryllium, total	SIA1X,KS-NT
	Cadmium, total	SIA1X,KS-NT
	Chromium, total	SIA1X,KS-NT
	Cobalt, total	SIA1X,KS-NT
	Copper, total	SIA1X,KS-NT
	Lead, total	SIA1X,KS-NT
	Nickel, total	SIA1X,KS-NT
	Selenium, total	SIA1X,KS-NT
	Silver, total	SIA1X,KS-NT
	Thallium, total	SIA1X,KS-NT
	Vanadium, total	SIA1X,KS-NT
	Zinc, total	SIA1X,KS-NT
EPA 8260B in Water	Chloromethane	KS-NT,SIA1X
	Vinyl Chloride	KS-NT,SIA1X
	Bromomethane	KS-NT,SIA1X
	Chloroethane	KS-NT,SIA1X
	Trichlorofluoromethane	KS-NT,SIA1X
	1,1-Dichloroethylene	KS-NT,SIA1X
	Acetone	KS-NT,SIA1X
	Methyl Iodide	SIA1X
	Carbon Disulfide	KS-NT,SIA1X
	Methylene Chloride	KS-NT,SIA1X
	Acrylonitrile	KS-NT,SIA1X
	trans-1,2-Dichloroethylene	KS-NT,SIA1X
	1,1-Dichloroethane	KS-NT,SIA1X
	Vinyl Acetate	KS-NT,SIA1X
	cis-1,2-Dichloroethylene	KS-NT,SIA1X
	2-Butanone (MEK)	KS-NT,SIA1X
	Bromochloromethane	KS-NT,SIA1X
	Chloroform	KS-NT,SIA1X
	1,1,1-Trichloroethane	KS-NT,SIA1X
	Carbon Tetrachloride	KS-NT,SIA1X
	Benzene	KS-NT,SIA1X
	1,2-Dichloroethane	KS-NT,SIA1X
	Trichloroethylene	KS-NT,SIA1X
	1,2-Dichloropropane	KS-NT,SIA1X
	Dibromomethane	SIA1X
	Bromodichloromethane	KS-NT,SIA1X
	cis-1,3-Dichloropropene	KS-NT,SIA1X
	4-Methyl-2-pentanone (MIBK)	KS-NT,SIA1X

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HLW Engineering
PO Box 314
Story City, IA 50248

April 13, 2023
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Work Order: 1GC2550

	Toluene	KS-NT,SIA1X
	trans-1,3-Dichloropropene	KS-NT,SIA1X
	1,1,2-Trichloroethane	KS-NT,SIA1X
	Tetrachloroethylene	KS-NT,SIA1X
	2-Hexanone (MBK)	KS-NT,SIA1X
	Dibromochloromethane	KS-NT,SIA1X
	1,2-Dibromoethane	KS-NT,SIA1X
	Chlorobenzene	KS-NT,SIA1X
	1,1,1,2-Tetrachloroethane	KS-NT,SIA1X
	Ethylbenzene	KS-NT,SIA1X
	Xylenes, total	KS-NT,SIA1X
	Styrene	KS-NT,SIA1X
	Bromoform	KS-NT,SIA1X
	1,2,3-Trichloropropane	KS-NT,SIA1X
	trans-1,4-Dichloro-2-butene	SIA1X
	1,1,2,2-Tetrachloroethane	KS-NT,SIA1X
	1,4-Dichlorobenzene	KS-NT,SIA1X
	1,2-Dichlorobenzene	KS-NT,SIA1X
	1,2-Dibromo-3-chloropropane	KS-NT,SIA1X
EPA 9056 in Water		
	Chloride	KS-NT,SIA1X
	Sulfate	KS-NT,SIA1X
SM 4500 H+ B in Water		
	pH	KS-NT,SIA1X
SM 5210 B in Water		
	BOD (5 day)	SIA1X,KS-NT
TIMBERLINE in Water		
	Nitrogen, Ammonia	SIA1X
USGS I-1750-85 in Water		
	Solids, total dissolved	KS-NT,SIA1X

Code	Description	Number	Expires
KS-KC	Kansas Department of Health and Environment-KC	E-10110	04/30/2023
KS-NT	Kansas Department of Health and Environment (NELAP)	E-10287	10/31/2023
MO-KC	Missouri Department of Natural Resources	140	04/30/2023
SIA1X	Iowa Dept. of Natural Resources	95	02/01/2024

Notes and Definitions

- B-06 Unseeded Blank equals .3mg/L
- I-03 Analyte required to be analyzed within 15 minutes of sampling. Analysis performed upon receipt of sample at laboratory.
- QM-07 The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

HLW Engineering
PO Box 314
Story City, IA 50248

April 13, 2023
Page 61 of 66

Work Order: 1GC2550

End of Report

Sue Thompson

Keystone Laboratories

Sue Thompson
Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.



1 G C 2 5 5 0

HLW Engineering
PM: Sue Thompson

SITE INFORMATION

Sampler: Todd Whipple
Project: SCILA - New Regs
6022

SPECIAL INSTRUCTIONS

None
Turn Around Time
 Standard RUSH, need by ___/___/___

REPORT TO

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

INVOICE TO

Marcia Beeber
South Central Iowa Landfill
2490 State Hwy 92
Winterset, IA 50273

LAB USE ONLY

Work Order 1GC2550
Temperature 2.4
Turn-Cooler: No

Custody Seal
 Containers Intact
 COC/Labels Agree
 Preservation Confirmed
 Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
01-001	MW-4 Broken	Water	GRAB	1-1	---	1	Indfil-app I -metals-6020 Indfil-app I -voc	---
02-001	MW-18	Water	GRAB	3/23/23	9:39	7	Indfil-app I -metals-6020 Indfil-app I -voc	01
03-001	GU-1 DK7	Water	GRAB	1-1	---	1	Indfil-app I -metals-6020 Indfil-app I -voc	---
04-001	MW-1R DK7	Water	GRAB	1-1	---	1	Indfil-app I -metals-6020 Indfil-app I -voc	---
05-001	MW-6A	Water	GRAB	3/23/23	12:33	7	Indfil-app I -metals-6020 Indfil-app I -voc	02
06-001	MW-21	Water	GRAB	3/23/23	13:51	7	Indfil-app I -metals-6020 Indfil-app I -voc	03
07-001	TILE-1	Water	GRAB	3/23/23	9:12	7	Indfil-app I -metals-6020 Indfil-app I -voc	04

Relinquished By Todd Whipple Date/Time 3/24/23

Received By _____ Date/Time _____

Relinquished By _____ Date/Time _____

Received for Lab By Randy Wood Date/Time 3-24-23 1000

Remarks:



SITE INFORMATION

Sampler: TODD WHIPPLE
Project: SCILA - New Regs
6022

REPORT TO

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

INVOICE TO

Marcia Beeier
South Central Iowa Landfill
2490 State Hwy 92
Winterset, IA 50273

SPECIAL INSTRUCTIONS

None
Turn Around Time Standard RUSH, need by / /

LAB USE ONLY

Work Order 16C2550
Temperature 2.4
Turn-Cooler: No

Custody Seal
 Containers Intact
 COC/Labels Agree
 Preservation Confirmed
 Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
08-001	TILE 2	Water	GRAB	3/23/23	9:04	7	Indfil-app1-metals-6020 Indfil-app1-voc	05
09-001	MW-11C	Water	GRAB	3/23/23	12:06	7	Indfil-app1-metals-6020 Indfil-app1-voc	06
10-001	MW-39D	Water	GRAB	3/23/23	10:44	1	Indfil-app1-metals-6020	07
11-001	MW-41D	Water	GRAB	3/23/23	11:09	1	Indfil-app1-metals-6020	08
12-001	MW-42D	Water	GRAB	3/23/23	11:33	1	Indfil-app1-metals-6020	09
13-001	MW-17R	Water	GRAB	3/23/23	13:10	7	Indfil-app1-metals-6020 Indfil-app1-voc	10
14-001	MW-28	Water	GRAB	3/23/23	14:13	7	Indfil-app1-metals-6020 Indfil-app1-voc	11

Relinquished By Carol Whipple Date/Time 3/24/23

Relinquished By _____ Date/Time _____

Received for Lab By Todd Whipple Date/Time 3-24-23 1002

Received By _____ Date/Time _____

Remarks:



HLW Engineering
P.M. Sue Thompson

SITE INFORMATION

Sampler: Todd Whipple
Project: SCILA - New Regs
6022

REPORT TO

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

Marcia Beeler
South Central Iowa Landfill
2400 State Hwy 92
Winterset, IA 50273

SPECIAL INSTRUCTIONS

None
Turn Around Time
 Standard RUSH, need by ___/___/___

LAB USE ONLY

Work Order 16C2550
Temperature 2.4
Turn-Cooler: No

Custody Seal
 Containers Intact
 COC/Labels Agree
 Preservation Confirmed
 Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
15-001	MW-8B	Water	GRAB	3/23/23	13:30	10	Indfil-app1-metals-6020 Indfil-app1-voc Indfil-app1-voc	<u>12</u>
16-001	MW-9AR	Water	GRAB	3/23/23	15:07	10	Indfil-app1-metals-6020 Indfil-app1-voc Indfil-app1-voc	<u>13</u>
17-001	MW-14D	Water	GRAB	3/23/23	15:40	10	Indfil-app1-metals-6020 Indfil-app1-voc Indfil-app1-voc	<u>14</u>
18-001	MW-15R	Water	GRAB	3/23/23	14:35	10	Indfil-app1-metals-6020 Indfil-app1-voc Indfil-app1-voc	<u>15</u>
19-001	SW-1	Water	GRAB	3/23/23	8:26	7	Indfil-app1-metals-6020 Indfil-app1-voc	<u>16</u>
20-001	SW-2B	Water	GRAB	3/23/23	8:05	7	Indfil-app1-metals-6020 Indfil-app1-voc	<u>17</u>
21-001	MW-31	Water	GRAB	3/23/23	15:27	6	Indfil-app1-voc	<u>18</u>

Relinquished By Todd Whipple Date/Time 3/24/23

Relinquished By _____ Date/Time _____
Received for Lab By Sue Thompson Date/Time 3/24/23 10:00

Remarks:



1 G C 2 5 5 0

HLW Engineering
 PM: Sue Thompson

SITE INFORMATION

Sampler: Todd Whipple
 Project: SCILA - New Regs
8022

REPORT TO

Todd Whipple
 HLW Engineering
 PO Box 314
 Story City, IA 50248

Marcia Beeler
 South Central Iowa Landfill
 2490 State Hwy 92
 Winterset, IA 50273

SPECIAL INSTRUCTIONS

None
 Turn Around Time
 Standard RUSH, need by ___/___/___

LAB USE ONLY

Work Order 1GC2550
 Temperature 2.4
 Turn-Cooler: No

Custody Seal
 Containers Intact
 COC/Labels Agree
 Preservation Confirmed
 Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
22-001	MW-32	Water	GRAB	3/23/23	14:51	6	Indfil-app1-voc alk-caco3-2320 ci-9036-w	19
23-001	LW-26	Water	GRAB	3/23/23	16:11	13	Indfil-app1-voc nd3-tinberline-lf so4-9036-w	20
24-001	SW-102	Water	GRAB	3/23/23	8:12	6	Indfil-app1-voc bod-3210 co-4-6020 methane-rsk-175 ph-4300 tds-1-1750-83	21
25-001	Duplicate	Water	GRAB	3/23/23	✓	1	Indfil-app1-voc Indfil-app1-metals-6020	22

Relinquished By Sue Whipple 3/24/23
 Date/Time

Relinquished By _____ Date/Time _____

Received for Lab By Sue Whipple 3-24-23 1000
 Date/Time

Received By _____ Date/Time _____

Original - Lab Copy Yellow - Sampler Copy

Remarks:

April 04, 2023

Sue Thompson
Keystone Laboratories
600 East 17 th Street South
Newton, IA 50208
TEL: (641) 792-8451
FAX:



Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: 1GC2550

WorkOrder: 23031883

Dear Sue Thompson:

TEKLAB, INC received 5 samples on 3/29/2023 8:50:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Marvin L. Darling
Project Manager
(618)344-1004 ex 41
mdarling@teklabinc.com



Report Contents

<http://www.teklabinc.com/>

Client: Keystone Laboratories

Work Order: 23031883

Client Project: 1GC2550

Report Date: 04-Apr-23

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Receiving Check List	12
Chain of Custody	Appended

Client: Keystone Laboratories

Work Order: 23031883

Client Project: 1GC2550

Report Date: 04-Apr-23

Abbr Definition

* Analytes on report marked with an asterisk are not NELAP accredited

CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.

CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.

DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.

DNI Did not ignite

DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.

ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.

IDPH IL Dept. of Public Health

LCS Laboratory control sample is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.

LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).

MBLK Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.

MDL "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."

MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).

MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).

MW Molecular weight

NC Data is not acceptable for compliance purposes

ND Not Detected at the Reporting Limit

NELAP NELAP Accredited

PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.

RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.

RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).

SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.

Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.

TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"

TNTC Too numerous to count (> 200 CFU)

Client: Keystone Laboratories

Work Order: 23031883

Client Project: 1GC2550

Report Date: 04-Apr-23

Qualifiers

- # - Unknown hydrocarbon
- C - RL shown is a Client Requested Quantitation Limit
- H - Holding times exceeded
- J - Analyte detected below quantitation limits
- ND - Not Detected at the Reporting Limit
- S - Spike Recovery outside recovery limits
- X - Value exceeds Maximum Contaminant Level
- B - Analyte detected in associated Method Blank
- E - Value above quantitation range
- I - Associated internal standard was outside method criteria
- M - Manual Integration used to determine area response
- R - RPD outside accepted recovery limits
- T - TIC(Tentatively identified compound)

Client: Keystone Laboratories

Work Order: 23031883

Client Project: 1GC2550

Report Date: 04-Apr-23

Cooler Receipt Temp: 3.2 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425

Phone (618) 344-1004

Fax (618) 344-1005

Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425

Phone (618) 344-1004

Fax (618) 344-1005

Email EHurley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415

Phone (217) 698-1004

Fax (217) 698-1005

Email KKlostermann@teklabinc.com

Chicago

Address 1319 Butterfield Rd.
Downers Grove, IL 60515

Phone (630) 324-6855

Fax

Email arenner@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214

Phone (913) 541-1998

Fax (913) 541-1998

Email jhriley@teklabinc.com



Accreditations

<http://www.teklabinc.com/>

Client: Keystone Laboratories

Work Order: 23031883

Client Project: 1GC2550

Report Date: 04-Apr-23

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2024	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2023	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2023	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2023	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2023	Collinsville
Arkansas	ADEQ	88-0966		3/14/2024	Collinsville
Illinois	IDPH	17584		5/31/2023	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2024	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville



Laboratory Results

<http://www.teklabinc.com/>

Client: Keystone Laboratories
Client Project: 1GC2550
Lab ID: 23031883-001
Matrix: AQUEOUS

Work Order: 23031883
Report Date: 04-Apr-23
Client Sample ID: 1GC2550-12
Collection Date: 03/23/2023 13:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
PERMANENT GASES (RSKSOP-175)								
Methane	*	40.0		161	µg/L	10	03/31/2023 12:26	R326743



Laboratory Results

<http://www.teklabinc.com/>

Client: Keystone Laboratories
Client Project: 1GC2550
Lab ID: 23031883-002
Matrix: AQUEOUS

Work Order: 23031883
Report Date: 04-Apr-23
Client Sample ID: 1GC2550-13
Collection Date: 03/23/2023 15:07

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
PERMANENT GASES (RSKSOP-175)								
Methane	*	40.0		56.5	µg/L	10	03/31/2023 12:43	R326743



Laboratory Results

<http://www.teklabinc.com/>

Client: Keystone Laboratories
Client Project: 1GC2550
Lab ID: 23031883-003
Matrix: AQUEOUS

Work Order: 23031883
Report Date: 04-Apr-23
Client Sample ID: 1GC2550-14
Collection Date: 03/23/2023 15:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
PERMANENT GASES (RSKSOP-175)								
Methane	*	4.0		ND	µg/L	1	03/31/2023 11:04	R326743



Laboratory Results

<http://www.teklabinc.com/>

Client: Keystone Laboratories
Client Project: 1GC2550
Lab ID: 23031883-004
Matrix: AQUEOUS

Work Order: 23031883
Report Date: 04-Apr-23
Client Sample ID: 1GC2550-15
Collection Date: 03/23/2023 14:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
PERMANENT GASES (RSKSOP-175)								
Methane	*	400		2180	µg/L	100	03/31/2023 12:56	R326743



Laboratory Results

<http://www.teklabinc.com/>

Client: Keystone Laboratories

Work Order: 23031883

Client Project: 1GC2550

Report Date: 04-Apr-23

Lab ID: 23031883-005

Client Sample ID: 1GC2550-20

Matrix: AQUEOUS

Collection Date: 03/23/2023 16:11

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
PERMANENT GASES (RSKSOP-175)								
Methane	*	400		1930	µg/L	100	03/31/2023 13:11	R326743



Receiving Check List

<http://www.teklabinc.com/>

Client: Keystone Laboratories

Work Order: 23031883

Client Project: 1GC2550

Report Date: 04-Apr-23

Carrier: Spee Dee

Received By: LM

Completed by:

Reviewed by:

On:

29-Mar-23

Lindsey Maddox

On:

29-Mar-23

Elizabeth A. Hurley

Pages to follow: Chain of custody

Extra pages included

- Shipping container/cooler in good condition? Yes No Not Present Temp °C **3.2**
- Type of thermal preservation? None Ice Blue Ice Dry Ice
- Chain of custody present? Yes No
- Chain of custody signed when relinquished and received? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Reported field parameters measured: Field Lab NA
- Container/Temp Blank temperature in compliance? Yes No

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

- Water – at least one vial per sample has zero headspace? Yes No No VOA vials
- Water - TOX containers have zero headspace? Yes No No TOX containers
- Water - pH acceptable upon receipt? Yes No NA
- NPDES/CWA TCN interferences checked/treated in the field? Yes No NA

Any No responses must be detailed below or on the COC.



SUBCONTRACTED CHAIN OF CUSTODY
1GC2550

SENDING LABORATORY:

Keystone Laboratories - Newton
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
Lab Manager: Sue Thompson
Email: sthompson@keystonelabs.com

RECEIVING LABORATORY:

Teklab, Inc.
5445 Horseshoe Lake Road
Collinsville, IL 62234
Phone: (618) 344-1004

OH Horseshoe TM 3.2 in 17th 74

Project Info:

Project Type: Landfills
Project Location: IA

Report TAT: 10
Due: 04/07/23 17:00

23031883 -

Sample ID: 1GC2550-12

Sampled: 03/23/23 13:30

Sampler: Whipple, Todd

Matrix: Water

Description: MW-8B

Analysis	Method	Analysis Due	Expires
methane-rsk-175	RSK-175	04/06/23 17:00	04/20/23 13:30
Containers Supplied:			
H: VH-40 ml Vial Hydrochloric	I: VH-40 ml Vial Hydrochloric		
J: VH-40 ml Vial Hydrochloric			

-001

Sample ID: 1GC2550-13

Sampled: 03/23/23 15:07

Sampler: Whipple, Todd

Matrix: Water

Description: MW-9AR

Analysis	Method	Analysis Due	Expires
methane-rsk-175	RSK-175	04/06/23 17:00	04/20/23 15:07
Containers Supplied:			
H: VH-40 ml Vial Hydrochloric	I: VH-40 ml Vial Hydrochloric		
J: VH-40 ml Vial Hydrochloric			

-002

Sample ID: 1GC2550-14

Sampled: 03/23/23 15:40

Sampler: Whipple, Todd

Matrix: Water

Description: MW-14D

Analysis	Method	Analysis Due	Expires
methane-rsk-175	RSK-175	04/06/23 17:00	04/20/23 15:40
Containers Supplied:			
H: VH-40 ml Vial Hydrochloric	I: VH-40 ml Vial Hydrochloric		
J: VH-40 ml Vial Hydrochloric			

-003

Sample ID: 1GC2550-15

Sampled: 03/23/23 14:35

Sampler: Whipple, Todd

Matrix: Water

Description: MW-15R

Analysis	Method	Analysis Due	Expires
methane-rsk-175	RSK-175	04/06/23 17:00	04/20/23 14:35
Containers Supplied:			
H: VH-40 ml Vial Hydrochloric	I: VH-40 ml Vial Hydrochloric		
J: VH-40 ml Vial Hydrochloric			

-004

23031883



SUBCONTRACTED CHAIN OF CUSTODY
1GC2550

Sample ID: 1GC2550-20

Sampled: 03/23/23 16:11

Sampler: Whipple, Todd

Matrix: Water

Description: LW-26

23031883
-005

Analysis	Method	Analysis Due	Expires
methane-rsk-175	RSK-175	04/06/23 17:00	04/20/23 16:11

Containers Supplied:

K: VH-40 ml Vial Hydrochloric

L: VH-40 ml Vial Hydrochloric

M: VH-40 ml Vial Hydrochloric

Linda B. Malcom 3/27/23 AMP (Spade) 3/29/23 0850

23031883

Released By _____ Date _____ Received By _____ Date _____

ANALYTICAL REPORT

July 12, 2023

Work Order: **1GC2550**

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Report To
Todd Whipple HLW Engineering PO Box 314 Story City, IA 50248

Work Order Information
Date Received: 3/24/2023 10:00:00AM Collector: Whipple, Todd Phone: (515) 733-4144 PO Number: SCILA - New Regs

Project: SCILA - New Regs

Project Number: 6022

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-20	LW-26			Matrix: Water		Collected: 03/23/23 16:11	
Chloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Vinyl Chloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Bromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Chloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Acetone	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Methyl Iodide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Carbon Disulfide	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Methylene Chloride	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Vinyl Acetate	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Bromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Chloroform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Benzene	2.4 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Trichloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Dibromomethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Bromodichloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Toluene	1.5 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	

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HLW Engineering
PO Box 314
Story City, IA 50248

July 12, 2023
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Work Order: 1GC2550

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GC2550-20	LW-26			Matrix: Water		Collected: 03/23/23 16:11	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Tetrachloroethylene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Dibromochloromethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Chlorobenzene	9.2 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Ethylbenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Xylenes, total	2.8 ug/L	2.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Styrene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Bromoform	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,4-Dichlorobenzene	5.6 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GC1422	EPA 8260B	MSV	03/28/23 17:27	
Surrogate: Dibromofluoromethane	101 %			75-136	MSV	03/28/23 17:27	
Surrogate: 1,2-Dichloroethane-d4	98.6 %			61-142	MSV	03/28/23 17:27	
Surrogate: Toluene-d8	96.8 %			82-121	MSV	03/28/23 17:27	
Surrogate: 4-Bromofluorobenzene	100 %			80-116	MSV	03/28/23 17:27	
Alkalinity, as CaCO3	473 mg/L	50	1GC1325	2320B	BSS	03/27/23 10:40	
BOD (5 day)	24 mg/L	4	1GC1304	SM 5210 B	TJB	03/24/23 16:45	
Nitrogen, Ammonia	38.2 mg/L	10.0	1GD0265	TIMBERLINE	TJB	04/06/23 12:12	
pH	6.7 pH	0.5	1GC1324	SM 4500 H+ B	BSS	03/24/23 16:44	I-03
Solids, total dissolved	732 mg/L	5	1GC1404	USGS I-1750-85	MEAH	03/29/23 10:15	
Chloride	259 mg/L	10.0	1GC1527	EPA 9056	MID	03/28/23 13:01	
Sulfate	4.0 mg/L	1.0	1GC1527	EPA 9056	MID	03/28/23 21:11	
Arsenic, total	0.0157 mg/L	0.0040	1GC1453	EPA 6020A	RVV	03/31/23 22:30	
Cobalt, total	0.0056 mg/L	0.0004	1GC1453	EPA 6020A	RVV	03/31/23 22:30	

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HLW Engineering
PO Box 314
Story City, IA 50248

July 12, 2023
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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1422 - EPA 5030B

Blank (1GC1422-BLK1)

Prepared & Analyzed: 03/28/23

Surrogate: Dibromofluoromethane	51.7		ug/L	50.3520		103	75-136			
Surrogate: 1,2-Dichloroethane-d4	54.2		"	50.4080		108	61-142			
Surrogate: Toluene-d8	49.9		"	50.2360		99.3	82-121			
Surrogate: 4-Bromofluorobenzene	51.2		"	50.4200		102	80-116			
Chloromethane	ND	1.0	"							
Vinyl Chloride	ND	1.0	"							
Bromomethane	ND	1.0	"							
Chloroethane	ND	1.0	"							
Trichlorofluoromethane	ND	1.0	"							
1,1-Dichloroethylene	ND	1.0	"							
Acetone	ND	10.0	"							
Methyl Iodide	ND	1.0	"							
Carbon Disulfide	ND	1.0	"							
Methylene Chloride	ND	5.0	"							
trans-1,2-Dichloroethylene	ND	1.0	"							
1,1-Dichloroethane	ND	1.0	"							
Vinyl Acetate	ND	5.0	"							
cis-1,2-Dichloroethylene	ND	1.0	"							
2-Butanone (MEK)	ND	10.0	"							
Bromochloromethane	ND	1.0	"							
Chloroform	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
Carbon Tetrachloride	ND	1.0	"							
Benzene	ND	1.0	"							
1,2-Dichloroethane	ND	1.0	"							
Trichloroethylene	ND	1.0	"							
1,2-Dichloropropane	ND	1.0	"							
Dibromomethane	ND	1.0	"							
Bromodichloromethane	ND	1.0	"							
cis-1,3-Dichloropropene	ND	1.0	"							
4-Methyl-2-pentanone (MIBK)	ND	5.0	"							
Toluene	ND	1.0	"							
trans-1,3-Dichloropropene	ND	1.0	"							
1,1,2-Trichloroethane	ND	1.0	"							
Tetrachloroethylene	ND	1.0	"							
2-Hexanone (MBK)	ND	5.0	"							
Dibromochloromethane	ND	1.0	"							
1,2-Dibromoethane	ND	1.0	"							

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PO Box 314
Story City, IA 50248

July 12, 2023
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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1422 - EPA 5030B

Blank (1GC1422-BLK1)			Prepared & Analyzed: 03/28/23							
Chlorobenzene	ND	1.0	ug/L							
1,1,1,2-Tetrachloroethane	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	2.0	"							
Styrene	ND	1.0	"							
Bromoform	ND	1.0	"							
1,2,3-Trichloropropane	ND	1.0	"							
trans-1,4-Dichloro-2-butene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
1,2-Dichlorobenzene	ND	1.0	"							
1,2-Dibromo-3-chloropropane	ND	5.0	"							

LCS (1GC1422-BS1)			Prepared & Analyzed: 03/28/23							
<i>Surrogate: Dibromofluoromethane</i>	50.4		ug/L	50.3520		100	75-136			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	52.6		"	50.4080		104	61-142			
<i>Surrogate: Toluene-d8</i>	53.4		"	50.2360		106	82-121			
<i>Surrogate: 4-Bromofluorobenzene</i>	54.2		"	50.4200		108	80-116			
Chloromethane	35.41	1.0	"	30.0000		118	63-155			
Vinyl Chloride	30.39	1.0	"	30.0000		101	70-154			
Bromomethane	30.65	1.0	"	30.0000		102	52-176			
Chloroethane	29.85	1.0	"	30.0000		99.5	72-148			
Trichlorofluoromethane	30.96	1.0	"	30.0000		103	70-152			
1,1-Dichloroethylene	53.56	1.0	"	50.0000		107	70-148			
Acetone	84.96	10.0	"	108.800		78.1	43-172			
Methyl Iodide	135.5	1.0	"	99.6930		136	69-170			
Carbon Disulfide	122.8	1.0	"	104.600		117	72-162			
Methylene Chloride	44.69	5.0	"	50.0000		89.4	68-142			
trans-1,2-Dichloroethylene	50.29	1.0	"	50.0000		101	66-148			
1,1-Dichloroethane	46.66	1.0	"	50.0000		93.3	66-143			
Vinyl Acetate	77.83	5.0	"	115.300		67.5	43-153			
cis-1,2-Dichloroethylene	50.17	1.0	"	50.0000		100	71-149			
2-Butanone (MEK)	80.60	10.0	"	105.600		76.3	52-159			
Bromochloromethane	50.28	1.0	"	50.0000		101	69-143			
Chloroform	52.03	1.0	"	50.0000		104	69-144			
1,1,1-Trichloroethane	46.70	1.0	"	49.9750		93.4	62-129			
Carbon Tetrachloride	52.42	1.0	"	50.0000		105	63-141			
Benzene	47.32	1.0	"	50.0000		94.6	71-134			
1,2-Dichloroethane	52.18	1.0	"	50.0000		104	72-132			

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HLW Engineering
PO Box 314
Story City, IA 50248

July 12, 2023
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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1422 - EPA 5030B

LCS (1GC1422-BS1)

Prepared & Analyzed: 03/28/23

Trichloroethylene	48.05	1.0	ug/L	50.0000		96.1	71-135			
1,2-Dichloropropane	51.59	1.0	"	50.0000		103	69-136			
Dibromomethane	54.00	1.0	"	50.0000		108	73-147			
Bromodichloromethane	50.71	1.0	"	50.0000		101	68-129			
cis-1,3-Dichloropropene	50.03	1.0	"	50.3250		99.4	65-134			
4-Methyl-2-pentanone (MIBK)	107.2	5.0	"	106.400		101	58-147			
Toluene	49.41	1.0	"	50.0000		98.8	72-133			
trans-1,3-Dichloropropene	52.27	1.0	"	50.4250		104	67-130			
1,1,2-Trichloroethane	50.37	1.0	"	50.0000		101	69-135			
Tetrachloroethylene	43.07	1.0	"	50.0000		86.1	69-130			
2-Hexanone (MBK)	105.0	5.0	"	105.000		100	55-144			
Dibromochloromethane	50.92	1.0	"	49.5000		103	73-127			
1,2-Dibromoethane	52.52	1.0	"	50.0000		105	67-132			
Chlorobenzene	50.00	1.0	"	50.0000		100	72-123			
1,1,1,2-Tetrachloroethane	51.87	1.0	"	50.0000		104	73-127			
Ethylbenzene	49.46	1.0	"	50.0000		98.9	71-127			
Xylenes, total	153.9	2.0	"	150.000		103	74-127			
Styrene	51.95	1.0	"	50.0000		104	66-126			
Bromoform	53.75	1.0	"	50.0000		108	68-130			
1,2,3-Trichloropropane	53.18	1.0	"	50.0000		106	63-136			
trans-1,4-Dichloro-2-butene	97.66	5.0	"	116.300		84.0	54-134			
1,1,2,2-Tetrachloroethane	47.66	1.0	"	49.8500		95.6	61-131			
1,4-Dichlorobenzene	46.54	1.0	"	50.0000		93.1	70-129			
1,2-Dichlorobenzene	47.50	1.0	"	50.0000		95.0	69-126			
1,2-Dibromo-3-chloropropane	52.12	5.0	"	50.0000		104	50-143			

LCS Dup (1GC1422-BS1)

Prepared & Analyzed: 03/28/23

Surrogate: Dibromofluoromethane	50.6		ug/L	50.3520		100	75-136			
Surrogate: 1,2-Dichloroethane-d4	52.4		"	50.4080		104	61-142			
Surrogate: Toluene-d8	48.7		"	50.2360		97.0	82-121			
Surrogate: 4-Bromofluorobenzene	53.2		"	50.4200		106	80-116			
Chloromethane	35.34	1.0	"	30.0000		118	63-155	0.198	24	
Vinyl Chloride	28.96	1.0	"	30.0000		96.5	70-154	4.82	25	
Bromomethane	30.27	1.0	"	30.0000		101	52-176	1.25	27	
Chloroethane	26.72	1.0	"	30.0000		89.1	72-148	11.1	25	
Trichlorofluoromethane	29.53	1.0	"	30.0000		98.4	70-152	4.73	26	
1,1-Dichloroethylene	52.05	1.0	"	50.0000		104	70-148	2.86	24	
Acetone	88.82	10.0	"	108.800		81.6	43-172	4.44	30	
Methyl Iodide	135.5	1.0	"	99.6930		136	69-170	0.0517	30	

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1422 - EPA 5030B

LCS Dup (1GC1422-BSD1)				Prepared & Analyzed: 03/28/23						
Carbon Disulfide	115.4	1.0	ug/L	104.600	110	72-162	6.25	24		
Methylene Chloride	44.95	5.0	"	50.0000	89.9	68-142	0.580	21		
trans-1,2-Dichloroethylene	49.21	1.0	"	50.0000	98.4	66-148	2.17	27		
1,1-Dichloroethane	46.55	1.0	"	50.0000	93.1	66-143	0.236	24		
Vinyl Acetate	58.69	5.0	"	115.300	50.9	43-153	28.0	30		
cis-1,2-Dichloroethylene	48.42	1.0	"	50.0000	96.8	71-149	3.55	26		
2-Butanone (MEK)	72.56	10.0	"	105.600	68.7	52-159	10.5	27		
Bromochloromethane	53.55	1.0	"	50.0000	107	69-143	6.30	23		
Chloroform	50.52	1.0	"	50.0000	101	69-144	2.94	23		
1,1,1-Trichloroethane	46.21	1.0	"	49.9750	92.5	62-129	1.05	24		
Carbon Tetrachloride	52.74	1.0	"	50.0000	105	63-141	0.609	25		
Benzene	44.11	1.0	"	50.0000	88.2	71-134	7.02	24		
1,2-Dichloroethane	48.14	1.0	"	50.0000	96.3	72-132	8.05	24		
Trichloroethylene	43.69	1.0	"	50.0000	87.4	71-135	9.51	24		
1,2-Dichloropropane	47.34	1.0	"	50.0000	94.7	69-136	8.59	24		
Dibromomethane	49.33	1.0	"	50.0000	98.7	73-147	9.04	25		
Bromodichloromethane	45.26	1.0	"	50.0000	90.5	68-129	11.4	22		
cis-1,3-Dichloropropene	46.14	1.0	"	50.3250	91.7	65-134	8.09	23		
4-Methyl-2-pentanone (MIBK)	100.6	5.0	"	106.400	94.6	58-147	6.34	27		
Toluene	46.63	1.0	"	50.0000	93.3	72-133	5.79	24		
trans-1,3-Dichloropropene	46.48	1.0	"	50.4250	92.2	67-130	11.7	24		
1,1,2-Trichloroethane	46.52	1.0	"	50.0000	93.0	69-135	7.95	23		
Tetrachloroethylene	38.99	1.0	"	50.0000	78.0	69-130	9.94	25		
2-Hexanone (MBK)	101.4	5.0	"	105.000	96.6	55-144	3.50	25		
Dibromochloromethane	50.26	1.0	"	49.5000	102	73-127	1.30	22		
1,2-Dibromoethane	52.07	1.0	"	50.0000	104	67-132	0.861	24		
Chlorobenzene	49.77	1.0	"	50.0000	99.5	72-123	0.461	23		
1,1,1,2-Tetrachloroethane	49.13	1.0	"	50.0000	98.3	73-127	5.43	24		
Ethylbenzene	46.73	1.0	"	50.0000	93.5	71-127	5.68	26		
Xylenes, total	143.5	2.0	"	150.000	95.7	74-127	7.01	25		
Styrene	43.82	1.0	"	50.0000	87.6	66-126	17.0	23		
Bromoform	53.42	1.0	"	50.0000	107	68-130	0.616	23		
1,2,3-Trichloropropane	52.15	1.0	"	50.0000	104	63-136	1.96	24		
trans-1,4-Dichloro-2-butene	93.60	5.0	"	116.300	80.5	54-134	4.25	27		
1,1,2,2-Tetrachloroethane	45.23	1.0	"	49.8500	90.7	61-131	5.23	29		
1,4-Dichlorobenzene	44.51	1.0	"	50.0000	89.0	70-129	4.46	24		
1,2-Dichlorobenzene	44.04	1.0	"	50.0000	88.1	69-126	7.56	26		
1,2-Dibromo-3-chloropropane	54.47	5.0	"	50.0000	109	50-143	4.41	30		

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1422 - EPA 5030B

Matrix Spike (1GC1422-MS1)

Source: 1GC2550-13

Prepared & Analyzed: 03/28/23

Surrogate: Dibromofluoromethane	505		ug/L	503.520		100	75-136			
Surrogate: 1,2-Dichloroethane-d4	522		"	504.080		104	61-142			
Surrogate: Toluene-d8	512		"	502.360		102	82-121			
Surrogate: 4-Bromofluorobenzene	509		"	504.200		101	80-116			
Chloromethane	421.0	10.0	"	300.000	ND	140	61-152			
Vinyl Chloride	376.4	10.0	"	300.000	ND	125	66-149			
Bromomethane	368.8	10.0	"	300.000	ND	123	43-171			
Chloroethane	353.0	10.0	"	300.000	ND	118	69-148			
Trichlorofluoromethane	372.0	10.0	"	300.000	ND	124	62-163			
1,1-Dichloroethylene	643.1	10.0	"	500.000	ND	129	70-148			
Acetone	1021	100	"	1088.00	ND	93.8	45-173			
Methyl Iodide	1552	10.0	"	996.930	ND	156	62-167			
Carbon Disulfide	1450	10.0	"	1046.00	ND	139	71-163			
Methylene Chloride	551.3	50.0	"	500.000	ND	110	69-140			
trans-1,2-Dichloroethylene	596.1	10.0	"	500.000	ND	119	69-144			
1,1-Dichloroethane	530.6	10.0	"	500.000	ND	106	70-138			
Vinyl Acetate	1106	50.0	"	1153.00	ND	96.0	58-142			
cis-1,2-Dichloroethylene	636.4	10.0	"	500.000	69.97	113	68-151			
2-Butanone (MEK)	941.8	100	"	1056.00	ND	89.2	50-160			
Bromochloromethane	598.5	10.0	"	500.000	ND	120	65-143			
Chloroform	568.8	10.0	"	500.000	ND	114	71-143			
1,1,1-Trichloroethane	491.7	10.0	"	499.750	ND	98.4	63-133			
Carbon Tetrachloride	564.4	10.0	"	500.000	ND	113	63-142			
Benzene	608.6	10.0	"	500.000	ND	122	69-133			
1,2-Dichloroethane	532.8	10.0	"	500.000	ND	107	63-138			
Trichloroethylene	531.2	10.0	"	500.000	7.43	105	71-133			
1,2-Dichloropropane	555.1	10.0	"	500.000	ND	111	69-132			
Dibromomethane	571.8	10.0	"	500.000	ND	114	70-147			
Bromodichloromethane	538.8	10.0	"	500.000	ND	108	67-130			
cis-1,3-Dichloropropene	542.8	10.0	"	503.250	ND	108	61-126			
4-Methyl-2-pentanone (MIBK)	1108	50.0	"	1064.00	ND	104	55-147			
Toluene	569.8	10.0	"	500.000	ND	114	71-133			
trans-1,3-Dichloropropene	537.0	10.0	"	504.250	ND	106	63-124			
1,1,2-Trichloroethane	524.0	10.0	"	500.000	ND	105	69-133			
Tetrachloroethylene	444.4	10.0	"	500.000	ND	88.9	70-124			
2-Hexanone (MBK)	1044	50.0	"	1050.00	ND	99.4	53-141			
Dibromochloromethane	527.9	10.0	"	495.000	ND	107	74-122			
1,2-Dibromoethane	521.2	10.0	"	500.000	ND	104	66-127			

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1422 - EPA 5030B

Matrix Spike (1GC1422-MS1)	Source: 1GC2550-13			Prepared & Analyzed: 03/28/23						
Chlorobenzene	521.4	10.0	ug/L	500.000	ND	104	76-116			
1,1,1,2-Tetrachloroethane	534.2	10.0	"	500.000	ND	107	77-121			
Ethylbenzene	517.7	10.0	"	500.000	ND	104	73-124			
Xylenes, total	1566	20.0	"	1500.00	ND	104	75-123			
Styrene	488.2	10.0	"	500.000	ND	97.6	70-120			
Bromoform	560.6	10.0	"	500.000	ND	112	70-124			
1,2,3-Trichloropropane	514.1	10.0	"	500.000	ND	103	62-135			
trans-1,4-Dichloro-2-butene	984.3	50.0	"	1163.00	ND	84.6	50-120			
1,1,2,2-Tetrachloroethane	467.1	10.0	"	498.500	ND	93.7	63-126			
1,4-Dichlorobenzene	480.7	10.0	"	500.000	ND	96.1	72-119			
1,2-Dichlorobenzene	511.4	10.0	"	500.000	ND	102	71-117			
1,2-Dibromo-3-chloropropane	508.0	50.0	"	500.000	ND	102	49-134			

Matrix Spike Dup (1GC1422-MSD1)	Source: 1GC2550-13			Prepared & Analyzed: 03/28/23						
Surrogate: Dibromofluoromethane	482		ug/L	503.520		95.8	75-136			
Surrogate: 1,2-Dichloroethane-d4	504		"	504.080		100	61-142			
Surrogate: Toluene-d8	493		"	502.360		98.1	82-121			
Surrogate: 4-Bromofluorobenzene	529		"	504.200		105	80-116			
Chloromethane	322.9	10.0	"	300.000	ND	108	61-152	26.4	26	QR-02
Vinyl Chloride	312.3	10.0	"	300.000	ND	104	66-149	18.6	23	
Bromomethane	277.2	10.0	"	300.000	ND	92.4	43-171	28.4	29	
Chloroethane	280.7	10.0	"	300.000	ND	93.6	69-148	22.8	25	
Trichlorofluoromethane	288.1	10.0	"	300.000	ND	96.0	62-163	25.4	25	QR-02
1,1-Dichloroethylene	507.6	10.0	"	500.000	ND	102	70-148	23.6	22	QR-02
Acetone	822.3	100	"	1088.00	ND	75.6	45-173	21.6	30	
Methyl Iodide	1335	10.0	"	996.930	ND	134	62-167	15.0	24	
Carbon Disulfide	1159	10.0	"	1046.00	ND	111	71-163	22.3	22	QR-02
Methylene Chloride	428.8	50.0	"	500.000	ND	85.8	69-140	25.0	19	QR-02
trans-1,2-Dichloroethylene	494.6	10.0	"	500.000	ND	98.9	69-144	18.6	22	
1,1-Dichloroethane	434.4	10.0	"	500.000	ND	86.9	70-138	19.9	20	
Vinyl Acetate	957.1	50.0	"	1153.00	ND	83.0	58-142	14.5	24	
cis-1,2-Dichloroethylene	526.9	10.0	"	500.000	69.97	91.4	68-151	18.8	22	
2-Butanone (MEK)	802.5	100	"	1056.00	ND	76.0	50-160	16.0	23	
Bromochloromethane	504.2	10.0	"	500.000	ND	101	65-143	17.1	22	
Chloroform	484.3	10.0	"	500.000	ND	96.9	71-143	16.0	21	
1,1,1-Trichloroethane	431.1	10.0	"	499.750	ND	86.3	63-133	13.1	23	
Carbon Tetrachloride	498.8	10.0	"	500.000	ND	99.8	63-142	12.3	22	
Benzene	442.4	10.0	"	500.000	ND	88.5	69-133	31.6	18	QR-02
1,2-Dichloroethane	488.2	10.0	"	500.000	ND	97.6	63-138	8.74	20	

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Work Order: 1GC2550

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1422 - EPA 5030B

Matrix Spike Dup (1GC1422-MSD1)	Source: 1GC2550-13			Prepared & Analyzed: 03/28/23						
Trichloroethylene	454.6	10.0	ug/L	500.000	7.43	89.4	71-133	15.5	23	
1,2-Dichloropropane	456.3	10.0	"	500.000	ND	91.3	69-132	19.5	20	
Dibromomethane	508.4	10.0	"	500.000	ND	102	70-147	11.7	22	
Bromodichloromethane	461.6	10.0	"	500.000	ND	92.3	67-130	15.4	21	
cis-1,3-Dichloropropene	470.4	10.0	"	503.250	ND	93.5	61-126	14.3	21	
4-Methyl-2-pentanone (MIBK)	980.0	50.0	"	1064.00	ND	92.1	55-147	12.3	23	
Toluene	474.8	10.0	"	500.000	ND	95.0	71-133	18.2	19	
trans-1,3-Dichloropropene	484.9	10.0	"	504.250	ND	96.2	63-124	10.2	21	
1,1,2-Trichloroethane	473.6	10.0	"	500.000	ND	94.7	69-133	10.1	19	
Tetrachloroethylene	403.3	10.0	"	500.000	ND	80.7	70-124	9.70	24	
2-Hexanone (MBK)	1013	50.0	"	1050.00	ND	96.5	53-141	2.95	24	
Dibromochloromethane	494.1	10.0	"	495.000	ND	99.8	74-122	6.61	21	
1,2-Dibromoethane	505.3	10.0	"	500.000	ND	101	66-127	3.10	23	
Chlorobenzene	465.0	10.0	"	500.000	ND	93.0	76-116	11.4	21	
1,1,1,2-Tetrachloroethane	499.6	10.0	"	500.000	ND	99.9	77-121	6.69	25	
Ethylbenzene	482.2	10.0	"	500.000	ND	96.4	73-124	7.10	20	
Xylenes, total	1397	20.0	"	1500.00	ND	93.2	75-123	11.4	20	
Styrene	488.8	10.0	"	500.000	ND	97.8	70-120	0.123	23	
Bromoform	524.5	10.0	"	500.000	ND	105	70-124	6.65	22	
1,2,3-Trichloropropane	507.2	10.0	"	500.000	ND	101	62-135	1.35	28	
trans-1,4-Dichloro-2-butene	908.8	50.0	"	1163.00	ND	78.1	50-120	7.98	26	
1,1,2,2-Tetrachloroethane	441.1	10.0	"	498.500	ND	88.5	63-126	5.73	24	
1,4-Dichlorobenzene	436.8	10.0	"	500.000	ND	87.4	72-119	9.57	24	
1,2-Dichlorobenzene	471.0	10.0	"	500.000	ND	94.2	71-117	8.22	24	
1,2-Dibromo-3-chloropropane	480.4	50.0	"	500.000	ND	96.1	49-134	5.58	28	

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Work Order: 1GC2550

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1304 - General Prep Micro

Blank (1GC1304-BLK1)				Prepared & Analyzed: 03/24/23						
BOD (5 day)	ND	4	mg/L							B-06
Duplicate (1GC1304-DUP1)				Source: 1GC2515-03 Prepared & Analyzed: 03/24/23						
BOD (5 day)	88.0	4	mg/L		111			23.1	29	
Reference (1GC1304-SRM1)				Prepared & Analyzed: 03/24/23						
BOD (5 day)	227	4	mg/L	198.000		115	84.6-115.4			

Batch 1GC1324 - Wet Chem Preparation

Duplicate (1GC1324-DUP1)				Source: 1GC2498-01 Prepared & Analyzed: 03/24/23						
pH	10.5	0.5	pH		10.5			0.0382	10	
Reference (1GC1324-SRM1)				Prepared & Analyzed: 03/24/23						
pH	7.0	0.5	pH	7.00000		99.8	90-110			
Reference (1GC1324-SRM2)				Prepared & Analyzed: 03/24/23						
pH	7.0	0.5	pH	7.00000		99.8	90-110			
Reference (1GC1324-SRM3)				Prepared & Analyzed: 03/24/23						
pH	12.5	0.5	pH	12.4500		100	90-110			

Batch 1GC1325 - Wet Chem Preparation

Blank (1GC1325-BLK1)				Prepared: 03/24/23 Analyzed: 03/27/23						
Alkalinity, as CaCO3	ND	10	mg/L							

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Work Order: 1GC2550

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GC1325 - Wet Chem Preparation

LCS (1GC1325-BS1)				Prepared: 03/24/23 Analyzed: 03/27/23						
Alkalinity, as CaCO ₃	50.7	10	mg/L	50.0000		101	88-114			
Matrix Spike (1GC1325-MS1)				Source: 1GC2550-20 Prepared: 03/24/23 Analyzed: 03/27/23						
Alkalinity, as CaCO ₃	702	50	mg/L	250.000	473	91.8	74-122			
Matrix Spike Dup (1GC1325-MSD1)				Source: 1GC2550-20 Prepared: 03/24/23 Analyzed: 03/27/23						
Alkalinity, as CaCO ₃	725	50	mg/L	250.000	473	101	74-122	3.15	10	

Batch 1GC1404 - Wet Chem Preparation

Blank (1GC1404-BLK1)				Prepared: 03/28/23 Analyzed: 03/29/23						
Solids, total dissolved	ND	5	mg/L							
LCS (1GC1404-BS1)				Prepared: 03/28/23 Analyzed: 03/29/23						
Solids, total dissolved	100	5	mg/L	100.000		100	71-114			
Duplicate (1GC1404-DUP1)				Source: 1GC2553-01 Prepared: 03/28/23 Analyzed: 03/29/23						
Solids, total dissolved	1390	5	mg/L		1140			19.1	30	

Batch 1GD0265 - General Prep HPLC/IC

Blank (1GD0265-BLK1)				Prepared & Analyzed: 04/06/23						
Nitrogen, Ammonia	ND	1.00	mg/L							
LCS (1GD0265-BS1)				Prepared & Analyzed: 04/06/23						
Nitrogen, Ammonia	5.14	1.00	mg/L	5.00000		103	90-114			

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Work Order: 1GC2550

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0265 - General Prep HPLC/IC

Matrix Spike (1GD0265-MS1)	Source: 1GC2557-01			Prepared & Analyzed: 04/06/23						
Nitrogen, Ammonia	5.55	1.00	mg/L	5.00000	0.236	106	84-115			
Matrix Spike Dup (1GD0265-MSD1)	Source: 1GC2557-01			Prepared & Analyzed: 04/06/23						
Nitrogen, Ammonia	5.48	1.00	mg/L	5.00000	0.236	105	84-115	1.31	20	

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Work Order: 1GC2550

Determination of Inorganic Anions - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GC1527 - General Prep HPLC/IC										
Blank (1GC1527-BLK1) Prepared & Analyzed: 03/28/23										
Chloride	ND	1.0	mg/L							
Sulfate	ND	1.0	"							
Blank (1GC1527-BLK2) Prepared & Analyzed: 03/28/23										
Chloride	ND	1.0	mg/L							
Sulfate	ND	1.0	"							
Blank (1GC1527-BLK3) Prepared & Analyzed: 03/28/23										
Chloride	ND	1.0	mg/L							
Sulfate	ND	1.0	"							
LCS (1GC1527-BS1) Prepared & Analyzed: 03/28/23										
Chloride	14.99	1.0	mg/L	15.5751		96.2	80-120			
Sulfate	33.30	1.0	"	34.2650		97.2	80-120			
LCS (1GC1527-BS2) Prepared & Analyzed: 03/28/23										
Chloride	15.02	1.0	mg/L	15.5751		96.4	80-120			
Sulfate	33.51	1.0	"	34.2650		97.8	80-120			
LCS Dup (1GC1527-BSD1) Prepared & Analyzed: 03/28/23										
Chloride	15.04	1.0	mg/L	15.5751		96.6	80-120	0.333	10	
Sulfate	32.97	1.0	"	34.2650		96.2	80-120	1.01	10	
LCS Dup (1GC1527-BSD2) Prepared & Analyzed: 03/28/23										
Chloride	15.16	1.0	mg/L	15.5751		97.3	80-120	0.935	10	
Sulfate	33.36	1.0	"	34.2650		97.4	80-120	0.446	10	
MRL Check (1GC1527-MRL1) Prepared & Analyzed: 03/28/23										
Chloride	0.61	1.0	mg/L	0.615300		99.1	50-150			
Sulfate	1.05	1.0	"	1.10748		94.9	0-200			

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

HLW Engineering
PO Box 314
Story City, IA 50248

July 12, 2023
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Work Order: 1GC2550

Determination of Inorganic Anions - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1GC1527 - General Prep HPLC/IC

Matrix Spike (1GC1527-MS1)		Source: 1GC2543-03			Prepared & Analyzed: 03/28/23					
Chloride	310.7	5.0	mg/L	77.8755	236.0	95.9	81-116			
Sulfate	212.5	5.0	"	171.325	43.93	98.4	87-113			
Matrix Spike (1GC1527-MS2)		Source: 1GC2226-01			Prepared & Analyzed: 03/28/23					
Chloride	15.24	1.0	mg/L	15.5751	0.52	94.5	81-116			
Sulfate	33.43	1.0	"	34.2650	1.03	94.6	87-113			
Matrix Spike Dup (1GC1527-MSD1)		Source: 1GC2543-03			Prepared & Analyzed: 03/28/23					
Chloride	309.3	5.0	mg/L	77.8755	236.0	94.2	81-116	0.442	10	
Sulfate	213.6	5.0	"	171.325	43.93	99.1	87-113	0.535	10	
Matrix Spike Dup (1GC1527-MSD2)		Source: 1GC2226-01			Prepared & Analyzed: 03/28/23					
Chloride	15.18	1.0	mg/L	15.5751	0.52	94.1	81-116	0.368	10	
Sulfate	33.64	1.0	"	34.2650	1.03	95.2	87-113	0.611	10	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

HLW Engineering
PO Box 314
Story City, IA 50248

July 12, 2023
Page 15 of 23

Work Order: 1GC2550

Determination of Total Metals - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
---------	--------	-----------------	-------	-------------	---------------	------	-------------	-----	-----------	-------

Batch 1GC1453 - EPA 3005A Total Recoverable Metals

Blank (1GC1453-BLK1) Prepared: 03/28/23 Analyzed: 03/31/23

Arsenic, total	ND	0.0040	mg/L							
Cobalt, total	ND	0.0004	"							

LCS (1GC1453-BS1) Prepared: 03/28/23 Analyzed: 03/31/23

Arsenic, total	0.0980	0.0040	mg/L	0.100000		98.0	80-120			
Cobalt, total	0.104	0.0004	"	0.100000		104	80-120			

Matrix Spike (1GC1453-MS1) Source: 1GC2550-01 Prepared: 03/28/23 Analyzed: 03/31/23

Arsenic, total	0.182	0.0040	mg/L	0.100000	0.0794	103	75-125			
Cobalt, total	0.103	0.0004	"	0.100000	0.0029	100	75-125			

Matrix Spike Dup (1GC1453-MSD1) Source: 1GC2550-01 Prepared: 03/28/23 Analyzed: 03/31/23

Arsenic, total	0.193	0.0040	mg/L	0.100000	0.0794	114	75-125	6.10	20	
Cobalt, total	0.102	0.0004	"	0.100000	0.0029	99.2	75-125	0.776	20	

Post Spike (1GC1453-PS1) Source: 1GC2550-01 Prepared: 03/28/23 Analyzed: 03/31/23

Arsenic, total	0.154		mg/L	0.0800000	0.0778	95.1	80-120			
Cobalt, total	0.0820		"	0.0800000	0.0028	99.0	80-120			

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

HLW Engineering
PO Box 314
Story City, IA 50248

July 12, 2023
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Work Order: 1GC2550

Certified Analyses Included In This Report

Method/Matrix	Analyte	Certifications
2320B in Water	Alkalinity, as CaCO ₃	KS-NT,SIA1X
EPA 6020A in Water	Antimony, total	SIA1X,KS-NT
	Arsenic, total	SIA1X,KS-NT
	Barium, total	SIA1X,KS-NT
	Beryllium, total	SIA1X,KS-NT
	Cadmium, total	SIA1X,KS-NT
	Chromium, total	SIA1X,KS-NT
	Cobalt, total	SIA1X,KS-NT
	Copper, total	SIA1X,KS-NT
	Lead, total	SIA1X,KS-NT
	Nickel, total	SIA1X,KS-NT
	Selenium, total	SIA1X,KS-NT
	Silver, total	SIA1X,KS-NT
	Thallium, total	SIA1X,KS-NT
	Vanadium, total	SIA1X,KS-NT
	Zinc, total	SIA1X,KS-NT
EPA 8260B in Water	Chloromethane	KS-NT,SIA1X
	Vinyl Chloride	KS-NT,SIA1X
	Bromomethane	KS-NT,SIA1X
	Chloroethane	KS-NT,SIA1X
	Trichlorofluoromethane	KS-NT,SIA1X
	1,1-Dichloroethylene	KS-NT,SIA1X
	Acetone	KS-NT,SIA1X
	Methyl Iodide	SIA1X
	Carbon Disulfide	KS-NT,SIA1X
	Methylene Chloride	KS-NT,SIA1X
	Acrylonitrile	KS-NT,SIA1X
	trans-1,2-Dichloroethylene	KS-NT,SIA1X
	1,1-Dichloroethane	KS-NT,SIA1X
	Vinyl Acetate	KS-NT,SIA1X
	cis-1,2-Dichloroethylene	KS-NT,SIA1X
	2-Butanone (MEK)	KS-NT,SIA1X
	Bromochloromethane	KS-NT,SIA1X
	Chloroform	KS-NT,SIA1X
	1,1,1-Trichloroethane	KS-NT,SIA1X
	Carbon Tetrachloride	KS-NT,SIA1X
	Benzene	KS-NT,SIA1X
	1,2-Dichloroethane	KS-NT,SIA1X
	Trichloroethylene	KS-NT,SIA1X
	1,2-Dichloropropane	KS-NT,SIA1X
	Dibromomethane	SIA1X
	Bromodichloromethane	KS-NT,SIA1X
	cis-1,3-Dichloropropene	KS-NT,SIA1X
	4-Methyl-2-pentanone (MIBK)	KS-NT,SIA1X

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

HLW Engineering
PO Box 314
Story City, IA 50248

July 12, 2023
Page 17 of 23

Work Order: 1GC2550

	Toluene	KS-NT,SIA1X
	trans-1,3-Dichloropropene	KS-NT,SIA1X
	1,1,2-Trichloroethane	KS-NT,SIA1X
	Tetrachloroethylene	KS-NT,SIA1X
	2-Hexanone (MBK)	KS-NT,SIA1X
	Dibromochloromethane	KS-NT,SIA1X
	1,2-Dibromoethane	KS-NT,SIA1X
	Chlorobenzene	KS-NT,SIA1X
	1,1,1,2-Tetrachloroethane	KS-NT,SIA1X
	Ethylbenzene	KS-NT,SIA1X
	Xylenes, total	KS-NT,SIA1X
	Styrene	KS-NT,SIA1X
	Bromoform	KS-NT,SIA1X
	1,2,3-Trichloropropane	KS-NT,SIA1X
	trans-1,4-Dichloro-2-butene	SIA1X
	1,1,2,2-Tetrachloroethane	KS-NT,SIA1X
	1,4-Dichlorobenzene	KS-NT,SIA1X
	1,2-Dichlorobenzene	KS-NT,SIA1X
	1,2-Dibromo-3-chloropropane	KS-NT,SIA1X
EPA 9056 in Water		
	Chloride	KS-NT,SIA1X
	Sulfate	KS-NT,SIA1X
SM 4500 H+ B in Water		
	pH	KS-NT,SIA1X
SM 5210 B in Water		
	BOD (5 day)	SIA1X,KS-NT
TIMBERLINE in Water		
	Nitrogen, Ammonia	SIA1X
USGS I-1750-85 in Water		
	Solids, total dissolved	KS-NT,SIA1X

Code	Description	Number	Expires
KS-KC	Kansas Department of Health and Environment-KC	E-10110	04/30/2024
KS-NT	Kansas Department of Health and Environment (NELAP)	E-10287	10/31/2023
MO-KC	Missouri Department of Natural Resources (KC)	140	04/30/2024
MO-NT	Missouri Department of Natural Resources (Newton)	10170	04/30/2026
SIA1X	Iowa Dept. of Natural Resources	95	02/01/2024

Notes and Definitions

- B-06 Unseeded Blank equals .3mg/L
- I-03 Analyte required to be analyzed within 15 minutes of sampling. Analysis performed upon receipt of sample at laboratory.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

HLW Engineering
PO Box 314
Story City, IA 50248

July 12, 2023
Page 18 of 23

Work Order: 1GC2550

End of Report

Sue Thompson

Keystone Laboratories

Sue Thompson
Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.



1 G C 2 5 5 0

HLW Engineering
PM: Sue Thompson

SITE INFORMATION

Sampler: Todd Whipple
Project: SCILA - New Regs
6022

SPECIAL INSTRUCTIONS

None
Turn Around Time
 Standard RUSH, need by ___/___/___

REPORT TO

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

INVOICE TO

Marcia Beeber
South Central Iowa Landfill
2490 State Hwy 92
Winterset, IA 50273

LAB USE ONLY

Work Order 1GC2550
Temperature 2.4
Turn-Cooler: No

Custody Seal
 Containers Intact
 COC/Labels Agree
 Preservation Confirmed
 Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
01-001	MW-4 Broken	Water	GRAB	1-1	---	1	Indfil-app I -metals-6020 Indfil-app I -voc	---
02-001	MW-18	Water	GRAB	3/23/23	9:39	7	Indfil-app I -metals-6020 Indfil-app I -voc	01
03-001	GU-1 DK7	Water	GRAB	1-1	---	1	Indfil-app I -metals-6020 Indfil-app I -voc	---
04-001	MW-1R DK7	Water	GRAB	1-1	---	1	Indfil-app I -metals-6020 Indfil-app I -voc	---
05-001	MW-6A	Water	GRAB	3/23/23	12:33	7	Indfil-app I -metals-6020 Indfil-app I -voc	02
06-001	MW-21	Water	GRAB	3/23/23	13:51	7	Indfil-app I -metals-6020 Indfil-app I -voc	03
07-001	TILE-1	Water	GRAB	3/23/23	9:12	7	Indfil-app I -metals-6020 Indfil-app I -voc	04

Relinquished By Todd Whipple Date/Time 3/24/23

Received By _____ Date/Time _____

Relinquished By _____ Date/Time _____

Received for Lab By Randy Wood Date/Time 3-24-23 1000

Remarks:



HLW Engineering
Pvt Sue Thompson

SITE INFORMATION

Sampler: Todd Whipple
Project: SCILA - New Regs
6022

REPORT TO

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

INVOICE TO

Marcia Beeier
South Central Iowa Landfill
2490 State Hwy 92
Winterset, IA 50273

SPECIAL INSTRUCTIONS

None
Turn Around Time Standard RUSH, need by ___/___/___

LAB USE ONLY

Work Order 16C2550
Temperature 2.4
Turn-Cooler: No

Custody Seal
 Containers Intact
 COC/Labels Agree
 Preservation Confirmed
 Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
08-001	TILE 2	Water	GRAB	3/23/23	9:04	7	Indfil-app1-metals-6020 Indfil-app1-voc	05
09-001	MW-11C	Water	GRAB	3/23/23	12:06	7	Indfil-app1-metals-6020 Indfil-app1-voc	06
10-001	MW-39D	Water	GRAB	3/23/23	10:44	1	Indfil-app1-metals-6020	07
11-001	MW-41D	Water	GRAB	3/23/23	11:09	1	Indfil-app1-metals-6020	08
12-001	MW-42D	Water	GRAB	3/23/23	11:33	1	Indfil-app1-metals-6020	09
13-001	MW-17R	Water	GRAB	3/23/23	13:10	7	Indfil-app1-metals-6020 Indfil-app1-voc	10
14-001	MW-28	Water	GRAB	3/23/23	14:13	7	Indfil-app1-metals-6020 Indfil-app1-voc	11

Relinquished By Carol Whipple Date/Time 3/24/23

Relinquished By _____ Date/Time _____

Received for Lab By Todd Whipple Date/Time 3-24-23 100

Received By _____ Date/Time _____

Remarks:



HLW Engineering
P.M. Sue Thompson

SITE INFORMATION

Sampler: Todd Whipple
Project: SCILA - New Regs
6022

REPORT TO

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

Marcia Beeler
South Central Iowa Landfill
2400 State Hwy 92
Winterset, IA 50273

SPECIAL INSTRUCTIONS

None
Turn Around Time
 Standard RUSH, need by ___/___/___

LAB USE ONLY

Work Order 16C2550
Temperature 2.4
Turn-Cooler: No

Custody Seal
 Containers Intact
 COC/Labels Agree
 Preservation Confirmed
 Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
15-001	MW-8B	Water	GRAB	3/23/23	13:30	10	Indfil-app1-metals-6020 Indfil-app1-voc Indfil-app1-voc	<u>12</u>
16-001	MW-9AR	Water	GRAB	3/23/23	15:07	10	Indfil-app1-metals-6020 Indfil-app1-voc Indfil-app1-voc	<u>13</u>
17-001	MW-14D	Water	GRAB	3/23/23	15:40	10	Indfil-app1-metals-6020 Indfil-app1-voc Indfil-app1-voc	<u>14</u>
18-001	MW-15R	Water	GRAB	3/23/23	14:35	10	Indfil-app1-metals-6020 Indfil-app1-voc Indfil-app1-voc	<u>15</u>
19-001	SW-1	Water	GRAB	3/23/23	8:26	7	Indfil-app1-metals-6020 Indfil-app1-voc	<u>16</u>
20-001	SW-2B	Water	GRAB	3/23/23	8:05	7	Indfil-app1-metals-6020 Indfil-app1-voc	<u>17</u>
21-001	MW-31	Water	GRAB	3/23/23	15:27	6	Indfil-app1-voc	<u>18</u>

Relinquished By Todd Whipple Date/Time 3/24/23

Relinquished By _____ Date/Time _____
Received for Lab By Sue Thompson Date/Time 3/24/23 10:00

Remarks:



HLW Engineering
 PM: Sue Thompson

SITE INFORMATION

Sampler: Todd Whipple
 Project: SCILA - New Regs
8022

REPORT TO

Todd Whipple
 HLW Engineering
 PO Box 314
 Story City, IA 50248

Marcia Beeler
 South Central Iowa Landfill
 2490 State Hwy 92
 Winterset, IA 50273

SPECIAL INSTRUCTIONS

None
 Turn Around Time
 Standard RUSH, need by ___/___/___

LAB USE ONLY

Work Order 1GC2550
 Temperature 2.4
 Turn-Cooler: No

Custody Seal
 Containers Intact
 COC/Labels Agree
 Preservation Confirmed
 Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
22-001	MW-32	Water	GRAB	3/23/23	14:51	6	Indfil-app1-voc alk-caco3-2320 ci-9036-w	19
23-001	LW-26	Water	GRAB	3/23/23	16:11	13	Indfil-app1-voc nd3-tinberline-lf so4-9036-w	20
24-001	SW-102	Water	GRAB	3/23/23	8:12	6	Indfil-app1-voc bod-3210 co-4-6020 methane-rsk-175 ph-4300 tds-1-1750-85	21
25-001	Duplicate	Water	GRAB	3/23/23	✓	1	Indfil-app1-voc Indfil-app1-metals-6020	22

Relinquished By Sue Whipple 3/24/23
 Date/Time

Relinquished By _____ Date/Time _____
 Received for Lab By Sue Whipple 3-24-23 1000
 Date/Time

Received By _____ Date/Time _____

Remarks:

April 04, 2023

Sue Thompson
Keystone Laboratories
600 East 17 th Street South
Newton, IA 50208
TEL: (641) 792-8451
FAX:



Illinois	100226
Kansas	E-10374
Louisiana	05002
Louisiana	05003
Oklahoma	9978

RE: 1GC2550

WorkOrder: 23031883

Dear Sue Thompson:

TEKLAB, INC received 5 samples on 3/29/2023 8:50:00 AM for the analysis presented in the following report.

Samples are analyzed on an as received basis unless otherwise requested and documented. The sample results contained in this report relate only to the requested analytes of interest as directed on the chain of custody. NELAP accredited fields of testing are indicated by the letters NELAP under the Certification column. Unless otherwise documented within this report, Teklab Inc. analyzes samples utilizing the most current methods in compliance with 40CFR. All tests are performed in the Collinsville, IL laboratory unless otherwise noted in the Case Narrative.

All quality control criteria applicable to the test methods employed for this project have been satisfactorily met and are in accordance with NELAP except where noted. The following report shall not be reproduced, except in full, without the written approval of Teklab, Inc.

If you have any questions regarding these tests results, please feel free to call.

Sincerely,



Marvin L. Darling
Project Manager
(618)344-1004 ex 41
mdarling@teklabinc.com



Report Contents

<http://www.teklabinc.com/>

Client: Keystone Laboratories

Work Order: 23031883

Client Project: 1GC2550

Report Date: 04-Apr-23

This reporting package includes the following:

Cover Letter	1
Report Contents	2
Definitions	3
Case Narrative	5
Accreditations	6
Laboratory Results	7
Receiving Check List	12
Chain of Custody	Appended

Client: Keystone Laboratories

Work Order: 23031883

Client Project: 1GC2550

Report Date: 04-Apr-23

Abbr Definition

* Analytes on report marked with an asterisk are not NELAP accredited

CCV Continuing calibration verification is a check of a standard to determine the state of calibration of an instrument between recalibration.

CRQL A Client Requested Quantitation Limit is a reporting limit that varies according to customer request. The CRQL may not be less than the MDL.

DF Dilution factor is the dilution performed during analysis only and does not take into account any dilutions made during sample preparation. The reported result is final and includes all dilution factors.

DNI Did not ignite

DUP Laboratory duplicate is a replicate aliquot prepared under the same laboratory conditions and independently analyzed to obtain a measure of precision.

ICV Initial calibration verification is a check of a standard to determine the state of calibration of an instrument before sample analysis is initiated.

IDPH IL Dept. of Public Health

LCS Laboratory control sample is a sample matrix, free from the analytes of interest, spiked with verified known amounts of analytes and analyzed exactly like a sample to establish intra-laboratory or analyst specific precision and bias or to assess the performance of all or a portion of the measurement system.

LCSD Laboratory control sample duplicate is a replicate laboratory control sample that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).

MBLK Method blank is a sample of a matrix similar to the batch of associated sample (when available) that is free from the analytes of interest and is processed simultaneously with and under the same conditions as samples through all steps of the analytical procedures, and in which no target analytes or interferences should present at concentrations that impact the analytical results for sample analyses.

MDL "The method detection limit is defined as the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results."

MS Matrix spike is an aliquot of matrix fortified (spiked) with known quantities of specific analytes that is subjected to the entire analytical procedures in order to determine the effect of the matrix on an approved test method's recovery system. The acceptable recovery range is listed in the QC Package (provided upon request).

MSD Matrix spike duplicate means a replicate matrix spike that is prepared and analyzed in order to determine the precision of the approved test method. The acceptable recovery range is listed in the QC Package (provided upon request).

MW Molecular weight

NC Data is not acceptable for compliance purposes

ND Not Detected at the Reporting Limit

NELAP NELAP Accredited

PQL Practical quantitation limit means the lowest level that can be reliably achieved within specified limits of precision and accuracy during routine laboratory operation conditions.

RL The reporting limit the lowest level that the data is displayed in the final report. The reporting limit may vary according to customer request or sample dilution. The reporting limit may not be less than the MDL.

RPD Relative percent difference is a calculated difference between two recoveries (ie. MS/MSD). The acceptable recovery limit is listed in the QC Package (provided upon request).

SPK The spike is a known mass of target analyte added to a blank sample or sub-sample; used to determine recovery deficiency or for other quality control purposes.

Surr Surrogates are compounds which are similar to the analytes of interest in chemical composition and behavior in the analytical process, but which are not normally found in environmental samples.

TIC Tentatively identified compound: Analytes tentatively identified in the sample by using a library search. Only results not in the calibration standard will be reported as tentatively identified compounds. Results for tentatively identified compounds that are not present in the calibration standard, but are assigned a specific chemical name based upon the library search, are calculated using total peak areas from reconstructed ion chromatograms and a response factor of one. The nearest Internal Standard is used for the calculation. The results of any TICs must be considered estimated, and are flagged with a "T". If the estimated result is above the calibration range it is flagged "ET"

TNTC Too numerous to count (> 200 CFU)

Client: Keystone Laboratories

Work Order: 23031883

Client Project: 1GC2550

Report Date: 04-Apr-23

Qualifiers

- # - Unknown hydrocarbon
- C - RL shown is a Client Requested Quantitation Limit
- H - Holding times exceeded
- J - Analyte detected below quantitation limits
- ND - Not Detected at the Reporting Limit
- S - Spike Recovery outside recovery limits
- X - Value exceeds Maximum Contaminant Level
- B - Analyte detected in associated Method Blank
- E - Value above quantitation range
- I - Associated internal standard was outside method criteria
- M - Manual Integration used to determine area response
- R - RPD outside accepted recovery limits
- T - TIC(Tentatively identified compound)

Client: Keystone Laboratories

Work Order: 23031883

Client Project: 1GC2550

Report Date: 04-Apr-23

Cooler Receipt Temp: 3.2 °C

Locations

Collinsville

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425

Phone (618) 344-1004

Fax (618) 344-1005

Email jhriley@teklabinc.com

Collinsville Air

Address 5445 Horseshoe Lake Road
Collinsville, IL 62234-7425

Phone (618) 344-1004

Fax (618) 344-1005

Email EHurley@teklabinc.com

Springfield

Address 3920 Pintail Dr
Springfield, IL 62711-9415

Phone (217) 698-1004

Fax (217) 698-1005

Email KKlostermann@teklabinc.com

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Address 1319 Butterfield Rd.
Downers Grove, IL 60515

Phone (630) 324-6855

Fax

Email arenner@teklabinc.com

Kansas City

Address 8421 Nieman Road
Lenexa, KS 66214

Phone (913) 541-1998

Fax (913) 541-1998

Email jhriley@teklabinc.com



Accreditations

<http://www.teklabinc.com/>

Client: Keystone Laboratories

Work Order: 23031883

Client Project: 1GC2550

Report Date: 04-Apr-23

State	Dept	Cert #	NELAP	Exp Date	Lab
Illinois	IEPA	100226	NELAP	1/31/2024	Collinsville
Kansas	KDHE	E-10374	NELAP	4/30/2023	Collinsville
Louisiana	LDEQ	05002	NELAP	6/30/2023	Collinsville
Louisiana	LDEQ	05003	NELAP	6/30/2023	Collinsville
Oklahoma	ODEQ	9978	NELAP	8/31/2023	Collinsville
Arkansas	ADEQ	88-0966		3/14/2024	Collinsville
Illinois	IDPH	17584		5/31/2023	Collinsville
Iowa	IDNR	430		6/1/2024	Collinsville
Kentucky	UST	0073		1/31/2024	Collinsville
Missouri	MDNR	00930		5/31/2023	Collinsville
Missouri	MDNR	930		1/31/2025	Collinsville



Laboratory Results

<http://www.teklabinc.com/>

Client: Keystone Laboratories
Client Project: 1GC2550
Lab ID: 23031883-001
Matrix: AQUEOUS

Work Order: 23031883
Report Date: 04-Apr-23
Client Sample ID: 1GC2550-12
Collection Date: 03/23/2023 13:30

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
PERMANENT GASES (RSKSOP-175)								
Methane	*	40.0		161	µg/L	10	03/31/2023 12:26	R326743



Laboratory Results

<http://www.teklabinc.com/>

Client: Keystone Laboratories

Work Order: 23031883

Client Project: 1GC2550

Report Date: 04-Apr-23

Lab ID: 23031883-002

Client Sample ID: 1GC2550-13

Matrix: AQUEOUS

Collection Date: 03/23/2023 15:07

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
PERMANENT GASES (RSKSOP-175)								
Methane	*	40.0		56.5	µg/L	10	03/31/2023 12:43	R326743



Laboratory Results

<http://www.teklabinc.com/>

Client: Keystone Laboratories
Client Project: 1GC2550
Lab ID: 23031883-003
Matrix: AQUEOUS

Work Order: 23031883
Report Date: 04-Apr-23
Client Sample ID: 1GC2550-14
Collection Date: 03/23/2023 15:40

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
PERMANENT GASES (RSKSOP-175)								
Methane	*	4.0		ND	µg/L	1	03/31/2023 11:04	R326743



Laboratory Results

<http://www.teklabinc.com/>

Client: Keystone Laboratories
Client Project: 1GC2550
Lab ID: 23031883-004
Matrix: AQUEOUS

Work Order: 23031883
Report Date: 04-Apr-23
Client Sample ID: 1GC2550-15
Collection Date: 03/23/2023 14:35

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
PERMANENT GASES (RSKSOP-175)								
Methane	*	400		2180	µg/L	100	03/31/2023 12:56	R326743



Laboratory Results

<http://www.teklabinc.com/>

Client: Keystone Laboratories
Client Project: 1GC2550
Lab ID: 23031883-005
Matrix: AQUEOUS

Work Order: 23031883
Report Date: 04-Apr-23
Client Sample ID: 1GC2550-20
Collection Date: 03/23/2023 16:11

Analyses	Certification	RL	Qual	Result	Units	DF	Date Analyzed	Batch
PERMANENT GASES (RSKSOP-175)								
Methane	*	400		1930	µg/L	100	03/31/2023 13:11	R326743



Receiving Check List

<http://www.teklabinc.com/>

Client: Keystone Laboratories

Work Order: 23031883

Client Project: 1GC2550

Report Date: 04-Apr-23

Carrier: Spee Dee

Received By: LM

Completed by:

Reviewed by:

On:

On:

29-Mar-23

29-Mar-23

Lindsey Maddox

Elizabeth A. Hurley

Pages to follow: Chain of custody

Extra pages included

- Shipping container/cooler in good condition? Yes No Not Present Temp °C **3.2**
- Type of thermal preservation? None Ice Blue Ice Dry Ice
- Chain of custody present? Yes No
- Chain of custody signed when relinquished and received? Yes No
- Chain of custody agrees with sample labels? Yes No
- Samples in proper container/bottle? Yes No
- Sample containers intact? Yes No
- Sufficient sample volume for indicated test? Yes No
- All samples received within holding time? Yes No
- Reported field parameters measured: Field Lab NA
- Container/Temp Blank temperature in compliance? Yes No

When thermal preservation is required, samples are compliant with a temperature between 0.1°C - 6.0°C, or when samples are received on ice the same day as collected.

- Water – at least one vial per sample has zero headspace? Yes No No VOA vials
- Water - TOX containers have zero headspace? Yes No No TOX containers
- Water - pH acceptable upon receipt? Yes No NA
- NPDES/CWA TCN interferences checked/treated in the field? Yes No NA

Any No responses must be detailed below or on the COC.



SUBCONTRACTED CHAIN OF CUSTODY
1GC2550

SENDING LABORATORY:

Keystone Laboratories - Newton
600 East 17th Street South
Newton, IA 50208
Phone: 641-792-8451
Lab Manager: Sue Thompson
Email: sthompson@keystonelabs.com

RECEIVING LABORATORY:

Teklab, Inc.
5445 Horseshoe Lake Road
Collinsville, IL 62234
Phone: (618) 344-1004

OH Horseshoe TM 3.2 in 17th 74

Project Info:

Project Type: Landfills
Project Location: IA

Report TAT: 10
Due: 04/07/23 17:00

23031883 -

Sample ID: 1GC2550-12

Sampled: 03/23/23 13:30

Sampler: Whipple, Todd

Matrix: Water

Description: MW-8B

Analysis	Method	Analysis Due	Expires
methane-rsk-175	RSK-175	04/06/23 17:00	04/20/23 13:30
Containers Supplied:			
H: VH-40 ml Vial Hydrochloric	I: VH-40 ml Vial Hydrochloric		
J: VH-40 ml Vial Hydrochloric			

-001

Sample ID: 1GC2550-13

Sampled: 03/23/23 15:07

Sampler: Whipple, Todd

Matrix: Water

Description: MW-9AR

Analysis	Method	Analysis Due	Expires
methane-rsk-175	RSK-175	04/06/23 17:00	04/20/23 15:07
Containers Supplied:			
H: VH-40 ml Vial Hydrochloric	I: VH-40 ml Vial Hydrochloric		
J: VH-40 ml Vial Hydrochloric			

-002

Sample ID: 1GC2550-14

Sampled: 03/23/23 15:40

Sampler: Whipple, Todd

Matrix: Water

Description: MW-14D

Analysis	Method	Analysis Due	Expires
methane-rsk-175	RSK-175	04/06/23 17:00	04/20/23 15:40
Containers Supplied:			
H: VH-40 ml Vial Hydrochloric	I: VH-40 ml Vial Hydrochloric		
J: VH-40 ml Vial Hydrochloric			

-003

Sample ID: 1GC2550-15

Sampled: 03/23/23 14:35

Sampler: Whipple, Todd

Matrix: Water

Description: MW-15R

Analysis	Method	Analysis Due	Expires
methane-rsk-175	RSK-175	04/06/23 17:00	04/20/23 14:35
Containers Supplied:			
H: VH-40 ml Vial Hydrochloric	I: VH-40 ml Vial Hydrochloric		
J: VH-40 ml Vial Hydrochloric			

-004

23031883



SUBCONTRACTED CHAIN OF CUSTODY
1GC2550

Sample ID: 1GC2550-20

Sampled: 03/23/23 16:11

Sampler: Whipple, Todd

Matrix: Water

Description: LW-26

23031883
-005

Analysis	Method	Analysis Due	Expires
methane-rsk-175	RSK-175	04/06/23 17:00	04/20/23 16:11

Containers Supplied:

K: VH-40 ml Vial Hydrochloric

L: VH-40 ml Vial Hydrochloric

M: VH-40 ml Vial Hydrochloric

Linda B. Malcom 3/27/23 AMP (Spade) 3/29/23 0850

23031883

Released By _____ Date _____ Received By _____ Date _____

ANALYTICAL REPORT

May 23, 2023

Work Order: 1GE1366

Page 1 of 4

Report To
Todd Whipple HLW Engineering PO Box 314 Story City, IA 50248

Work Order Information
Date Received: 5/10/2023 10:10:00AM Collector: Whipple, Todd Phone: (515) 733-4144 PO Number:

Project: SCILA - New Regs

Project Number: 6022

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GE1366-01	MW-8B			Matrix: Water		Collected: 05/09/23 09:39	
Acetone	<10.0 ug/L	10.0	1GE0997	EPA 8260B	CSM	05/16/23 12:48	
Surrogate: Dibromofluoromethane	118 %			80-126	CSM	05/16/23 12:48	
Surrogate: 1,2-Dichloroethane-d4	121 %			63-138	CSM	05/16/23 12:48	
Surrogate: Toluene-d8	102 %			87-116	CSM	05/16/23 12:48	
Surrogate: 4-Bromofluorobenzene	98.8 %			85-111	CSM	05/16/23 12:48	

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HLW Engineering
PO Box 314
Story City, IA 50248

May 23, 2023
Page 2 of 4

Work Order: 1GE1366

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GE0997 - EPA 5030B

Blank (1GE0997-BLK1)

Prepared & Analyzed: 05/16/23

Surrogate: Dibromofluoromethane	59.3		ug/L	50.3520		118	80-126			
Surrogate: 1,2-Dichloroethane-d4	59.9		"	50.4080		119	63-138			
Surrogate: Toluene-d8	52.0		"	50.2360		104	87-116			
Surrogate: 4-Bromofluorobenzene	49.8		"	50.4200		98.7	85-111			
Acetone	ND	10.0	"							

LCS (1GE0997-BS1)

Prepared & Analyzed: 05/16/23

Surrogate: Dibromofluoromethane	52.0		ug/L	50.3520		103	80-126			
Surrogate: 1,2-Dichloroethane-d4	50.2		"	50.4080		99.6	63-138			
Surrogate: Toluene-d8	48.2		"	50.2360		96.0	87-116			
Surrogate: 4-Bromofluorobenzene	49.6		"	50.4200		98.3	85-111			
Acetone	106.8	10.0	"	104.100		103	51-156			

LCS Dup (1GE0997-BSD1)

Prepared & Analyzed: 05/16/23

Surrogate: Dibromofluoromethane	51.5		ug/L	50.3520		102	80-126			
Surrogate: 1,2-Dichloroethane-d4	49.4		"	50.4080		98.0	63-138			
Surrogate: Toluene-d8	48.1		"	50.2360		95.7	87-116			
Surrogate: 4-Bromofluorobenzene	49.1		"	50.4200		97.3	85-111			
Acetone	91.21	10.0	"	104.100		87.6	51-156	15.7	30	

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

Certified Analyses Included In This Report

Method/Matrix	Analyte	Certifications	
EPA 8260B in Water	Acetone	KS-NT,SIA1X	
Code	Description	Number	Expires
KS-KC	Kansas Department of Health and Environment-KC	E-10110	04/30/2024
KS-NT	Kansas Department of Health and Environment (NELAP)	E-10287	10/31/2023
MO-KC	Missouri Department of Natural Resources (KC)	140	04/30/2023
MO-NT	Missouri Department of Natural Resources (Newton)	10170	04/30/2026
SIA1X	Iowa Dept. of Natural Resources	95	02/01/2024

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HLW Engineering
PO Box 314
Story City, IA 50248

May 23, 2023
Page 3 of 4

Work Order: 1GE1366

End of Report

Sue Thompson

Keystone Laboratories

Sue Thompson
Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

ANALYTICAL REPORT

July 25, 2023

Work Order: 1GG1119

Page 1 of 15

Report To
Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

Work Order Information
Date Received: 7/13/2023 9:52:00AM
Collector: Whipple, Todd
Phone: (515) 733-4144
PO Number:

Project: SCILA - New Regs

Project Number: 6022

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GG1119-01	MW-32			Matrix: Water		Collected: 07/12/23 14:30	
Arsenic, total	<0.0040 mg/L	0.0040	1GG0962	EPA 6020A	RVV	07/20/23 20:27	
1GG1119-02	MW-44			Matrix: Water		Collected: 07/12/23 14:18	
Acrylonitrile	<5.0 ug/L	5.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Surrogate: Dibromofluoromethane	109 %			80-126	LNH	07/18/23 19:14	
Surrogate: 1,2-Dichloroethane-d4	109 %			63-138	LNH	07/18/23 19:14	
Surrogate: Toluene-d8	98.0 %			87-116	LNH	07/18/23 19:14	
Surrogate: 4-Bromofluorobenzene	105 %			85-111	LNH	07/18/23 19:14	
Chloromethane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Vinyl Chloride	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Bromomethane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Chloroethane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Trichlorofluoromethane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Acetone	11.1 ug/L	10.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Methyl Iodide	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Carbon Disulfide	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Methylene Chloride	<5.0 ug/L	5.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Vinyl Acetate	<5.0 ug/L	5.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
2-Butanone (MEK)	<10.0 ug/L	10.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Bromochloromethane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Chloroform	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Benzene	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	

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HLW Engineering
PO Box 314
Story City, IA 50248

July 25, 2023
Page 2 of 15

Work Order: 1GG1119

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GG1119-02	MW-44			Matrix: Water		Collected: 07/12/23 14:18	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Trichloroethylene	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Dibromomethane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Bromodichloromethane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
4-Methyl-2-pentanone (MIBK)	<5.0 ug/L	5.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Toluene	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
2-Hexanone (MBK)	<5.0 ug/L	5.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Dibromochloromethane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
1,2-Dibromoethane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Chlorobenzene	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
1,1,1,2-Tetrachloroethane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Ethylbenzene	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Xylenes, total	<2.0 ug/L	2.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Styrene	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Bromoform	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
1,2,3-Trichloropropane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
trans-1,4-Dichloro-2-butene	<5.0 ug/L	5.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
1,4-Dichlorobenzene	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
1,2-Dichlorobenzene	<1.0 ug/L	1.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
1,2-Dibromo-3-chloropropane	<5.0 ug/L	5.0	1GG0896	EPA 8260B	LNH	07/18/23 19:14	
Surrogate: Dibromofluoromethane	109 %			75-136	LNH	07/18/23 19:14	
Surrogate: 1,2-Dichloroethane-d4	109 %			61-142	LNH	07/18/23 19:14	
Surrogate: Toluene-d8	98.0 %			82-121	LNH	07/18/23 19:14	
Surrogate: 4-Bromofluorobenzene	105 %			80-116	LNH	07/18/23 19:14	
Silver, total	<0.0040 mg/L	0.0040	1GG0962	EPA 6020A	RVV	07/20/23 20:34	
Arsenic, total	<0.0040 mg/L	0.0040	1GG0962	EPA 6020A	RVV	07/20/23 20:34	
Barium, total	0.624 mg/L	0.0040	1GG0962	EPA 6020A	RVV	07/20/23 20:34	
Beryllium, total	<0.0040 mg/L	0.0040	1GG0962	EPA 6020A	RVV	07/20/23 20:34	
Cadmium, total	<0.0008 mg/L	0.0008	1GG0962	EPA 6020A	RVV	07/20/23 20:34	
Cobalt, total	0.0010 mg/L	0.0004	1GG0962	EPA 6020A	RVV	07/20/23 20:34	
Chromium, total	<0.0080 mg/L	0.0080	1GG0962	EPA 6020A	RVV	07/20/23 20:34	
Copper, total	<0.0040 mg/L	0.0040	1GG0962	EPA 6020A	RVV	07/20/23 20:34	
Nickel, total	<0.0040 mg/L	0.0040	1GG0962	EPA 6020A	RVV	07/20/23 20:34	

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HLW Engineering
PO Box 314
Story City, IA 50248

July 25, 2023
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Work Order: 1GG1119

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GG1119-02	MW-44			Matrix: Water		Collected: 07/12/23 14:18	
Lead, total	<0.0040 mg/L	0.0040	1GG0962	EPA 6020A	RVV	07/20/23 20:34	
Antimony, total	<0.0020 mg/L	0.0020	1GG0962	EPA 6020A	RVV	07/20/23 20:34	
Selenium, total	<0.0040 mg/L	0.0040	1GG0962	EPA 6020A	RVV	07/20/23 20:34	
Thallium, total	<0.0020 mg/L	0.0020	1GG0962	EPA 6020A	RVV	07/20/23 20:34	
Vanadium, total	<0.0200 mg/L	0.0200	1GG0962	EPA 6020A	RVV	07/20/23 20:34	
Zinc, total	<0.0200 mg/L	0.0200	1GG0962	EPA 6020A	RVV	07/20/23 20:34	
1GG1119-02RE1	MW-44			Matrix: Water		Collected: 07/12/23 14:18	
Tetrachloroethylene	<1.0 ug/L	1.0	1GG0892	EPA 8260B	LJS	07/18/23 15:12	
Surrogate: Dibromofluoromethane	99.4 %			75-136	LJS	07/18/23 15:12	
Surrogate: 1,2-Dichloroethane-d4	90.2 %			61-142	LJS	07/18/23 15:12	
Surrogate: Toluene-d8	104 %			82-121	LJS	07/18/23 15:12	
Surrogate: 4-Bromofluorobenzene	99.9 %			80-116	LJS	07/18/23 15:12	

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HLW Engineering
PO Box 314
Story City, IA 50248

July 25, 2023
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Work Order: 1GG1119

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GG0892 - EPA 5030B

Blank (1GG0892-BLK1)			Prepared & Analyzed: 07/18/23							
Surrogate: Dibromofluoromethane	50.8		ug/L	50.3520		101	75-136			
Surrogate: 1,2-Dichloroethane-d4	46.0		"	50.4080		91.3	61-142			
Surrogate: Toluene-d8	52.0		"	50.2360		103	82-121			
Surrogate: 4-Bromofluorobenzene	50.0		"	50.4200		99.3	80-116			
Tetrachloroethylene	ND	1.0	"							

LCS (1GG0892-BS1)			Prepared & Analyzed: 07/18/23							
Surrogate: Dibromofluoromethane	51.3		ug/L	50.3520		102	75-136			
Surrogate: 1,2-Dichloroethane-d4	52.0		"	50.4080		103	61-142			
Surrogate: Toluene-d8	51.6		"	50.2360		103	82-121			
Surrogate: 4-Bromofluorobenzene	51.1		"	50.4200		101	80-116			
Tetrachloroethylene	42.73	1.0	"	50.0000		85.5	69-130			

LCS Dup (1GG0892-BSD1)			Prepared & Analyzed: 07/18/23							
Surrogate: Dibromofluoromethane	51.1		ug/L	50.3520		102	75-136			
Surrogate: 1,2-Dichloroethane-d4	51.0		"	50.4080		101	61-142			
Surrogate: Toluene-d8	51.6		"	50.2360		103	82-121			
Surrogate: 4-Bromofluorobenzene	51.4		"	50.4200		102	80-116			
Tetrachloroethylene	44.50	1.0	"	50.0000		89.0	69-130	4.06	25	

Matrix Spike (1GG0892-MS1)			Source: 1GG1119-02RE1		Prepared & Analyzed: 07/18/23					
Surrogate: Dibromofluoromethane	500		ug/L	503.520		99.2	75-136			
Surrogate: 1,2-Dichloroethane-d4	507		"	504.080		101	61-142			
Surrogate: Toluene-d8	512		"	502.360		102	82-121			
Surrogate: 4-Bromofluorobenzene	494		"	504.200		97.9	80-116			
Tetrachloroethylene	428.0	10.0	"	500.000	ND	85.6	70-124			

Matrix Spike Dup (1GG0892-MSD1)			Source: 1GG1119-02RE1		Prepared & Analyzed: 07/18/23					
Surrogate: Dibromofluoromethane	531		ug/L	503.520		105	75-136			
Surrogate: 1,2-Dichloroethane-d4	560		"	504.080		111	61-142			
Surrogate: Toluene-d8	515		"	502.360		103	82-121			
Surrogate: 4-Bromofluorobenzene	509		"	504.200		101	80-116			
Tetrachloroethylene	433.4	10.0	"	500.000	ND	86.7	70-124	1.25	24	

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Work Order: 1GG1119

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GG0896 - EPA 5030B

Blank (1GG0896-BLK1)

Prepared & Analyzed: 07/18/23

Surrogate: Dibromofluoromethane	52.5		ug/L	50.3520		104	75-136			
Surrogate: Dibromofluoromethane	52.5		"	50.3520		104	80-126			
Surrogate: 1,2-Dichloroethane-d4	52.9		"	50.4080		105	61-142			
Surrogate: 1,2-Dichloroethane-d4	52.9		"	50.4080		105	63-138			
Surrogate: Toluene-d8	49.3		"	50.2360		98.1	82-121			
Surrogate: Toluene-d8	49.3		"	50.2360		98.1	87-116			
Surrogate: 4-Bromofluorobenzene	52.9		"	50.4200		105	80-116			
Surrogate: 4-Bromofluorobenzene	52.9		"	50.4200		105	85-111			
Chloromethane	ND	1.0	"							
Vinyl Chloride	ND	1.0	"							
Bromomethane	ND	1.0	"							
Chloroethane	ND	1.0	"							
Trichlorofluoromethane	ND	1.0	"							
1,1-Dichloroethylene	ND	1.0	"							
Acetone	ND	10.0	"							
Methyl Iodide	ND	1.0	"							
Carbon Disulfide	ND	1.0	"							
Methylene Chloride	ND	5.0	"							
Acrylonitrile	ND	5.0	"							
trans-1,2-Dichloroethylene	ND	1.0	"							
1,1-Dichloroethane	ND	1.0	"							
Vinyl Acetate	ND	5.0	"							
cis-1,2-Dichloroethylene	ND	1.0	"							
2-Butanone (MEK)	ND	10.0	"							
Bromochloromethane	ND	1.0	"							
Chloroform	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
Carbon Tetrachloride	ND	1.0	"							
Benzene	ND	1.0	"							
1,2-Dichloroethane	ND	1.0	"							
Trichloroethylene	ND	1.0	"							
1,2-Dichloropropane	ND	1.0	"							
Dibromomethane	ND	1.0	"							
Bromodichloromethane	ND	1.0	"							
cis-1,3-Dichloropropene	ND	1.0	"							
4-Methyl-2-pentanone (MIBK)	ND	5.0	"							
Toluene	ND	1.0	"							
trans-1,3-Dichloropropene	ND	1.0	"							

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Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GG0896 - EPA 5030B

Blank (1GG0896-BLK1)

Prepared & Analyzed: 07/18/23

1,1,2-Trichloroethane	ND	1.0	ug/L							
2-Hexanone (MBK)	ND	5.0	"							
Dibromochloromethane	ND	1.0	"							
1,2-Dibromoethane	ND	1.0	"							
Chlorobenzene	ND	1.0	"							
1,1,1,2-Tetrachloroethane	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Xylenes, total	ND	2.0	"							
Styrene	ND	1.0	"							
Bromoform	ND	1.0	"							
1,2,3-Trichloropropane	ND	1.0	"							
trans-1,4-Dichloro-2-butene	ND	5.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							
1,4-Dichlorobenzene	ND	1.0	"							
1,2-Dichlorobenzene	ND	1.0	"							
1,2-Dibromo-3-chloropropane	ND	5.0	"							

LCS (1GG0896-BS1)

Prepared & Analyzed: 07/18/23

QM-10

Surrogate: Dibromofluoromethane	50.7		ug/L	50.3520	101	75-136
Surrogate: Dibromofluoromethane	50.7		"	50.3520	101	80-126
Surrogate: 1,2-Dichloroethane-d4	50.6		"	50.4080	100	61-142
Surrogate: 1,2-Dichloroethane-d4	50.6		"	50.4080	100	63-138
Surrogate: Toluene-d8	51.1		"	50.2360	102	82-121
Surrogate: Toluene-d8	51.1		"	50.2360	102	87-116
Surrogate: 4-Bromofluorobenzene	49.4		"	50.4200	97.9	80-116
Surrogate: 4-Bromofluorobenzene	49.4		"	50.4200	97.9	85-111
Chloromethane	28.22	1.0	"	30.0000	94.1	63-155
Vinyl Chloride	28.62	1.0	"	30.0000	95.4	70-154
Bromomethane	40.87	1.0	"	30.0000	136	52-176
Chloroethane	29.89	1.0	"	30.0000	99.6	72-148
Trichlorofluoromethane	27.68	1.0	"	30.0000	92.3	70-152
1,1-Dichloroethylene	52.95	1.0	"	50.0000	106	70-148
Acetone	107.7	10.0	"	104.100	103	43-172
Methyl Iodide	130.5	1.0	"	112.563	116	69-170
Carbon Disulfide	112.7	1.0	"	106.400	106	72-162
Methylene Chloride	46.62	5.0	"	50.0000	93.2	68-142
Acrylonitrile	101.3	5.0	"	100.450	101	67-144
trans-1,2-Dichloroethylene	50.51	1.0	"	50.0000	101	66-148
1,1-Dichloroethane	50.08	1.0	"	50.0000	100	66-143

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GG0896 - EPA 5030B

LCS (1GG0896-BS1)	Prepared & Analyzed: 07/18/23						QM-10
Vinyl Acetate	142.0	5.0	ug/L	103.300	138	43-153	
cis-1,2-Dichloroethylene	51.67	1.0	"	49.4750	104	71-149	
2-Butanone (MEK)	106.9	10.0	"	106.200	101	52-159	
Bromochloromethane	51.01	1.0	"	50.0000	102	69-143	
Chloroform	49.60	1.0	"	50.0000	99.2	69-144	
1,1,1-Trichloroethane	47.39	1.0	"	49.9750	94.8	62-129	
Carbon Tetrachloride	50.96	1.0	"	50.0000	102	63-141	
Benzene	49.49	1.0	"	50.0000	99.0	71-134	
1,2-Dichloroethane	52.43	1.0	"	50.0000	105	72-132	
Trichloroethylene	48.54	1.0	"	50.0000	97.1	71-135	
1,2-Dichloropropane	50.52	1.0	"	50.0000	101	69-136	
Dibromomethane	53.35	1.0	"	50.0000	107	73-147	
Bromodichloromethane	50.30	1.0	"	50.0000	101	68-129	
cis-1,3-Dichloropropene	50.13	1.0	"	50.3250	99.6	65-134	
4-Methyl-2-pentanone (MIBK)	105.6	5.0	"	103.100	102	58-147	
Toluene	49.65	1.0	"	50.0000	99.3	72-133	
trans-1,3-Dichloropropene	46.33	1.0	"	50.4250	91.9	67-130	
1,1,2-Trichloroethane	51.88	1.0	"	50.0000	104	69-135	
2-Hexanone (MBK)	115.7	5.0	"	110.300	105	55-144	
Dibromochloromethane	52.85	1.0	"	49.5000	107	73-127	
1,2-Dibromoethane	51.34	1.0	"	50.0000	103	67-132	
Chlorobenzene	45.78	1.0	"	50.0000	91.6	72-123	
1,1,1,2-Tetrachloroethane	52.13	1.0	"	50.0000	104	73-127	
Ethylbenzene	47.89	1.0	"	50.0000	95.8	71-127	
Xylenes, total	143.1	2.0	"	150.000	95.4	74-127	
Styrene	47.58	1.0	"	50.0000	95.2	66-126	
Bromoform	51.94	1.0	"	50.0000	104	68-130	
1,2,3-Trichloropropane	49.42	1.0	"	50.0000	98.8	63-136	
trans-1,4-Dichloro-2-butene	83.05	5.0	"	102.400	81.1	54-134	
1,1,2,2-Tetrachloroethane	47.53	1.0	"	49.8500	95.3	61-131	
1,4-Dichlorobenzene	47.44	1.0	"	50.0000	94.9	70-129	
1,2-Dichlorobenzene	45.81	1.0	"	50.0000	91.6	69-126	
1,2-Dibromo-3-chloropropane	47.01	5.0	"	50.0000	94.0	50-143	

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Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GG0896 - EPA 5030B

LCS Dup (1GG0896-BSD1)	Prepared & Analyzed: 07/18/23					QM-20				
Surrogate: Dibromofluoromethane	50.0		ug/L	50.3520	99.4	80-126				
Surrogate: Dibromofluoromethane	50.0		"	50.3520	99.4	75-136				
Surrogate: 1,2-Dichloroethane-d4	50.0		"	50.4080	99.3	63-138				
Surrogate: 1,2-Dichloroethane-d4	50.0		"	50.4080	99.3	61-142				
Surrogate: Toluene-d8	51.1		"	50.2360	102	82-121				
Surrogate: Toluene-d8	51.1		"	50.2360	102	87-116				
Surrogate: 4-Bromofluorobenzene	49.2		"	50.4200	97.7	80-116				
Surrogate: 4-Bromofluorobenzene	49.2		"	50.4200	97.7	85-111				
Chloromethane	27.46	1.0	"	30.0000	91.5	63-155	2.73		24	
Vinyl Chloride	28.06	1.0	"	30.0000	93.5	70-154	1.98		25	
Bromomethane	39.94	1.0	"	30.0000	133	52-176	2.30		27	
Chloroethane	29.35	1.0	"	30.0000	97.8	72-148	1.82		25	
Trichlorofluoromethane	26.82	1.0	"	30.0000	89.4	70-152	3.16		26	
1,1-Dichloroethylene	51.86	1.0	"	50.0000	104	70-148	2.08		24	
Acetone	107.8	10.0	"	104.100	104	43-172	0.139		30	
Methyl Iodide	131.6	1.0	"	112.563	117	69-170	0.854		30	
Carbon Disulfide	109.7	1.0	"	106.400	103	72-162	2.75		24	
Methylene Chloride	45.70	5.0	"	50.0000	91.4	68-142	1.99		21	
Acrylonitrile	98.97	5.0	"	100.450	98.5	67-144	2.31		24	
trans-1,2-Dichloroethylene	49.48	1.0	"	50.0000	99.0	66-148	2.06		27	
1,1-Dichloroethane	48.78	1.0	"	50.0000	97.6	66-143	2.63		24	
Vinyl Acetate	130.1	5.0	"	103.300	126	43-153	8.77		30	
cis-1,2-Dichloroethylene	50.61	1.0	"	49.4750	102	71-149	2.07		26	
2-Butanone (MEK)	112.2	10.0	"	106.200	106	52-159	4.79		27	
Bromochloromethane	50.75	1.0	"	50.0000	102	69-143	0.511		23	
Chloroform	48.95	1.0	"	50.0000	97.9	69-144	1.32		23	
1,1,1-Trichloroethane	46.51	1.0	"	49.9750	93.1	62-129	1.87		24	
Carbon Tetrachloride	50.73	1.0	"	50.0000	101	63-141	0.452		25	
Benzene	49.05	1.0	"	50.0000	98.1	71-134	0.893		24	
1,2-Dichloroethane	52.34	1.0	"	50.0000	105	72-132	0.172		24	
Trichloroethylene	48.75	1.0	"	50.0000	97.5	71-135	0.432		24	
1,2-Dichloropropane	50.86	1.0	"	50.0000	102	69-136	0.671		24	
Dibromomethane	53.05	1.0	"	50.0000	106	73-147	0.564		25	
Bromodichloromethane	50.62	1.0	"	50.0000	101	68-129	0.634		22	
cis-1,3-Dichloropropene	50.27	1.0	"	50.3250	99.9	65-134	0.279		23	
4-Methyl-2-pentanone (MIBK)	106.6	5.0	"	103.100	103	58-147	0.999		27	
Toluene	49.67	1.0	"	50.0000	99.3	72-133	0.0403		24	
trans-1,3-Dichloropropene	46.91	1.0	"	50.4250	93.0	67-130	1.24		24	

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Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GG0896 - EPA 5030B

LCS Dup (1GG0896-BSD1)	Prepared & Analyzed: 07/18/23								QM-10
1,1,2-Trichloroethane	52.51	1.0	ug/L	50.0000	105	69-135	1.21	23	
2-Hexanone (MBK)	116.7	5.0	"	110.300	106	55-144	0.826	25	
Dibromochloromethane	52.95	1.0	"	49.5000	107	73-127	0.189	22	
1,2-Dibromoethane	52.07	1.0	"	50.0000	104	67-132	1.41	24	
Chlorobenzene	45.40	1.0	"	50.0000	90.8	72-123	0.834	23	
1,1,1,2-Tetrachloroethane	51.27	1.0	"	50.0000	103	73-127	1.66	24	
Ethylbenzene	47.71	1.0	"	50.0000	95.4	71-127	0.377	26	
Xylenes, total	142.1	2.0	"	150.000	94.7	74-127	0.715	25	
Styrene	47.57	1.0	"	50.0000	95.1	66-126	0.0210	23	
Bromoform	52.11	1.0	"	50.0000	104	68-130	0.327	23	
1,2,3-Trichloropropane	49.88	1.0	"	50.0000	99.8	63-136	0.926	24	
trans-1,4-Dichloro-2-butene	82.27	5.0	"	102.400	80.3	54-134	0.944	27	
1,1,2,2-Tetrachloroethane	48.13	1.0	"	49.8500	96.5	61-131	1.25	29	
1,4-Dichlorobenzene	47.51	1.0	"	50.0000	95.0	70-129	0.147	24	
1,2-Dichlorobenzene	45.02	1.0	"	50.0000	90.0	69-126	1.74	26	
1,2-Dibromo-3-chloropropane	47.95	5.0	"	50.0000	95.9	50-143	1.98	30	

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Determination of Total Metals - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GG0962 - EPA 3005A Total Recoverable Metals

Blank (1GG0962-BLK1)

Prepared: 07/19/23 Analyzed: 07/20/23

Antimony, total	ND	0.0020	mg/L							
Arsenic, total	ND	0.0040	"							
Barium, total	ND	0.0040	"							
Beryllium, total	ND	0.0040	"							
Cadmium, total	ND	0.0008	"							
Chromium, total	ND	0.0080	"							
Cobalt, total	ND	0.0004	"							
Copper, total	ND	0.0040	"							
Lead, total	ND	0.0040	"							
Nickel, total	ND	0.0040	"							
Selenium, total	ND	0.0040	"							
Silver, total	ND	0.0040	"							
Thallium, total	ND	0.0020	"							
Vanadium, total	ND	0.0200	"							
Zinc, total	ND	0.0200	"							

LCS (1GG0962-BS1)

Prepared: 07/19/23 Analyzed: 07/20/23

Antimony, total	0.0911	0.0020	mg/L	0.100000		91.1	80-120			
Arsenic, total	0.0957	0.0040	"	0.100000		95.7	80-120			
Barium, total	0.0972	0.0040	"	0.100000		97.2	80-120			
Beryllium, total	0.0933	0.0040	"	0.100000		93.3	80-120			
Cadmium, total	0.0935	0.0008	"	0.100000		93.5	80-120			
Chromium, total	0.0913	0.0080	"	0.100000		91.3	80-120			
Cobalt, total	0.0997	0.0004	"	0.100000		99.7	80-120			
Copper, total	0.0992	0.0040	"	0.100000		99.2	80-120			
Lead, total	0.0949	0.0040	"	0.100000		94.9	80-120			
Nickel, total	0.0962	0.0040	"	0.100000		96.2	80-120			
Selenium, total	0.0942	0.0040	"	0.100000		94.2	80-120			
Silver, total	0.0950	0.0040	"	0.100000		95.0	80-120			
Thallium, total	0.0896	0.0020	"	0.100000		89.6	80-120			
Vanadium, total	0.0969	0.0200	"	0.100000		96.9	80-120			
Zinc, total	0.101	0.0200	"	0.100000		101	80-120			

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Determination of Total Metals - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GG0962 - EPA 3005A Total Recoverable Metals

Matrix Spike (1GG0962-MS1)	Source: 1GG1119-02			Prepared: 07/19/23 Analyzed: 07/20/23						
Antimony, total	0.0935	0.0020	mg/L	0.100000	ND	93.5	75-125			
Arsenic, total	0.0970	0.0040	"	0.100000	0.0036	93.4	75-125			
Barium, total	0.752	0.0040	"	0.100000	0.624	128	75-125			QM-07
Beryllium, total	0.0945	0.0040	"	0.100000	ND	94.5	75-125			
Cadmium, total	0.0921	0.0008	"	0.100000	ND	92.1	75-125			
Chromium, total	0.0899	0.0080	"	0.100000	0.0008	89.1	75-125			
Cobalt, total	0.102	0.0004	"	0.100000	0.0010	101	75-125			
Copper, total	0.0892	0.0040	"	0.100000	0.0019	87.3	75-125			
Lead, total	0.0892	0.0040	"	0.100000	0.0011	88.1	75-125			
Nickel, total	0.0924	0.0040	"	0.100000	0.0021	90.4	75-125			
Selenium, total	0.0904	0.0040	"	0.100000	ND	90.4	75-125			
Silver, total	0.0924	0.0040	"	0.100000	ND	92.4	75-125			
Thallium, total	0.0868	0.0020	"	0.100000	ND	86.8	75-125			
Vanadium, total	0.0897	0.0200	"	0.100000	ND	89.7	75-125			
Zinc, total	0.0946	0.0200	"	0.100000	ND	94.6	75-125			

Matrix Spike Dup (1GG0962-MSD1)	Source: 1GG1119-02			Prepared: 07/19/23 Analyzed: 07/20/23						
Antimony, total	0.0953	0.0020	mg/L	0.100000	ND	95.3	75-125	1.93	20	
Arsenic, total	0.0972	0.0040	"	0.100000	0.0036	93.6	75-125	0.246	20	
Barium, total	0.756	0.0040	"	0.100000	0.624	132	75-125	0.546	20	QM-07
Beryllium, total	0.0906	0.0040	"	0.100000	ND	90.6	75-125	4.28	20	
Cadmium, total	0.0934	0.0008	"	0.100000	ND	93.4	75-125	1.39	20	
Chromium, total	0.0912	0.0080	"	0.100000	0.0008	90.3	75-125	1.42	20	
Cobalt, total	0.0990	0.0004	"	0.100000	0.0010	98.0	75-125	2.95	20	
Copper, total	0.0910	0.0040	"	0.100000	0.0019	89.1	75-125	1.96	20	
Lead, total	0.0906	0.0040	"	0.100000	0.0011	89.5	75-125	1.59	20	
Nickel, total	0.0937	0.0040	"	0.100000	0.0021	91.6	75-125	1.30	20	
Selenium, total	0.0913	0.0040	"	0.100000	ND	91.3	75-125	1.00	20	
Silver, total	0.0931	0.0040	"	0.100000	ND	93.1	75-125	0.821	20	
Thallium, total	0.0878	0.0020	"	0.100000	ND	87.8	75-125	1.12	20	
Vanadium, total	0.0917	0.0200	"	0.100000	ND	91.7	75-125	2.23	20	
Zinc, total	0.0943	0.0200	"	0.100000	ND	94.3	75-125	0.334	20	

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PO Box 314
Story City, IA 50248

July 25, 2023
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Work Order: 1GG1119

Determination of Total Metals - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GG0962 - EPA 3005A Total Recoverable Metals

Post Spike (1GG0962-PS1)	Source: 1GG1119-02		Prepared: 07/19/23		Analyzed: 07/20/23	
Antimony, total	0.0770	mg/L	0.0800000	0.0001	96.1	80-120
Arsenic, total	0.0806	"	0.0800000	0.0036	96.3	80-120
Barium, total	0.701	"	0.0800000	0.611	112	80-120
Beryllium, total	0.0765	"	0.0800000	0.00002	95.6	80-120
Cadmium, total	0.0757	"	0.0800000	0.00007	94.6	80-120
Chromium, total	0.0741	"	0.0800000	0.0008	91.6	80-120
Cobalt, total	0.0800	"	0.0800000	0.0009	98.8	80-120
Copper, total	0.0750	"	0.0800000	0.0019	91.4	80-120
Lead, total	0.0712	"	0.0800000	0.0011	87.6	80-120
Nickel, total	0.0780	"	0.0800000	0.0021	95.0	80-120
Selenium, total	0.0735	"	0.0800000	0.00004	91.8	80-120
Silver, total	0.0771	"	0.0800000	0.0005	95.7	80-120
Thallium, total	0.0698	"	0.0800000	0.00002	87.3	80-120
Vanadium, total	0.0760	"	0.0800000	0.0013	93.4	80-120
Zinc, total	0.0783	"	0.0800000	0.0085	87.2	80-120

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

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PO Box 314
Story City, IA 50248

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Work Order: 1GG1119

Certified Analyses Included In This Report

Method/Matrix	Analyte	Certifications
EPA 6020A in Water		
	Antimony, total	SIA1X,KS-NT
	Arsenic, total	SIA1X,KS-NT
	Barium, total	SIA1X,KS-NT
	Beryllium, total	SIA1X,KS-NT
	Cadmium, total	SIA1X,KS-NT
	Chromium, total	SIA1X,KS-NT
	Cobalt, total	SIA1X,KS-NT
	Copper, total	SIA1X,KS-NT
	Lead, total	SIA1X,KS-NT
	Nickel, total	SIA1X,KS-NT
	Selenium, total	SIA1X,KS-NT
	Silver, total	SIA1X,KS-NT
	Thallium, total	SIA1X,KS-NT
	Vanadium, total	SIA1X,KS-NT
	Zinc, total	SIA1X,KS-NT
EPA 8260B in Water		
	Chloromethane	KS-NT,SIA1X
	Vinyl Chloride	KS-NT,SIA1X
	Bromomethane	KS-NT,SIA1X
	Chloroethane	KS-NT,SIA1X
	Trichlorofluoromethane	KS-NT,SIA1X
	1,1-Dichloroethylene	KS-NT,SIA1X
	Acetone	KS-NT,SIA1X
	Methyl Iodide	SIA1X
	Carbon Disulfide	KS-NT,SIA1X
	Methylene Chloride	KS-NT,SIA1X
	Acrylonitrile	KS-NT,SIA1X
	trans-1,2-Dichloroethylene	KS-NT,SIA1X
	1,1-Dichloroethane	KS-NT,SIA1X
	Vinyl Acetate	KS-NT,SIA1X
	cis-1,2-Dichloroethylene	KS-NT,SIA1X
	2-Butanone (MEK)	KS-NT,SIA1X
	Bromochloromethane	KS-NT,SIA1X
	Chloroform	KS-NT,SIA1X
	1,1,1-Trichloroethane	KS-NT,SIA1X
	Carbon Tetrachloride	KS-NT,SIA1X
	Benzene	KS-NT,SIA1X
	1,2-Dichloroethane	KS-NT,SIA1X
	Trichloroethylene	KS-NT,SIA1X
	1,2-Dichloropropane	KS-NT,SIA1X
	Dibromomethane	SIA1X
	Bromodichloromethane	KS-NT,SIA1X
	cis-1,3-Dichloropropene	KS-NT,SIA1X
	4-Methyl-2-pentanone (MIBK)	KS-NT,SIA1X
	Toluene	KS-NT,SIA1X
	trans-1,3-Dichloropropene	KS-NT,SIA1X

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Work Order: 1GG1119

1,1,2-Trichloroethane	KS-NT,SIA1X
Tetrachloroethylene	KS-NT,SIA1X
2-Hexanone (MBK)	KS-NT,SIA1X
Dibromochloromethane	KS-NT,SIA1X
1,2-Dibromoethane	KS-NT,SIA1X
Chlorobenzene	KS-NT,SIA1X
1,1,1,2-Tetrachloroethane	KS-NT,SIA1X
Ethylbenzene	KS-NT,SIA1X
Xylenes, total	KS-NT,SIA1X
Styrene	KS-NT,SIA1X
Bromoform	KS-NT,SIA1X
1,2,3-Trichloropropane	KS-NT,SIA1X
trans-1,4-Dichloro-2-butene	SIA1X
1,1,2,2-Tetrachloroethane	KS-NT,SIA1X
1,4-Dichlorobenzene	KS-NT,SIA1X
1,2-Dichlorobenzene	KS-NT,SIA1X
1,2-Dibromo-3-chloropropane	KS-NT,SIA1X

Code	Description	Number	Expires
KS-KC	Kansas Department of Health and Environment-KC	E-10110	04/30/2024
KS-NT	Kansas Department of Health and Environment (NELAP)	E-10287	10/31/2023
MO-KC	Missouri Department of Natural Resources (KC)	140	04/30/2024
MO-NT	Missouri Department of Natural Resources (Newton)	10170	04/30/2026
SIA1X	Iowa Dept. of Natural Resources	95	02/01/2024

Notes and Definitions

- QM-07 The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- QM-10 LCS/LCSD were analyzed in place of MS/MSD.
- QM-20 The spike recovery for this QC sample is outside of established control limits due to instrument malfunction. QC batch accepted based on ending CCV, MS/MSD and/or LCS QC results.

End of Report

Keystone Laboratories
Sue Thompson
Client Services Manager

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Project Description

SCILA - New Regs

For:

Todd Whipple

HLW Engineering

PO Box 314

Story City, IA 50248

A handwritten signature in black ink that reads "Heather Murphy". The signature is written in a cursive style and is positioned above a horizontal line.

Heather Murphy

Customer Relationship Specialist

Tuesday, September 19, 2023

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Keystone Laboratories - Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc.

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

HLW Engineering

Todd Whipple
PO Box 314
Story City, IA 50248

Project Name: SCILA - New Regs

Project / PO Number: / 6022
Received: 09/06/2023
Reported: 09/19/2023

Sample Summary Report

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
MW-18	1GI0517-01	Water	GRAB		09/05/23 11:38	09/06/23 10:07
MW-21	1GI0517-02	Water	GRAB		09/05/23 09:35	09/06/23 10:07
TILE-1	1GI0517-03	Water	GRAB		09/05/23 14:41	09/06/23 10:07
TILE 2	1GI0517-04	Water	GRAB		09/05/23 13:33	09/06/23 10:07
MW-11C	1GI0517-05	Water	GRAB		09/05/23 10:38	09/06/23 10:07
MW-39D	1GI0517-06	Water	GRAB		09/05/23 12:39	09/06/23 10:07
MW-41D	1GI0517-07	Water	GRAB		09/05/23 13:02	09/06/23 10:07
MW-42D	1GI0517-08	Water	GRAB		09/05/23 11:23	09/06/23 10:07
MW-17R	1GI0517-09	Water	GRAB		09/05/23 10:02	09/06/23 10:07
MW-28	1GI0517-10	Water	GRAB		09/05/23 15:15	09/06/23 10:07
MW-8B	1GI0517-11	Water	GRAB		09/05/23 08:46	09/06/23 10:07
MW-9AR	1GI0517-12	Water	GRAB		09/05/23 14:17	09/06/23 10:07
MW-14D	1GI0517-13	Water	GRAB		09/05/23 13:48	09/06/23 10:07
MW-15R	1GI0517-14	Water	GRAB		09/05/23 08:13	09/06/23 10:07
Duplicate	1GI0517-15	Water	GRAB		09/05/23 00:00	09/06/23 10:07
MW-44	1GI0517-16	Water	GRAB		09/05/23 07:55	09/06/23 10:07

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Analytical Testing Parameters

Client Sample ID:	MW-18	Collected By:	Whipple, Todd
Sample Matrix:	Water	Collection Date:	09/05/2023 11:38
Lab Sample ID:	1GI0517-01		

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	0.0055	0.0020	mg/L	4		09/12/23 1608	09/13/23 2309	RVV
Arsenic, total	0.0268	0.0040	mg/L	4		09/12/23 1608	09/13/23 2309	RVV
Barium, total	0.509	0.0040	mg/L	4		09/12/23 1608	09/13/23 2309	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2309	RVV
Cadmium, total	0.0018	0.0008	mg/L	4		09/12/23 1608	09/13/23 2309	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/13/23 2309	RVV
Cobalt, total	0.0022	0.0004	mg/L	4		09/12/23 1608	09/13/23 2309	RVV
Copper, total	0.0059	0.0040	mg/L	4		09/12/23 1608	09/13/23 2309	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2309	RVV
Nickel, total	0.0140	0.0040	mg/L	4		09/12/23 1608	09/13/23 2309	RVV
Selenium, total	0.0080	0.0040	mg/L	4		09/12/23 1608	09/13/23 2309	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2309	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/13/23 2309	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/13/23 2309	RVV
Zinc, total	0.0481	0.0200	mg/L	4		09/12/23 1608	09/13/23 2309	RVV

Client Sample ID:	MW-21	Collected By:	Whipple, Todd
Sample Matrix:	Water	Collection Date:	09/05/2023 9:35
Lab Sample ID:	1GI0517-02		

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Vinyl Chloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Bromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Chloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Trichlorofluoromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Acetone	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Methyl Iodide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Carbon Disulfide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Methylene Chloride	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Acrylonitrile	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
1,1-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Vinyl Acetate	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
2-Butanone (MEK)	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Bromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Chloroform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID: MW-21
Sample Matrix: Water
Lab Sample ID: 1GI0517-02

Collected By: Whipple, Todd
Collection Date: 09/05/2023 9:35

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Carbon Tetrachloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Benzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
1,2-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Trichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
1,2-Dichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Dibromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Bromodichloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Toluene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Tetrachloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Dibromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
1,2-Dibromoethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Chlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Ethylbenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Xylenes, total	<2.0	2.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Styrene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Bromoform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1449	LNH
Surrogate: Dibromofluoromethane	124	Limit: 75-136	% Rec	1		09/11/23 0000	09/11/23 1449	LNH
Surrogate: Dibromofluoromethane	124	Limit: 80-126	% Rec	1		09/11/23 0000	09/11/23 1449	LNH
Surrogate: 1,2-Dichloroethane-d4	116	Limit: 61-142	% Rec	1		09/11/23 0000	09/11/23 1449	LNH
Surrogate: 1,2-Dichloroethane-d4	116	Limit: 63-138	% Rec	1		09/11/23 0000	09/11/23 1449	LNH
Surrogate: Toluene-d8	103	Limit: 82-121	% Rec	1		09/11/23 0000	09/11/23 1449	LNH
Surrogate: Toluene-d8	103	Limit: 87-116	% Rec	1		09/11/23 0000	09/11/23 1449	LNH
Surrogate: 4-Bromofluorobenzene	108	Limit: 80-116	% Rec	1		09/11/23 0000	09/11/23 1449	LNH
Surrogate: 4-Bromofluorobenzene	108	Limit: 85-111	% Rec	1		09/11/23 0000	09/11/23 1449	LNH

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/13/23 2333	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2333	RVV
Barium, total	0.162	0.0040	mg/L	4		09/12/23 1608	09/13/23 2333	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID:	MW-21	Collected By:	Whipple, Todd
Sample Matrix:	Water	Collection Date:	09/05/2023 9:35
Lab Sample ID:	1GI0517-02		

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2333	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		09/12/23 1608	09/13/23 2333	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/13/23 2333	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		09/12/23 1608	09/13/23 2333	RVV
Copper, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2333	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2333	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2333	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2333	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2333	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/13/23 2333	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/13/23 2333	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/13/23 2333	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID: TILE-1
Sample Matrix: Water
Lab Sample ID: 1GI0517-03

Collected By: Whipple, Todd
Collection Date: 09/05/2023 14:41

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Vinyl Chloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Bromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Chloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Trichlorofluoromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Acetone	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Methyl Iodide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Carbon Disulfide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Methylene Chloride	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Acrylonitrile	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
1,1-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Vinyl Acetate	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
2-Butanone (MEK)	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Bromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Chloroform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Carbon Tetrachloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Benzene	3.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
1,2-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Trichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
1,2-Dichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Dibromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Bromodichloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Toluene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Tetrachloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Dibromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
1,2-Dibromoethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Chlorobenzene	5.6	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Ethylbenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Xylenes, total	<2.0	2.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Styrene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Bromoform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID: TILE-1	Collected By: Whipple, Todd
Sample Matrix: Water	Collection Date: 09/05/2023 14:41
Lab Sample ID: 1GI0517-03	

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
1,4-Dichlorobenzene	4.5	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1515	LNH
Surrogate: Dibromofluoromethane	124	Limit: 80-126	% Rec	1		09/11/23 0000	09/11/23 1515	LNH
Surrogate: Dibromofluoromethane	124	Limit: 75-136	% Rec	1		09/11/23 0000	09/11/23 1515	LNH
Surrogate: 1,2-Dichloroethane-d4	119	Limit: 61-142	% Rec	1		09/11/23 0000	09/11/23 1515	LNH
Surrogate: 1,2-Dichloroethane-d4	119	Limit: 63-138	% Rec	1		09/11/23 0000	09/11/23 1515	LNH
Surrogate: Toluene-d8	102	Limit: 87-116	% Rec	1		09/11/23 0000	09/11/23 1515	LNH
Surrogate: Toluene-d8	102	Limit: 82-121	% Rec	1		09/11/23 0000	09/11/23 1515	LNH
Surrogate: 4-Bromofluorobenzene	108	Limit: 80-116	% Rec	1		09/11/23 0000	09/11/23 1515	LNH
Surrogate: 4-Bromofluorobenzene	108	Limit: 85-111	% Rec	1		09/11/23 0000	09/11/23 1515	LNH

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/13/23 2339	RVV
Arsenic, total	0.0087	0.0040	mg/L	4		09/12/23 1608	09/13/23 2339	RVV
Barium, total	2.51	0.100	mg/L	100		09/12/23 1608	09/14/23 1356	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2339	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		09/12/23 1608	09/13/23 2339	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/13/23 2339	RVV
Cobalt, total	0.0033	0.0004	mg/L	4		09/12/23 1608	09/13/23 2339	RVV
Copper, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2339	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2339	RVV
Nickel, total	0.0436	0.0040	mg/L	4		09/12/23 1608	09/13/23 2339	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2339	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2339	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/13/23 2339	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/13/23 2339	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/13/23 2339	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID: TILE 2
Sample Matrix: Water
Lab Sample ID: 1GI0517-04

Collected By: Whipple, Todd
Collection Date: 09/05/2023 13:33

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Vinyl Chloride	1.6	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Bromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Chloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Trichlorofluoromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Acetone	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Methyl Iodide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Carbon Disulfide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Methylene Chloride	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Acrylonitrile	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
1,1-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Vinyl Acetate	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
cis-1,2-Dichloroethylene	2.3	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
2-Butanone (MEK)	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Bromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Chloroform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Carbon Tetrachloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Benzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
1,2-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Trichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
1,2-Dichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Dibromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Bromodichloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Toluene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Tetrachloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Dibromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
1,2-Dibromoethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Chlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Ethylbenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Xylenes, total	<2.0	2.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Styrene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Bromoform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID: TILE 2	Collected By: Whipple, Todd
Sample Matrix: Water	Collection Date: 09/05/2023 13:33
Lab Sample ID: 1GI0517-04	

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1542	LNH
Surrogate: Dibromofluoromethane	126	Limit: 80-126	% Rec	1		09/11/23 0000	09/11/23 1542	LNH
Surrogate: Dibromofluoromethane	126	Limit: 75-136	% Rec	1		09/11/23 0000	09/11/23 1542	LNH
Surrogate: 1,2-Dichloroethane-d4	119	Limit: 61-142	% Rec	1		09/11/23 0000	09/11/23 1542	LNH
Surrogate: 1,2-Dichloroethane-d4	119	Limit: 63-138	% Rec	1		09/11/23 0000	09/11/23 1542	LNH
Surrogate: Toluene-d8	104	Limit: 87-116	% Rec	1		09/11/23 0000	09/11/23 1542	LNH
Surrogate: Toluene-d8	104	Limit: 82-121	% Rec	1		09/11/23 0000	09/11/23 1542	LNH
Surrogate: 4-Bromofluorobenzene	107	Limit: 80-116	% Rec	1		09/11/23 0000	09/11/23 1542	LNH
Surrogate: 4-Bromofluorobenzene	107	Limit: 85-111	% Rec	1		09/11/23 0000	09/11/23 1542	LNH

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/13/23 2345	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2345	RVV
Barium, total	0.590	0.0040	mg/L	4		09/12/23 1608	09/13/23 2345	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2345	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		09/12/23 1608	09/13/23 2345	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/13/23 2345	RVV
Cobalt, total	0.0015	0.0004	mg/L	4		09/12/23 1608	09/13/23 2345	RVV
Copper, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2345	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2345	RVV
Nickel, total	0.0077	0.0040	mg/L	4		09/12/23 1608	09/13/23 2345	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2345	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2345	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/13/23 2345	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/13/23 2345	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/13/23 2345	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID: MW-11C	Collected By: Whipple, Todd
Sample Matrix: Water	Collection Date: 09/05/2023 10:38
Lab Sample ID: 1GI0517-05	

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Vinyl Chloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Bromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Chloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Trichlorofluoromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Acetone	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Methyl Iodide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Carbon Disulfide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Methylene Chloride	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Acrylonitrile	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
1,1-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Vinyl Acetate	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
2-Butanone (MEK)	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Bromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Chloroform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Carbon Tetrachloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Benzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
1,2-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Trichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
1,2-Dichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Dibromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Bromodichloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Toluene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Tetrachloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Dibromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
1,2-Dibromoethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Chlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Ethylbenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Xylenes, total	<2.0	2.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Styrene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Bromoform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID: MW-11C	Collected By: Whipple, Todd
Sample Matrix: Water	Collection Date: 09/05/2023 10:38
Lab Sample ID: 1GI0517-05	

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1609	LNH
Surrogate: Dibromofluoromethane	122	Limit: 75-136	% Rec	1		09/11/23 0000	09/11/23 1609	LNH
Surrogate: Dibromofluoromethane	122	Limit: 80-126	% Rec	1		09/11/23 0000	09/11/23 1609	LNH
Surrogate: 1,2-Dichloroethane-d4	117	Limit: 63-138	% Rec	1		09/11/23 0000	09/11/23 1609	LNH
Surrogate: 1,2-Dichloroethane-d4	117	Limit: 61-142	% Rec	1		09/11/23 0000	09/11/23 1609	LNH
Surrogate: Toluene-d8	103	Limit: 82-121	% Rec	1		09/11/23 0000	09/11/23 1609	LNH
Surrogate: Toluene-d8	103	Limit: 87-116	% Rec	1		09/11/23 0000	09/11/23 1609	LNH
Surrogate: 4-Bromofluorobenzene	108	Limit: 85-111	% Rec	1		09/11/23 0000	09/11/23 1609	LNH
Surrogate: 4-Bromofluorobenzene	108	Limit: 80-116	% Rec	1		09/11/23 0000	09/11/23 1609	LNH

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/13/23 2351	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2351	RVV
Barium, total	0.0723	0.0040	mg/L	4		09/12/23 1608	09/13/23 2351	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2351	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		09/12/23 1608	09/13/23 2351	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/13/23 2351	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		09/12/23 1608	09/13/23 2351	RVV
Copper, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2351	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2351	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2351	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2351	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/13/23 2351	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/13/23 2351	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/13/23 2351	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/13/23 2351	RVV

Keystone Laboratories - Newton
CERTIFICATE OF ANALYSIS
1GI0517

Client Sample ID: MW-39D	Collected By: Whipple, Todd
Sample Matrix: Water	Collection Date: 09/05/2023 12:39
Lab Sample ID: 1GI0517-06	

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0009	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0009	RVV
Barium, total	0.0335	0.0040	mg/L	4		09/12/23 1608	09/14/23 0009	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0009	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		09/12/23 1608	09/14/23 0009	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/14/23 0009	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		09/12/23 1608	09/14/23 0009	RVV
Copper, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0009	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0009	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0009	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0009	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0009	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0009	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0009	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0009	RVV

Client Sample ID: MW-41D	Collected By: Whipple, Todd
Sample Matrix: Water	Collection Date: 09/05/2023 13:02
Lab Sample ID: 1GI0517-07	

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	0.0031	0.0020	mg/L	4		09/12/23 1608	09/14/23 0015	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0015	RVV
Barium, total	0.0303	0.0040	mg/L	4		09/12/23 1608	09/14/23 0015	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0015	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		09/12/23 1608	09/14/23 0015	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/14/23 0015	RVV
Cobalt, total	0.0009	0.0004	mg/L	4		09/12/23 1608	09/14/23 0015	RVV
Copper, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0015	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0015	RVV
Nickel, total	0.0075	0.0040	mg/L	4		09/12/23 1608	09/14/23 0015	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0015	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0015	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0015	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0015	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0015	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID:	MW-42D	Collected By:	Whipple, Todd
Sample Matrix:	Water	Collection Date:	09/05/2023 11:23
Lab Sample ID:	1GI0517-08		

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Vinyl Chloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Bromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Chloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Trichlorofluoromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Acetone	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Methyl Iodide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Carbon Disulfide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Methylene Chloride	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Acrylonitrile	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
1,1-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Vinyl Acetate	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
2-Butanone (MEK)	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Bromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Chloroform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Carbon Tetrachloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Benzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
1,2-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Trichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
1,2-Dichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Dibromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Bromodichloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Toluene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Tetrachloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Dibromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
1,2-Dibromoethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Chlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Ethylbenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Xylenes, total	<2.0	2.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Styrene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Bromoform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID: MW-42D
Sample Matrix: Water
Lab Sample ID: 1GI0517-08

Collected By: Whipple, Todd
Collection Date: 09/05/2023 11:23

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1636	LNH
Surrogate: Dibromofluoromethane	126	Limit: 80-126	% Rec	1		09/11/23 0000	09/11/23 1636	LNH
Surrogate: Dibromofluoromethane	126	Limit: 75-136	% Rec	1		09/11/23 0000	09/11/23 1636	LNH
Surrogate: 1,2-Dichloroethane-d4	120	Limit: 61-142	% Rec	1		09/11/23 0000	09/11/23 1636	LNH
Surrogate: 1,2-Dichloroethane-d4	120	Limit: 63-138	% Rec	1		09/11/23 0000	09/11/23 1636	LNH
Surrogate: Toluene-d8	103	Limit: 82-121	% Rec	1		09/11/23 0000	09/11/23 1636	LNH
Surrogate: Toluene-d8	103	Limit: 87-116	% Rec	1		09/11/23 0000	09/11/23 1636	LNH
Surrogate: 4-Bromofluorobenzene	108	Limit: 80-116	% Rec	1		09/11/23 0000	09/11/23 1636	LNH
Surrogate: 4-Bromofluorobenzene	108	Limit: 85-111	% Rec	1		09/11/23 0000	09/11/23 1636	LNH

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0021	RVV
Arsenic, total	0.0043	0.0040	mg/L	4		09/12/23 1608	09/14/23 0021	RVV
Barium, total	0.0366	0.0040	mg/L	4		09/12/23 1608	09/14/23 0021	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0021	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		09/12/23 1608	09/14/23 0021	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/14/23 0021	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		09/12/23 1608	09/14/23 0021	RVV
Copper, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0021	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0021	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0021	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0021	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0021	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0021	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0021	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0021	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID: MW-17R
Sample Matrix: Water
Lab Sample ID: 1GI0517-09

Collected By: Whipple, Todd
Collection Date: 09/05/2023 10:02

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Vinyl Chloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Bromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Chloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Trichlorofluoromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Acetone	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Methyl Iodide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Carbon Disulfide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Methylene Chloride	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Acrylonitrile	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
1,1-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Vinyl Acetate	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
cis-1,2-Dichloroethylene	3.7	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
2-Butanone (MEK)	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Bromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Chloroform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Carbon Tetrachloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Benzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
1,2-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Trichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
1,2-Dichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Dibromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Bromodichloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Toluene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Tetrachloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Dibromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
1,2-Dibromoethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Chlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Ethylbenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Xylenes, total	<2.0	2.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Styrene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Bromoform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH

Keystone Laboratories - Newton
CERTIFICATE OF ANALYSIS
1GI0517

Client Sample ID: MW-17R
Sample Matrix: Water
Lab Sample ID: 1GI0517-09

Collected By: Whipple, Todd
Collection Date: 09/05/2023 10:02

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1702	LNH
Surrogate: Dibromofluoromethane	125	Limit: 75-136	% Rec	1		09/11/23 0000	09/11/23 1702	LNH
Surrogate: Dibromofluoromethane	125	Limit: 80-126	% Rec	1		09/11/23 0000	09/11/23 1702	LNH
Surrogate: 1,2-Dichloroethane-d4	119	Limit: 61-142	% Rec	1		09/11/23 0000	09/11/23 1702	LNH
Surrogate: 1,2-Dichloroethane-d4	119	Limit: 63-138	% Rec	1		09/11/23 0000	09/11/23 1702	LNH
Surrogate: Toluene-d8	103	Limit: 82-121	% Rec	1		09/11/23 0000	09/11/23 1702	LNH
Surrogate: Toluene-d8	103	Limit: 87-116	% Rec	1		09/11/23 0000	09/11/23 1702	LNH
Surrogate: 4-Bromofluorobenzene	108	Limit: 85-111	% Rec	1		09/11/23 0000	09/11/23 1702	LNH
Surrogate: 4-Bromofluorobenzene	108	Limit: 80-116	% Rec	1		09/11/23 0000	09/11/23 1702	LNH

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0027	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0027	RVV
Barium, total	0.422	0.0040	mg/L	4		09/12/23 1608	09/14/23 0027	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0027	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		09/12/23 1608	09/14/23 0027	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/14/23 0027	RVV
Cobalt, total	0.0018	0.0004	mg/L	4		09/12/23 1608	09/14/23 0027	RVV
Copper, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0027	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0027	RVV
Nickel, total	0.0214	0.0040	mg/L	4		09/12/23 1608	09/14/23 0027	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0027	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0027	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0027	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0027	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0027	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID: MW-28
Sample Matrix: Water
Lab Sample ID: 1GI0517-10

Collected By: Whipple, Todd
Collection Date: 09/05/2023 15:15

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Vinyl Chloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Bromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Chloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Trichlorofluoromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Acetone	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Methyl Iodide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Carbon Disulfide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Methylene Chloride	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Acrylonitrile	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
1,1-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Vinyl Acetate	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
cis-1,2-Dichloroethylene	12.2	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
2-Butanone (MEK)	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Bromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Chloroform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Carbon Tetrachloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Benzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
1,2-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Trichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
1,2-Dichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Dibromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Bromodichloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Toluene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Tetrachloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Dibromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
1,2-Dibromoethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Chlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Ethylbenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Xylenes, total	<2.0	2.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Styrene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Bromoform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID: MW-28	Collected By: Whipple, Todd
Sample Matrix: Water	Collection Date: 09/05/2023 15:15
Lab Sample ID: 1GI0517-10	

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1729	LNH
Surrogate: Dibromofluoromethane	131	Limit: 75-136	% Rec	1		09/11/23 0000	09/11/23 1729	LNH
Surrogate: Dibromofluoromethane	131	Limit: 80-126	% Rec	1	S-GC	09/11/23 0000	09/11/23 1729	LNH
Surrogate: 1,2-Dichloroethane-d4	122	Limit: 61-142	% Rec	1		09/11/23 0000	09/11/23 1729	LNH
Surrogate: 1,2-Dichloroethane-d4	122	Limit: 63-138	% Rec	1		09/11/23 0000	09/11/23 1729	LNH
Surrogate: Toluene-d8	104	Limit: 87-116	% Rec	1		09/11/23 0000	09/11/23 1729	LNH
Surrogate: Toluene-d8	104	Limit: 82-121	% Rec	1		09/11/23 0000	09/11/23 1729	LNH
Surrogate: 4-Bromofluorobenzene	109	Limit: 80-116	% Rec	1		09/11/23 0000	09/11/23 1729	LNH
Surrogate: 4-Bromofluorobenzene	109	Limit: 85-111	% Rec	1		09/11/23 0000	09/11/23 1729	LNH

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0033	RVV
Arsenic, total	0.0088	0.0040	mg/L	4		09/12/23 1608	09/14/23 0033	RVV
Barium, total	0.647	0.0040	mg/L	4		09/12/23 1608	09/14/23 0033	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0033	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		09/12/23 1608	09/14/23 0033	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/14/23 0033	RVV
Cobalt, total	0.0286	0.0004	mg/L	4		09/12/23 1608	09/14/23 0033	RVV
Copper, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0033	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0033	RVV
Nickel, total	0.0191	0.0040	mg/L	4		09/12/23 1608	09/14/23 0033	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0033	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0033	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0033	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0033	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0033	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID:	MW-8B	Collected By:	Whipple, Todd
Sample Matrix:	Water	Collection Date:	09/05/2023 8:46
Lab Sample ID:	1GI0517-11		

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Vinyl Chloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Bromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Chloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Trichlorofluoromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Acetone	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Methyl Iodide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Carbon Disulfide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Methylene Chloride	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Acrylonitrile	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
1,1-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Vinyl Acetate	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
2-Butanone (MEK)	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Bromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Chloroform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Carbon Tetrachloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Benzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
1,2-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Trichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
1,2-Dichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Dibromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Bromodichloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Toluene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Tetrachloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Dibromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
1,2-Dibromoethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Chlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Ethylbenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Xylenes, total	<2.0	2.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Styrene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Bromoform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID: MW-8B	Collected By: Whipple, Todd
Sample Matrix: Water	Collection Date: 09/05/2023 8:46
Lab Sample ID: 1GI0517-11	

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1755	LNH
Surrogate: Dibromofluoromethane	130	Limit: 75-136	% Rec	1		09/11/23 0000	09/11/23 1755	LNH
Surrogate: Dibromofluoromethane	130	Limit: 80-126	% Rec	1	S-GC	09/11/23 0000	09/11/23 1755	LNH
Surrogate: 1,2-Dichloroethane-d4	119	Limit: 61-142	% Rec	1		09/11/23 0000	09/11/23 1755	LNH
Surrogate: 1,2-Dichloroethane-d4	119	Limit: 63-138	% Rec	1		09/11/23 0000	09/11/23 1755	LNH
Surrogate: Toluene-d8	104	Limit: 82-121	% Rec	1		09/11/23 0000	09/11/23 1755	LNH
Surrogate: Toluene-d8	104	Limit: 87-116	% Rec	1		09/11/23 0000	09/11/23 1755	LNH
Surrogate: 4-Bromofluorobenzene	109	Limit: 80-116	% Rec	1		09/11/23 0000	09/11/23 1755	LNH
Surrogate: 4-Bromofluorobenzene	109	Limit: 85-111	% Rec	1		09/11/23 0000	09/11/23 1755	LNH

Determination of Conventional Chemistry Parameters	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2320B								
Alkalinity, as CaCO3	698	50	mg/L	1		09/11/23 0905	09/11/23 0951	BSS
SM 4500 H+ B								
pH	7.0	0.5	pH	1	I-03	09/12/23 1502	09/13/23 0839	BSS

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0040	RVV
Arsenic, total	0.0174	0.0040	mg/L	4		09/12/23 1608	09/14/23 0040	RVV
Barium, total	0.810	0.0040	mg/L	4		09/12/23 1608	09/14/23 0040	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0040	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		09/12/23 1608	09/14/23 0040	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/14/23 0040	RVV
Cobalt, total	0.0123	0.0004	mg/L	4		09/12/23 1608	09/14/23 0040	RVV
Copper, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0040	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0040	RVV
Nickel, total	0.0071	0.0040	mg/L	4		09/12/23 1608	09/14/23 0040	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0040	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0040	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0040	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0040	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0040	RVV

Keystone Laboratories - Newton
CERTIFICATE OF ANALYSIS
1GI0517

Client Sample ID: MW-9AR
Sample Matrix: Water
Lab Sample ID: 1GI0517-12

Collected By: Whipple, Todd
Collection Date: 09/05/2023 14:17

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Vinyl Chloride	32.8	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Bromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Chloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Trichlorofluoromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Acetone	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Methyl Iodide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Carbon Disulfide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Methylene Chloride	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Acrylonitrile	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
trans-1,2-Dichloroethylene	5.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
1,1-Dichloroethane	1.5	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Vinyl Acetate	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
cis-1,2-Dichloroethylene	70.8	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
2-Butanone (MEK)	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Bromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Chloroform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Carbon Tetrachloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Benzene	2.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
1,2-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Trichloroethylene	2.4	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
1,2-Dichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Dibromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Bromodichloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Toluene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Tetrachloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Dibromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
1,2-Dibromoethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Chlorobenzene	5.8	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Ethylbenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Xylenes, total	<2.0	2.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Styrene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Bromoform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH

Keystone Laboratories - Newton
CERTIFICATE OF ANALYSIS
1GI0517

Client Sample ID: MW-9AR	Collected By: Whipple, Todd
Sample Matrix: Water	Collection Date: 09/05/2023 14:17
Lab Sample ID: 1GI0517-12	

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1822	LNH
Surrogate: Dibromofluoromethane	133	Limit: 80-126	% Rec	1	S-GC	09/11/23 0000	09/11/23 1822	LNH
Surrogate: Dibromofluoromethane	133	Limit: 75-136	% Rec	1		09/11/23 0000	09/11/23 1822	LNH
Surrogate: 1,2-Dichloroethane-d4	124	Limit: 61-142	% Rec	1		09/11/23 0000	09/11/23 1822	LNH
Surrogate: 1,2-Dichloroethane-d4	124	Limit: 63-138	% Rec	1		09/11/23 0000	09/11/23 1822	LNH
Surrogate: Toluene-d8	105	Limit: 82-121	% Rec	1		09/11/23 0000	09/11/23 1822	LNH
Surrogate: Toluene-d8	105	Limit: 87-116	% Rec	1		09/11/23 0000	09/11/23 1822	LNH
Surrogate: 4-Bromofluorobenzene	109	Limit: 80-116	% Rec	1		09/11/23 0000	09/11/23 1822	LNH
Surrogate: 4-Bromofluorobenzene	109	Limit: 85-111	% Rec	1		09/11/23 0000	09/11/23 1822	LNH

Determination of Conventional Chemistry Parameters	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2320B								
Alkalinity, as CaCO3	690	50	mg/L	1		09/11/23 0905	09/11/23 0951	BSS
SM 4500 H+ B								
pH	6.6	0.5	pH	1	I-03	09/12/23 1502	09/13/23 0839	BSS

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0046	RVV
Arsenic, total	0.0041	0.0040	mg/L	4		09/12/23 1608	09/14/23 0046	RVV
Barium, total	0.523	0.0040	mg/L	4		09/12/23 1608	09/14/23 0046	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0046	RVV
Cadmium, total	0.0019	0.0008	mg/L	4		09/12/23 1608	09/14/23 0046	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/14/23 0046	RVV
Cobalt, total	0.0041	0.0004	mg/L	4		09/12/23 1608	09/14/23 0046	RVV
Copper, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0046	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0046	RVV
Nickel, total	0.0194	0.0040	mg/L	4		09/12/23 1608	09/14/23 0046	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0046	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0046	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0046	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0046	RVV
Zinc, total	0.0283	0.0200	mg/L	4		09/12/23 1608	09/14/23 0046	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID:	MW-14D	Collected By:	Whipple, Todd
Sample Matrix:	Water	Collection Date:	09/05/2023 13:48
Lab Sample ID:	1GI0517-13		

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Vinyl Chloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Bromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Chloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Trichlorofluoromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Acetone	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Methyl Iodide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Carbon Disulfide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Methylene Chloride	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Acrylonitrile	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
1,1-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Vinyl Acetate	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
2-Butanone (MEK)	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Bromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Chloroform	1.4	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Carbon Tetrachloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Benzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
1,2-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Trichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
1,2-Dichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Dibromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Bromodichloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Toluene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Tetrachloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Dibromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
1,2-Dibromoethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Chlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Ethylbenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Xylenes, total	<2.0	2.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Styrene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Bromoform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH

Keystone Laboratories - Newton
CERTIFICATE OF ANALYSIS
1GI0517

Client Sample ID: MW-14D	Collected By: Whipple, Todd
Sample Matrix: Water	Collection Date: 09/05/2023 13:48
Lab Sample ID: 1GI0517-13	

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1849	LNH
Surrogate: Dibromofluoromethane	129	Limit: 75-136	% Rec	1		09/11/23 0000	09/11/23 1849	LNH
Surrogate: Dibromofluoromethane	129	Limit: 80-126	% Rec	1	S-GC	09/11/23 0000	09/11/23 1849	LNH
Surrogate: 1,2-Dichloroethane-d4	121	Limit: 61-142	% Rec	1		09/11/23 0000	09/11/23 1849	LNH
Surrogate: 1,2-Dichloroethane-d4	121	Limit: 63-138	% Rec	1		09/11/23 0000	09/11/23 1849	LNH
Surrogate: Toluene-d8	105	Limit: 82-121	% Rec	1		09/11/23 0000	09/11/23 1849	LNH
Surrogate: Toluene-d8	105	Limit: 87-116	% Rec	1		09/11/23 0000	09/11/23 1849	LNH
Surrogate: 4-Bromofluorobenzene	109	Limit: 80-116	% Rec	1		09/11/23 0000	09/11/23 1849	LNH
Surrogate: 4-Bromofluorobenzene	109	Limit: 85-111	% Rec	1		09/11/23 0000	09/11/23 1849	LNH

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	0.0023	0.0020	mg/L	4		09/12/23 1608	09/14/23 0826	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0826	RVV
Barium, total	0.0183	0.0040	mg/L	4		09/12/23 1608	09/14/23 0826	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0826	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		09/12/23 1608	09/14/23 0826	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/14/23 0826	RVV
Cobalt, total	0.0059	0.0004	mg/L	4		09/12/23 1608	09/14/23 0826	RVV
Copper, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0826	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0826	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0826	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0826	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0826	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0826	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0826	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0826	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID:	MW-15R	Collected By:	Whipple, Todd
Sample Matrix:	Water	Collection Date:	09/05/2023 8:13
Lab Sample ID:	1GI0517-14		

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Vinyl Chloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Bromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Chloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Trichlorofluoromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Acetone	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Methyl Iodide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Carbon Disulfide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Methylene Chloride	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Acrylonitrile	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
1,1-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Vinyl Acetate	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
2-Butanone (MEK)	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Bromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Chloroform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Carbon Tetrachloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Benzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
1,2-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Trichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
1,2-Dichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Dibromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Bromodichloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Toluene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Tetrachloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Dibromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
1,2-Dibromoethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Chlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Ethylbenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Xylenes, total	<2.0	2.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Styrene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Bromoform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID:	MW-15R	Collected By:	Whipple, Todd
Sample Matrix:	Water	Collection Date:	09/05/2023 8:13
Lab Sample ID:	1GI0517-14		

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1915	LNH
Surrogate: Dibromofluoromethane	134	Limit: 75-136	% Rec	1		09/11/23 0000	09/11/23 1915	LNH
Surrogate: Dibromofluoromethane	134	Limit: 80-126	% Rec	1	S-GC	09/11/23 0000	09/11/23 1915	LNH
Surrogate: 1,2-Dichloroethane-d4	123	Limit: 61-142	% Rec	1		09/11/23 0000	09/11/23 1915	LNH
Surrogate: 1,2-Dichloroethane-d4	123	Limit: 63-138	% Rec	1		09/11/23 0000	09/11/23 1915	LNH
Surrogate: Toluene-d8	105	Limit: 87-116	% Rec	1		09/11/23 0000	09/11/23 1915	LNH
Surrogate: Toluene-d8	105	Limit: 82-121	% Rec	1		09/11/23 0000	09/11/23 1915	LNH
Surrogate: 4-Bromofluorobenzene	110	Limit: 80-116	% Rec	1		09/11/23 0000	09/11/23 1915	LNH
Surrogate: 4-Bromofluorobenzene	110	Limit: 85-111	% Rec	1		09/11/23 0000	09/11/23 1915	LNH

Determination of Conventional Chemistry Parameters	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
2320B								
Alkalinity, as CaCO3	620	50	mg/L	1		09/11/23 0905	09/11/23 0951	BSS
SM 4500 H+ B								
pH	6.6	0.5	pH	1	I-03	09/12/23 1502	09/13/23 0839	BSS

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0832	RVV
Arsenic, total	0.0703	0.0040	mg/L	4		09/12/23 1608	09/14/23 0832	RVV
Barium, total	0.743	0.0040	mg/L	4		09/12/23 1608	09/14/23 0832	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0832	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		09/12/23 1608	09/14/23 0832	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/14/23 0832	RVV
Cobalt, total	0.0012	0.0004	mg/L	4		09/12/23 1608	09/14/23 0832	RVV
Copper, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0832	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0832	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0832	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0832	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0832	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0832	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0832	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0832	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID:	Duplicate	Collected By:	Whipple, Todd
Sample Matrix:	Water	Collection Date:	09/05/2023
Lab Sample ID:	1GI0517-15		

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0838	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0838	RVV
Barium, total	0.726	0.0040	mg/L	4		09/12/23 1608	09/14/23 0838	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0838	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		09/12/23 1608	09/14/23 0838	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/14/23 0838	RVV
Cobalt, total	0.0006	0.0004	mg/L	4		09/12/23 1608	09/14/23 0838	RVV
Copper, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0838	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0838	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0838	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0838	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0838	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0838	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0838	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0838	RVV

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CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID:	MW-44	Collected By:	Whipple, Todd
Sample Matrix:	Water	Collection Date:	09/05/2023 7:55
Lab Sample ID:	1GI0517-16		

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Vinyl Chloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Bromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Chloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Trichlorofluoromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
1,1-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Acetone	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Methyl Iodide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Carbon Disulfide	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Methylene Chloride	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Acrylonitrile	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
1,1-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Vinyl Acetate	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
2-Butanone (MEK)	<10.0	10.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Bromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Chloroform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
1,1,1-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Carbon Tetrachloride	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Benzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
1,2-Dichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Trichloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
1,2-Dichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Dibromomethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Bromodichloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
cis-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Toluene	2.2	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
trans-1,3-Dichloropropene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
1,1,2-Trichloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Tetrachloroethylene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
2-Hexanone (MBK)	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Dibromochloromethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
1,2-Dibromoethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Chlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Ethylbenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Xylenes, total	<2.0	2.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Styrene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Bromoform	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
1,2,3-Trichloropropane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Client Sample ID: MW-44
Sample Matrix: Water
Lab Sample ID: 1GI0517-16

Collected By: Whipple, Todd
Collection Date: 09/05/2023 7:55

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
1,4-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
1,2-Dichlorobenzene	<1.0	1.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L	1		09/11/23 0000	09/11/23 1942	LNH
Surrogate: Dibromofluoromethane	133	Limit: 80-126	% Rec	1	S-GC	09/11/23 0000	09/11/23 1942	LNH
Surrogate: Dibromofluoromethane	133	Limit: 75-136	% Rec	1		09/11/23 0000	09/11/23 1942	LNH
Surrogate: 1,2-Dichloroethane-d4	123	Limit: 61-142	% Rec	1		09/11/23 0000	09/11/23 1942	LNH
Surrogate: 1,2-Dichloroethane-d4	123	Limit: 63-138	% Rec	1		09/11/23 0000	09/11/23 1942	LNH
Surrogate: Toluene-d8	106	Limit: 87-116	% Rec	1		09/11/23 0000	09/11/23 1942	LNH
Surrogate: Toluene-d8	106	Limit: 82-121	% Rec	1		09/11/23 0000	09/11/23 1942	LNH
Surrogate: 4-Bromofluorobenzene	110	Limit: 80-116	% Rec	1		09/11/23 0000	09/11/23 1942	LNH
Surrogate: 4-Bromofluorobenzene	110	Limit: 85-111	% Rec	1		09/11/23 0000	09/11/23 1942	LNH

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0856	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0856	RVV
Barium, total	0.708	0.0040	mg/L	4		09/12/23 1608	09/14/23 0856	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0856	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		09/12/23 1608	09/14/23 0856	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		09/12/23 1608	09/14/23 0856	RVV
Cobalt, total	0.0006	0.0004	mg/L	4		09/12/23 1608	09/14/23 0856	RVV
Copper, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0856	RVV
Lead, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0856	RVV
Nickel, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0856	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0856	RVV
Silver, total	<0.0040	0.0040	mg/L	4		09/12/23 1608	09/14/23 0856	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		09/12/23 1608	09/14/23 0856	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0856	RVV
Zinc, total	<0.0200	0.0200	mg/L	4		09/12/23 1608	09/14/23 0856	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
2320B	1GI0433	1GI0517-11	MW-8B
		1GI0517-14	MW-15R
		1GI0433-MSD1	1GI0284-04
		1GI0433-MS1	1GI0284-04
		1GI0433-BS1	
		1GI0433-BLK1	
		1GI0517-12	MW-9AR

Method	Batch	Laboratory ID	Client / Source ID
EPA 8260B	1GI0502	1GI0502-BS1	
		1GI0502-BSD1	
		1GI0502-BLK1	
		1GI0517-02	MW-21
		1GI0517-03	TILE-1
		1GI0517-04	TILE 2
		1GI0517-05	MW-11C
		1GI0517-08	MW-42D
		1GI0517-09	MW-17R
		1GI0517-10	MW-28
		1GI0517-11	MW-8B
		1GI0517-12	MW-9AR
		1GI0517-13	MW-14D
		1GI0517-14	MW-15R
		1GI0517-16	MW-44
		1GI0502-MS1	1GI0517-08
		1GI0502-MSD1	1GI0517-08

Method	Batch	Laboratory ID	Client / Source ID
SM 4500 H+ B	1GI0574	1GI0574-DUP1	1GI0517-11
		1GI0574-SRM1	
		1GI0574-SRM2	
		1GI0574-SRM3	
		1GI0517-11	MW-8B
		1GI0574-DUP2	1GI0707-09
		1GI0517-12	MW-9AR
		1GI0517-14	MW-15R

Method	Batch	Laboratory ID	Client / Source ID
EPA 6020A	1GI0589	1GI0589-BLK1	
		1GI0589-BS1	



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CERTIFICATE OF ANALYSIS

1GI0517

EPA 6020A	1GI0589	1GI0517-01	MW-18
		1GI0589-MS1	1GI0517-01
		1GI0589-MSD1	1GI0517-01
		1GI0589-PS1	1GI0517-01
		1GI0517-02	MW-21
		1GI0517-03	TILE-1
		1GI0517-04	TILE 2
		1GI0517-05	MW-11C
		1GI0517-06	MW-39D
		1GI0517-07	MW-41D
		1GI0517-08	MW-42D
		1GI0517-09	MW-17R
		1GI0517-10	MW-28
		1GI0517-11	MW-8B
		1GI0517-12	MW-9AR
		1GI0517-13	MW-14D
		1GI0517-14	MW-15R
		1GI0517-15	Duplicate
		1GI0517-16	MW-44
		1GI0517-03RE1	TILE-1

Batch Quality Control Summary: Keystone Laboratories - Newton

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GI0502 - EPA 5030B - EPA 8260B										
<hr/>										
Blank (1GI0502-BLK1)	Prepared: 09/11/23 00:00 Analyzed: 09/11/23 09:45									
Chloromethane	<1.0	1.0	ug/L							
Vinyl Chloride	<1.0	1.0	ug/L							
Bromomethane	<1.0	1.0	ug/L							
Chloroethane	<1.0	1.0	ug/L							
Trichlorofluoromethane	<1.0	1.0	ug/L							
1,1-Dichloroethylene	<1.0	1.0	ug/L							
Acetone	459.1	10.0	ug/L							QB-02
Methyl Iodide	<1.0	1.0	ug/L							
Carbon Disulfide	<1.0	1.0	ug/L							
Methylene Chloride	<5.0	5.0	ug/L							
Acrylonitrile	<5.0	5.0	ug/L							
trans-1,2-Dichloroethylene	<1.0	1.0	ug/L							
1,1-Dichloroethane	<1.0	1.0	ug/L							
Vinyl Acetate	<5.0	5.0	ug/L							
cis-1,2-Dichloroethylene	<1.0	1.0	ug/L							
2-Butanone (MEK)	<10.0	10.0	ug/L							
Bromochloromethane	<1.0	1.0	ug/L							
Chloroform	<1.0	1.0	ug/L							



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GI0502 - EPA 5030B - EPA 8260B

Blank (1GI0502-BLK1)

Prepared: 09/11/23 00:00 Analyzed: 09/11/23 09:45

1,1,1-Trichloroethane	<1.0	1.0	ug/L							
Carbon Tetrachloride	<1.0	1.0	ug/L							
Benzene	<1.0	1.0	ug/L							
1,2-Dichloroethane	<1.0	1.0	ug/L							
Trichloroethylene	<1.0	1.0	ug/L							
1,2-Dichloropropane	<1.0	1.0	ug/L							
Dibromomethane	<1.0	1.0	ug/L							
Bromodichloromethane	<1.0	1.0	ug/L							
cis-1,3-Dichloropropene	<1.0	1.0	ug/L							
4-Methyl-2-pentanone (MIBK)	<5.0	5.0	ug/L							
Toluene	<1.0	1.0	ug/L							
trans-1,3-Dichloropropene	<1.0	1.0	ug/L							
1,1,2-Trichloroethane	<1.0	1.0	ug/L							
Tetrachloroethylene	<1.0	1.0	ug/L							
2-Hexanone (MBK)	<5.0	5.0	ug/L							
Dibromochloromethane	<1.0	1.0	ug/L							
1,2-Dibromoethane	<1.0	1.0	ug/L							
Chlorobenzene	<1.0	1.0	ug/L							
1,1,1,2-Tetrachloroethane	<1.0	1.0	ug/L							
Ethylbenzene	<1.0	1.0	ug/L							
Xylenes, total	<2.0	2.0	ug/L							
Styrene	<1.0	1.0	ug/L							
Bromoform	<1.0	1.0	ug/L							
1,2,3-Trichloropropane	<1.0	1.0	ug/L							
trans-1,4-Dichloro-2-butene	<5.0	5.0	ug/L							
1,1,2,2-Tetrachloroethane	<1.0	1.0	ug/L							
1,4-Dichlorobenzene	<1.0	1.0	ug/L							
1,2-Dichlorobenzene	<1.0	1.0	ug/L							
1,2-Dibromo-3-chloropropane	<5.0	5.0	ug/L							

Surrogate: Dibromofluoromethane	58.8		ug/L	50.4		117	75-136
Surrogate: Dibromofluoromethane	58.8		ug/L	50.4		117	80-126
Surrogate: 1,2-Dichloroethane-d4	56.3		ug/L	50.4		112	63-138
Surrogate: 1,2-Dichloroethane-d4	56.3		ug/L	50.4		112	61-142
Surrogate: Toluene-d8	50.7		ug/L	50.2		101	87-116
Surrogate: Toluene-d8	50.7		ug/L	50.2		101	82-121
Surrogate: 4-Bromofluorobenzene	55.4		ug/L	50.4		110	80-116
Surrogate: 4-Bromofluorobenzene	55.4		ug/L	50.4		110	85-111

LCS (1GI0502-BS1)

Prepared: 09/11/23 00:00 Analyzed: 09/11/23 08:26

Chloromethane	118.6	1.0	ug/L	100		119	63-155
Vinyl Chloride	123.6	1.0	ug/L	100		124	70-154
Bromomethane	113.7	1.0	ug/L	100		114	52-176
Chloroethane	128.6	1.0	ug/L	100		129	72-148
Trichlorofluoromethane	114.1	1.0	ug/L	100		114	70-152

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GI0502 - EPA 5030B - EPA 8260B										
LCS (1GI0502-BS1)										
				Prepared: 09/11/23 00:00 Analyzed: 09/11/23 08:26						
1,1-Dichloroethylene	62.85	1.0	ug/L	50.0		126	70-148			
Acetone	568.4	10.0	ug/L	104		546	43-172			QS-02
Methyl Iodide	210.0	1.0	ug/L	113		187	69-170			QS-02
Carbon Disulfide	127.6	1.0	ug/L	106		120	72-162			
Methylene Chloride	55.74	5.0	ug/L	50.0		111	68-142			
Acrylonitrile	107.4	5.0	ug/L	100		107	67-144			
trans-1,2-Dichloroethylene	59.66	1.0	ug/L	50.0		119	66-148			
1,1-Dichloroethane	58.74	1.0	ug/L	50.0		117	66-143			
Vinyl Acetate	139.1	5.0	ug/L	103		135	43-153			
cis-1,2-Dichloroethylene	58.56	1.0	ug/L	49.5		118	71-149			
2-Butanone (MEK)	115.5	10.0	ug/L	106		109	52-159			
Bromochloromethane	60.63	1.0	ug/L	50.0		121	69-143			
Chloroform	59.88	1.0	ug/L	50.0		120	69-144			
1,1,1-Trichloroethane	55.92	1.0	ug/L	50.0		112	62-129			
Carbon Tetrachloride	61.96	1.0	ug/L	50.0		124	63-141			
Benzene	55.85	1.0	ug/L	50.0		112	71-134			
1,2-Dichloroethane	52.20	1.0	ug/L	50.0		104	72-132			
Trichloroethylene	59.36	1.0	ug/L	50.0		119	71-135			
1,2-Dichloropropane	60.71	1.0	ug/L	50.0		121	69-136			
Dibromomethane	60.81	1.0	ug/L	50.0		122	73-147			
Bromodichloromethane	58.60	1.0	ug/L	50.0		117	68-129			
cis-1,3-Dichloropropene	56.76	1.0	ug/L	50.3		113	65-134			
4-Methyl-2-pentanone (MIBK)	108.2	5.0	ug/L	103		105	58-147			
Toluene	54.17	1.0	ug/L	50.0		108	72-133			
trans-1,3-Dichloropropene	48.19	1.0	ug/L	50.4		95.6	67-130			
1,1,2-Trichloroethane	51.33	1.0	ug/L	50.0		103	69-135			
Tetrachloroethylene	54.21	1.0	ug/L	50.0		108	69-130			
2-Hexanone (MBK)	120.5	5.0	ug/L	110		109	55-144			
Dibromochloromethane	64.44	1.0	ug/L	49.5		130	73-127			QS-02
1,2-Dibromoethane	51.72	1.0	ug/L	50.0		103	67-132			
Chlorobenzene	53.36	1.0	ug/L	50.0		107	72-123			
1,1,1,2-Tetrachloroethane	61.78	1.0	ug/L	50.0		124	73-127			
Ethylbenzene	54.50	1.0	ug/L	50.0		109	71-127			
Xylenes, total	159.7	2.0	ug/L	150		106	74-127			
Styrene	52.98	1.0	ug/L	50.0		106	66-126			
Bromoform	56.64	1.0	ug/L	50.0		113	68-130			
1,2,3-Trichloropropane	56.30	1.0	ug/L	50.0		113	63-136			
trans-1,4-Dichloro-2-butene	93.53	5.0	ug/L	102		91.3	54-134			
1,1,2,2-Tetrachloroethane	55.77	1.0	ug/L	49.8		112	61-131			
1,4-Dichlorobenzene	55.21	1.0	ug/L	50.0		110	70-129			
1,2-Dichlorobenzene	53.85	1.0	ug/L	50.0		108	69-126			
1,2-Dibromo-3-chloropropane	55.37	5.0	ug/L	50.0		111	50-143			

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GI0502 - EPA 5030B - EPA 8260B										
LCS (1GI0502-BS1)										
Prepared: 09/11/23 00:00 Analyzed: 09/11/23 08:26										
Surrogate: Dibromofluoromethane	52.7		ug/L	50.4		105	80-126			
Surrogate: Dibromofluoromethane	52.7		ug/L	50.4		105	75-136			
Surrogate: 1,2-Dichloroethane-d4	53.6		ug/L	50.4		106	63-138			
Surrogate: 1,2-Dichloroethane-d4	53.6		ug/L	50.4		106	61-142			
Surrogate: Toluene-d8	50.6		ug/L	50.2		101	87-116			
Surrogate: Toluene-d8	50.6		ug/L	50.2		101	82-121			
Surrogate: 4-Bromofluorobenzene	49.1		ug/L	50.4		97.4	85-111			
Surrogate: 4-Bromofluorobenzene	49.1		ug/L	50.4		97.4	80-116			
LCS Dup (1GI0502-BS1)										
Prepared: 09/11/23 00:00 Analyzed: 09/11/23 08:52										
Chloromethane	114.8	1.0	ug/L	100		115	63-155	3.24	24	
Vinyl Chloride	120.2	1.0	ug/L	100		120	70-154	2.80	25	
Bromomethane	113.7	1.0	ug/L	100		114	52-176	0.00880	27	
Chloroethane	125.0	1.0	ug/L	100		125	72-148	2.86	25	
Trichlorofluoromethane	111.5	1.0	ug/L	100		111	70-152	2.32	26	
1,1-Dichloroethylene	61.64	1.0	ug/L	50.0		123	70-148	1.94	24	
Acetone	573.0	10.0	ug/L	104		550	43-172	0.790	30	QS-02
Methyl Iodide	203.9	1.0	ug/L	113		181	69-170	2.98	30	QS-02
Carbon Disulfide	124.7	1.0	ug/L	106		117	72-162	2.30	24	
Methylene Chloride	54.16	5.0	ug/L	50.0		108	68-142	2.88	21	
Acrylonitrile	107.3	5.0	ug/L	100		107	67-144	0.112	24	
trans-1,2-Dichloroethylene	58.49	1.0	ug/L	50.0		117	66-148	1.98	27	
1,1-Dichloroethane	57.93	1.0	ug/L	50.0		116	66-143	1.39	24	
Vinyl Acetate	228.9	5.0	ug/L	103		222	43-153	48.8	30	QS-02
cis-1,2-Dichloroethylene	63.64	1.0	ug/L	49.5		129	71-149	8.31	26	
2-Butanone (MEK)	116.7	10.0	ug/L	106		110	52-159	0.999	27	
Bromochloromethane	59.42	1.0	ug/L	50.0		119	69-143	2.02	23	
Chloroform	58.74	1.0	ug/L	50.0		117	69-144	1.92	23	
1,1,1-Trichloroethane	55.46	1.0	ug/L	50.0		111	62-129	0.826	24	
Carbon Tetrachloride	61.68	1.0	ug/L	50.0		123	63-141	0.453	25	
Benzene	56.46	1.0	ug/L	50.0		113	71-134	1.09	24	
1,2-Dichloroethane	53.08	1.0	ug/L	50.0		106	72-132	1.67	24	
Trichloroethylene	60.29	1.0	ug/L	50.0		121	71-135	1.55	24	
1,2-Dichloropropane	60.72	1.0	ug/L	50.0		121	69-136	0.0165	24	
Dibromomethane	60.84	1.0	ug/L	50.0		122	73-147	0.0493	25	
Bromodichloromethane	58.65	1.0	ug/L	50.0		117	68-129	0.0853	22	
cis-1,3-Dichloropropene	57.49	1.0	ug/L	50.3		114	65-134	1.28	23	
4-Methyl-2-pentanone (MIBK)	110.1	5.0	ug/L	103		107	58-147	1.77	27	
Toluene	54.80	1.0	ug/L	50.0		110	72-133	1.16	24	
trans-1,3-Dichloropropene	48.71	1.0	ug/L	50.4		96.6	67-130	1.07	24	
1,1,2-Trichloroethane	52.02	1.0	ug/L	50.0		104	69-135	1.34	23	
Tetrachloroethylene	54.64	1.0	ug/L	50.0		109	69-130	0.790	25	
2-Hexanone (MBK)	123.8	5.0	ug/L	110		112	55-144	2.73	25	
Dibromochloromethane	64.89	1.0	ug/L	49.5		131	73-127	0.696	22	QS-02



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GI0502 - EPA 5030B - EPA 8260B										
LCS Dup (1GI0502-BSD1)										
				Prepared: 09/11/23 00:00 Analyzed: 09/11/23 08:52						
1,2-Dibromoethane	52.82	1.0	ug/L	50.0		106	67-132	2.10	24	
Chlorobenzene	54.24	1.0	ug/L	50.0		108	72-123	1.64	23	
1,1,1,2-Tetrachloroethane	62.12	1.0	ug/L	50.0		124	73-127	0.549	24	
Ethylbenzene	55.07	1.0	ug/L	50.0		110	71-127	1.04	26	
Xylenes, total	162.7	2.0	ug/L	150		108	74-127	1.82	25	
Styrene	54.18	1.0	ug/L	50.0		108	66-126	2.24	23	
Bromoform	58.36	1.0	ug/L	50.0		117	68-130	2.99	23	
1,2,3-Trichloropropane	58.32	1.0	ug/L	50.0		117	63-136	3.52	24	
trans-1,4-Dichloro-2-butene	97.12	5.0	ug/L	102		94.8	54-134	3.77	27	
1,1,1,2-Tetrachloroethane	56.73	1.0	ug/L	49.8		114	61-131	1.71	29	
1,4-Dichlorobenzene	55.79	1.0	ug/L	50.0		112	70-129	1.05	24	
1,2-Dichlorobenzene	54.27	1.0	ug/L	50.0		109	69-126	0.777	26	
1,2-Dibromo-3-chloropropane	55.75	5.0	ug/L	50.0		112	50-143	0.684	30	
<i>Surrogate: Dibromofluoromethane</i>	<i>51.5</i>		<i>ug/L</i>	<i>50.4</i>		<i>102</i>	<i>80-126</i>			
<i>Surrogate: Dibromofluoromethane</i>	<i>51.5</i>		<i>ug/L</i>	<i>50.4</i>		<i>102</i>	<i>75-136</i>			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>53.2</i>		<i>ug/L</i>	<i>50.4</i>		<i>106</i>	<i>63-138</i>			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	<i>53.2</i>		<i>ug/L</i>	<i>50.4</i>		<i>106</i>	<i>61-142</i>			
<i>Surrogate: Toluene-d8</i>	<i>51.0</i>		<i>ug/L</i>	<i>50.2</i>		<i>101</i>	<i>87-116</i>			
<i>Surrogate: Toluene-d8</i>	<i>51.0</i>		<i>ug/L</i>	<i>50.2</i>		<i>101</i>	<i>82-121</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>49.1</i>		<i>ug/L</i>	<i>50.4</i>		<i>97.3</i>	<i>85-111</i>			
<i>Surrogate: 4-Bromofluorobenzene</i>	<i>49.1</i>		<i>ug/L</i>	<i>50.4</i>		<i>97.3</i>	<i>80-116</i>			
Matrix Spike (1GI0502-MS1)										
				Source: 1GI0517-08 Prepared: 09/11/23 00:00 Analyzed: 09/11/23 21:02						
Chloromethane	1367	10.0	ug/L	1000	ND	137	61-152			
Vinyl Chloride	1392	10.0	ug/L	1000	ND	139	66-149			
Bromomethane	1293	10.0	ug/L	1000	ND	129	43-171			
Chloroethane	1439	10.0	ug/L	1000	ND	144	69-148			
Trichlorofluoromethane	1257	10.0	ug/L	1000	ND	126	62-163			
1,1-Dichloroethylene	717.2	10.0	ug/L	500	ND	143	70-148			
Acetone	10190	100	ug/L	1040	ND	978	45-173			QS-02
Methyl Iodide	2215	10.0	ug/L	1130	ND	197	62-167			QS-02
Carbon Disulfide	1410	10.0	ug/L	1060	ND	132	71-163			
Methylene Chloride	610.5	50.0	ug/L	500	ND	122	69-140			
Acrylonitrile	1220	50.0	ug/L	1000	ND	121	58-151			
trans-1,2-Dichloroethylene	677.2	10.0	ug/L	500	ND	135	69-144			
1,1-Dichloroethane	668.8	10.0	ug/L	500	ND	134	70-138			
Vinyl Acetate	2638	50.0	ug/L	1030	ND	255	58-142			QS-02
cis-1,2-Dichloroethylene	726.1	10.0	ug/L	495	ND	147	68-151			
2-Butanone (MEK)	1429	100	ug/L	1060	ND	135	50-160			
Bromochloromethane	708.6	10.0	ug/L	500	ND	142	65-143			
Chloroform	680.5	10.0	ug/L	500	ND	136	71-143			
1,1,1-Trichloroethane	642.3	10.0	ug/L	500	ND	129	63-133			
Carbon Tetrachloride	708.5	10.0	ug/L	500	ND	142	63-142			
Benzene	606.6	10.0	ug/L	500	ND	121	69-133			



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GI0502 - EPA 5030B - EPA 8260B										
Matrix Spike (1GI0502-MS1)	Source: 1GI0517-08			Prepared: 09/11/23 00:00 Analyzed: 09/11/23 21:02						
1,2-Dichloroethane	564.1	10.0	ug/L	500	ND	113	63-138			
Trichloroethylene	643.4	10.0	ug/L	500	ND	129	71-133			
1,2-Dichloropropane	661.0	10.0	ug/L	500	ND	132	69-132			
Dibromomethane	644.4	10.0	ug/L	500	ND	129	70-147			
Bromodichloromethane	620.8	10.0	ug/L	500	ND	124	67-130			
cis-1,3-Dichloropropene	586.7	10.0	ug/L	503	ND	117	61-126			
4-Methyl-2-pentanone (MIBK)	1153	50.0	ug/L	1030	ND	112	55-147			
Toluene	590.0	10.0	ug/L	500	ND	118	71-133			
trans-1,3-Dichloropropene	472.8	10.0	ug/L	504	ND	93.8	63-124			
1,1,2-Trichloroethane	535.5	10.0	ug/L	500	ND	107	69-133			
Tetrachloroethylene	541.0	10.0	ug/L	500	ND	108	70-124			
2-Hexanone (MBK)	1263	50.0	ug/L	1100	ND	115	53-141			
Dibromochloromethane	630.9	10.0	ug/L	495	ND	127	74-122			QS-02
1,2-Dibromoethane	509.0	10.0	ug/L	500	ND	102	66-127			
Chlorobenzene	545.9	10.0	ug/L	500	ND	109	76-116			
1,1,1,2-Tetrachloroethane	616.8	10.0	ug/L	500	ND	123	77-121			QS-02
Ethylbenzene	567.9	10.0	ug/L	500	ND	114	73-124			
Xylenes, total	1666	20.0	ug/L	1500	ND	111	75-123			
Styrene	556.8	10.0	ug/L	500	ND	111	70-120			
Bromoform	558.2	10.0	ug/L	500	ND	112	70-124			
1,2,3-Trichloropropane	586.8	10.0	ug/L	500	ND	117	62-135			
trans-1,4-Dichloro-2-butene	884.3	50.0	ug/L	1020	ND	86.4	50-120			
1,1,2,2-Tetrachloroethane	578.6	10.0	ug/L	498	ND	116	63-126			
1,4-Dichlorobenzene	563.2	10.0	ug/L	500	ND	113	72-119			
1,2-Dichlorobenzene	548.0	10.0	ug/L	500	ND	110	71-117			
1,2-Dibromo-3-chloropropane	530.4	50.0	ug/L	500	ND	106	49-134			
<i>Surrogate: Dibromofluoromethane</i>	578		ug/L	504		115	80-126			
<i>Surrogate: Dibromofluoromethane</i>	578		ug/L	504		115	75-136			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	602		ug/L	504		119	63-138			
<i>Surrogate: 1,2-Dichloroethane-d4</i>	602		ug/L	504		119	61-142			
<i>Surrogate: Toluene-d8</i>	527		ug/L	502		105	87-116			
<i>Surrogate: Toluene-d8</i>	527		ug/L	502		105	82-121			
<i>Surrogate: 4-Bromofluorobenzene</i>	494		ug/L	504		97.9	80-116			
<i>Surrogate: 4-Bromofluorobenzene</i>	494		ug/L	504		97.9	85-111			
Matrix Spike Dup (1GI0502-MSD1)	Source: 1GI0517-08			Prepared: 09/11/23 00:00 Analyzed: 09/11/23 21:29						
Chloromethane	1323	10.0	ug/L	1000	ND	132	61-152	3.24	26	
Vinyl Chloride	1356	10.0	ug/L	1000	ND	136	66-149	2.60	23	
Bromomethane	1277	10.0	ug/L	1000	ND	128	43-171	1.26	29	
Chloroethane	1417	10.0	ug/L	1000	ND	142	69-148	1.59	25	
Trichlorofluoromethane	1251	10.0	ug/L	1000	ND	125	62-163	0.518	25	
1,1-Dichloroethylene	699.2	10.0	ug/L	500	ND	140	70-148	2.54	22	
Acetone	9908	100	ug/L	1040	ND	952	45-173	2.77	30	QS-02
Methyl Iodide	2177	10.0	ug/L	1130	ND	193	62-167	1.73	24	QS-02

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CERTIFICATE OF ANALYSIS

1GI0517

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GI0502 - EPA 5030B - EPA 8260B										
Matrix Spike Dup (1GI0502-MSD1)	Source: 1GI0517-08			Prepared: 09/11/23 00:00 Analyzed: 09/11/23 21:29						
Carbon Disulfide	1391	10.0	ug/L	1060	ND	131	71-163	1.36	22	
Methylene Chloride	607.4	50.0	ug/L	500	ND	121	69-140	0.509	19	
Acrylonitrile	1202	50.0	ug/L	1000	ND	120	58-151	1.48	15	
trans-1,2-Dichloroethylene	663.6	10.0	ug/L	500	ND	133	69-144	2.03	22	
1,1-Dichloroethane	659.6	10.0	ug/L	500	ND	132	70-138	1.39	20	
Vinyl Acetate	2603	50.0	ug/L	1030	ND	252	58-142	1.37	24	QS-02
cis-1,2-Dichloroethylene	711.8	10.0	ug/L	495	ND	144	68-151	1.99	22	
2-Butanone (MEK)	1330	100	ug/L	1060	ND	125	50-160	7.14	23	
Bromochloromethane	698.4	10.0	ug/L	500	ND	140	65-143	1.45	22	
Chloroform	669.1	10.0	ug/L	500	ND	134	71-143	1.69	21	
1,1,1-Trichloroethane	628.0	10.0	ug/L	500	ND	126	63-133	2.25	23	
Carbon Tetrachloride	691.7	10.0	ug/L	500	ND	138	63-142	2.40	22	
Benzene	585.4	10.0	ug/L	500	ND	117	69-133	3.56	18	
1,2-Dichloroethane	568.1	10.0	ug/L	500	ND	114	63-138	0.707	20	
Trichloroethylene	617.5	10.0	ug/L	500	ND	124	71-133	4.11	23	
1,2-Dichloropropane	642.4	10.0	ug/L	500	ND	128	69-132	2.85	20	
Dibromomethane	631.5	10.0	ug/L	500	ND	126	70-147	2.02	22	
Bromodichloromethane	614.1	10.0	ug/L	500	ND	123	67-130	1.09	21	
cis-1,3-Dichloropropene	571.0	10.0	ug/L	503	ND	113	61-126	2.71	21	
4-Methyl-2-pentanone (MIBK)	1117	50.0	ug/L	1030	ND	108	55-147	3.21	23	
Toluene	568.3	10.0	ug/L	500	ND	114	71-133	3.75	19	
trans-1,3-Dichloropropene	462.3	10.0	ug/L	504	ND	91.7	63-124	2.25	21	
1,1,2-Trichloroethane	526.3	10.0	ug/L	500	ND	105	69-133	1.73	19	
Tetrachloroethylene	522.0	10.0	ug/L	500	ND	104	70-124	3.57	24	
2-Hexanone (MBK)	1228	50.0	ug/L	1100	ND	111	53-141	2.79	24	
Dibromochloromethane	619.1	10.0	ug/L	495	ND	125	74-122	1.89	21	QS-02
1,2-Dibromoethane	492.7	10.0	ug/L	500	ND	98.5	66-127	3.25	23	
Chlorobenzene	528.1	10.0	ug/L	500	ND	106	76-116	3.31	21	
1,1,1,2-Tetrachloroethane	602.1	10.0	ug/L	500	ND	120	77-121	2.41	25	
Ethylbenzene	545.1	10.0	ug/L	500	ND	109	73-124	4.10	20	
Xylenes, total	1614	20.0	ug/L	1500	ND	108	75-123	3.20	20	
Styrene	534.8	10.0	ug/L	500	ND	107	70-120	4.03	23	
Bromoform	545.2	10.0	ug/L	500	ND	109	70-124	2.36	22	
1,2,3-Trichloropropane	570.4	10.0	ug/L	500	ND	114	62-135	2.83	28	
trans-1,4-Dichloro-2-butene	888.2	50.0	ug/L	1020	ND	86.7	50-120	0.440	26	
1,1,2,2-Tetrachloroethane	560.1	10.0	ug/L	498	ND	112	63-126	3.25	24	
1,4-Dichlorobenzene	545.9	10.0	ug/L	500	ND	109	72-119	3.12	24	
1,2-Dichlorobenzene	536.0	10.0	ug/L	500	ND	107	71-117	2.21	24	
1,2-Dibromo-3-chloropropane	519.7	50.0	ug/L	500	ND	104	49-134	2.04	28	
Surrogate: Dibromofluoromethane	590		ug/L	504		117	80-126			
Surrogate: Dibromofluoromethane	590		ug/L	504		117	75-136			
Surrogate: 1,2-Dichloroethane-d4	607		ug/L	504		120	63-138			
Surrogate: 1,2-Dichloroethane-d4	607		ug/L	504		120	61-142			



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GI0502 - EPA 5030B - EPA 8260B										
Matrix Spike Dup (1GI0502-MSD1)	Source: 1GI0517-08			Prepared: 09/11/23 00:00 Analyzed: 09/11/23 21:29						
Surrogate: Toluene-d8	524		ug/L	502		104	87-116			
Surrogate: Toluene-d8	524		ug/L	502		104	82-121			
Surrogate: 4-Bromofluorobenzene	492		ug/L	504		97.6	85-111			
Surrogate: 4-Bromofluorobenzene	492		ug/L	504		97.6	80-116			

Determination of Conventional Chemistry Parameters	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GI0433 - Wet Chem Preparation - 2320B										
Blank (1GI0433-BLK1)				Prepared: 09/11/23 09:05 Analyzed: 09/11/23 09:51						
Alkalinity, as CaCO3	<10	10	mg/L							
LCS (1GI0433-BS1)				Prepared: 09/11/23 09:05 Analyzed: 09/11/23 09:51						
Alkalinity, as CaCO3	48.7	10	mg/L	50.0		97.4	88-114			
Matrix Spike (1GI0433-MS1)	Source: 1GI0284-04			Prepared: 09/11/23 09:05 Analyzed: 09/11/23 09:51						
Alkalinity, as CaCO3	201	10	mg/L	50.0	167	66.8	74-122			QM-07
Matrix Spike Dup (1GI0433-MSD1)	Source: 1GI0284-04			Prepared: 09/11/23 09:05 Analyzed: 09/11/23 09:51						
Alkalinity, as CaCO3	199	10	mg/L	50.0	167	63.8	74-122	0.750	10	QM-07

Batch 1GI0574 - Wet Chem Preparation - SM 4500 H+ B										
Duplicate (1GI0574-DUP1)	Source: 1GI0517-11			Prepared: 09/12/23 15:02 Analyzed: 09/13/23 08:39						
pH	6.7	0.5	pH		7.0			3.91	10	
Duplicate (1GI0574-DUP2)	Source: 1GI0707-09			Prepared: 09/12/23 15:02 Analyzed: 09/13/23 08:39						
pH	7.3	0.5	pH		7.3			0.0411	10	
Reference (1GI0574-SRM1)				Prepared: 09/12/23 15:02 Analyzed: 09/13/23 08:39						
pH	7.0	0.5	pH	7.00		101	90-110			
Reference (1GI0574-SRM2)				Prepared: 09/12/23 15:02 Analyzed: 09/13/23 08:39						
pH	7.0	0.5	pH	7.00		101	90-110			
Reference (1GI0574-SRM3)				Prepared: 09/12/23 15:02 Analyzed: 09/13/23 08:39						
pH	7.0	0.5	pH	7.00		100	90-110			

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GI0589 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Blank (1GI0589-BLK1)				Prepared: 09/12/23 16:08 Analyzed: 09/13/23 22:57						
Antimony, total	<0.0020	0.0020	mg/L							
Arsenic, total	<0.0040	0.0040	mg/L							
Barium, total	<0.0040	0.0040	mg/L							
Beryllium, total	<0.0040	0.0040	mg/L							



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GI0589 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Blank (1GI0589-BLK1)										
				Prepared: 09/12/23 16:08 Analyzed: 09/13/23 22:57						
Cadmium, total	<0.0008	0.0008	mg/L							
Chromium, total	<0.0080	0.0080	mg/L							
Cobalt, total	<0.0004	0.0004	mg/L							
Copper, total	<0.0040	0.0040	mg/L							
Lead, total	<0.0040	0.0040	mg/L							
Nickel, total	<0.0040	0.0040	mg/L							
Selenium, total	<0.0040	0.0040	mg/L							
Silver, total	<0.0040	0.0040	mg/L							
Thallium, total	<0.0020	0.0020	mg/L							
Vanadium, total	<0.0200	0.0200	mg/L							
Zinc, total	<0.0200	0.0200	mg/L							
LCS (1GI0589-BS1)										
				Prepared: 09/12/23 16:08 Analyzed: 09/13/23 23:03						
Antimony, total	0.0967	0.0020	mg/L	0.100		96.7	80-120			
Arsenic, total	0.0946	0.0040	mg/L	0.100		94.6	80-120			
Barium, total	0.105	0.0040	mg/L	0.100		105	80-120			
Beryllium, total	0.0943	0.0040	mg/L	0.100		94.3	80-120			
Cadmium, total	0.0945	0.0008	mg/L	0.100		94.5	80-120			
Chromium, total	0.0939	0.0080	mg/L	0.100		93.9	80-120			
Cobalt, total	0.101	0.0004	mg/L	0.100		101	80-120			
Copper, total	0.100	0.0040	mg/L	0.100		100	80-120			
Lead, total	0.0980	0.0040	mg/L	0.100		98.0	80-120			
Nickel, total	0.0992	0.0040	mg/L	0.100		99.2	80-120			
Selenium, total	0.0906	0.0040	mg/L	0.100		90.6	80-120			
Silver, total	0.101	0.0040	mg/L	0.100		101	80-120			
Thallium, total	0.0960	0.0020	mg/L	0.100		96.0	80-120			
Vanadium, total	0.0975	0.0200	mg/L	0.100		97.5	80-120			
Zinc, total	0.0981	0.0200	mg/L	0.100		98.1	80-120			
Matrix Spike (1GI0589-MS1)										
			Source: 1GI0517-01		Prepared: 09/12/23 16:08 Analyzed: 09/13/23 23:15					
Antimony, total	0.105	0.0020	mg/L	0.100	0.0055	99.7	75-125			
Arsenic, total	0.124	0.0040	mg/L	0.100	0.0268	97.2	75-125			
Barium, total	0.643	0.0040	mg/L	0.100	0.509	135	75-125			QM-4X
Beryllium, total	0.0943	0.0040	mg/L	0.100	ND	94.3	75-125			
Cadmium, total	0.0944	0.0008	mg/L	0.100	0.0018	92.7	75-125			
Chromium, total	0.0925	0.0080	mg/L	0.100	ND	92.5	75-125			
Cobalt, total	0.101	0.0004	mg/L	0.100	0.0022	99.1	75-125			
Copper, total	0.0940	0.0040	mg/L	0.100	0.0059	88.1	75-125			
Lead, total	0.0929	0.0040	mg/L	0.100	ND	92.9	75-125			
Nickel, total	0.109	0.0040	mg/L	0.100	0.0140	94.6	75-125			
Selenium, total	0.1020	0.0040	mg/L	0.100	0.0080	94.1	75-125			
Silver, total	0.0998	0.0040	mg/L	0.100	ND	99.8	75-125			
Thallium, total	0.0922	0.0020	mg/L	0.100	0.0003	91.9	75-125			
Vanadium, total	0.0970	0.0200	mg/L	0.100	ND	97.0	75-125			
Zinc, total	0.138	0.0200	mg/L	0.100	0.0481	89.5	75-125			

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GI0517

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GI0589 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Matrix Spike Dup (1GI0589-MSD1)		Source: 1GI0517-01			Prepared: 09/12/23 16:08 Analyzed: 09/13/23 23:21					
Antimony, total	0.109	0.0020	mg/L	0.100	0.0055	104	75-125	3.74	20	
Arsenic, total	0.0966	0.0040	mg/L	0.100	0.0268	69.8	75-125	24.8	20	QM-07
Barium, total	0.645	0.0040	mg/L	0.100	0.509	136	75-125	0.227	20	QM-4X
Beryllium, total	0.100	0.0040	mg/L	0.100	ND	100	75-125	5.95	20	
Cadmium, total	0.0946	0.0008	mg/L	0.100	0.0018	92.8	75-125	0.136	20	
Chromium, total	0.0934	0.0080	mg/L	0.100	ND	93.4	75-125	0.961	20	
Cobalt, total	0.0970	0.0004	mg/L	0.100	0.0022	94.8	75-125	4.30	20	
Copper, total	0.0909	0.0040	mg/L	0.100	0.0059	85.1	75-125	3.30	20	
Lead, total	0.0917	0.0040	mg/L	0.100	ND	91.7	75-125	1.29	20	
Nickel, total	0.105	0.0040	mg/L	0.100	0.0140	91.1	75-125	3.29	20	
Selenium, total	0.0977	0.0040	mg/L	0.100	0.0080	89.8	75-125	4.30	20	
Silver, total	0.0966	0.0040	mg/L	0.100	ND	96.6	75-125	3.26	20	
Thallium, total	0.0913	0.0020	mg/L	0.100	0.0003	91.0	75-125	0.962	20	
Vanadium, total	0.0974	0.0200	mg/L	0.100	ND	97.4	75-125	0.382	20	
Zinc, total	0.133	0.0200	mg/L	0.100	0.0481	85.2	75-125	3.19	20	
Post Spike (1GI0589-PS1)		Source: 1GI0517-01			Prepared: 09/12/23 16:08 Analyzed: 09/13/23 23:27					
Antimony, total	0.0864		mg/L	0.0800	0.0054	101	80-120			
Arsenic, total	0.104		mg/L	0.0800	0.0263	97.2	80-120			
Barium, total	0.596		mg/L	0.0800	0.499	122	80-120			PS-4X
Beryllium, total	0.0770		mg/L	0.0800	0.00001	96.2	80-120			
Cadmium, total	0.0770		mg/L	0.0800	0.0017	94.0	80-120			
Chromium, total	0.0763		mg/L	0.0800	0.0005	94.7	80-120			
Cobalt, total	0.0808		mg/L	0.0800	0.0021	98.3	80-120			
Copper, total	0.0772		mg/L	0.0800	0.0057	89.4	80-120			
Lead, total	0.0747		mg/L	0.0800	0.0004	92.9	80-120			
Nickel, total	0.0908		mg/L	0.0800	0.0137	96.3	80-120			
Selenium, total	0.0797		mg/L	0.0800	0.0078	89.9	80-120			
Silver, total	0.0787		mg/L	0.0800	0.0013	96.8	80-120			
Thallium, total	0.0752		mg/L	0.0800	0.0002	93.7	80-120			
Vanadium, total	0.0803		mg/L	0.0800	0.0049	94.4	80-120			
Zinc, total	0.117		mg/L	0.0800	0.0471	87.5	80-120			



1 G I O 5 1 7
HLW Engineering
PM: Sue Thompson

SITE INFORMATION

Sampler: Todd Whipple
Project: SCILA - New Regs
6022

SPECIAL INSTRUCTIONS

None
Turn Around Time Standard RUSH, need by / /

REPORT TO

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

INVOICE TO

Marcia Beeler
South Central Iowa Landfill
2460 State Hwy 92
Winterset, IA 50273

LAB USE ONLY

Work Order 1610517
Temperature 3.1
Turn-Cooler: No

Custody Seal
 Containers Intact
 COC/Labels Agree
 Preservation Confirmed
 Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
01-001	MW-4 <u>BROKEN</u>	Water	GRAB	<u>1-1</u>	<u> </u>	<u>0</u>	Indfil-app1-voc-group Indfil-app1-metals-6020	<u> </u>
02-001	MW-18	Water	GRAB	<u>9/5/23</u>	<u>11:38</u>	<u>7</u>	Indfil-app1-voc-group Indfil-app1-metals-6020	<u>01</u>
03-001	GU-1 <u>DRY</u>	Water	GRAB	<u>1-1</u>	<u> </u>	<u>0</u>	Indfil-app1-voc-group Indfil-app1-metals-6020	<u> </u>
04-001	MW-1R <u>DRY</u>	Water	GRAB	<u>1-1</u>	<u> </u>	<u>0</u>	Indfil-app1-voc-group Indfil-app1-metals-6020	<u> </u>
05-001	MW-6A <u>No Access</u>	Water	GRAB	<u>1-1</u>	<u> </u>	<u>0</u>	Indfil-app1-voc-group Indfil-app1-metals-6020	<u> </u>
06-001	MW-21	Water	GRAB	<u>9/5/23</u>	<u>9:35</u>	<u>7</u>	Indfil-app1-voc-group Indfil-app1-metals-6020	<u>02</u>
07-001	TILE-1	Water	GRAB	<u>9/5/23</u>	<u>14:41</u>	<u>7</u>	Indfil-app1-voc-group Indfil-app1-metals-6020	<u>03</u>

Relinquished By Sue Thompson Date/Time 9/6/23
Relinquished By Maha Date/Time 9/6/23
Relinquished By Date/Time 10-07

Received for Lab By Date/Time
Original - Lab Copy Yellow - Sampler Copy

Remarks:



SITE INFORMATION

Sampler: Todd Whipple
Project: SCILA - New Regs

SPECIAL INSTRUCTIONS

None
Turn Around Time
 Standard RUSH, need by ___/___/___

REPORT TO

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

INVOICE TO

Marcia Beeler
South Central Iowa Landfill
2490 State Hwy 92
Winterset, IA 50273

LAB USE ONLY

Work Order 1610517
Temperature 3.1
Turn-Cooler: No

Custody Seal
 Containers Intact
 COC/Labels Agree
 Preservation Confirmed
 Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
08-001	TILE 2	Water	GRAB	<u>9/5/23</u>	<u>13:33</u>	<u>7</u>	indfil-app1-vec-group indfil-app1-metals-6020	<u>04</u>
09-001	MW-11C	Water	GRAB	<u>9/5/23</u>	<u>10:38</u>	<u>7</u>	indfil-app1-vec-group indfil-app1-metals-6020	<u>05</u>
10-001	MW-39D	Water	GRAB	<u>9/5/23</u>	<u>12:39</u>	<u>1</u>	indfil-app1-metals-6020	<u>06</u>
11-001	MW-41D	Water	GRAB	<u>9/5/23</u>	<u>13:02</u>	<u>1</u>	indfil-app1-metals-6020	<u>07</u>
12-001	MW-42D	Water	GRAB	<u>9/5/23</u>	<u>11:23</u>	<u>7</u>	indfil-app1-vec-group indfil-app1-metals-6020	<u>08</u>
13-001	MW-17R	Water	GRAB	<u>9/5/23</u>	<u>10:02</u>	<u>7</u>	indfil-app1-vec-group indfil-app1-metals-6020	<u>09</u>
14-001	MW-28	Water	GRAB	<u>9/5/23</u>	<u>15:15</u>	<u>7</u>	indfil-app1-vec-group indfil-app1-metals-6020	<u>10</u>

Relinquished By Todd Whipple Date/Time 9/6/23

Relinquished By Wahen Date/Time 9/6/23 10:07

Remarks:

Received By _____ Date/Time _____

Received for Lab By _____ Date/Time _____
Original - Lab Copy Yellow - Sampler Copy

SITE INFORMATION

Sampler: Todd Whipple
 Project: SCILA - New Regs
5022

REPORT TO

Todd Whipple
 HLW Engineering
 PO Box 314
 Story City, IA 50248

INVOICE TO

Marcia Beeler
 South Central Iowa Landfill
 2490 State Hwy 92
 Winterset, IA 50273

SPECIAL INSTRUCTIONS

None
 Turn Around Time Standard RUSH, need by / /

LAB USE ONLY

Work Order GI0517
 Temperature 3.1
 Turn-Cooler: No

Custody Seal
 Containers Intact
 COC/Labels Agree
 Preservation Confirmed
 Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
15-001	MW-8B	Water	GRAB	9/15/23	8:44	8	alk-caco3-2320 Indfill-app1-voc-group pb-4500	<u>11</u>
16-001	MW-9AR	Water	GRAB	9/15/23	14:17	8	alk-caco3-2320 Indfill-app1-voc-group pb-4500	<u>12</u>
17-001	MW-14D	Water	GRAB	9/15/23	13:48	7	Indfill-app1-voc-group Indfill-app1-metals-6020	<u>13</u>
18-001	MW-15R	Water	GRAB	9/15/23	8:13	8	alk-caco3-2320 Indfill-app1-voc-group pb-4500	<u>14</u>
19-001	SW-1 Dry	Water	GRAB			0	Indfill-app1-voc-group Indfill-app1-metals-6020	
20-001	SW-2B Dry	Water	GRAB			0	Indfill-app1-voc-group Indfill-app1-metals-6020	
21-001	SW-102 Dry	Water	GRAB			0	Indfill-app1-voc-group Indfill-app1-metals-6020	

Relinquished By Lois W... 9/6/23 Date/Time

Relinquished By Maher 9/6/23 10:07 Date/Time

Remarks:

Received By Date/Time

Received for Lab By Date/Time

Original - Lab Copy Yellow - Sampler Copy



HLW Engineering
PM: Sue Thompson

SITE INFORMATION

Sampler: Todd Whipple

Project: SCILA - New Regs
6022

SPECIAL INSTRUCTIONS

None
Turn Around Time
 Standard RUSH, need by ___/___/___

REPORT TO

Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

Marcia Beeler
South Central Iowa Landfill
2490 State Hwy 92
Winterset, IA 50273

LAB USE ONLY

Work Order 1610517
Temperature 3.1
Turn-Cooler: No

Custody Seal
 Containers Intact
 COC/Labels Agree
 Preservation Confirmed
 Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
22-001	Duplicate	Water	GRAB	9/5/23	✓	1	Indfil-app1-metals-6020	15
23-001	GU-2	Water	GRAB	1/1		0	Indfil-app1-voc-group	-
24-001	GU-A	Water	GRAB	1/1		0	Indfil-app1-voc-group	-
25-001	GU-B	Water	GRAB	1/1		0	Indfil-app1-voc-group	-
26-001	MW-44	Water	GRAB	9/15/23	7:55	7	Indfil-app1-voc-group	16
27-001	MW-38 Dry	Water	GRAB	1/1		0	Indfil-app1-voc-group	-

Relinquished By: Sue Thompson Date/Time: 9/6/23
Relinquished By: Maher Date/Time: 9/6/23 10:07

Received By: _____ Date/Time: _____
Received for Lab By: _____ Date/Time: _____
Original - Lab Copy Yellow - Sampler Copy

Remarks:



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GK1143

Project Description

SCILA - New Regs

For:

Todd Whipple

HLW Engineering

PO Box 314

Story City, IA 50248

A handwritten signature in black ink that reads "Heather Murphy". The signature is written in a cursive style and is positioned above a horizontal line.

Heather Murphy

Customer Relationship Specialist

Friday, December 1, 2023

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Keystone Laboratories - Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc.

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Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GK1143

HLW Engineering

Todd Whipple
PO Box 314
Story City, IA 50248

Project Name: SCILA - New Regs

Project / PO Number: / 6022
Received: 11/15/2023
Reported: 12/01/2023

Sample Summary Report

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
GU-2	1GK1143-01	Water	GRAB		11/13/23 09:06	11/15/23 10:10
GU-B	1GK1143-02	Water	GRAB		11/13/23 09:02	11/15/23 10:10

Keystone Laboratories - Newton
CERTIFICATE OF ANALYSIS
1GK1143

Analytical Testing Parameters

Client Sample ID:	GU-2	Collected By:	Whipple, Todd
Sample Matrix:	Water	Collection Date:	11/13/2023 9:06
Lab Sample ID:	1GK1143-01		

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	0.0047	0.0020	mg/L	4		11/16/23 1405	11/22/23 1921	JAR
Arsenic, total	<0.0040	0.0040	mg/L	4		11/16/23 1405	11/22/23 1921	JAR
Barium, total	0.182	0.0040	mg/L	4		11/16/23 1405	11/22/23 1921	JAR
Beryllium, total	<0.0040	0.0040	mg/L	4		11/16/23 1405	11/22/23 1921	JAR
Cadmium, total	<0.0008	0.0008	mg/L	4		11/16/23 1405	11/22/23 1921	JAR
Chromium, total	<0.0080	0.0080	mg/L	4		11/16/23 1405	11/22/23 1921	JAR
Cobalt, total	0.0044	0.0004	mg/L	4		11/16/23 1405	11/22/23 1921	JAR
Copper, total	<0.0040	0.0040	mg/L	4		11/16/23 1405	11/22/23 1921	JAR
Lead, total	<0.0040	0.0040	mg/L	4		11/16/23 1405	11/22/23 1921	JAR
Nickel, total	0.0350	0.0040	mg/L	4		11/16/23 1405	11/22/23 1921	JAR
Selenium, total	<0.0040	0.0040	mg/L	4		11/16/23 1405	11/22/23 1921	JAR
Silver, total	<0.0040	0.0040	mg/L	4		11/16/23 1405	11/22/23 1921	JAR
Thallium, total	<0.0020	0.0020	mg/L	4		11/16/23 1405	11/22/23 1921	JAR
Vanadium, total	<0.0200	0.0200	mg/L	4		11/16/23 1405	11/22/23 1921	JAR
Zinc, total	<0.0200	0.0200	mg/L	4		11/16/23 1405	11/22/23 1921	JAR

Client Sample ID:	GU-B	Collected By:	Whipple, Todd
Sample Matrix:	Water	Collection Date:	11/13/2023 9:02
Lab Sample ID:	1GK1143-02		

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	0.0078	0.0020	mg/L	4		11/16/23 1405	11/22/23 1928	JAR
Arsenic, total	0.0044	0.0040	mg/L	4		11/16/23 1405	11/22/23 1928	JAR
Barium, total	0.0684	0.0040	mg/L	4		11/16/23 1405	11/22/23 1928	JAR
Beryllium, total	<0.0040	0.0040	mg/L	4		11/16/23 1405	11/22/23 1928	JAR
Cadmium, total	<0.0008	0.0008	mg/L	4		11/16/23 1405	11/22/23 1928	JAR
Chromium, total	<0.0080	0.0080	mg/L	4		11/16/23 1405	11/22/23 1928	JAR
Cobalt, total	0.0010	0.0004	mg/L	4		11/16/23 1405	11/22/23 1928	JAR
Copper, total	<0.0040	0.0040	mg/L	4		11/16/23 1405	11/22/23 1928	JAR
Lead, total	<0.0040	0.0040	mg/L	4		11/16/23 1405	11/22/23 1928	JAR
Nickel, total	0.0207	0.0040	mg/L	4		11/16/23 1405	11/22/23 1928	JAR
Selenium, total	0.0088	0.0040	mg/L	4		11/16/23 1405	11/22/23 1928	JAR
Silver, total	<0.0040	0.0040	mg/L	4		11/16/23 1405	11/22/23 1928	JAR
Thallium, total	<0.0020	0.0020	mg/L	4		11/16/23 1405	11/22/23 1928	JAR
Vanadium, total	<0.0200	0.0200	mg/L	4		11/16/23 1405	11/22/23 1928	JAR
Zinc, total	<0.0200	0.0200	mg/L	4		11/16/23 1405	11/22/23 1928	JAR



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GK1143

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 6020A	1GK1009	1GK1009-BLK1	
		1GK1009-BS1	
		1GK1009-MS1	1GK1138-01
		1GK1009-MSD1	1GK1138-01
		1GK1009-PS1	1GK1138-01
		1GK1143-01	GU-2
		1GK1143-02	GU-B

Batch Quality Control Summary: Keystone Laboratories - Newton

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GK1009 - EPA 3005A Total Recoverable Metals - EPA 6020A

Blank (1GK1009-BLK1) Prepared: 11/16/23 14:05 Analyzed: 11/22/23 18:45

Antimony, total	<0.0020	0.0020	mg/L							
Arsenic, total	<0.0040	0.0040	mg/L							
Barium, total	<0.0040	0.0040	mg/L							
Beryllium, total	<0.0020	0.0020	mg/L							
Cadmium, total	<0.0008	0.0008	mg/L							
Chromium, total	<0.0080	0.0080	mg/L							
Cobalt, total	<0.0004	0.0004	mg/L							
Copper, total	<0.0040	0.0040	mg/L							
Lead, total	<0.0040	0.0040	mg/L							
Nickel, total	<0.0040	0.0040	mg/L							
Selenium, total	<0.0040	0.0040	mg/L							
Silver, total	<0.0040	0.0040	mg/L							
Thallium, total	<0.0020	0.0020	mg/L							
Vanadium, total	<0.0200	0.0200	mg/L							
Zinc, total	<0.0200	0.0200	mg/L							

LCS (1GK1009-BS1) Prepared: 11/16/23 14:05 Analyzed: 11/22/23 18:51

Antimony, total	0.0943	0.0020	mg/L	0.100		94.3	80-120			
Arsenic, total	0.102	0.0040	mg/L	0.100		102	80-120			
Barium, total	0.102	0.0040	mg/L	0.100		102	80-120			
Beryllium, total	0.105	0.0020	mg/L	0.100		105	80-120			
Cadmium, total	0.0980	0.0008	mg/L	0.100		98.0	80-120			
Chromium, total	0.0939	0.0080	mg/L	0.100		93.9	80-120			
Cobalt, total	0.0947	0.0004	mg/L	0.100		94.7	80-120			
Copper, total	0.0947	0.0040	mg/L	0.100		94.7	80-120			
Lead, total	0.0986	0.0040	mg/L	0.100		98.6	80-120			
Nickel, total	0.0952	0.0040	mg/L	0.100		95.2	80-120			
Selenium, total	0.1085	0.0040	mg/L	0.100		108	80-120			
Silver, total	0.115	0.0040	mg/L	0.100		115	80-120			
Thallium, total	0.0951	0.0020	mg/L	0.100		95.1	80-120			
Vanadium, total	0.102	0.0200	mg/L	0.100		102	80-120			



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GK1143

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GK1009 - EPA 3005A Total Recoverable Metals - EPA 6020A										
LCS (1GK1009-BS1)			Prepared: 11/16/23 14:05 Analyzed: 11/22/23 18:51							
Zinc, total	0.105	0.0200	mg/L	0.100		105	80-120			
Matrix Spike (1GK1009-MS1)			Source: 1GK1138-01 Prepared: 11/16/23 14:05 Analyzed: 11/22/23 19:03							
Antimony, total	0.0956	0.0020	mg/L	0.100	ND	95.6	75-125			
Arsenic, total	0.101	0.0040	mg/L	0.100	0.0018	98.7	75-125			
Barium, total	0.229	0.0040	mg/L	0.100	0.137	92.7	75-125			
Beryllium, total	0.103	0.0020	mg/L	0.100	ND	103	75-125			
Cadmium, total	0.0971	0.0008	mg/L	0.100	ND	97.1	75-125			
Chromium, total	0.0918	0.0080	mg/L	0.100	0.0018	90.0	75-125			
Cobalt, total	0.0918	0.0004	mg/L	0.100	ND	91.8	75-125			
Copper, total	0.0884	0.0040	mg/L	0.100	ND	88.4	75-125			
Lead, total	0.0940	0.0040	mg/L	0.100	ND	94.0	75-125			
Nickel, total	0.0897	0.0040	mg/L	0.100	ND	89.7	75-125			
Selenium, total	0.1058	0.0040	mg/L	0.100	ND	106	75-125			
Silver, total	0.114	0.0040	mg/L	0.100	ND	114	75-125			
Thallium, total	0.0928	0.0020	mg/L	0.100	0.0003	92.5	75-125			
Vanadium, total	0.0998	0.0200	mg/L	0.100	ND	99.8	75-125			
Zinc, total	0.103	0.0200	mg/L	0.100	ND	103	75-125			
Matrix Spike Dup (1GK1009-MSD1)			Source: 1GK1138-01 Prepared: 11/16/23 14:05 Analyzed: 11/22/23 19:09							
Antimony, total	0.0958	0.0020	mg/L	0.100	ND	95.8	75-125	0.249	20	
Arsenic, total	0.0997	0.0040	mg/L	0.100	0.0018	97.9	75-125	0.824	20	
Barium, total	0.232	0.0040	mg/L	0.100	0.137	95.2	75-125	1.09	20	
Beryllium, total	0.102	0.0020	mg/L	0.100	ND	102	75-125	0.733	20	
Cadmium, total	0.0948	0.0008	mg/L	0.100	ND	94.8	75-125	2.37	20	
Chromium, total	0.0910	0.0080	mg/L	0.100	0.0018	89.2	75-125	0.892	20	
Cobalt, total	0.0911	0.0004	mg/L	0.100	ND	91.1	75-125	0.694	20	
Copper, total	0.0875	0.0040	mg/L	0.100	ND	87.5	75-125	1.07	20	
Lead, total	0.0944	0.0040	mg/L	0.100	ND	94.4	75-125	0.382	20	
Nickel, total	0.0891	0.0040	mg/L	0.100	ND	89.1	75-125	0.664	20	
Selenium, total	0.1060	0.0040	mg/L	0.100	ND	106	75-125	0.192	20	
Silver, total	0.113	0.0040	mg/L	0.100	ND	113	75-125	1.04	20	
Thallium, total	0.0938	0.0020	mg/L	0.100	0.0003	93.6	75-125	1.11	20	
Vanadium, total	0.0968	0.0200	mg/L	0.100	ND	96.8	75-125	2.99	20	
Zinc, total	0.103	0.0200	mg/L	0.100	ND	103	75-125	0.375	20	
Post Spike (1GK1009-PS1)			Source: 1GK1138-01 Prepared: 11/16/23 14:05 Analyzed: 11/22/23 19:15							
Antimony, total	0.0805		mg/L	0.0800	0.0002	100	80-120			
Arsenic, total	0.0848		mg/L	0.0800	0.0018	104	80-120			
Barium, total	0.214		mg/L	0.0800	0.134	99.4	80-120			
Beryllium, total	0.0871		mg/L	0.0800	0.000006	109	80-120			
Cadmium, total	0.0804		mg/L	0.0800	0.000003	100	80-120			
Chromium, total	0.0784		mg/L	0.0800	0.0017	95.8	80-120			
Cobalt, total	0.0771		mg/L	0.0800	0.000006	96.4	80-120			
Copper, total	0.0736		mg/L	0.0800	-0.0001	92.0	80-120			
Lead, total	0.0792		mg/L	0.0800	0.000005	98.9	80-120			

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GK1143

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GK1009 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Post Spike (1GK1009-PS1)										
Source: 1GK1138-01			Prepared: 11/16/23 14:05 Analyzed: 11/22/23 19:15							
Nickel, total	0.0772		mg/L	0.0800	0.0003	96.1	80-120			
Selenium, total	0.0870		mg/L	0.0800	0.0010	107	80-120			
Silver, total	0.0961		mg/L	0.0800	0.0014	118	80-120			
Thallium, total	0.0789		mg/L	0.0800	0.0003	98.2	80-120			
Vanadium, total	0.0866		mg/L	0.0800	0.0072	99.2	80-120			
Zinc, total	0.0864		mg/L	0.0800	0.0042	103	80-120			

Definitions

RL: Reporting Limit
RPD: Relative Percent Difference

Cooler Receipt Log

Cooler ID: Default Cooler **Temp:** 0.0°C

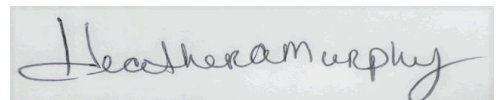
Cooler Inspection Checklist

Custody Seals	No	Containers Intact	Yes
COC/Labels Agree	No	Preservation Confirmed	No
Received On Ice	Yes		

Report Comments

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. **The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.**

Reviewed and Approved By:



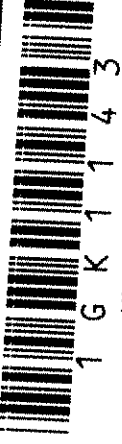
Heather Murphy
Customer Relationship Specialist
heather.murphy@microbac.com
12/01/23 16:14

CHAIN OF CUSTODY

Keystone
LABORATORIES, INC.

600 E. 17th St. S.
Newton, IA 50208
Phone: 641-792-8451
Fax: 641-792-7989

3012 Ansborough Ave.
Waterloo, IA 50701
Phone: 319-235-4440
Fax: 319-235-2480



HLW Engineering
PM: Sue Thompson

St
2544
-7023
-7040

OF 1

PRINT OR TYPE INFORMATION BELOW

SAMPLER: TODD WHIPPLE
SITE NAME: _____
ADDRESS: _____
CITY/ST/ZIP: _____
PHONE: _____

REPORT TO:
NAME: TODD WHIPPLE
COMPANY NAME: HLW Group
ADDRESS: P.O. Box 314
CITY/ST/ZIP: SIDNEY City, IA 50248
PHONE: 515 733 4144
FAX: 4146

BILL TO:
NAME: Marcia Brelev, MGR
COMPANY NAME: SK-11A
ADDRESS: 2490 STATE Hwy 92
CITY/ST/ZIP: Winterset IA 50273
PHONE: _____

Keystone Quote No: _____
(if Applicable)

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED	LAB USE ONLY	
								LABORATORY WORK ORDER NO.	LABORATORY SAMPLE NUMBER
GV-2	11-13-23	9:06	GV-2	1	W G	G	App I metals	160K1143	01
GV-A	11-13-23	DRY						0.0 y 100 °C	02
GV-B	11-13-23	9:02	GV-B	1	W G	G			

Relinquished by: (Signature) [Signature] Date 11-15-23 Time _____
 Received by: (Signature) [Signature] Date _____ Time _____
 Rush Turn-Around: 20 Standard
 Relinquished by: (Signature) _____ Date _____ Time _____
 Received for Lab by: (Signature) _____ Date _____ Time _____
 Remarks: _____
 Contact Lab Prior to Submission



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GK1950

Project Description

SCILA - New Regs

For:

Todd Whipple

HLW Engineering

PO Box 314

Story City, IA 50248

A handwritten signature in black ink that reads "Heather Murphy". The signature is written in a cursive style and is centered within a light gray rectangular box.

Heather Murphy

Customer Relationship Specialist

Friday, December 15, 2023

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Keystone Laboratories - Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc.

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GK1950

HLW Engineering

Todd Whipple
PO Box 314
Story City, IA 50248

Project Name: SCILA - New Regs

Project / PO Number: / 6022
Received: 11/29/2023
Reported: 12/15/2023

Sample Summary Report

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
MW-14D	1GK1950-01	Water	GRAB		11/28/23 11:14	11/29/23 10:04
MW-44	1GK1950-02	Water	GRAB		11/28/23 10:54	11/29/23 10:04

Keystone Laboratories - Newton
CERTIFICATE OF ANALYSIS
1GK1950

Analytical Testing Parameters

Client Sample ID:	MW-14D	Collected By:	JGH
Sample Matrix:	Water	Collection Date:	11/28/2023 11:14
Lab Sample ID:	1GK1950-01		

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Chloroform	<1.0	1.0	ug/L	1		12/04/23 0000	12/04/23 2032	CSM
Surrogate: Dibromofluoromethane	101	Limit: 80-126	% Rec	1		12/04/23 0000	12/04/23 2032	CSM
Surrogate: 1,2-Dichloroethane-d4	85.4	Limit: 63-138	% Rec	1		12/04/23 0000	12/04/23 2032	CSM
Surrogate: Toluene-d8	101	Limit: 87-116	% Rec	1		12/04/23 0000	12/04/23 2032	CSM
Surrogate: 4-Bromofluorobenzene	89.9	Limit: 85-111	% Rec	1		12/04/23 0000	12/04/23 2032	CSM
Determination of Total Metals								
EPA 3005A/EPA 6020A								
Cobalt, total	0.0061	0.0004	mg/L	4		12/07/23 1205	12/09/23 0003	RVV

Client Sample ID:	MW-44	Collected By:	JGH
Sample Matrix:	Water	Collection Date:	11/28/2023 10:54
Lab Sample ID:	1GK1950-02		

Determination of Volatile Organic Compounds	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 5030B/EPA 8260B								
Toluene	<1.0	1.0	ug/L	1		12/04/23 0000	12/04/23 2059	CSM
Surrogate: Dibromofluoromethane	99.5	Limit: 80-126	% Rec	1		12/04/23 0000	12/04/23 2059	CSM
Surrogate: 1,2-Dichloroethane-d4	85.4	Limit: 63-138	% Rec	1		12/04/23 0000	12/04/23 2059	CSM
Surrogate: Toluene-d8	101	Limit: 87-116	% Rec	1		12/04/23 0000	12/04/23 2059	CSM
Surrogate: 4-Bromofluorobenzene	85.1	Limit: 85-111	% Rec	1		12/04/23 0000	12/04/23 2059	CSM
Determination of Total Metals								
EPA 3005A/EPA 6020A								
Barium, total	0.803	0.0040	mg/L	4		12/07/23 1205	12/09/23 0009	RVV



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GK1950

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 8260B	1GL0151	1GL0151-BS1	
		1GL0151-BS1	
		1GL0151-BSD1	
		1GL0151-BSD1	
		1GL0151-BLK1	
		1GL0151-BLK1	
		1GK1950-01	MW-14D
		1GK1950-01	MW-14D
		1GK1950-02	MW-44
		1GK1950-02	MW-44
		1GL0151-MS1	1GK1979-01
		1GL0151-MS1	1GK1979-01
		1GL0151-MSD1	1GK1979-01
		1GL0151-MSD1	1GK1979-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 6020A	1GL0378	1GL0378-BLK1	
		1GL0378-BS1	
		1GK1950-01	MW-14D
		1GK1950-02	MW-44
		1GL0378-MS1	1GL0146-01
		1GL0378-MSD1	1GL0146-01
		1GL0378-PS1	1GL0146-01

Batch Quality Control Summary: Keystone Laboratories - Newton

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GL0151 - EPA 5030B - EPA 8260B										
Blank (1GL0151-BLK1)										
Prepared: 12/04/23 00:00 Analyzed: 12/04/23 11:10										
Chloroform	<1.0	1.0	ug/L							
Toluene	<1.0	1.0	ug/L							
Surrogate: Dibromofluoromethane	48.5		ug/L	50.4		96.3	80-126			
Surrogate: 1,2-Dichloroethane-d4	43.6		ug/L	50.4		86.4	63-138			
Surrogate: Toluene-d8	49.3		ug/L	50.2		98.1	87-116			
Surrogate: 4-Bromofluorobenzene	51.6		ug/L	50.4		102	85-111			
LCS (1GL0151-BS1)										
Prepared: 12/04/23 00:00 Analyzed: 12/04/23 09:49										
Chloroform	48.34	1.0	ug/L	50.0		96.7	78-131			
Toluene	50.47	1.0	ug/L	50.0		101	77-130			
Surrogate: Dibromofluoromethane	46.5		ug/L	50.4		92.3	80-126			



Keystone Laboratories - Newton
CERTIFICATE OF ANALYSIS
1GK1950

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GL0151 - EPA 5030B - EPA 8260B

LCS (1GL0151-BS1)

Prepared: 12/04/23 00:00 Analyzed: 12/04/23 09:49

Surrogate: 1,2-Dichloroethane-d4	43.6		ug/L	50.4		86.5	63-138			
Surrogate: Toluene-d8	50.3		ug/L	50.2		100	87-116			
Surrogate: 4-Bromofluorobenzene	52.1		ug/L	50.4		103	85-111			

LCS Dup (1GL0151-BSD1)

Prepared: 12/04/23 00:00 Analyzed: 12/04/23 10:16

Chloroform	46.87	1.0	ug/L	50.0		93.7	78-131	3.09	27	
Toluene	47.84	1.0	ug/L	50.0		95.7	77-130	5.35	27	

Surrogate: Dibromofluoromethane	46.9		ug/L	50.4		93.1	80-126			
Surrogate: 1,2-Dichloroethane-d4	44.6		ug/L	50.4		88.4	63-138			
Surrogate: Toluene-d8	49.6		ug/L	50.2		98.7	87-116			
Surrogate: 4-Bromofluorobenzene	51.4		ug/L	50.4		102	85-111			

Matrix Spike (1GL0151-MS1)

Source: 1GK1979-01

Prepared: 12/04/23 00:00 Analyzed: 12/04/23 21:26

Chloroform	54.72	4.0	ug/L	200	3.34	25.7	77-132			QM-05
Toluene	50.64	4.0	ug/L	200	ND	25.3	82-123			QM-05

Surrogate: Dibromofluoromethane	198		ug/L	201		98.2	80-126			
Surrogate: 1,2-Dichloroethane-d4	175		ug/L	202		86.9	63-138			
Surrogate: Toluene-d8	201		ug/L	201		100	87-116			
Surrogate: 4-Bromofluorobenzene	206		ug/L	202		102	85-111			

Matrix Spike Dup (1GL0151-MSD1)

Source: 1GK1979-01

Prepared: 12/04/23 00:00 Analyzed: 12/04/23 21:54

Chloroform	49.56	4.0	ug/L	200	3.34	23.1	77-132	9.90	17	QM-05
Toluene	46.76	4.0	ug/L	200	ND	23.4	82-123	7.97	12	QM-05

Surrogate: Dibromofluoromethane	196		ug/L	201		97.5	80-126			
Surrogate: 1,2-Dichloroethane-d4	173		ug/L	202		85.8	63-138			
Surrogate: Toluene-d8	202		ug/L	201		101	87-116			
Surrogate: 4-Bromofluorobenzene	206		ug/L	202		102	85-111			

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GL0378 - EPA 3005A Total Recoverable Metals - EPA 6020A

Blank (1GL0378-BLK1)

Prepared: 12/07/23 12:05 Analyzed: 12/08/23 23:51

Barium, total	<0.0040	0.0040	mg/L							
Cobalt, total	<0.0004	0.0004	mg/L							

LCS (1GL0378-BS1)

Prepared: 12/07/23 12:05 Analyzed: 12/08/23 23:57

Barium, total	0.102	0.0040	mg/L	0.100		102	80-120			
Cobalt, total	0.100	0.0004	mg/L	0.100		100	80-120			

Matrix Spike (1GL0378-MS1)

Source: 1GL0146-01

Prepared: 12/07/23 12:05 Analyzed: 12/09/23 00:21

Barium, total	0.167	0.0040	mg/L	0.100	0.0594	108	75-125			
Cobalt, total	0.104	0.0004	mg/L	0.100	0.0025	101	75-125			

Matrix Spike Dup (1GL0378-MSD1)

Source: 1GL0146-01

Prepared: 12/07/23 12:05 Analyzed: 12/09/23 00:27

Barium, total	0.165	0.0040	mg/L	0.100	0.0594	105	75-125	1.49	20	
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Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GK1950

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GL0378 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Matrix Spike Dup (1GL0378-MSD1)										
		Source: 1GL0146-01		Prepared: 12/07/23 12:05 Analyzed: 12/09/23 00:27						
Cobalt, total	0.103	0.0004	mg/L	0.100	0.0025	101	75-125	0.733	20	
Post Spike (1GL0378-PS1)										
		Source: 1GL0146-01		Prepared: 12/07/23 12:05 Analyzed: 12/09/23 00:45						
Barium, total	0.143		mg/L	0.0800	0.0582	106	80-120			
Cobalt, total	0.0885		mg/L	0.0800	0.0024	108	80-120			

Definitions

- QM-05:** The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
- RL:** Reporting Limit
- RPD:** Relative Percent Difference

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 2.8°C

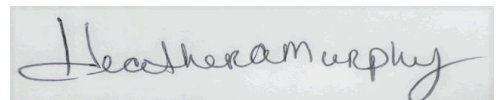
Cooler Inspection Checklist

Custody Seals	No	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Confirmed	No
Received On Ice	Yes		

Report Comments

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. **The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <<https://www.microbac.com/standard-terms-conditions>>.**

Reviewed and Approved By:



Heather Murphy
Customer Relationship Specialist
heather.murphy@microbac.com
12/15/23 13:38

CHAIN OF CUSTODY RECORD

Keystone
LABORATORIES, INC.

600 E. 17th St. S.
Newton, IA 50208
Phone: 641-792-8451
Fax: 641-792-7989



HLW Engineering
PM: Heather Murphy

66105
-7856
-6778

205 E VanBuren St
Centerville, IA 52544
Phone: 641-437-7023
Fax: 641-437-7040

PAGE 1 OF 1

PRINT OR TYPE INFORMATION BELOW

SAMPLER: JGH
SITE NAME: SCILA
ADDRESS: _____
CITY/ST/ZIP: _____
PHONE: _____

REPORT TO: TODD WHIPPLE
NAME: _____
COMPANY NAME: HLW ENGINEERING
ADDRESS: PO BOX 314
CITY/ST/ZIP: STOEY CITY, IA 50248
PHONE: 515-733-4144
FAX: 515-733-4146

BILL TO: _____
NAME: MAZZA BEELER
COMPANY NAME: SCILA
ADDRESS: _____
CITY/ST/ZIP: WINTERSET, IA
PHONE: _____
Keystone Quote No: _____
(If Applicable)

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED			LABORATORY WORK ORDER NO.	LABORATORY SAMPLE NUMBER
							Contact, for	Microform	Residual, for		
MW 1AD	11/20/23	11:1A		4	Water G	G	X	X			01
MW 4A	11/20/23	10:5A		4	Water G	G		X	X		02

SAMPLE TEMPERATURE UPON RECEIPT: 2.8 seen °C
SAMPLE CONDITION/COMMENTS: _____

Relinquished by: (Signature) JGH Date 11/21/23 Time _____
 Relinquished by: (Signature) _____ Date _____ Time _____
 Received by: (Signature) Maha Date 11/29/23 Time 10:04
 Received for Lab by: (Signature) _____ Date _____ Time _____
 Turn-Around: Standard Rush
 Remarks: _____
 Contact Lab Prior to Submission



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GL0412

Project Description

SCILA - New Regs

For:

Todd Whipple

HLW Engineering

PO Box 314

Story City, IA 50248

A handwritten signature in black ink that reads "Heather Murphy". The signature is written in a cursive style and is placed on a light gray rectangular background.

Heather Murphy

Customer Relationship Specialist

Monday, December 18, 2023

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Keystone Laboratories - Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

Microbac Laboratories, Inc.

600 East 17th Street South | Newton, IA 50208 | 641-792-8451 p | www.microbac.com



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GL0412

HLW Engineering

Todd Whipple
PO Box 314
Story City, IA 50248

Project Name: SCILA - New Regs

Project / PO Number: / 6022
Received: 12/06/2023
Reported: 12/18/2023

Sample Summary Report

<u>Sample Name</u>	<u>Laboratory ID</u>	<u>Client Matrix</u>	<u>Sample Type</u>	<u>Sample Begin</u>	<u>Sample Taken</u>	<u>Lab Received</u>
GU-2	1GL0412-01	Water	GRAB		12/05/23 09:06	12/06/23 10:40
GU-A	1GL0412-02	Water	GRAB		12/05/23 10:09	12/06/23 10:40
GU-B	1GL0412-03	Water	GRAB		12/05/23 09:30	12/06/23 10:40

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GL0412

Analytical Testing Parameters

Client Sample ID:	GU-2	Collected By:	Whipple, Toddd
Sample Matrix:	Water	Collection Date:	12/05/2023 9:06
Lab Sample ID:	1GL0412-01		

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	0.0029	0.0020	mg/L	4		12/07/23 1205	12/09/23 0115	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0115	RVV
Barium, total	0.186	0.0040	mg/L	4		12/07/23 1205	12/09/23 0115	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0115	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		12/07/23 1205	12/09/23 0115	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		12/07/23 1205	12/09/23 0115	RVV
Cobalt, total	0.0025	0.0004	mg/L	4		12/07/23 1205	12/09/23 0115	RVV
Copper, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0115	RVV
Lead, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0115	RVV
Nickel, total	0.0344	0.0040	mg/L	4		12/07/23 1205	12/09/23 0115	RVV
Selenium, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0115	RVV
Silver, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0115	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		12/07/23 1205	12/09/23 0115	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		12/07/23 1205	12/09/23 0115	RVV
Zinc, total	0.666	0.0200	mg/L	4		12/07/23 1205	12/09/23 0115	RVV

Client Sample ID:	GU-A	Collected By:	Whipple, Toddd
Sample Matrix:	Water	Collection Date:	12/05/2023 10:09
Lab Sample ID:	1GL0412-02		

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	0.0100	0.0020	mg/L	4		12/07/23 1205	12/09/23 0122	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0122	RVV
Barium, total	0.0340	0.0040	mg/L	4		12/07/23 1205	12/09/23 0122	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0122	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		12/07/23 1205	12/09/23 0122	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		12/07/23 1205	12/09/23 0122	RVV
Cobalt, total	<0.0004	0.0004	mg/L	4		12/07/23 1205	12/09/23 0122	RVV
Copper, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0122	RVV
Lead, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0122	RVV
Nickel, total	0.0275	0.0040	mg/L	4		12/07/23 1205	12/09/23 0122	RVV
Selenium, total	0.0253	0.0040	mg/L	4		12/07/23 1205	12/09/23 0122	RVV
Silver, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0122	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		12/07/23 1205	12/09/23 0122	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		12/07/23 1205	12/09/23 0122	RVV
Zinc, total	1.35	0.0200	mg/L	4		12/07/23 1205	12/09/23 0122	RVV

Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GL0412

Client Sample ID:	GU-B	Collected By:	Whipple, Toddd
Sample Matrix:	Water	Collection Date:	12/05/2023 9:30
Lab Sample ID:	1GL0412-03		

Determination of Total Metals	Result	RL	Units	DF	Note	Prepared	Analyzed	Analyst
EPA 3005A/EPA 6020A								
Antimony, total	0.0069	0.0020	mg/L	4		12/07/23 1205	12/09/23 0128	RVV
Arsenic, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0128	RVV
Barium, total	0.0553	0.0040	mg/L	4		12/07/23 1205	12/09/23 0128	RVV
Beryllium, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0128	RVV
Cadmium, total	<0.0008	0.0008	mg/L	4		12/07/23 1205	12/09/23 0128	RVV
Chromium, total	<0.0080	0.0080	mg/L	4		12/07/23 1205	12/09/23 0128	RVV
Cobalt, total	0.0007	0.0004	mg/L	4		12/07/23 1205	12/09/23 0128	RVV
Copper, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0128	RVV
Lead, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0128	RVV
Nickel, total	0.0150	0.0040	mg/L	4		12/07/23 1205	12/09/23 0128	RVV
Selenium, total	0.0069	0.0040	mg/L	4		12/07/23 1205	12/09/23 0128	RVV
Silver, total	<0.0040	0.0040	mg/L	4		12/07/23 1205	12/09/23 0128	RVV
Thallium, total	<0.0020	0.0020	mg/L	4		12/07/23 1205	12/09/23 0128	RVV
Vanadium, total	<0.0200	0.0200	mg/L	4		12/07/23 1205	12/09/23 0128	RVV
Zinc, total	0.513	0.0200	mg/L	4		12/07/23 1205	12/09/23 0128	RVV



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GL0412

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 6020A	1GL0378	1GL0378-BLK1	
		1GL0378-BS1	
		1GL0378-MS1	1GL0146-01
		1GL0378-MSD1	1GL0146-01
		1GL0378-PS1	1GL0146-01
		1GL0412-01	GU-2
		1GL0412-02	GU-A
		1GL0412-03	GU-B

Batch Quality Control Summary: Keystone Laboratories - Newton

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GL0378 - EPA 3005A Total Recoverable Metals - EPA 6020A

Blank (1GL0378-BLK1)				Prepared: 12/07/23 12:05 Analyzed: 12/08/23 23:51						
Antimony, total	<0.0020	0.0020	mg/L							
Arsenic, total	<0.0040	0.0040	mg/L							
Barium, total	<0.0040	0.0040	mg/L							
Beryllium, total	<0.0040	0.0040	mg/L							
Cadmium, total	<0.0008	0.0008	mg/L							
Chromium, total	<0.0080	0.0080	mg/L							
Cobalt, total	<0.0004	0.0004	mg/L							
Copper, total	<0.0040	0.0040	mg/L							
Lead, total	<0.0040	0.0040	mg/L							
Nickel, total	<0.0040	0.0040	mg/L							
Selenium, total	<0.0040	0.0040	mg/L							
Silver, total	<0.0040	0.0040	mg/L							
Thallium, total	<0.0020	0.0020	mg/L							
Vanadium, total	<0.0200	0.0200	mg/L							
Zinc, total	<0.0200	0.0200	mg/L							

LCS (1GL0378-BS1)				Prepared: 12/07/23 12:05 Analyzed: 12/08/23 23:57						
Antimony, total	0.0947	0.0020	mg/L	0.100	94.7	80-120				
Arsenic, total	0.0964	0.0040	mg/L	0.100	96.4	80-120				
Barium, total	0.102	0.0040	mg/L	0.100	102	80-120				
Beryllium, total	0.0996	0.0040	mg/L	0.100	99.6	80-120				
Cadmium, total	0.0997	0.0008	mg/L	0.100	99.7	80-120				
Chromium, total	0.0962	0.0080	mg/L	0.100	96.2	80-120				
Cobalt, total	0.100	0.0004	mg/L	0.100	100	80-120				
Copper, total	0.100	0.0040	mg/L	0.100	100	80-120				
Lead, total	0.0990	0.0040	mg/L	0.100	99.0	80-120				
Nickel, total	0.100	0.0040	mg/L	0.100	100	80-120				
Selenium, total	0.0981	0.0040	mg/L	0.100	98.1	80-120				
Silver, total	0.102	0.0040	mg/L	0.100	102	80-120				
Thallium, total	0.0987	0.0020	mg/L	0.100	98.7	80-120				



Keystone Laboratories - Newton

CERTIFICATE OF ANALYSIS

1GL0412

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GL0378 - EPA 3005A Total Recoverable Metals - EPA 6020A										
LCS (1GL0378-BS1) Prepared: 12/07/23 12:05 Analyzed: 12/08/23 23:57										
Vanadium, total	0.0946	0.0200	mg/L	0.100		94.6	80-120			
Zinc, total	0.102	0.0200	mg/L	0.100		102	80-120			
Matrix Spike (1GL0378-MS1) Source: 1GL0146-01 Prepared: 12/07/23 12:05 Analyzed: 12/09/23 00:21										
Antimony, total	0.0995	0.0020	mg/L	0.100	0.0014	98.0	75-125			
Arsenic, total	0.108	0.0040	mg/L	0.100	0.0035	104	75-125			
Barium, total	0.167	0.0040	mg/L	0.100	0.0594	108	75-125			
Beryllium, total	0.0977	0.0040	mg/L	0.100	ND	97.7	75-125			
Cadmium, total	0.0997	0.0008	mg/L	0.100	0.0014	98.3	75-125			
Chromium, total	0.0928	0.0080	mg/L	0.100	0.0007	92.1	75-125			
Cobalt, total	0.104	0.0004	mg/L	0.100	0.0025	101	75-125			
Copper, total	0.0980	0.0040	mg/L	0.100	0.0048	93.2	75-125			
Lead, total	0.0933	0.0040	mg/L	0.100	0.0006	92.6	75-125			
Nickel, total	0.116	0.0040	mg/L	0.100	0.0169	98.7	75-125			
Selenium, total	0.1022	0.0040	mg/L	0.100	ND	102	75-125			
Silver, total	0.0986	0.0040	mg/L	0.100	ND	98.6	75-125			
Thallium, total	0.0951	0.0020	mg/L	0.100	0.0002	95.1	75-125			
Vanadium, total	0.0972	0.0200	mg/L	0.100	ND	97.2	75-125			
Zinc, total	0.110	0.0200	mg/L	0.100	ND	110	75-125			
Matrix Spike Dup (1GL0378-MSD1) Source: 1GL0146-01 Prepared: 12/07/23 12:05 Analyzed: 12/09/23 00:27										
Antimony, total	0.0983	0.0020	mg/L	0.100	0.0014	96.9	75-125	1.19	20	
Arsenic, total	0.105	0.0040	mg/L	0.100	0.0035	102	75-125	2.08	20	
Barium, total	0.165	0.0040	mg/L	0.100	0.0594	105	75-125	1.49	20	
Beryllium, total	0.0952	0.0040	mg/L	0.100	ND	95.2	75-125	2.65	20	
Cadmium, total	0.0985	0.0008	mg/L	0.100	0.0014	97.1	75-125	1.17	20	
Chromium, total	0.0918	0.0080	mg/L	0.100	0.0007	91.1	75-125	1.07	20	
Cobalt, total	0.103	0.0004	mg/L	0.100	0.0025	101	75-125	0.733	20	
Copper, total	0.0947	0.0040	mg/L	0.100	0.0048	89.9	75-125	3.42	20	
Lead, total	0.0916	0.0040	mg/L	0.100	0.0006	91.0	75-125	1.79	20	
Nickel, total	0.113	0.0040	mg/L	0.100	0.0169	95.7	75-125	2.67	20	
Selenium, total	0.0979	0.0040	mg/L	0.100	ND	97.9	75-125	4.33	20	
Silver, total	0.0982	0.0040	mg/L	0.100	ND	98.2	75-125	0.459	20	
Thallium, total	0.0930	0.0020	mg/L	0.100	0.0002	93.0	75-125	2.19	20	
Vanadium, total	0.0974	0.0200	mg/L	0.100	ND	97.4	75-125	0.239	20	
Zinc, total	0.109	0.0200	mg/L	0.100	ND	109	75-125	0.982	20	
Post Spike (1GL0378-PS1) Source: 1GL0146-01 Prepared: 12/07/23 12:05 Analyzed: 12/09/23 00:45										
Antimony, total	0.0827		mg/L	0.0800	0.0014	102	80-120			
Arsenic, total	0.0898		mg/L	0.0800	0.0034	108	80-120			
Barium, total	0.143		mg/L	0.0800	0.0582	106	80-120			
Beryllium, total	0.0819		mg/L	0.0800	0.00005	102	80-120			
Cadmium, total	0.0825		mg/L	0.0800	0.0013	101	80-120			
Chromium, total	0.0780		mg/L	0.0800	0.0007	96.6	80-120			
Cobalt, total	0.0885		mg/L	0.0800	0.0024	108	80-120			
Copper, total	0.0814		mg/L	0.0800	0.0047	95.9	80-120			

Keystone Laboratories - Newton
CERTIFICATE OF ANALYSIS
1GL0412

Determination of Total Metals	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GL0378 - EPA 3005A Total Recoverable Metals - EPA 6020A										
Post Spike (1GL0378-PS1)										
			Source: 1GL0146-01		Prepared: 12/07/23 12:05 Analyzed: 12/09/23 00:45					
Lead, total	0.0774		mg/L	0.0800	0.0006	96.0	80-120			
Nickel, total	0.0990		mg/L	0.0800	0.0166	103	80-120			
Selenium, total	0.0816		mg/L	0.0800	0.0006	101	80-120			
Silver, total	0.0819		mg/L	0.0800	0.0001	102	80-120			
Thallium, total	0.0790		mg/L	0.0800	0.0002	98.5	80-120			
Vanadium, total	0.0834		mg/L	0.0800	0.0034	100	80-120			
Zinc, total	0.0915		mg/L	0.0800	0.0111	100	80-120			

Definitions

RL: Reporting Limit
RPD: Relative Percent Difference

Cooler Receipt Log

Cooler ID: Default Cooler **Temp:** 3.4°C

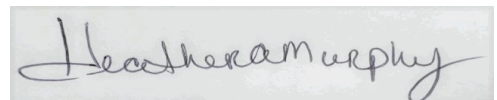
Cooler Inspection Checklist

Custody Seals	No	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Confirmed	No
Received On Ice	Yes		

Report Comments

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. **The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.**

Reviewed and Approved By:



Heather Murphy
Customer Relationship Specialist
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12/18/23 09:54

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HLW Engineering
 PM: Heather Murphy

36105
 856
 3778

205 E VanBuren St
 Centerville, IA 52544
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PAGE 1 OF 1

PRINT OR TYPE INFORMATION BELOW

SAMPLER: TOOD WHIRL
 SITE NAME: SCILA
 ADDRESS:
 CITY/ST/ZIP: Winterset, Iowa
 PHONE:

REPORT TO:
 NAME: HLW Engineering Group
 COMPANY NAME: TOOD WHIRL
 ADDRESS: 204 West Broad / P.O. Box 31A
 CITY/ST/ZIP: Story City IA 50248
 PHONE: 515 733 4444
 FAX:

BILL TO:
 NAME: Marcia Beelev
 COMPANY NAME: SCILA
 ADDRESS: 2499 Hwy 92
 CITY/ST/ZIP: Winterset, IA 50273
 PHONE:
 Keystone Quote No: _____
 (if applicable)

CLIENT SAMPLE NUMBER	DATE	TIME	SAMPLE LOCATION	NO. OF CONTAINERS	MATRIX	GRAB/COMPOSITE	ANALYSES REQUIRED	LAB USE ONLY	
								LABORATORY WORK ORDER NO.	LABORATORY SAMPLE NUMBER
GU-2	12-5-23	9:06	GU-2	1	W G	G	Appendix I Metals (Total)	1 GL 0412	01
GU-A	12-5-23	10:09	GU-A	1	W G	G		SAMPLE TEMPERATURE UPON RECEIPT: 3.4 °C	02
GU-B	12-5-23	9:30	GU-B	1	W G	G		SAMPLE CONDITION/COMMENTS	03

Relinquished by: (Signature) [Signature] Date 12/6/23 Time _____
 Received by: (Signature) Maher Date _____ Time _____
 Relinquished by: (Signature) _____ Date _____ Time _____
 Received for Lab by: (Signature) _____ Date _____ Time _____

Turn-Around: Standard Rush
 Contact Lab Prior to Submission

Remarks:

Appendix E

Field Turbidity (NTU) Summary

South Central Iowa Landfill - SCILA

Project Number: 6022

Field Turbidity Over Time

No-Purge Sampling																Max	Min	Ave	Std Dev	Mean + 2 STD
Well	3/24/20	6/3/20	7/20/20	9/2/20	3/8/21	9/14/21	3/28/22	9/13/22	3/23/23	5/9/23	7/12/23	9/5/23	11/13/23	11/28/23	12/6/23					
GU-1	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry			Dry				0.00	0.00	0.00	0.00	0.00
MW-1R	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry	Dry			Dry				0.00	0.00	0.00	0.00	0.00
MW-4A	0.89			8.98	13.87	1.08	Broken	Broken	Broken			Broken				13.87	0.89	6.21	6.35	18.91
MW-18	9.97			9.13	3.56	4.19	24.74	106	32.2			28.5				106.00	3.56	27.29	33.71	94.70
MW-38A												Dry				0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!
MW-9AR	2.23			2.73	4.95	1.96	4.00	7.12	6.19			2.57				7.12	1.96	3.97	1.94	7.85
MW-15R	1.87			3.17	4.04	5.38	5.22	2.44	11.14			3.88				11.14	1.87	4.64	2.90	10.44
MW-44											11.67	6.18		17.5		17.50	6.18	11.78	5.66	23.11
MW-8B	4.32			6.08	3.57	2.59	2.59	1.92	7.06	4.04		1.97				7.06	1.92	3.79	1.80	7.40
MW-21	1.57			1.96		1.23	1.83	6.22	0.91			2.84				6.22	0.91	2.37	1.81	5.98
MW-17R	1.00			4.62	6.28	1.8	1.34	1.24	1.35			4.31				6.28	1.00	2.74	2.02	6.78
MW-6A	0.99			2.00	6.58	1.76	1.93	1.02	1.36							6.58	0.99	2.23	1.96	6.15
MW-11C	1.30			1.06	1.56	2.04	2.53	1.69	0.98			3.04				3.04	0.98	1.78	0.72	3.22
MW-14D	3.14		1.34	3.26	1.5	1.8	1.15	2.66	1.13			1.46		4.24		4.24	1.13	2.17	1.08	4.33
MW-28	311.8			6.2	288.6	4.53	173.7	29.1	437.4			17.78				437.40	4.53	158.64	169.83	498.30
TILE 1	5.8			9.28	9.2	107	5.67	10.33	4.3			18.54				107.00	4.30	21.27	34.92	91.11
TILE 2	6.17			68.14	7.86	24.05	8.94	35.5	23.6			5.36				68.14	5.36	22.45	21.43	65.31
MW-31																0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!
MW-32	1.81				2.41		2.26		1.43		1.36					2.41	1.36	1.85	0.47	2.80
SW-1	8.54			12.91	5.51	13.32	7.17	Dry	1.69			Dry				13.32	1.69	8.19	4.45	17.10
SW-2B	12.03	20.80		7.91	4.74	10.72	4.24		7.26			Dry				20.80	4.24	9.67	5.68	21.02
MW-39D				4.13	15.79	10.66	2.02	1.85	2.09			7.86				15.79	1.85	6.34	5.35	17.05
MW-41D				1.56	1.45	1.50	1.66	0.92	0.58			2.59				2.59	0.58	1.47	0.63	2.73
MW-42D				6.05	2.65	4.64	2.3	1.14	1.01			2.10				6.05	1.01	2.84	1.86	6.55
MW-45A																0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!
MW-45D																0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!
GU-2													1.67		1.93	1.93	1.67	1.80	0.18	2.17
GU-A															1.64	1.64	1.64	#DIV/0!	#DIV/0!	#DIV/0!
GU-B													1.97		1.69	1.97	1.69	1.83	0.20	2.23
																0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!
																0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!
																0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!
																0.00	0.00	#DIV/0!	#DIV/0!	#DIV/0!
Max	311.80	20.80	1.34	68.14	288.60	107.00	173.70	106.00	437.40	4.04	11.67	28.50	1.97	17.50	1.93					
Min	0.89	20.80	1.34	1.06	1.45	1.08	1.15	0.92	0.58	4.04	1.36	1.46	1.67	4.24	1.64					
Median	2.69	20.80	1.34	5.34	4.85	3.39	2.56	2.44	1.89	4.04	6.52	3.88	1.82	10.87	1.69					
Average	23.34	20.80	1.34	8.84	21.34	11.13	14.07	13.94	30.09	4.04	6.52	7.27	1.82	10.87	1.75					

Appendix F

Summary of Prediction Limit Exceedances

2008†

		3/25/08	5/30/08	7/17/08	9/11/08	12/20/08
MW-8B	Barium		X	X	X	X
MW-8B	Cobalt		X	X	X	X
MW-9A	Barium	X	X	X	X	X
MW-9A	Cobalt	X				
MW-9A	Nickel	X				
MW-9A	Zinc			X		
MW-9A	1,1DCA	X	X	X	X	X
MW-9A	1,4-dichlorobenzene	X	X	X	X	X
MW-9A	acetone	X		X	X	
MW-9A	mek			X	X	
MW-9A	mibk			X	X	
MW-9A	benzene	X	X	X	X	X
MW-9A	chlorobenzene	X	X	X	X	X
MW-9A	cis-1,2-DCE	X	X	X	X	X
MW-9A	ethylbenzene			X	X	
MW-9A	PCE	X	X	X	X	
MW-9A	toluene			X	X	X
MW-9A	trans-1,2-DCE	X	X	X	X	X
MW-9A	TCE	X	X	X	X	X
MW-9A	Vinyl chloride	X	X	X	X	X
MW-9A	xylenes			X	X	

2009†

		4/22/09	6/8/09	8/13/09	10/23/09
MW-8B	Barium	X			X
MW-8B	Cobalt	X			X
MW-8B	cis-1,2-DCE	X			
MW-9A	Barium	X	X		X
MW-9A	Zinc				X
MW-9A	1,1DCA	X	X		X
MW-9A	1,2-dichloropropane	X			
MW-9A	1,4-dichlorobenzene	X	X		X
MW-9A	benzene	X	X		X
MW-9A	chlorobenzene	X	X		X
MW-9A	cis-1,2-DCE	X	X		X
MW-9A	PCE	X			X
MW-9A	trans-1,2-DCE	X	X		X
MW-9A	TCE	X	X		X
MW-9A	Vinyl chloride	X	X		X
MW-14	chlorobenzene				X
MW-14	cis-1,2-DCE				X
MW-14	Vinyl chloride				X
MW-15	Zinc			X	X
MW-17	cis-1,2-DCE		X	X	X

2010†

		1/27/10	3/19/10	6/17/10	9/14/10
MW-8B	Barium	X	X		X
MW-8B	Cobalt	X	X		X
MW-8B	cis-1,2-DCE	X	X		X
MW-9A	Barium		X		X
MW-9A	Cobalt		X		X
MW-9A	nickel		X		X
MW-9A	Zinc		X		
MW-9A	1,1DCA		X		X
MW-9A	1,4-dichlorobenzene				X
MW-9A	benzene		X		X
MW-9A	Bis(2EHP)				X
MW-9A	chlorobenzene		X		X
MW-9A	cis-1,2-DCE		X		X
MW-9A	PCE		X		X
MW-9A	trans-1,2-DCE		X		X
MW-9A	TCE		X		X
MW-9A	Vinyl chloride		X		X
MW-9A	xylenes		X		
MW-14	1,4-dichlorobenzene				X
MW-14	benzene	X	X		X
MW-14	chlorobenzene	X	X		X
MW-14	cis-1,2-DCE	X	X	X	X
MW-14	Vinyl chloride	X	X	X	X
MW-15	Zinc		X	X	X
MW-17	cis-1,2-DCE		X	X	X
MW-19	Cobalt	X	X	X	X
MW-19	Copper		X	X	X
MW-19	acetone		X		

2011†

		3/4/11	9/20/11
MW-9A	Barium	X	X
MW-9A	Cobalt		X
MW-9A	nickel	X	X
MW-9A	Zinc		X
MW-9A	1,1DCA	X	X
MW-9A	1,4-dichlorobenzene	X	X
MW-9A	benzene	X	X
MW-9A	chlorobenzene	X	X
MW-9A	cis-1,2-DCE	X	X
MW-9A	PCE		X
MW-9A	trans-1,2-DCE	X	X
MW-9A	TCE	X	X
MW-9A	Vinyl chloride	X	X
MW-14	1,4-dichlorobenzene		X
MW-14	benzene	X	X
MW-14	chlorobenzene	X	X
MW-14	cis-1,2-DCE	X	X
MW-14	Vinyl chloride		X
MW-15	Zinc	X	X
MW-17	cis-1,2-DCE	X	X
MW-19	Cobalt	X	
MW-19	Copper	X	

2012†

		3/13/12	9/19/12
MW-9A	Barium	X	X
MW-9A	nickel	X	
MW-9A	1,1DCA	X	X
MW-9A	benzene	X	X
MW-9A	chlorobenzene	X	X
MW-9A	cis-1,2-DCE	X	X
MW-9A	PCE	X	X
MW-9A	trans-1,2-DCE	X	X
MW-9A	TCE	X	X
MW-9A	Vinyl chloride	X	X
MW-14	1,4-dichlorobenzene	X	
MW-14	benzene	X	
MW-14	chlorobenzene	X	X
MW-14	cis-1,2-DCE	X	
MW-15	Zinc	X	
MW-17	cis-1,2-DCE	X	X
MW-19	acetone	X	

2013†

		3/25/13	7/7/13	9/20/13
MW-8B	Barium			X
MW-8B	Cobalt			X
MW-9A	Barium	X		X
MW-9A	1,1DCA	X	X	X
MW-9A	1,4-dichlorobenzene	X	X	
MW-9A	benzene	X	X	X
MW-9A	chlorobenzene	X	X	X
MW-9A	cis-1,2-DCE	X	X	X
MW-9A	PCE		X	X
MW-9A	trans-1,2-DCE	X	X	X
MW-9A	TCE	X	X	X
MW-9A	Vinyl chloride	X	X	X
MW-14	benzene	X		
MW-14	chlorobenzene	X		X
MW-14	cis-1,2-DCE	X		X
MW-17	cis-1,2-DCE	X		X
MW-19	Cobalt			X
MW-19	Copper			X

2014†

		3/28/14	9/23/14
MW-8B	Barium	X	X
MW-8B	Cobalt	X	X
MW-8B	cis-1,2-DCE	X	
MW-9A	Barium	X	X
MW-9A	Cobalt	X	
MW-9A	nickel	X	
MW-9A	Zinc	X	
MW-9A	1,1 DCA	X	X
MW-9A	1,1-dichloropropane	X	
MW-9A	1,4-dichlorobenzene	X	X
MW-9A	benzene	X	X
MW-9A	chlorobenzene	X	X
MW-9A	cis-1,2-DCE	X	X
MW-9A	PCE	X	
MW-9A	trans-1,2-DCE	X	X
MW-9A	TCE	X	X
MW-9A	Vinyl chloride	X	X
MW-14	chlorobenzene	X	
MW-14	cis-1,2-DCE	X	
MW-15	Zinc		X
MW-17	acetone	X	
MW-17	cis-1,2-DCE	X	X
MW-19	Arsenic	X	
MW-19	Cobalt	X	
MW-19	Copper	X	
MW-19	mek	X	
MW-19	acetone	X	
MW-19	chloroethane	X	

2015†

		3/19/15	8/27/15
MW-8B	Barium	X	X
MW-8B	Cobalt	X	X
MW-9A	Barium	X	X
MW-9A	Cobalt	X	
MW-9A	1,1 DCA	X	X
MW-9A	1,1-dichloropropane	X	X
MW-9A	1,4-dichlorobenzene	X	X
MW-9A	benzene	X	X
MW-9A	chlorobenzene	X	X
MW-9A	cis-1,2-DCE	X	X
MW-9A	PCE	X	
MW-9A	trans-1,2-DCE	X	X
MW-9A	TCE	X	
MW-9A	Vinyl chloride	X	X
MW-17R	cis-1,2-DCE	X	X
MW-23B	Barium		X
SW-101	Selenium		X
SW-103	cis-1,2-DCE	X	

2016

		3/4/16†	9/20/2016
MW-8B	Barium	X	X
MW-8B	Cobalt	X	X
MW-9A	Barium	X	X
MW-9A	1,1 DCA	X	X
MW-9A	1,4-dichlorobenzene	X	X
MW-9A	benzene	X	X
MW-9A	chlorobenzene	X	X
MW-9A	cis-1,2-DCE	X	X
MW-9A	PCE	X	
MW-9A	trans-1,2-DCE	X	X
MW-9A	TCE	X	X
MW-9A	Vinyl chloride	X	X
MW-15	zinc		X
MW-17R	cis-1,2-DCE	X	X
MW-17R	Barium		X
SW-101	Selenium	X	X

† Predates paring of the historic background data and the results included herein are considered informational and should not be considered conclusive.

2017

		3/9/2017	9/14/2017
MW-8B	Barium	X	X
MW-8B	Cobalt	X	X
MW-8B	Nickel	X	
MW-9A	Barium	X	X
MW-9A	1,1 DCA	X	X
MW-9A	1,2-DCP	X	
MW-9A	1,4-dichlorobenzene	X	
MW-9A	benzene	X	X
MW-9A	chlorobenzene	X	X
MW-9A	cis-1,2-DCE	X	X
MW-9A	PCE		
MW-9A	trans-1,2-DCE	X	X
MW-9A	TCE	X	
MW-9A	Vinyl chloride	X	X
MW-15	Barium		X
MW-15	Benzene		X
MW-17R	cis-1,2-DCE	X	X
MW-17R	Barium	X	X

Spring 2018		Fall 2018	
Till/Fill System			
MW-6A	None	MW-6A	Nickel
MW-8B	Barium	MW-8B	Barium
	Cobalt		Cobalt
MW-9AR	Barium	MW-9AR	Barium
	Cobalt		Cobalt
	Nickel		Nickel
	1,1-dichloroethane		1,1-dichloroethane
	1,2-dichloropropane		1,4-dichlorobenzene
	Benzene		Benzene
	Chlorobenzene		Chlorobenzene
	cis-1,2-dichloroethene (exceeds GWPS)		Chloroethane
	trans-1,2-dichloroethene		cis-1,2-dichloroethene
	trichlorethylene		trans-1,2-dichloroethene
	Vinyl chloride (exceeds GWPS)		trichlorethylene
			Vinyl chloride (exceeds GWPS)
MW-15	Barium	MW-15	Broken
Exline Bedrock System			
MW-14D	Antimony	MW-14D	Antimony
	Selenium		Selenium
MW-17R	Barium	MW-17R	Barium
	cis-1,2-dichloroethene		cis-1,2-dichloroethene
	trans-1,2-dichloroethene		

Spring 2019		Fall 2019	
Till/Fill System			
MW-6A	Bis (2-ethylhexyl)phthalate*	MW-6A	None
MW-8B	Barium Cobalt	MW-8B	Barium Cobalt
MW-9AR	Barium Cobalt Nickel 1,1-dichloroethane 1,4-dichlorobenzene Benzene Chlorobenzene Chloroethane cis-1,2-dichloroethene trans-1,2-dichloroethene trichlorethylene Vinyl chloride (exceeds GWPS)	MW-9AR	Barium Cobalt Nickel 1,1-dichloroethane Benzene Chlorobenzene cis-1,2-dichloroethene trans-1,2-dichloroethene Vinyl chloride (exceeds GWPS)
MW-15R	None	MW-15R	Barium
Exline Bedrock System			
MW-14D	Antimony Selenium	MW-14D	Antimony Selenium
MW-17R	Barium Nickel cis-1,2-dichloroethene	MW-17R	Barium Nickel cis-1,2-dichloroethene

* not verified by the 6/5/2019 resample

Spring 2020		Fall 2020	
Till/Fill System			
MW-6A	Bis(2-ethylhexyl)phthalate	MW-6A	None
MW-15R	Barium	MW-15R	Barium
Tile 1	1,4-dichlorobenzene	Tile 1	Barium
	chlorobenzene		Nickel
	cis-1,2-dichloroethene		1,4-dichlorobenzene
			Benzene
			chlorobenzene
			cis-1,2-dichloroethene
			Vinyl Chloride
Tile 2	chlorobenzene	Tile 2	Barium
	cis-1,2-dichloroethene		Cobalt
	Vinyl Chloride		chlorobenzene
			cis-1,2-dichloroethene
			Vinyl Chloride
MW-8B	Barium	MW-8B	Barium
	Cobalt		Cobalt
MW-9AR	Barium	MW-9AR	Barium
	Cobalt		Cobalt
	Nickel		Nickel
	1,1-dichloroethane		1,1-dichloroethane
	Benzene		Benzene
	Carbon disulfide		Chlorobenzene
	Chlorobenzene		cis-1,2-dichloroethene
	cis-1,2-dichloroethene		trans-1,2-dichloroethene
	trans-1,2-dichloroethene		trichlorethylene
	trichlorethylene		Vinyl Chloride
	Vinyl Chloride		
Exline Bedrock System			
MW-14D	Antimony	MW-14D	Antimony
	Selenium		Selenium
MW-17R	Barium	MW-17R	Barium
	cis-1,2-dichloroethene		Nickel
			cis-1,2-dichloroethene
MW-28	cis-1,2-dichloroethene	MW-28	Barium
			Cobalt
			Nickel
			cis-1,2-dichloroethene
			trans-1,2-dichloroethene
			Vinyl Chloride

Spring 2021		Fall 2021	
Till/Fill System			
MW-6A	Cobalt	MW-6A	None
	Nickel		
MW-15R	Arsenic	MW-15R	Arsenic
	Barium		Barium
Tile 1	Barium	Tile 1	Barium
	Nickel		Nickel
	1,4-dichlorobenzene		1,4-dichlorobenzene
	chlorobenzene		Benzene
			chlorobenzene
			cis-1,2-dichloroethene
Tile 2	cis-1,2-dichloroethene	Tile 2	cis-1,2-dichloroethene
	Vinyl Chloride		Vinyl Chloride
MW-8B	Barium	MW-8B	Barium
	Cobalt		Cobalt
MW-9AR	Barium	MW-9AR	Barium
	Cobalt		Cobalt
	1,1-dichloroethane		Nickel
	Benzene		1,1-dichloroethane
	Chlorobenzene		1,2-dichloropropane
	cis-1,2-dichloroethene		Benzene
	trans-1,2-dichloroethene		Chlorobenzene
	trichlorethylene		cis-1,2-dichloroethene
	Vinyl Chloride		trans-1,2-dichloroethene
			trichlorethylene
			Vinyl Chloride
Exline Bedrock System			
MW-14D	Antimony	MW-14D	Antimony
	Selenium		
MW-17R	Barium	MW-17R	Barium
	Nickel		Nickel
	cis-1,2-dichloroethene		cis-1,2-dichloroethene
MW-28	Arsenic	MW-28	Barium
	Barium		Cobalt
	Cobalt		Nickel
	Nickel		cis-1,2-dichloroethene
	cis-1,2-dichloroethene		Vinyl Chloride

Spring 2022		Fall 2022	
Till/Fill System			
MW-6A	Antimony	MW-6A	Nickel
	Nickel		
	Selenium		
MW-15R	Arsenic	MW-15R	Arsenic
	Barium		Barium
Tile 1	Barium	Tile 1	Barium
	1,4-dichlorobenzene		Cobalt
	chlorobenzene		Nickel
			1,4-dichlorobenzene
			Benzene
			chlorobenzene
Tile 2	cis-1,2-dichloroethene	Tile 2	Barium
	Vinyl Chloride		cis-1,2-dichloroethene
			Vinyl Chloride
MW-8B	Barium	MW-8B	Barium
	Cobalt		Cobalt
MW-9AR	1,1-dichloroethane	MW-9AR	Barium
	1,2-dichloropropane		Nickel
	cis-1,2-dichloroethene		1,1-dichloroethane
	trans-1,2-dichloroethene		Benzene
	trichlorethylene		Chlorobenzene
	Vinyl Chloride		cis-1,2-dichloroethene
			trans-1,2-dichloroethene
			trichlorethylene
			Vinyl Chloride
MW-31	1,4-dichlorobenzene		
	Benzene		
	chlorobenzene		
MW-32	chlorobenzene		
	cis-1,2-dichloroethene		
Exline Bedrock System			
MW-14D	none	MW-14D	Cobalt
MW-17R	Barium	MW-17R	Barium
	Nickel		Cobalt
	bis(2-ethylhexyl)phthalate		Nickel
	cis-1,2-dichloroethene		cis-1,2-dichloroethene
MW-28	Arsenic	MW-28	Arsenic
	Barium		Barium
	Cobalt		Cobalt
	Nickel		Nickel
	cis-1,2-dichloroethene		cis-1,2-dichloroethene
	Vinyl Chloride		

Spring 2023		Fall 2023	
Till/Fill System			
MW-44	did not exist	MW-44	Barium
MW-15R	Arsenic	MW-15R	Arsenic
	Barium		Barium
Tile 1	Barium	Tile 1	Barium
	1,4-dichlorobenzene		Nickel
	chlorobenzene		1,4-dichlorobenzene
			Benzene
			chlorobenzene
Tile 2	cis-1,2-dichloroethene	Tile 2	cis-1,2-dichloroethene
	Vinyl Chloride		Vinyl Chloride
MW-9AR	1,2-dichloropropane	MW-9AR	1,1-dichloroethane
	cis-1,2-dichloroethene		Benzene
	trans-1,2-dichloroethene		Chlorobenzene
	trichlorethylene		cis-1,2-dichloroethene
	Vinyl Chloride		trans-1,2-dichloroethene
			trichlorethylene
			Vinyl Chloride
MW-31	1,4-dichlorobenzene	MW-31	No test required
	Benzene		
	chlorobenzene		
Exline Bedrock System			
MW-14D	none	MW-14D	Cobalt
MW-17R	Barium	MW-17R	Barium
	Nickel		Nickel
	cis-1,2-dichloroethene		cis-1,2-dichloroethene
MW-28	Arsenic	MW-28	Arsenic
	Barium		Barium
	Cobalt		Cobalt
	Nickel		Nickel
	cis-1,2-dichloroethene		cis-1,2-dichloroethene
	Vinyl Chloride		

Appendix G

Assessment Testing Results Summary

Bis(2-ethylhexyl)phthalate (green highlights = a full Appendix II sample)

Date	MW-9A/9AR*	MW-8B*	MW-15/15R*
6/8/2009	< 8	NT	NT
10/23/2009	< 11	NT	NT
1/27/2010	NT	< 8	NT
3/19/2010	NT	< 9.5	NT
9/14/2010	9.0	NT	NT
3/4/2011	< 10	NT	NT
3/13/2012	< 10	NT	NT
9/19/2012	< 10	NT	NT
3/5/2013	< 10	NT	NT
9/12/2013	< 10	NT	NT
3/28/2014	< 10	NT	NT
9/23/2014	< 10	NT	NT
3/19/2015	< 10	NT	NT
8/27/2015	< 10	NT	NT
3/4/2016	< 8	< 8	NT
9/20/2016	< 10	NT	NT
3/9/2017	< 10	NT	12.0
6/6/2017	NT	NT	<6
9/14/2017	NT	NT	NT
3/13/2018	NT	NT	<6
9/10/2018	NT	NT	NT
3/26/2019	NT	NT	NT
6/5/2019	NT	NT	NT
9/16/2019	NT	NT	NT
3/24/2020	NT	NT	NT
9/2/2020	NT	NT	NT
3/8/2021	NT	NT	NT
9/14/2021	NT	NT	NT
3/28/2022	NT	NT	NT
9/13/2022	NT	NT	NT
3/23/2023	NT	NT	NT
9/5/2023	NT	NT	NT

* - Supplemental wells do not require full Appendix II sampling on the five (5) year frequency.

Bis(2-ethylhexyl)phthalate (green highlights = a full Appendix II sample)

Date	MW-6A	MW-14D	MW-17R	Tile 1	Tile 2	MW-28
8/27/2015	NT	NT	NT	NT	NT	NT
3/4/2016	NT	NT	< 8	NT	NT	NT
9/20/2016	NT	NT	NT	NT	NT	NT
3/9/2017	NT	NT	< 8	NT	NT	NT
6/6/2017	NT	NT	NT	NT	NT	NT
9/14/2017	NT	<6	NT	NT	NT	NT
3/13/2018	NT	< 8	NT	NT	NT	NT
9/10/2018	NT	NT	NT	NT	NT	NT
3/26/2019	55.0	NT	NT	NT	NT	NT
6/5/2019	< 6	NT	NT	NT	NT	NT
9/16/2019	NT	NT	NT	NT	NT	NT
3/24/2020	7.0	NT	NT	NT	NT	NT
9/2/2020	NT	NT	NT	NT	NT	NT
3/8/2021	< 6	NT	NT	<6	<6	<6
9/14/2021	< 6	NT	NT	NT	NT	NT
3/28/2022	< 6	NT	13.0	<6	<6	<6
9/13/2022	NT	NT	< 6	NT	NT	NT
3/23/2023	NT	NT	NT	NT	NT	NT
9/5/2023	NT	NT	NT	NT	NT	NT

Appendix H

Leachate Collection System Performance Evaluation Report

Appendix H.1 - Leachate Recirculation Volumes
Daily/Weekly Leachate Recirculation Logs

**Leachate Recirculation
South Central Iowa Sanitary Landfill
2023**

April		May		June		July		August	
Date	Gallons	Date	Gallons	Date	Gallons	Date	Gallons	Date	Gallons
4/11/2023	75,000	5/3/2023	50,000	6/5/2023	50,000	7/5/2023	50,000	8/15/2023	75,000
4/12/2023	75,000	5/8/2023	50,000	6/7/2023	50,000	7/10/2023	50,000	8/16/2023	75,000
4/13/2023	75,000	5/11/2023	50,000	6/9/2023	50,000	7/14/2023	50,000	8/17/2023	75,000
4/17/2023	75,000	5/17/2023	50,000	6/13/2023	50,000	7/24/2023	50,000	8/18/2023	75,000
4/18/2023	75,000	5/19/2023	50,000	6/15/2023	50,000	7/26/2023	50,000	8/21/2023	75,000
		5/23/2023	50,000	6/19/2023	50,000	7/28/2023	50,000	8/22/2023	75,000
				6/21/2023	50,000				
				6/23/2023	50,000				

TOTAL 375,000 300,000 400,000 300,000 450,000 **1,825,000 Gallons**

SCILA Landfill – Daily/Weekly Leachate Recirculation Log

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date			4/11/23	4/12/23	4/13/23		
Liquid Level (not to exceed 12-inches)							
LW-101*			1”	0	2”		
Spray Irrigation Time							
Start Time							
End Time							
Spray Irrigation Gallons							
			75,000	75,000	75,000		
Trench Recirculation Time							
Start Time							
End Time							
Trench Recirculation Gallons							

- *NOTES:**
- 1) LW-101 measurement required at least once per week when leachate is being recirculated.
 - 2) If liquid level in LW-101 exceeds 12” leachate recirculation shall stop and not resume until the liquid level in LW-101 is less than 12”.

SCILA Landfill – Daily/Weekly Leachate Recirculation Log

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date		4/17/23	4/18/23				
Liquid Level (not to exceed 12-inches)							
LW-101*		2"	3"				
Spray Irrigation Time							
Start Time							
End Time							
Spray Irrigation Gallons							
		75,000	75,000				
Trench Recirculation Time							
Start Time							
End Time							
Trench Recirculation Gallons							

- *NOTES:**
- 1) LW-101 measurement required at least once per week when leachate is being recirculated.
 - 2) If liquid level in LW-101 exceeds 12" leachate recirculation shall stop and not resume until the liquid level in LW-101 is less than 12".

SCILA Landfill – Daily/Weekly Leachate Recirculation Log

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date				5/3/23			
Liquid Level (not to exceed 12-inches)							
LW-101*				1”			
Spray Irrigation Time							
Start Time							
End Time							
Spray Irrigation Gallons							
				50,000			
Trench Recirculation Time							
Start Time							
End Time							
Trench Recirculation Gallons							

- *NOTES:**
- 1) LW-101 measurement required at least once per week when leachate is being recirculated.
 - 2) If liquid level in LW-101 exceeds 12” leachate recirculation shall stop and not resume until the liquid level in LW-101 is less than 12”.

SCILA Landfill – Daily/Weekly Leachate Recirculation Log

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date		5/8/23			5/11/23		
Liquid Level (not to exceed 12-inches)							
LW-101*		0			1”		
Spray Irrigation Time							
Start Time							
End Time							
Spray Irrigation Gallons							
		50,000			50,000		
Trench Recirculation Time							
Start Time							
End Time							
Trench Recirculation Gallons							

- *NOTES:**
- 1) LW-101 measurement required at least once per week when leachate is being recirculated.
 - 2) If liquid level in LW-101 exceeds 12” leachate recirculation shall stop and not resume until the liquid level in LW-101 is less than 12”.

SCILA Landfill – Daily/Weekly Leachate Recirculation Log

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date				5/17/23		5/19/23	
Liquid Level (not to exceed 12-inches)							
LW-101*				3"		2"	
Spray Irrigation Time							
Start Time							
End Time							
Spray Irrigation Gallons							
				50,000		50,000	
Trench Recirculation Time							
Start Time							
End Time							
Trench Recirculation Gallons							

- *NOTES:**
- 1) LW-101 measurement required at least once per week when leachate is being recirculated.
 - 2) If liquid level in LW-101 exceeds 12" leachate recirculation shall stop and not resume until the liquid level in LW-101 is less than 12".

SCILA Landfill – Daily/Weekly Leachate Recirculation Log

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date			5/23/23				
Liquid Level (not to exceed 12-inches)							
LW-101*			1”				
Spray Irrigation Time							
Start Time							
End Time							
Spray Irrigation Gallons							
			50,000				
Trench Recirculation Time							
Start Time							
End Time							
Trench Recirculation Gallons							

- *NOTES:**
- 1) LW-101 measurement required at least once per week when leachate is being recirculated.
 - 2) If liquid level in LW-101 exceeds 12” leachate recirculation shall stop and not resume until the liquid level in LW-101 is less than 12”.

SCILA Landfill – Daily/Weekly Leachate Recirculation Log

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date		6/5/23		6/7/23		6/9/23	
Liquid Level (not to exceed 12-inches)							
LW-101*		2"		0		2"	
Spray Irrigation Time							
Start Time							
End Time							
Spray Irrigation Gallons							
		50,000		50,000		50,000	
Trench Recirculation Time							
Start Time							
End Time							
Trench Recirculation Gallons							

- *NOTES:**
- 1) LW-101 measurement required at least once per week when leachate is being recirculated.
 - 2) If liquid level in LW-101 exceeds 12" leachate recirculation shall stop and not resume until the liquid level in LW-101 is less than 12".

SCILA Landfill – Daily/Weekly Leachate Recirculation Log

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date		6/13/23		6/15/23			
Liquid Level (not to exceed 12-inches)							
LW-101*		1”		3”			
Spray Irrigation Time							
Start Time							
End Time							
Spray Irrigation Gallons							
		50,000		50,000			
Trench Recirculation Time							
Start Time							
End Time							
Trench Recirculation Gallons							

- *NOTES:**
- 1) LW-101 measurement required at least once per week when leachate is being recirculated.
 - 2) If liquid level in LW-101 exceeds 12” leachate recirculation shall stop and not resume until the liquid level in LW-101 is less than 12”.

SCILA Landfill – Daily/Weekly Leachate Recirculation Log

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date		6/19/23		6/21/23		6/23/23	
Liquid Level (not to exceed 12-inches)							
LW-101*		2”		1”		0	
Spray Irrigation Time							
Start Time							
End Time							
Spray Irrigation Gallons							
		50,000		50,000		50,000	
Trench Recirculation Time							
Start Time							
End Time							
Trench Recirculation Gallons							

- *NOTES:**
- 1) LW-101 measurement required at least once per week when leachate is being recirculated.
 - 2) If liquid level in LW-101 exceeds 12” leachate recirculation shall stop and not resume until the liquid level in LW-101 is less than 12”.

SCILA Landfill – Daily/Weekly Leachate Recirculation Log

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date				7/5/23			
Liquid Level (not to exceed 12-inches)							
LW-101*				1”			
Spray Irrigation Time							
Start Time							
End Time							
Spray Irrigation Gallons							
				50,000			
Trench Recirculation Time							
Start Time							
End Time							
Trench Recirculation Gallons							

- *NOTES:**
- 1) LW-101 measurement required at least once per week when leachate is being recirculated.
 - 2) If liquid level in LW-101 exceeds 12” leachate recirculation shall stop and not resume until the liquid level in LW-101 is less than 12”.

SCILA Landfill – Daily/Weekly Leachate Recirculation Log

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date		7/10/23				7/14/23	
Liquid Level (not to exceed 12-inches)							
LW-101*		0				2"	
Spray Irrigation Time							
Start Time							
End Time							
Spray Irrigation Gallons							
		50,000				50,000	
Trench Recirculation Time							
Start Time							
End Time							
Trench Recirculation Gallons							

- *NOTES:**
- 1) LW-101 measurement required at least once per week when leachate is being recirculated.
 - 2) If liquid level in LW-101 exceeds 12" leachate recirculation shall stop and not resume until the liquid level in LW-101 is less than 12".

SCILA Landfill – Daily/Weekly Leachate Recirculation Log

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date		7/24/23		7/26/23		7/28/23	
Liquid Level (not to exceed 12-inches)							
LW-101*		0		2"		3"	
Spray Irrigation Time							
Start Time							
End Time							
Spray Irrigation Gallons							
		50,000		50,000		50,000	
Trench Recirculation Time							
Start Time							
End Time							
Trench Recirculation Gallons							

- *NOTES:**
- 1) LW-101 measurement required at least once per week when leachate is being recirculated.
 - 2) If liquid level in LW-101 exceeds 12" leachate recirculation shall stop and not resume until the liquid level in LW-101 is less than 12".

SCILA Landfill – Daily/Weekly Leachate Recirculation Log

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date			8/15/23	8/16/23	8/17/23	8/18/23	
Liquid Level (not to exceed 12-inches)							
LW-101*			2"	1"	3"	2"	
Spray Irrigation Time							
Start Time							
End Time							
Spray Irrigation Gallons							
			75,000	75,000	75,000	75,000	
Trench Recirculation Time							
Start Time							
End Time							
Trench Recirculation Gallons							

- *NOTES:**
- 1) LW-101 measurement required at least once per week when leachate is being recirculated.
 - 2) If liquid level in LW-101 exceeds 12" leachate recirculation shall stop and not resume until the liquid level in LW-101 is less than 12".

SCILA Landfill – Daily/Weekly Leachate Recirculation Log

	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Date		8/21/23	8/22/23				
Liquid Level (not to exceed 12-inches)							
LW-101*		0	2"				
Spray Irrigation Time							
Start Time							
End Time							
Spray Irrigation Gallons							
		75,000	75,000				
Trench Recirculation Time							
Start Time							
End Time							
Trench Recirculation Gallons							

- *NOTES:**
- 1) LW-101 measurement required at least once per week when leachate is being recirculated.
 - 2) If liquid level in LW-101 exceeds 12" leachate recirculation shall stop and not resume until the liquid level in LW-101 is less than 12".

Appendix H.2 - Authorization to Discharge at Des Moines Metropolitan
Wastewater Reclamation Facility



**DES MOINES METROPOLITAN
WASTEWATER RECLAMATION AUTHORITY**

CITY OF DES MOINES, OPERATING CONTRACTOR

October 29, 2021

Marcia Beeler
South Central Iowa Landfill Agency
2490 State Hwy 92
Winterset, IA 50273

RE: Hauled Waste Discharge Permit No. B10161

Dear Ms. Beeler:

Enclosed is your Hauled Waste Discharge Permit for the South Central Iowa Landfill facility in Winterset. The permit is effective until the expiration date; however, an annual permit fee will be due.

Please keep us informed of any changes that may affect the characteristics or volume of your facility's hauled waste to the WRF. Questions should be directed to Paul Ebert, in Industrial Pretreatment, at 515/323-8133.

Sincerely,

Larry Hare
WRF Treatment Manager
WRA Wastewater Reclamation Facility

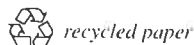
LH/ajf

Enc: Hauled Wastewater Discharge Permit

CC: T. Whipple, HLW Engineering PO Box 314, Story City, IA 50248
File

WORKING TOGETHER FOR CLEAN WATER

Phone 515/323-8000 • Fax 515/323-8050 • www.dmmwra.org
3000 Vandalia Road • Des Moines, Iowa 50317-1346





**DES MOINES METROPOLITAN
WASTEWATER RECLAMATION AUTHORITY**

CITY OF DES MOINES, OPERATING CONTRACTOR

**DES MOINES METROPOLITAN WASTEWATER RECLAMATION AUTHORITY
HAULED WASTE DISCHARGE PERMIT
PERMIT NO. B10161**

In accordance with the provisions of the Municipal Code of Des Moines, Chapter 118, Article III known as the Industrial Waste Ordinance,

South Central Iowa Landfill Agency
2490 State Hwy 92
Winterset, IA 50273

is hereby authorized to deliver wastewater from the RCRA Subtitle D non-hazardous landfill via a properly licensed and maintained tank truck to the Des Moines Metropolitan Wastewater Reclamation Facility in accordance with the conditions set forth in this permit. Compliance with this permit does not relieve the industrial user of its obligations to comply with all applicable pretreatment regulations, standards, requirements, or laws that are or may become effective during the term of this permit.

Noncompliance with any term or condition of this permit shall constitute a violation of the City of Des Moines Industrial Waste Ordinance.

EFFECTIVE DATE: November 1, 2021

EXPIRATION DATE: October 31, 2025

RENEWAL DATE: July 31, 2025

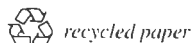
The industrial user must file an application for permit renewal 90 days prior to the expiration date.

Scott Hutchens, P.E., WRA Director
City of Des Moines
WRA Wastewater Reclamation Facility

REVISED: September 15, 2021

WORKING TOGETHER FOR CLEAN WATER

Phone 515/323-8000 • Fax 515/323-8050 • www.dmmwra.org
3000 Vandalia Road • Des Moines, Iowa 50317-1346



PART 1 - REQUIREMENTS RELATING TO TRUCKED WASTES

The Des Moines Metropolitan Wastewater Reclamation Authority (WRA) will accept process wastewater from the Industrial User (IU) under the following terms:

A. Process Wastewater Characteristics and Volume

1. The pH of any load must not be less than 5.0 S.U. or greater than 12.0 S.U.
2. The COD of any load delivered to the headworks (Structure 07) must not exceed 100,000 mg/L.
3. The Arsenic Daily Maximum concentration of any load shall not exceed 0.38 mg/L, and the Total Daily Loading of Arsenic shall not exceed 0.014 lbs/day.
4. Total Toxic Organics (TTO) will be monitored routinely by the WRA. TTOs are sum of all volatile organic compounds detected using EPA Method 624.
5. The number of truck loads delivered to the Des Moines Metropolitan Wastewater Reclamation Facility (WRF) shall not exceed five (5) per day. The IU may request an increase in writing. The WRF reserves the right to further restrict the volume of leachate per day in order to meet pollutant loading limits for the WRF as identified in Chapter 118-343.
6. Hauled waste shall be delivered to the headworks (Structure 07) at the WRF, unless directed otherwise by WRA personnel.
7. Only landfill leachate wastewater is allowed by truck without advanced notice to and permission from the WRA Director.

B. Treatment Charges

1. Charges must cover 150% of the costs incurred by the WRA to handle and treat the wastewater as determined by the WRA Director, as well as 100% of the costs to analyze the wastewater.
2. Charges are billed monthly with NET 30 terms payable to CITY OF DES MOINES and mailed to

City of Des Moines Treasurer's Office
P.O. Box 1633
Des Moines, IA 50306-1633
3. Treatment charges for waste loads disposed of at the headworks (Structure 07) shall be \$0.0456/gallon or \$0.00545/lb. (subject to annual rate increases, given 30-days' notice).
4. Reevaluation of charges:
 - (a) Charges will be reevaluated on February 1st and annually thereafter at a minimum.
 - (b) Charges may be reevaluated at the request of the IU or by the WRA at any time due to waste characteristic changes in the process wastewater.
 - (c) Changes in treatment charges are effective after 30-days' notice to the IU.

C. Sampling & Analysis

1. WRA Sampling & Analysis

- (a) The WRA may, at a minimum, perform daily sampling and measurement of pH, O&G, COD, TSS, TKN, %TS, %VS at the cost provided for in Chapter 118-352. The cost will be assessed to the IU and included in the charges in Part 1, B.1. above.
- (b) The WRA will perform other sampling and analysis at the expense of the IU as necessary to accurately assess charges and pollutant loadings.
- (c) Samples shall be taken from the tank truck at the WRF prior to discharge or mixing with any other waste.

2. Industrial User Sampling & Analysis

- (a) The IU shall perform an annual scan of priority pollutants and report results to the WRA.
- (b) Such scan does not eliminate the need for the WRA to perform its normal sampling and analysis.
- (c) Samples shall be taken from the leachate collection vessel used to fill tank trucks for transport to the WRF.

D. Hours of Operation

- 1. The WRA will accept trucked waste 24/7 if drivers are familiar with the WRF manifesting, scaling, and unloading processes.
- 2. The WRA has the right to restrict hours as necessary and restrict truck driver access as necessary. Additional costs to provide service will be charged to the IU.

E. Termination of this Permit

- 1. This permit may be terminated by the IU by making a written request to the WRA providing 30-days' advanced notice.
- 2. This permit may be terminated by the WRA for any reason by providing 30-days' advanced written notice to the IU.
- 3. Delivery of wastes may be immediately suspended by the WRA if acceptance of this wastewater causes, or is anticipated to cause, interference, pass through of pollutants, or violation of any environmental permit held by the WRA.

F. Automatic Permit Extension

Expired permits shall remain effective and enforceable until the permit is reissued unless the IU is notified of permit termination by the WRA Director. (Chapter 118-372)

G. Damages

Anyone delivering or discharging wastes to the WRF whose waste causes upset, interference, or pass through is liable for the costs incurred by such incident and to penalties as allowed under city, state, and federal law.

H. Spill Control Plan

When required to do so by the WRA, the IU shall develop a Spill Control Plan to address potential spills or slugs.

PART 2 – REPORTING REQUIREMENTS

A. Monitoring Reports

The WRA will provide the IU with routine reports of the concentration of pollutants in the IU's effluent which are being monitored as described above.

1. Semi-Annual Reports

A certification statement, signed by an Authorized Representative, which uses the language required by federal law (40 CFR 403.12(l)), must be returned to the WRA every six (6) months. The industry is certifying that information it has submitted to the WRA is true and accurate. Those with TTO limits in wastewater discharge permits have an additional certifying statement regarding use and disposal of these substances. The IU shall submit a semi-annual report to the WRA as follows:

<u>Semi-Annual</u>	<u>Periods Covered</u>
1st Half	January – June
2nd Half	July - December

Semi-Annual Report Format

- (a) Identifying information.
- (b) Measurement of pollutants for any samples collected by the IU, per Chapter 118-377(5).
- (c) Certification and signature by IU.
- (d) Compliance schedule (as required).
- (e) Additional monitoring (as required).

2. Reports - Additional Monitoring

If the IU monitors any permitted pollutant from the sample location identified in Part 1.C more frequently than required by this permit, using test procedures prescribed in 40 CFR Part 136, the results of such monitoring shall be submitted to the WRA. Such monitoring results shall be summarized and reported to the WRA as part of the semi-annual report.

B. Accidental Discharge Report

The IU shall notify the WRA immediately of all discharges that could cause problems to the POTW, including any slug loadings, as outlined in Chapter 118-349. Formal written notification discussing circumstances and remedies shall be submitted to the WRA within five (5) days of the occurrence. The following procedures shall be followed:

1. Accidental discharges that contain pollutants that exceed the permitted limit by 5x or that exceed a designated slug discharge concentration shall be reported immediately.
2. Accidental discharges that may cause permanent damage to treatment system shall be reported immediately. These discharges include, but are not limited to, pollutants that may cause a fire or explosion hazard, pH of less than 4.0 or greater than 13.0 for, any pollutant in a concentration that would increase the atmosphere in the POTW above the LC50 for human exposure, and any pollutant that may increase the concentration in the influent to the WRF enough to decrease treatment efficiency.
3. The IU shall notify the WRA immediately by telephone at 515/323-8000 or 8133. The notification shall include the name of the person making the call, telephone number where said person can be reached, location of discharge, date and time thereof, type of waste, including concentration and volume, and corrective action taken.

The party making the call shall be available by phone for a minimum of fifteen (15) minutes after the notification is made. This is so that a member of the WRA may contact the industry representative for more information, if necessary.

4. Within five (5) days following an accidental discharge, the IU shall submit to the WRA a detailed written report. The report shall specify:
 - (a) Description of the upset, slug or accidental discharge, the cause thereof, and the impact on the IU's compliance status. The description should also include location of discharge, type, concentration and volume of waste.
 - (b) Duration of noncompliance, including exact dates and times of noncompliance, and if the noncompliance continues, the time by which compliance is reasonably expected to occur.
 - (c) All steps taken or to be taken to reduce, eliminate and prevent recurrence of such a slug discharge, accidental discharge, or other condition of noncompliance.

C. Anticipated Noncompliance

The IU shall give advance notice to the WRA of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

D. Signatory Requirements

1. All applications and reports submitted to the WRA must contain the following certification statement and be signed by an authorized representative of the IU as defined below:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Authorized Representative means:

- (a) An executive officer of a corporation.
 - (b) A general partner of a partnership.
 - (c) The proprietor of a proprietorship.
 - (d) The conservator, trustee, attorney in fact, receiver or other person or agent authorized in law and in fact to act on behalf of IUs which are not corporations, partnerships, or proprietorships or on behalf of other entities which must legally act through an agent.
 - (e) Any other authorized representative of (a), (b), (c), or (d) above if the authorization specifies either an individual or a position having responsibility for the overall operation of the facility from which the discharge originates, such as the position of plant manager or a position of equivalent responsibility, or having overall responsibility for environmental matters for the company and the written authorization is submitted to the WRA Director.
 - (f) Any other person authorized by law to act on behalf of any entity.
2. If an authorization under paragraph (d) of this subpart is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, or overall responsibility for the environmental matters for the company, a new authorization satisfying the requirements of paragraph (d) of this subpart must be submitted to the WRA prior to or together with any reports to be signed by an authorized representative.

E. Wastewater Reclamation Authority Address and Phone Number

All reports, applications and correspondence shall be submitted to the following address:

Des Moines Metropolitan Wastewater Reclamation Authority
Attention: Pretreatment Department
3000 Vandalia Road
Des Moines, IA 50317

Telephone notification shall be to WRA - 515/323-8000 or 8133.

PART 3 - GENERAL CONDITIONS

The EPA in 40 CFR 403 requires wastewater treatment plants with pretreatment authority to have the following authority over all dischargers:

A. Duty to Comply

You must comply with the terms, conditions, and limits of this permit and of city ordinance. (Chapters 118-321 and 118-376)

B. Duty to Mitigate

The IU shall take all reasonable steps to minimize, correct, or prevent any discharge in violation of this permit which has a reasonable likelihood of adversely affecting the WRF, collection system, human health or environment. (Chapter 118-349)

C. Changes Resulting in New or Increase Pollutants

New or increased contributions of pollutants or changes in the nature of pollutant discharged to the WRF, whether due to changes in production, activity, flow or construction, shall require ninety (90) days prior approval by the WRA Director. (Chapter 118-370(11))

D. Permit Transfer

The IU shall not reassign or transfer this permit. New owners must apply for a new wastewater discharge permit sixty (60) days prior to a change of ownership. (Chapter 118-374)

E. Inspection of Premises, Records, Equipment, Methods and Discharges

You must permit authorized representatives of the City of Des Moines to inspect and sample in accordance with Chapter 118-405.

F. Confidential Information

No information shall be confidential except as specified in Chapters 118-381 and 118-382.

G. Dilution

The IU shall not increase the use of potable or process water or, in any way, attempt to dilute a discharge as a partial or complete substitute for adequate treatment to achieve compliance with limitations contained in this permit.

H. Annual Publication

A list of all permitted users which significantly violated pretreatment standards or requirements (including permit requirements) during the twelve (12) previous months shall be annually published in the largest daily newspaper within the service area. (Chapter 118-396)

I. Civil and Criminal Penalties

Violation of pretreatment standards and requirements, administrative orders, or compliance schedules may subject the IU to civil and criminal penalties contained in Chapter 118-400 and Iowa Code 364.22(1).

Appendix H.3 - Leachate Testing Results

ANALYTICAL REPORT

May 05, 2023

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Work Order: 1GD1381

Report To
Todd Whipple
HLW Engineering
PO Box 314
Story City, IA 50248

Work Order Information
Date Received: 4/13/2023 9:56:00AM
Collector: JGH
Phone: (515) 733-4144
PO Number:

Project: SCILA - Leachate

Project Number: [none]

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1381-01	Leachate			Matrix: Water		Collected: 04/12/23 15:50	
Dibromochloromethane	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Chloromethane	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Vinyl Chloride	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Bromomethane	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Chloroethane	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
1,1-Dichloroethylene	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Methylene Chloride	<5.0 ug/L	5.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
trans-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
1,1-Dichloroethane	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
cis-1,2-Dichloroethylene	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Chloroform	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
1,1,1-Trichloroethane	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Carbon Tetrachloride	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Benzene	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
1,2-Dichloroethane	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Trichloroethylene	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
1,2-Dichloropropane	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Bromodichloromethane	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
2-Chloroethylvinyl ether	<10.0 ug/L	10.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
cis-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Toluene	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
trans-1,3-Dichloropropene	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
1,1,2-Trichloroethane	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Tetrachloroethylene	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Chlorobenzene	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Ethylbenzene	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Bromoform	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	

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HLW Engineering
PO Box 314
Story City, IA 50248

May 05, 2023
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Work Order: 1GD1381

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1381-01	Leachate			Matrix: Water		Collected: 04/12/23 15:50	
1,1,2,2-Tetrachloroethane	<1.0 ug/L	1.0	1GD0727	EPA 624	LNH	04/14/23 13:43	
Surrogate: Dibromofluoromethane	116 %			79-129	LNH	04/14/23 13:43	
Surrogate: 1,2-Dichloroethane-d4	101 %			66-134	LNH	04/14/23 13:43	
Surrogate: Toluene-d8	98.4 %			91-113	LNH	04/14/23 13:43	
Surrogate: 4-Bromofluorobenzene	98.7 %			83-112	LNH	04/14/23 13:43	
n-Decane	<5 ug/L	5	1GD0848	EPA 625	EPP	04/27/23 3:58	
n-Octadecane	<5 ug/L	5	1GD0848	EPA 625	EPP	04/27/23 3:58	
Carbazole	<5 ug/L	5	1GD0848	EPA 625	EPP	04/27/23 3:58	
Surrogate: Nitrobenzene-d5	52.5 %			17-146	EPP	04/27/23 3:58	
Surrogate: 2-Fluorobiphenyl	57.2 %			18-122	EPP	04/27/23 3:58	
Surrogate: Terphenyl-d14	101 %			27-131	EPP	04/27/23 3:58	
Bis(2-Chloroethyl) Ether	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
2-Chlorophenol	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
1,3-Dichlorobenzene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
1,4-Dichlorobenzene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Benzyl Alcohol	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
1,2-Dichlorobenzene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Bis[2-Chloroisopropyl]ether	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
n-Nitroso-di-n-propylamine	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Hexachloroethane	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Nitrobenzene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Isophorone	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
2-Nitrophenol	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
2,4-Dimethylphenol	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Bis (2-Chloroethoxy) Methane	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Benzoic acid	<50 ug/L	50	1GD0848	EPA 625	EPP	04/27/23 3:58	
2,4-Dichlorophenol	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
1,2,4-Trichlorobenzene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Naphthalene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Hexachlorobutadiene	<20 ug/L	20	1GD0848	EPA 625	EPP	04/27/23 3:58	
4-Chloro-3-methylphenol	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Hexachlorocyclopentadiene	<20 ug/L	20	1GD0848	EPA 625	EPP	04/27/23 3:58	
2,4,6-Trichlorophenol	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
2,4,5-Trichlorophenol	<50 ug/L	50	1GD0848	EPA 625	EPP	04/27/23 3:58	
2-Chloronaphthalene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Dimethylphthalate	<15 ug/L	15	1GD0848	EPA 625	EPP	04/27/23 3:58	
Acenaphthylene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
2,6-Dinitrotoluene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	

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HLW Engineering
PO Box 314
Story City, IA 50248

May 05, 2023
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Work Order: 1GD1381

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1381-01	Leachate			Matrix: Water		Collected: 04/12/23 15:50	
Acenaphthene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
2,4-Dinitrophenol	<20 ug/L	20	1GD0848	EPA 625	EPP	04/27/23 3:58	
Dibenzofuran	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
2,4-Dinitrotoluene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
4-Nitrophenol	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Diethyl Phthalate	<30 ug/L	30	1GD0848	EPA 625	EPP	04/27/23 3:58	
Fluorene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
4-Chlorophenyl Phenyl Ether	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
4,6-Dinitro-2-methylphenol	<20 ug/L	20	1GD0848	EPA 625	EPP	04/27/23 3:58	
N-Nitrosodiphenylamine	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
4-Bromophenyl Phenyl Ether	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Hexachlorobenzene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Pentachlorophenol	<20 ug/L	20	1GD0848	EPA 625	EPP	04/27/23 3:58	
Phenanthrene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Anthracene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Di-n-butyl Phthalate	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Fluoranthene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Pyrene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Butyl Benzyl Phthalate	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Benzo(a)anthracene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Chrysene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Bis(2-Ethylhexyl) Phthalate	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Di-n-octyl Phthalate	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Indeno(1,2,3-cd)Pyrene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
3,3'-Dichlorobenzidine	<20 ug/L	20	1GD0848	EPA 625	EPP	04/27/23 3:58	
Benzo(b)Fluoranthene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Benzo(k)Fluoranthene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Benzo(a)Pyrene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Dibenzo(a,h)anthracene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Benzo(g,h,i)perylene	<10 ug/L	10	1GD0848	EPA 625	EPP	04/27/23 3:58	
Surrogate: 2-Fluorophenol	27.2 %			19-139	EPP	04/27/23 3:58	
Surrogate: Phenol-d6	15.3 %			14-154	EPP	04/27/23 3:58	
Surrogate: Nitrobenzene-d5	52.5 %			17-146	EPP	04/27/23 3:58	
Surrogate: 2-Fluorobiphenyl	57.2 %			18-122	EPP	04/27/23 3:58	
Surrogate: 2,4,6-Tribromophenol	29.0 %			21-151	EPP	04/27/23 3:58	
Surrogate: Terphenyl-dl4	101 %			27-131	EPP	04/27/23 3:58	
Gamma-BHC [Lindane]	<0.05 ug/L	0.05	1GD0969	EPA 608	EPP	05/01/23 14:39	
Beta-BHC	<0.05 ug/L	0.05	1GD0969	EPA 608	EPP	05/01/23 14:39	

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL = Method Reporting Limit.

HLW Engineering
PO Box 314
Story City, IA 50248

May 05, 2023
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Work Order: 1GD1381

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1381-01	Leachate			Matrix: Water		Collected: 04/12/23 15:50	
Heptachlor	<0.05 ug/L	0.05	1GD0969	EPA 608	EPP	05/01/23 14:39	
Delta-BHC	<0.05 ug/L	0.05	1GD0969	EPA 608	EPP	05/01/23 14:39	
Aldrin	<0.05 ug/L	0.05	1GD0969	EPA 608	EPP	05/01/23 14:39	
Heptachlor Epoxide	<0.05 ug/L	0.05	1GD0969	EPA 608	EPP	05/01/23 14:39	
Endosulfan I	<0.05 ug/L	0.05	1GD0969	EPA 608	EPP	05/01/23 14:39	
4,4'-DDE	<0.05 ug/L	0.05	1GD0969	EPA 608	EPP	05/01/23 14:39	
Dieldrin	<0.05 ug/L	0.05	1GD0969	EPA 608	EPP	05/01/23 14:39	
Endrin	<0.05 ug/L	0.05	1GD0969	EPA 608	EPP	05/01/23 14:39	
4,4'-DDD	<0.05 ug/L	0.05	1GD0969	EPA 608	EPP	05/01/23 14:39	
Endosulfan II	<0.05 ug/L	0.05	1GD0969	EPA 608	EPP	05/01/23 14:39	
4,4'-DDT	<0.05 ug/L	0.05	1GD0969	EPA 608	EPP	05/01/23 14:39	
Endrin Aldehyde	<0.05 ug/L	0.05	1GD0969	EPA 608	EPP	05/01/23 14:39	
Endosulfan Sulfate	<0.05 ug/L	0.05	1GD0969	EPA 608	EPP	05/01/23 14:39	
Chlordane	<0.10 ug/L	0.10	1GD0969	EPA 608	EPP	05/01/23 14:39	
Toxaphene	<0.20 ug/L	0.20	1GD0969	EPA 608	EPP	05/01/23 14:39	
Arochlor 1016	<0.10 ug/L	0.10	1GD0969	EPA 608	EPP	05/01/23 14:39	
Arochlor 1221	<0.20 ug/L	0.20	1GD0969	EPA 608	EPP	05/01/23 14:39	
Arochlor 1232	<0.20 ug/L	0.20	1GD0969	EPA 608	EPP	05/01/23 14:39	
Arochlor 1242	<0.20 ug/L	0.20	1GD0969	EPA 608	EPP	05/01/23 14:39	
Arochlor 1248	<0.20 ug/L	0.20	1GD0969	EPA 608	EPP	05/01/23 14:39	
Arochlor 1254	<0.10 ug/L	0.10	1GD0969	EPA 608	EPP	05/01/23 14:39	
Arochlor 1260	<0.10 ug/L	0.10	1GD0969	EPA 608	EPP	05/01/23 14:39	
Surrogate: Decachlorobiphenyl	63.1 %			19-120	EPP	05/01/23 14:39	
Surrogate: Tetrachloro-m-xylene	50.5 %			30-119	EPP	05/01/23 14:39	
Alkalinity, as CaCO3	1790 mg/L	50	1GD0762	2320B	BSS	04/19/23 15:58	
BOD (5 day)	33 mg/L	4	1GD0705	SM 5210 B	IDD	04/13/23 16:50	
Cyanide, total	0.012 mg/L	0.005	1GD0777	ASTM D7511-12(2017)	AKK	04/18/23 14:38	
COD, total	575 mg/L	80	1GD0748	EPA 410.4	JLW	04/17/23 9:09	
Nitrogen, Ammonia	34.6 mg/L	1.00	1GD1354	TIMBERLINE	TJB	04/27/23 11:29	
Oil and Grease	<4 mg/L	4	1GD0836	EPA 1664A	RMC	04/18/23 15:50	
pH	9.0 pH	0.5	1GD0838	EPA 150.1	BSS	04/17/23 16:03	I-03
Solids, total dissolved	4660 mg/L	5	1GD0874	USGS I-1750-85	MEAH	04/18/23 11:48	
Total Organic Carbon	192 mg/L	50.0	1GD1232	5310B	LNH	04/24/23 15:06	
Solids, total suspended	103 mg/L	7	1GD0855	USGS I-3765-85	MEAH	04/18/23 16:00	
Chloride	1320 mg/L	50.0	1GD0882	300.0	MID	04/17/23 14:51	
Nitrogen, Nitrate	<0.1 mg/L	0.1	1GD0826	300.0	MID	04/14/23 19:27	I-06
Sulfate	1.4 mg/L	1.0	1GD0826	300.0	MID	04/14/23 19:27	
Silver, total	<0.0020 mg/L	0.0020	1GD0920	EPA 200.8	RVV	04/20/23 0:08	
Arsenic, total	0.0341 mg/L	0.0020	1GD0920	EPA 200.8	RVV	04/20/23 0:08	

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Work Order: 1GD1381

Analyte	Result	MRL	Batch	Method	Analyst	Analyzed	Qualifier
1GD1381-01	Leachate			Matrix: Water		Collected: 04/12/23 15:50	
Barium, total	0.723 mg/L	0.0020	1GD0920	EPA 200.8	RVV	04/20/23 0:08	
Calcium, total	25.2 mg/L	0.1	1GD0767	200.7	JAR	04/18/23 6:40	
Cadmium, total	<0.0002 mg/L	0.0002	1GD0920	EPA 200.8	RVV	04/20/23 0:08	
Cobalt, total	0.0076 mg/L	0.0020	1GD0920	EPA 200.8	RVV	04/20/23 0:08	
Chromium, total	0.0092 mg/L	0.0020	1GD0920	EPA 200.8	RVV	04/20/23 0:08	
Copper, total	<0.0020 mg/L	0.0020	1GD0920	EPA 200.8	RVV	04/20/23 0:08	
Iron, total	0.515 mg/L	0.100	1GD0767	200.7	JAR	04/18/23 6:40	
Mercury, total	<0.00050 mg/L	0.00050	1GD0916	245.1	JAR	04/20/23 14:01	
Potassium, total	407 mg/L	1.00	1GD0767	200.7	JAR	04/18/23 6:40	
Magnesium, total	350 mg/L	0.10	1GD0767	200.7	JAR	04/18/23 6:40	
Molybdenum, total	0.0035 mg/L	0.0030	1GD0920	EPA 200.8	RVV	04/20/23 0:08	
Sodium, total	921 mg/L	1.00	1GD0767	200.7	JAR	04/18/23 6:40	
Nickel, total	0.0735 mg/L	0.0040	1GD0920	EPA 200.8	RVV	04/20/23 0:08	
Lead, total	<0.0008 mg/L	0.0008	1GD0920	EPA 200.8	RVV	04/20/23 0:08	
Antimony, total	<0.0020 mg/L	0.0020	1GD0920	EPA 200.8	RVV	04/20/23 0:08	
Selenium, total	<0.0040 mg/L	0.0040	1GD0920	EPA 200.8	RVV	04/20/23 0:08	
Tin, total	<0.0200 mg/L	0.0200	1GD0920	EPA 200.8	RVV	04/20/23 0:08	
Titanium, total	<0.050 mg/L	0.050	1GD0767	EPA 200.7	JAR	04/18/23 6:40	
Vanadium, total	0.0149 mg/L	0.0080	1GD0920	EPA 200.8	RVV	04/20/23 0:08	
Zinc, total	<0.0200 mg/L	0.0200	1GD0920	EPA 200.8	RVV	04/20/23 0:08	

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Work Order: 1GD1381

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0727 - EPA 5030B

Blank (1GD0727-BLK1)

Prepared & Analyzed: 04/14/23

Surrogate: Dibromofluoromethane	56.3		ug/L	50.3520		112	79-129			
Surrogate: 1,2-Dichloroethane-d4	50.3		"	50.4080		99.8	66-134			
Surrogate: Toluene-d8	49.2		"	50.2360		97.9	91-113			
Surrogate: 4-Bromofluorobenzene	48.2		"	50.4200		95.6	83-112			
Chloromethane	ND	1.0	"							
Vinyl Chloride	ND	1.0	"							
Bromomethane	ND	1.0	"							
Chloroethane	ND	1.0	"							
1,1-Dichloroethylene	ND	1.0	"							
Methylene Chloride	ND	5.0	"							
trans-1,2-Dichloroethylene	ND	1.0	"							
1,1-Dichloroethane	ND	1.0	"							
cis-1,2-Dichloroethylene	ND	1.0	"							
Chloroform	ND	1.0	"							
1,1,1-Trichloroethane	ND	1.0	"							
Carbon Tetrachloride	ND	1.0	"							
Benzene	ND	1.0	"							
1,2-Dichloroethane	ND	1.0	"							
Trichloroethylene	ND	1.0	"							
1,2-Dichloropropane	ND	1.0	"							
Bromodichloromethane	ND	1.0	"							
2-Chloroethylvinyl ether	ND	10.0	"							
cis-1,3-Dichloropropene	ND	1.0	"							
Toluene	ND	1.0	"							
trans-1,3-Dichloropropene	ND	1.0	"							
1,1,2-Trichloroethane	ND	1.0	"							
Tetrachloroethylene	ND	1.0	"							
Dibromochloromethane	ND	1.0	"							
Chlorobenzene	ND	1.0	"							
Ethylbenzene	ND	1.0	"							
Bromoform	ND	1.0	"							
1,1,2,2-Tetrachloroethane	ND	1.0	"							

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Work Order: 1GD1381

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0727 - EPA 5030B

LCS (1GD0727-BS1)

Prepared & Analyzed: 04/14/23

Surrogate: Dibromofluoromethane	53.6		ug/L	50.3520		107	79-129			
Surrogate: 1,2-Dichloroethane-d4	49.9		"	50.4080		99.0	66-134			
Surrogate: Toluene-d8	49.6		"	50.2360		98.7	91-113			
Surrogate: 4-Bromofluorobenzene	48.2		"	50.4200		95.6	83-112			
Chloromethane	26.86	1.0	"	30.0000		89.5	63-145			
Vinyl Chloride	28.21	1.0	"	30.0000		94.0	68-145			
Bromomethane	31.76	1.0	"	30.0000		106	69-150			
Chloroethane	31.61	1.0	"	30.0000		105	74-134			
1,1-Dichloroethylene	54.56	1.0	"	50.0000		109	76-139			
Methylene Chloride	48.27	5.0	"	50.0000		96.5	67-141			
trans-1,2-Dichloroethylene	52.03	1.0	"	50.0000		104	71-137			
1,1-Dichloroethane	51.44	1.0	"	50.0000		103	72-130			
cis-1,2-Dichloroethylene	47.96	1.0	"	50.0000		95.9	81-134			
2-Butanone (MEK)	85.69	10.0	"	106.200		80.7	44-158			
Chloroform	49.64	1.0	"	50.0000		99.3	76-132			
1,1,1-Trichloroethane	46.36	1.0	"	49.9750		92.8	65-122			
Carbon Tetrachloride	54.10	1.0	"	50.0000		108	66-132			
Benzene	49.29	1.0	"	50.0000		98.6	77-130			
1,2-Dichloroethane	46.60	1.0	"	50.0000		93.2	75-124			
Trichloroethylene	41.70	1.0	"	50.0000		83.4	79-126			
1,2-Dichloropropane	48.08	1.0	"	50.0000		96.2	79-128			
Dibromomethane	49.82	1.0	"	50.0000		99.6	71-139			
Bromodichloromethane	46.32	1.0	"	50.0000		92.6	76-122			
2-Chloroethylvinyl ether	85.97	10.0	"	103.500		83.1	50-169			
cis-1,3-Dichloropropene	48.42	1.0	"	50.3250		96.2	74-122			
Toluene	48.39	1.0	"	50.0000		96.8	76-128			
trans-1,3-Dichloropropene	46.44	1.0	"	50.4250		92.1	73-125			
1,1,2-Trichloroethane	45.26	1.0	"	50.0000		90.5	74-126			
Tetrachloroethylene	48.44	1.0	"	50.0000		96.9	68-124			
Dibromochloromethane	51.83	1.0	"	49.5000		105	76-125			
Chlorobenzene	47.61	1.0	"	50.0000		95.2	77-120			
Ethylbenzene	46.20	1.0	"	50.0000		92.4	76-118			
Xylenes, total	136.0	2.0	"	150.000		90.6	74-121			
Bromoform	51.00	1.0	"	50.0000		102	68-128			
1,1,2,2-Tetrachloroethane	46.63	1.0	"	49.8500		93.5	62-128			
1,3-Dichlorobenzene	47.16	1.0	"	50.0000		94.3	72-123			
1,4-Dichlorobenzene	48.75	1.0	"	50.0000		97.5	75-120			
1,2-Dichlorobenzene	47.23	1.0	"	50.0000		94.5	72-121			

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Work Order: 1GD1381

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0727 - EPA 5030B

LCS Dup (1GD0727-BSD1)

Prepared & Analyzed: 04/14/23

Surrogate: Dibromofluoromethane	54.6		ug/L	50.3520		108	79-129			
Surrogate: 1,2-Dichloroethane-d4	50.0		"	50.4080		99.2	66-134			
Surrogate: Toluene-d8	49.8		"	50.2360		99.1	91-113			
Surrogate: 4-Bromofluorobenzene	48.4		"	50.4200		95.9	83-112			
Chloromethane	26.19	1.0	"	30.0000		87.3	63-145	2.53	27	
Vinyl Chloride	26.99	1.0	"	30.0000		90.0	68-145	4.42	30	
Bromomethane	32.72	1.0	"	30.0000		109	69-150	2.98	30	
Chloroethane	30.65	1.0	"	30.0000		102	74-134	3.08	29	
1,1-Dichloroethylene	53.65	1.0	"	50.0000		107	76-139	1.68	30	
Methylene Chloride	48.26	5.0	"	50.0000		96.5	67-141	0.0207	25	
trans-1,2-Dichloroethylene	51.74	1.0	"	50.0000		103	71-137	0.559	29	
1,1-Dichloroethane	51.39	1.0	"	50.0000		103	72-130	0.0972	27	
cis-1,2-Dichloroethylene	47.20	1.0	"	50.0000		94.4	81-134	1.60	23	
2-Butanone (MEK)	94.61	10.0	"	106.200		89.1	44-158	9.89	25	
Chloroform	50.17	1.0	"	50.0000		100	76-132	1.06	26	
1,1,1-Trichloroethane	46.12	1.0	"	49.9750		92.3	65-122	0.519	29	
Carbon Tetrachloride	55.25	1.0	"	50.0000		110	66-132	2.10	30	
Benzene	50.25	1.0	"	50.0000		100	77-130	1.93	27	
1,2-Dichloroethane	47.94	1.0	"	50.0000		95.9	75-124	2.83	25	
Trichloroethylene	42.15	1.0	"	50.0000		84.3	79-126	1.07	28	
1,2-Dichloropropane	49.80	1.0	"	50.0000		99.6	79-128	3.51	26	
Dibromomethane	51.66	1.0	"	50.0000		103	71-139	3.63	27	
Bromodichloromethane	48.12	1.0	"	50.0000		96.2	76-122	3.81	24	
2-Chloroethylvinyl ether	89.87	10.0	"	103.500		86.8	50-169	4.44	28	
cis-1,3-Dichloropropene	49.64	1.0	"	50.3250		98.6	74-122	2.49	27	
Toluene	49.22	1.0	"	50.0000		98.4	76-128	1.70	28	
trans-1,3-Dichloropropene	48.18	1.0	"	50.4250		95.5	73-125	3.68	27	
1,1,2-Trichloroethane	47.56	1.0	"	50.0000		95.1	74-126	4.96	26	
Tetrachloroethylene	49.08	1.0	"	50.0000		98.2	68-124	1.31	28	
Dibromochloromethane	52.19	1.0	"	49.5000		105	76-125	0.692	23	
Chlorobenzene	48.47	1.0	"	50.0000		96.9	77-120	1.79	27	
Ethylbenzene	46.96	1.0	"	50.0000		93.9	76-118	1.63	27	
Xylenes, total	138.2	2.0	"	150.000		92.1	74-121	1.65	27	
Bromoform	53.94	1.0	"	50.0000		108	68-128	5.60	25	
1,1,2,2-Tetrachloroethane	48.07	1.0	"	49.8500		96.4	62-128	3.04	28	
1,3-Dichlorobenzene	48.06	1.0	"	50.0000		96.1	72-123	1.89	29	
1,4-Dichlorobenzene	48.50	1.0	"	50.0000		97.0	75-120	0.514	26	
1,2-Dichlorobenzene	47.73	1.0	"	50.0000		95.5	72-121	1.05	30	

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Work Order: 1GD1381

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0727 - EPA 5030B

Matrix Spike (1GD0727-MS1)	Source: 1GD1181-08			Prepared & Analyzed: 04/14/23						
Surrogate: Dibromofluoromethane	534		ug/L	503.520		106	79-129			
Surrogate: 1,2-Dichloroethane-d4	498		"	504.080		98.7	66-134			
Surrogate: Toluene-d8	498		"	502.360		99.1	91-113			
Surrogate: 4-Bromofluorobenzene	494		"	504.200		98.0	83-112			
Chloromethane	262.7	10.0	"	300.000	ND	87.6	50-155			
Vinyl Chloride	269.1	10.0	"	300.000	ND	89.7	64-148			
Bromomethane	320.3	10.0	"	300.000	ND	107	50-159			
Chloroethane	320.8	10.0	"	300.000	ND	107	65-144			
1,1-Dichloroethylene	530.6	10.0	"	500.000	ND	106	78-139			
Methylene Chloride	481.3	50.0	"	500.000	ND	96.3	65-144			
trans-1,2-Dichloroethylene	509.0	10.0	"	500.000	ND	102	67-142			
1,1-Dichloroethane	509.1	10.0	"	500.000	ND	102	71-133			
cis-1,2-Dichloroethylene	499.0	10.0	"	500.000	ND	99.8	76-142			
2-Butanone (MEK)	907.5	100	"	1062.00	ND	85.5	48-169			
Chloroform	494.3	10.0	"	500.000	ND	98.9	75-133			
1,1,1-Trichloroethane	452.0	10.0	"	499.750	ND	90.4	66-120			
Carbon Tetrachloride	552.3	10.0	"	500.000	ND	110	67-132			
Benzene	488.9	10.0	"	500.000	ND	97.8	79-128			
1,2-Dichloroethane	498.1	10.0	"	500.000	ND	99.6	74-124			
Trichloroethylene	405.6	10.0	"	500.000	ND	81.1	82-122			QM-05
1,2-Dichloropropane	494.9	10.0	"	500.000	ND	99.0	80-126			
Dibromomethane	524.3	10.0	"	500.000	ND	105	62-141			
Bromodichloromethane	489.1	10.0	"	500.000	ND	97.8	77-119			
2-Chloroethylvinyl ether	950.5	100	"	1035.00	ND	91.8	10-157			
cis-1,3-Dichloropropene	499.4	10.0	"	503.250	ND	99.2	69-120			
Toluene	487.5	10.0	"	500.000	ND	97.5	80-125			
trans-1,3-Dichloropropene	489.6	10.0	"	504.250	ND	97.1	70-122			
1,1,2-Trichloroethane	488.9	10.0	"	500.000	ND	97.8	73-127			
Tetrachloroethylene	474.7	10.0	"	500.000	ND	94.9	70-122			
Dibromochloromethane	540.2	10.0	"	495.000	ND	109	75-122			
Chlorobenzene	487.7	10.0	"	500.000	ND	97.5	81-114			
Ethylbenzene	469.6	10.0	"	500.000	ND	93.9	79-113			
Xylenes, total	1396	20.0	"	1500.00	ND	93.0	79-114			
Bromoform	564.3	10.0	"	500.000	ND	113	66-126			
1,1,2,2-Tetrachloroethane	526.9	10.0	"	498.500	ND	106	56-132			
1,3-Dichlorobenzene	480.3	10.0	"	500.000	ND	96.1	69-125			
1,4-Dichlorobenzene	482.2	10.0	"	500.000	ND	96.4	73-119			
1,2-Dichlorobenzene	479.1	10.0	"	500.000	ND	95.8	71-117			

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Work Order: 1GD1381

Determination of Volatile Organic Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0727 - EPA 5030B

Matrix Spike Dup (1GD0727-MSD1)	Source: 1GD1181-08			Prepared & Analyzed: 04/14/23						
Surrogate: Dibromofluoromethane	529		ug/L	503.520		105	79-129			
Surrogate: 1,2-Dichloroethane-d4	496		"	504.080		98.3	66-134			
Surrogate: Toluene-d8	500		"	502.360		99.6	91-113			
Surrogate: 4-Bromofluorobenzene	488		"	504.200		96.8	83-112			
Chloromethane	259.5	10.0	"	300.000	ND	86.5	50-155	1.23	19	
Vinyl Chloride	265.6	10.0	"	300.000	ND	88.5	64-148	1.31	24	
Bromomethane	339.4	10.0	"	300.000	ND	113	50-159	5.79	17	
Chloroethane	316.3	10.0	"	300.000	ND	105	65-144	1.41	28	
1,1-Dichloroethylene	532.8	10.0	"	500.000	ND	107	78-139	0.414	20	
Methylene Chloride	475.8	50.0	"	500.000	ND	95.2	65-144	1.15	16	
trans-1,2-Dichloroethylene	509.8	10.0	"	500.000	ND	102	67-142	0.157	18	
1,1-Dichloroethane	507.1	10.0	"	500.000	ND	101	71-133	0.394	16	
cis-1,2-Dichloroethylene	498.6	10.0	"	500.000	ND	99.7	76-142	0.0802	17	
2-Butanone (MEK)	885.2	100	"	1062.00	ND	83.4	48-169	2.49	17	
Chloroform	490.7	10.0	"	500.000	ND	98.1	75-133	0.731	16	
1,1,1-Trichloroethane	461.4	10.0	"	499.750	ND	92.3	66-120	2.06	15	
Carbon Tetrachloride	576.2	10.0	"	500.000	ND	115	67-132	4.24	15	
Benzene	498.2	10.0	"	500.000	ND	99.6	79-128	1.88	12	
1,2-Dichloroethane	484.4	10.0	"	500.000	ND	96.9	74-124	2.79	12	
Trichloroethylene	412.8	10.0	"	500.000	ND	82.6	82-122	1.76	13	
1,2-Dichloropropane	491.3	10.0	"	500.000	ND	98.3	80-126	0.730	10	
Dibromomethane	520.1	10.0	"	500.000	ND	104	62-141	0.804	11	
Bromodichloromethane	480.8	10.0	"	500.000	ND	96.2	77-119	1.71	10	
2-Chloroethylvinyl ether	943.4	100	"	1035.00	ND	91.1	10-157	0.750	30	
cis-1,3-Dichloropropene	491.8	10.0	"	503.250	ND	97.7	69-120	1.53	10	
Toluene	495.4	10.0	"	500.000	ND	99.1	80-125	1.61	12	
trans-1,3-Dichloropropene	482.9	10.0	"	504.250	ND	95.8	70-122	1.38	10	
1,1,2-Trichloroethane	476.7	10.0	"	500.000	ND	95.3	73-127	2.53	10	
Tetrachloroethylene	489.3	10.0	"	500.000	ND	97.9	70-122	3.03	15	
Dibromochloromethane	533.3	10.0	"	495.000	ND	108	75-122	1.29	12	
Chlorobenzene	487.4	10.0	"	500.000	ND	97.5	81-114	0.0615	12	
Ethylbenzene	478.1	10.0	"	500.000	ND	95.6	79-113	1.79	13	
Xylenes, total	1412	20.0	"	1500.00	ND	94.1	79-114	1.18	12	
Bromoform	565.5	10.0	"	500.000	ND	113	66-126	0.212	16	
1,1,2,2-Tetrachloroethane	523.0	10.0	"	498.500	ND	105	56-132	0.743	29	
1,3-Dichlorobenzene	481.9	10.0	"	500.000	ND	96.4	69-125	0.333	18	
1,4-Dichlorobenzene	493.8	10.0	"	500.000	ND	98.8	73-119	2.38	21	
1,2-Dichlorobenzene	488.8	10.0	"	500.000	ND	97.8	71-117	2.00	23	

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Work Order: 1GD1381

Determination of Base/Neutral Extractable Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0848 - EPA 625 Base Neutral

Blank (1GD0848-BLK1)

Prepared: 04/17/23 Analyzed: 04/27/23

Surrogate: Nitrobenzene-d5	51.0		ug/L	62.8500		81.1	17-146			
Surrogate: 2-Fluorobiphenyl	51.5		"	61.0000		84.4	18-122			
Surrogate: Terphenyl-d14	67.4		"	65.1000		104	27-131			
n-Decane	ND	5	"							
n-Octadecane	ND	5	"							
Carbazole	ND	5	"							

LCS (1GD0848-BS1)

Prepared: 04/17/23 Analyzed: 04/27/23

Surrogate: Nitrobenzene-d5	48.5		ug/L	62.8500		77.2	17-146			
Surrogate: 2-Fluorobiphenyl	50.3		"	61.0000		82.4	18-122			
Surrogate: Terphenyl-d14	58.1		"	65.1000		89.2	27-131			
Carbazole	39.3	5	"	41.6667		94.3	50-122			
Fluoranthene	36.9	10	"	41.6667		88.6	42-143			
Bis(2-Ethylhexyl) Phthalate	39.2	10	"	41.6667		94.1	34-180			

LCS Dup (1GD0848-BSD1)

Prepared: 04/17/23 Analyzed: 04/27/23

Surrogate: Nitrobenzene-d5	56.8		ug/L	62.8500		90.3	17-146			
Surrogate: 2-Fluorobiphenyl	61.0		"	61.0000		100	18-122			
Surrogate: Terphenyl-d14	64.7		"	65.1000		99.4	27-131			
Carbazole	26.7	5	"	41.6667		64.2	50-122	38.0	28	QR-02
Fluoranthene	27.6	10	"	41.6667		66.3	42-143	28.7	30	
Bis(2-Ethylhexyl) Phthalate	37.3	10	"	41.6667		89.6	34-180	4.89	30	

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Work Order: 1GD1381

Determination of Base/Neutral/Acid Extractable Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0848 - EPA 625 Base Neutral

Blank (1GD0848-BLK1)

Prepared: 04/17/23 Analyzed: 04/27/23

Surrogate: 2-Fluorophenol	43.4		ug/L	60.6000		71.7	19-139			
Surrogate: Phenol-d6	27.7		"	61.9000		44.8	14-154			
Surrogate: Nitrobenzene-d5	51.0		"	62.8500		81.1	17-146			
Surrogate: 2-Fluorobiphenyl	51.5		"	61.0000		84.4	18-122			
Surrogate: 2,4,6-Tribromophenol	55.9		"	62.2500		89.8	21-151			
Surrogate: Terphenyl-d14	67.4		"	65.1000		104	27-131			
Bis(2-Chloroethyl) Ether	ND	10	"							
2-Chlorophenol	ND	10	"							
1,3-Dichlorobenzene	ND	10	"							
1,4-Dichlorobenzene	ND	10	"							
Benzyl Alcohol	ND	10	"							
1,2-Dichlorobenzene	ND	10	"							
Bis[2-Chloroisopropyl]ether	ND	10	"							
n-Nitroso-di-n-propylamine	ND	10	"							
Hexachloroethane	ND	10	"							
Nitrobenzene	ND	10	"							
Isophorone	ND	10	"							
2-Nitrophenol	ND	10	"							
2,4-Dimethylphenol	ND	10	"							
Bis (2-Chloroethoxy) Methane	ND	10	"							
Benzoic acid	ND	50	"							
2,4-Dichlorophenol	ND	10	"							
1,2,4-Trichlorobenzene	ND	10	"							
Naphthalene	ND	10	"							
Hexachlorobutadiene	ND	20	"							
4-Chloro-3-methylphenol	ND	10	"							
Hexachlorocyclopentadiene	ND	20	"							
2,4,6-Trichlorophenol	ND	10	"							
2,4,5-Trichlorophenol	ND	50	"							
2-Chloronaphthalene	ND	10	"							
Dimethylphthalate	ND	15	"							
Acenaphthylene	ND	10	"							
2,6-Dinitrotoluene	ND	10	"							
Acenaphthene	ND	10	"							
2,4-Dinitrophenol	ND	20	"							
Dibenzofuran	ND	10	"							
2,4-Dinitrotoluene	ND	10	"							
4-Nitrophenol	ND	10	"							

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Work Order: 1GD1381

Determination of Base/Neutral/Acid Extractable Compounds - Quality Control

Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0848 - EPA 625 Base Neutral

Blank (1GD0848-BLK1)

Prepared: 04/17/23 Analyzed: 04/27/23

Diethyl Phthalate	ND	30	ug/L							
Fluorene	ND	10	"							
4-Chlorophenyl Phenyl Ether	ND	10	"							
4,6-Dinitro-2-methylphenol	ND	20	"							
N-Nitrosodiphenylamine	ND	10	"							
4-Bromophenyl Phenyl Ether	ND	10	"							
Hexachlorobenzene	ND	10	"							
Pentachlorophenol	ND	20	"							
Phenanthrene	ND	10	"							
Anthracene	ND	10	"							
Di-n-butyl Phthalate	ND	10	"							
Fluoranthene	ND	10	"							
Pyrene	ND	10	"							
Butyl Benzyl Phthalate	ND	10	"							
Benzo(a)anthracene	ND	10	"							
Chrysene	ND	10	"							
Bis(2-Ethylhexyl) Phthalate	ND	10	"							
Di-n-octyl Phthalate	ND	10	"							
Indeno(1,2,3-cd)Pyrene	ND	10	"							
3,3'-Dichlorobenzidine	ND	20	"							
Benzo(b)Fluoranthene	ND	10	"							
Benzo(k)Fluoranthene	ND	10	"							
Benzo(a)Pyrene	ND	10	"							
Dibenzo(a,h)anthracene	ND	10	"							
Benzo(g,h,i)perylene	ND	10	"							

LCS (1GD0848-BS1)

Prepared: 04/17/23 Analyzed: 04/27/23

Surrogate: 2-Fluorophenol	29.5		ug/L	60.6000	48.6	19-139
Surrogate: Phenol-d6	20.6		"	61.9000	33.3	14-154
Surrogate: Nitrobenzene-d5	48.5		"	62.8500	77.2	17-146
Surrogate: 2-Fluorobiphenyl	50.3		"	61.0000	82.4	18-122
Surrogate: 2,4,6-Tribromophenol	50.6		"	62.2500	81.2	21-151
Surrogate: Terphenyl-d14	58.1		"	65.1000	89.2	27-131
Bis(2-Chloroethyl) Ether	25.8	10	"	41.6667	62.0	35-150
2-Chlorophenol	35.3	10	"	41.6667	84.7	51-117
1,3-Dichlorobenzene	32.9	10	"	41.6667	78.9	27-91.3
1,4-Dichlorobenzene	34.1	10	"	41.6667	81.9	28-92.6
1,2-Dichlorobenzene	34.6	10	"	41.6667	83.2	32-94.8
Bis[2-Chloroisopropyl]ether	38.9	10	"	41.6667	93.3	40-125

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Determination of Base/Neutral/Acid Extractable Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0848 - EPA 625 Base Neutral

LCS (1GD0848-BS1)		Prepared: 04/17/23 Analyzed: 04/27/23								
n-Nitroso-di-n-propylamine	34.8	10	ug/L	41.6667		83.6	47-136			
Hexachloroethane	28.8	10	"	41.6667		69.0	13-110			
Nitrobenzene	33.8	10	"	41.6667		81.1	46-133			
Isophorone	33.2	10	"	41.6667		79.8	48-130			
2-Nitrophenol	34.3	10	"	41.6667		82.3	54-116			
2,4-Dimethylphenol	33.9	10	"	41.6667		81.4	47-121			
Bis (2-Chloroethoxy) Methane	31.9	10	"	41.6667		76.6	25-110			
2,4-Dichlorophenol	34.5	10	"	41.6667		82.7	50-118			
1,2,4-Trichlorobenzene	32.3	10	"	41.6667		77.6	27-95.5			
Naphthalene	33.6	10	"	41.6667		80.6	42-107			
Hexachlorobutadiene	29.1	20	"	41.6667		69.8	10-110			
4-Chloro-3-methylphenol	33.0	10	"	41.6667		79.1	54-138			
Hexachlorocyclopentadiene	7.6	20	"	41.6667		18.3	10-110			
2,4,6-Trichlorophenol	29.1	10	"	41.6667		69.8	46-127			
2,4,5-Trichlorophenol	35.4	50	"	41.6667		85.0	62-119			
2-Chloronaphthalene	35.6	10	"	41.6667		85.5	38-118			
Dimethylphthalate	39.8	15	"	41.6667		95.4	58-125			
Acenaphthylene	36.3	10	"	41.6667		87.1	41-116			
2,6-Dinitrotoluene	43.2	10	"	41.6667		104	58-126			
Acenaphthene	35.0	10	"	41.6667		84.0	45-117			
2,4-Dinitrophenol	13.7	20	"	41.6667		32.8	21-138			
Dibenzofuran	37.3	10	"	41.6667		89.4	51-126			
2,4-Dinitrotoluene	46.2	10	"	41.6667		111	52-134			
4-Nitrophenol	24.4	10	"	41.6667		58.4	41-149			
Diethyl Phthalate	41.2	30	"	41.6667		98.8	53-132			
Fluorene	36.7	10	"	41.6667		88.1	47-126			
4-Chlorophenyl Phenyl Ether	36.6	10	"	41.6667		87.7	47-124			
4,6-Dinitro-2-methylphenol	25.2	20	"	41.6667		60.4	50-139			
N-Nitrosodiphenylamine	37.3	10	"	41.6667		89.5	29-129			
4-Bromophenyl Phenyl Ether	35.2	10	"	41.6667		84.5	48-125			
Hexachlorobenzene	33.2	10	"	41.6667		79.7	29-137			
Pentachlorophenol	12.6	20	"	41.6667		30.2	15-154			
Phenanthrene	37.1	10	"	41.6667		89.1	45-136			
Anthracene	35.6	10	"	41.6667		85.5	43-135			
Di-n-butyl Phthalate	39.7	10	"	41.6667		95.2	42-153			
Fluoranthene	36.9	10	"	41.6667		88.6	42-143			
Pyrene	37.0	10	"	41.6667		88.8	40-146			
Butyl Benzyl Phthalate	40.2	10	"	41.6667		96.4	40-151			
Benzo(a)anthracene	38.0	10	"	41.6667		91.3	48-136			

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Determination of Base/Neutral/Acid Extractable Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0848 - EPA 625 Base Neutral

LCS (1GD0848-BS1)		Prepared: 04/17/23 Analyzed: 04/27/23								
Chrysene	37.1	10	ug/L	41.6667	89.1	50-136				
Bis(2-Ethylhexyl) Phthalate	39.2	10	"	41.6667	94.1	34-180				
Di-n-octyl Phthalate	40.7	10	"	41.6667	97.6	40-165				
Indeno(1,2,3-cd)Pyrene	34.7	10	"	41.6667	83.2	39-152				
Benzo(b)Fluoranthene	38.9	10	"	41.6667	93.3	52-140				
Benzo(k)Fluoranthene	38.7	10	"	41.6667	92.9	47-147				
Benzo(a)Pyrene	38.4	10	"	41.6667	92.2	38-142				
Dibenzo(a,h)anthracene	34.5	10	"	41.6667	82.9	37-153				
Benzo(g,h,i)perylene	33.4	10	"	41.6667	80.1	39-157				

LCS Dup (1GD0848-BS1)		Prepared: 04/17/23 Analyzed: 04/27/23								
Surrogate: 2-Fluorophenol	27.4		ug/L	60.6000	45.3	19-139				
Surrogate: Phenol-d6	15.2		"	61.9000	24.6	14-154				
Surrogate: Nitrobenzene-d5	56.8		"	62.8500	90.3	17-146				
Surrogate: 2-Fluorobiphenyl	61.0		"	61.0000	100	18-122				
Surrogate: 2,4,6-Tribromophenol	32.7		"	62.2500	52.5	21-151				
Surrogate: Terphenyl-d14	64.7		"	65.1000	99.4	27-131				
Bis(2-Chloroethyl) Ether	19.2	10	"	41.6667	46.0	35-150	29.6	30		
2-Chlorophenol	27.1	10	"	41.6667	65.0	51-117	26.3	27		
1,3-Dichlorobenzene	28.7	10	"	41.6667	68.9	27-91.3	13.5	30		
1,4-Dichlorobenzene	30.5	10	"	41.6667	73.3	28-92.6	11.2	30		
1,2-Dichlorobenzene	27.2	10	"	41.6667	65.4	32-94.8	23.9	30		
Bis[2-Chloroisopropyl]ether	32.8	10	"	41.6667	78.7	40-125	16.9	26		
n-Nitroso-di-n-propylamine	24.4	10	"	41.6667	58.6	47-136	35.2	29		QR-02
Hexachloroethane	26.6	10	"	41.6667	63.8	13-110	7.88	30		
Nitrobenzene	37.3	10	"	41.6667	89.5	46-133	9.88	19		
Isophorone	35.3	10	"	41.6667	84.8	48-130	6.15	23		
2-Nitrophenol	37.0	10	"	41.6667	88.8	54-116	7.60	25		
2,4-Dimethylphenol	31.0	10	"	41.6667	74.4	47-121	8.94	29		
Bis (2-Chloroethoxy) Methane	33.3	10	"	41.6667	79.9	25-110	4.29	30		
2,4-Dichlorophenol	29.6	10	"	41.6667	71.0	50-118	15.2	21		
1,2,4-Trichlorobenzene	39.6	10	"	41.6667	94.9	27-95.5	20.1	30		
Naphthalene	37.4	10	"	41.6667	89.8	42-107	10.7	26		
Hexachlorobutadiene	37.4	20	"	41.6667	89.6	10-110	24.9	30		
4-Chloro-3-methylphenol	20.6	10	"	41.6667	49.5	54-138	46.1	12		QS-03
Hexachlorocyclopentadiene	15.4	20	"	41.6667	37.1	10-110	67.9	30		QR-02
2,4,6-Trichlorophenol	29.2	10	"	41.6667	70.1	46-127	0.446	21		
2,4,5-Trichlorophenol	28.8	50	"	41.6667	69.2	62-119	20.5	15		QR-02
2-Chloronaphthalene	44.6	10	"	41.6667	107	38-118	22.3	24		

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Determination of Base/Neutral/Acid Extractable Compounds - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0848 - EPA 625 Base Neutral

LCS Dup (1GD0848-BSD1)

Prepared: 04/17/23 Analyzed: 04/27/23

Dimethylphthalate	37.6	15	ug/L	41.6667		90.4	58-125	5.43	20	
Acenaphthylene	40.5	10	"	41.6667		97.2	41-116	10.9	30	
2,6-Dinitrotoluene	38.9	10	"	41.6667		93.3	58-126	10.5	20	
Acenaphthene	40.1	10	"	41.6667		96.2	45-117	13.6	27	
2,4-Dinitrophenol	ND	20	"	41.6667			21-138		22	QS-03
Dibenzofuran	39.4	10	"	41.6667		94.6	51-126	5.61	15	
2,4-Dinitrotoluene	34.5	10	"	41.6667		82.8	52-134	29.0	22	QR-02
4-Nitrophenol	10.0	10	"	41.6667		24.0	41-149	83.6	28	QS-03
Diethyl Phthalate	33.2	30	"	41.6667		79.8	53-132	21.3	22	
Fluorene	34.8	10	"	41.6667		83.5	47-126	5.29	27	
4-Chlorophenyl Phenyl Ether	35.6	10	"	41.6667		85.4	47-124	2.63	20	
4,6-Dinitro-2-methylphenol	20.0	20	"	41.6667		47.9	50-139	23.1	25	QS-03
N-Nitrosodiphenylamine	44.9	10	"	41.6667		108	29-129	18.5	30	
4-Bromophenyl Phenyl Ether	47.6	10	"	41.6667		114	48-125	29.9	18	QR-02
Hexachlorobenzene	49.8	10	"	41.6667		120	29-137	40.1	30	QR-02
Pentachlorophenol	5.6	20	"	41.6667		13.5	15-154	76.4	29	QS-03
Phenanthrene	40.7	10	"	41.6667		97.8	45-136	9.27	27	
Anthracene	38.5	10	"	41.6667		92.4	43-135	7.72	28	
Di-n-butyl Phthalate	32.7	10	"	41.6667		78.5	42-153	19.3	29	
Fluoranthene	27.6	10	"	41.6667		66.3	42-143	28.7	30	
Pyrene	47.1	10	"	41.6667		113	40-146	24.0	25	
Butyl Benzyl Phthalate	41.1	10	"	41.6667		98.7	40-151	2.39	29	
Benzo(a)anthracene	39.5	10	"	41.6667		94.8	48-136	3.74	30	
Chrysene	41.0	10	"	41.6667		98.4	50-136	9.86	30	
Bis(2-Ethylhexyl) Phthalate	37.3	10	"	41.6667		89.6	34-180	4.89	30	
Di-n-octyl Phthalate	36.5	10	"	41.6667		87.7	40-165	10.7	30	
Indeno(1,2,3-cd)Pyrene	39.9	10	"	41.6667		95.8	39-152	14.1	30	
Benzo(b)Fluoranthene	43.0	10	"	41.6667		103	52-140	10.0	30	
Benzo(k)Fluoranthene	41.4	10	"	41.6667		99.5	47-147	6.86	30	
Benzo(a)Pyrene	42.2	10	"	41.6667		101	38-142	9.43	30	
Dibenzo(a,h)anthracene	39.7	10	"	41.6667		95.3	37-153	13.9	30	
Benzo(g,h,i)perylene	38.6	10	"	41.6667		92.8	39-157	14.7	30	

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Work Order: 1GD1381

Determination of Organochlorine Insecticides & PCBs - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0969 - 3520C NP/OC Cont Liq

Blank (1GD0969-BLK1)

Prepared: 04/19/23 Analyzed: 05/01/23

Surrogate: Tetrachloro-m-xylene	0.354		ug/L	0.600000		59.0	30-119			
Surrogate: Decachlorobiphenyl	0.269		"	0.600000		44.9	19-120			
Gamma-BHC [Lindane]	ND	0.05	"							
Beta-BHC	ND	0.05	"							
Heptachlor	ND	0.05	"							
Delta-BHC	ND	0.05	"							
Aldrin	ND	0.05	"							
Heptachlor Epoxide	ND	0.05	"							
Endosulfan I	ND	0.05	"							
4,4'-DDE	ND	0.05	"							
Dieldrin	ND	0.05	"							
Endrin	ND	0.05	"							
4,4'-DDD	ND	0.05	"							
Endosulfan II	ND	0.05	"							
4,4'-DDT	ND	0.05	"							
Endrin Aldehyde	ND	0.05	"							
Endosulfan Sulfate	ND	0.05	"							
Chlordane	ND	0.10	"							
Toxaphene	ND	0.20	"							
Arochlor 1016	ND	0.10	"							
Arochlor 1221	ND	0.20	"							
Arochlor 1232	ND	0.20	"							
Arochlor 1242	ND	0.20	"							
Arochlor 1248	ND	0.20	"							
Arochlor 1254	ND	0.10	"							
Arochlor 1260	ND	0.10	"							

LCS (1GD0969-BS1)

Prepared: 04/19/23 Analyzed: 05/01/23

Surrogate: Decachlorobiphenyl	0.263		ug/L	0.600000		43.9	19-120			
Surrogate: Tetrachloro-m-xylene	0.221		"	0.600000		36.8	30-119			
Gamma-BHC [Lindane]	0.191	0.05	"	0.250000		76.5	37-127			
Beta-BHC	0.173	0.05	"	0.250000		69.4	36-131			
Heptachlor	0.094	0.05	"	0.250000		37.5	36-128			
Delta-BHC	0.223	0.05	"	0.250000		89.3	29-147			
Aldrin	0.082	0.05	"	0.250000		32.9	41-120			QS-03
Heptachlor Epoxide	0.112	0.05	"	0.250000		44.7	50-132			QS-03
Endosulfan I	0.112	0.05	"	0.250000		44.9	50-133			QS-03
4,4'-DDE	0.115	0.05	"	0.250000		45.9	46-140			QS-03
Dieldrin	0.123	0.05	"	0.250000		49.2	41-138			

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Determination of Organochlorine Insecticides & PCBs - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0969 - 3520C NP/OC Cont Liq

LCS (1GD0969-BS1)		Prepared: 04/19/23 Analyzed: 05/01/23								
Endrin	0.126	0.05	ug/L	0.250000		50.6	32-152			
4,4'-DDD	0.138	0.05	"	0.250000		55.1	44-150			
Endosulfan II	0.140	0.05	"	0.250000		55.8	45-141			
4,4'-DDT	0.153	0.05	"	0.250000		61.1	46-145			
Endrin Aldehyde	0.230	0.05	"	0.250000		92.0	33-145			
Endosulfan Sulfate	0.149	0.05	"	0.250000		59.6	52-133			

LCS Dup (1GD0969-BS1)		Prepared: 04/19/23 Analyzed: 05/01/23								
Surrogate: Tetrachloro-m-xylene	0.405		ug/L	0.600000		67.5	30-119			
Surrogate: Decachlorobiphenyl	0.200		"	0.600000		33.3	19-120			
Gamma-BHC [Lindane]	0.198	0.05	"	0.250000		79.2	37-127	3.48	30	
Beta-BHC	0.176	0.05	"	0.250000		70.5	36-131	1.65	30	
Heptachlor	0.168	0.05	"	0.250000		67.0	36-128	56.4	30	QR-02
Delta-BHC	0.229	0.05	"	0.250000		91.4	29-147	2.40	30	
Aldrin	0.147	0.05	"	0.250000		58.9	41-120	56.7	30	QR-04
Heptachlor Epoxide	0.246	0.05	"	0.250000		98.3	50-132	74.9	30	QR-04
Endosulfan I	0.241	0.05	"	0.250000		96.6	50-133	73.2	30	QR-04
4,4'-DDE	0.246	0.05	"	0.250000		98.2	46-140	72.6	30	QR-04
Dieldrin	0.241	0.05	"	0.250000		96.6	41-138	65.1	30	QR-02
Endrin	0.239	0.05	"	0.250000		95.4	32-152	61.4	30	QR-02
4,4'-DDD	0.259	0.05	"	0.250000		104	44-150	61.1	30	QR-02
Endosulfan II	0.254	0.05	"	0.250000		102	45-141	58.1	30	QR-02
4,4'-DDT	0.257	0.05	"	0.250000		103	46-145	50.8	30	QR-02
Endrin Aldehyde	0.268	0.05	"	0.250000		107	33-145	15.2	30	
Endosulfan Sulfate	0.260	0.05	"	0.250000		104	52-133	54.2	30	QR-02

Reference (1GD0969-SRM1)		Prepared: 04/19/23 Analyzed: 05/01/23								
Surrogate: Tetrachloro-m-xylene	0.539		ug/L	0.600000		89.8	30-119			
Surrogate: Decachlorobiphenyl	0.544		"	0.600000		90.7	19-120			
Gamma-BHC [Lindane]	0.252	0.05	"	0.250000		101	80-120			
Beta-BHC	0.242	0.05	"	0.250000		96.6	80-120			
Heptachlor	0.273	0.05	"	0.250000		109	80-120			
Delta-BHC	0.246	0.05	"	0.250000		98.5	80-120			
Aldrin	0.248	0.05	"	0.250000		99.1	80-120			
Heptachlor Epoxide	0.266	0.05	"	0.250000		106	80-120			
Endosulfan I	0.275	0.05	"	0.250000		110	80-120			
4,4'-DDE	0.280	0.05	"	0.250000		112	80-120			
Dieldrin	0.263	0.05	"	0.250000		105	80-120			
Endrin	0.284	0.05	"	0.250000		114	80-120			

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Determination of Organochlorine Insecticides & PCBs - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0969 - 3520C NP/OC Cont Liq

Reference (1GD0969-SRM1)	Prepared: 04/19/23 Analyzed: 05/01/23									
4,4'-DDD	0.269	0.05	ug/L	0.250000		108	80-120			
Endosulfan II	0.272	0.05	"	0.250000		109	80-120			
4,4'-DDT	0.291	0.05	"	0.250000		116	80-120			
Endrin Aldehyde	0.303	0.05	"	0.250000		121	80-120			QR-06
Endosulfan Sulfate	0.270	0.05	"	0.250000		108	80-120			

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Work Order: 1GD1381

Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0705 - General Prep Micro

Blank (1GD0705-BLK1)				Prepared & Analyzed: 04/13/23						
BOD (5 day)	ND	4	mg/L							B-06
Duplicate (1GD0705-DUP1)				Source: 1GD1392-01 Prepared & Analyzed: 04/13/23						
BOD (5 day)	192	4	mg/L		193			0.519	29	
Reference (1GD0705-SRM1)				Prepared & Analyzed: 04/13/23						
BOD (5 day)	246	4	mg/L	198.000		124	84.6-115.4			QR-06

Batch 1GD0748 - Wet Chem Preparation

Blank (1GD0748-BLK1)				Prepared: 04/14/23 Analyzed: 04/17/23						
COD, total	ND	20	mg/L							
LCS (1GD0748-BS1)				Prepared: 04/14/23 Analyzed: 04/17/23						
COD, total	109	27	mg/L	100.000		109	90-110			
Matrix Spike (1GD0748-MS1)				Source: 1GD1286-01 Prepared: 04/14/23 Analyzed: 04/17/23						
COD, total	127	27	mg/L	100.000	22.4	104	90-110			PH-3
Matrix Spike Dup (1GD0748-MSD1)				Source: 1GD1286-01 Prepared: 04/14/23 Analyzed: 04/17/23						
COD, total	125	27	mg/L	100.000	22.4	102	90-110	1.76	10	PH-3

Batch 1GD0762 - Wet Chem Preparation

Blank (1GD0762-BLK1)				Prepared: 04/14/23 Analyzed: 04/19/23						
Alkalinity, as CaCO3	ND	10	mg/L							

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Determination of Conventional Chemistry Parameters - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0762 - Wet Chem Preparation

LCS (1GD0762-BS1)				Prepared: 04/14/23 Analyzed: 04/19/23						
Alkalinity, as CaCO ₃	50.2	10	mg/L	50.0000		100	88-114			
Matrix Spike (1GD0762-MS1)				Source: 1GD1487-04 Prepared: 04/14/23 Analyzed: 04/19/23						
Alkalinity, as CaCO ₃	206	10	mg/L	50.0000	168	76.4	74-122			
Matrix Spike Dup (1GD0762-MSD1)				Source: 1GD1487-04 Prepared: 04/14/23 Analyzed: 04/19/23						
Alkalinity, as CaCO ₃	206	10	mg/L	50.0000	168	75.4	74-122	0.243	10	

Batch 1GD0777 - Wet Chem Preparation

Blank (1GD0777-BLK1)				Prepared: 04/17/23 Analyzed: 04/18/23						
Cyanide, total	ND	0.005	mg/L							
LCS (1GD0777-BS1)				Prepared: 04/17/23 Analyzed: 04/18/23						
Cyanide, total	0.113	0.005	mg/L	0.111111		102	67-110			
MRL Check (1GD0777-MRL1)				Prepared: 04/17/23 Analyzed: 04/18/23						
Cyanide, total	ND	0.005	mg/L	0.00500000			0-200			
Matrix Spike (1GD0777-MS1)				Source: 1GD0665-01 Prepared: 04/17/23 Analyzed: 04/18/23						
Cyanide, total	0.116	0.005	mg/L	0.111111	ND	105	53-120			
Matrix Spike Dup (1GD0777-MSD1)				Source: 1GD0665-01 Prepared: 04/17/23 Analyzed: 04/18/23						
Cyanide, total	0.108	0.005	mg/L	0.111111	ND	97.3	53-120	7.42	30	

Batch 1GD0836 - Wet Chem Preparation

Blank (1GD0836-BLK1)				Prepared: 04/17/23 Analyzed: 04/18/23						
Oil and Grease	ND	4	mg/L							

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Determination of Conventional Chemistry Parameters - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0836 - Wet Chem Preparation

LCS (1GD0836-BS1)		Prepared: 04/17/23 Analyzed: 04/18/23								
Oil and Grease	35.0	4	mg/L	40.0000		87.5	78-114			
Matrix Spike (1GD0836-MS1)		Source: 1GD1340-02 Prepared: 04/17/23 Analyzed: 04/18/23								
Oil and Grease	54.2	7	mg/L	74.2115	7.3	63.2	78-114			QM-07
Matrix Spike Dup (1GD0836-MSD1)		Source: 1GD1340-02 Prepared: 04/17/23 Analyzed: 04/18/23								
Oil and Grease	55.0	8	mg/L	75.3296	7.3	63.3	78-114	1.50	18	QM-07

Batch 1GD0838 - Wet Chem Preparation

Duplicate (1GD0838-DUP1)		Source: 1GD1263-01 Prepared & Analyzed: 04/17/23								
pH	7.6	0.5	pH		7.6			0.0395	10	
Duplicate (1GD0838-DUP2)		Source: 1GD1381-01 Prepared & Analyzed: 04/17/23								
pH	9.0	0.5	pH		9.0			0.0555	10	
Reference (1GD0838-SRM1)		Prepared & Analyzed: 04/17/23								
pH	7.0	0.5	pH	7.00000		100	90-110			
Reference (1GD0838-SRM2)		Prepared & Analyzed: 04/17/23								
pH	7.1	0.5	pH	7.00000		101	90-110			

Batch 1GD0855 - Wet Chem Preparation

Blank (1GD0855-BLK1)		Prepared: 04/17/23 Analyzed: 04/18/23								
Solids, total suspended	ND	1	mg/L							

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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0855 - Wet Chem Preparation

LCS (1GD0855-BS1)		Prepared: 04/17/23 Analyzed: 04/18/23								
Solids, total suspended	13.5	1	mg/L	15.0000		90.0	74-114			
Duplicate (1GD0855-DUP1)		Source: 1GD1178-01 Prepared: 04/17/23 Analyzed: 04/18/23								
Solids, total suspended	118	10	mg/L		116			1.71	30	

Batch 1GD0874 - Wet Chem Preparation

Blank (1GD0874-BLK1)		Prepared & Analyzed: 04/18/23								
Solids, total dissolved	ND	5	mg/L							
LCS (1GD0874-BS1)		Prepared & Analyzed: 04/18/23								
Solids, total dissolved	94	5	mg/L	100.000		93.6	71-114			
Duplicate (1GD0874-DUP1)		Source: 1GD1191-01 Prepared & Analyzed: 04/18/23								
Solids, total dissolved	2020	5	mg/L		1990			1.59	30	

Batch 1GD1232 - TOC/DOC

Blank (1GD1232-BLK1)		Prepared & Analyzed: 04/24/23								
Total Organic Carbon	ND	0.50	mg/L							
LCS (1GD1232-BS1)		Prepared & Analyzed: 04/24/23								
Total Organic Carbon	5.08	0.50	mg/L	5.00000		102	86-120			
LCS Dup (1GD1232-BSD1)		Prepared & Analyzed: 04/24/23								
Total Organic Carbon	5.07	0.50	mg/L	5.00000		101	86-120	0.256	10	

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Determination of Conventional Chemistry Parameters - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD1232 - TOC/DOC

Matrix Spike (1GD1232-MS1)		Source: 1GD1048-01			Prepared & Analyzed: 04/24/23					
Total Organic Carbon	22.77	2.00	mg/L	20.0000	2.98	99.0	81-128			
Matrix Spike Dup (1GD1232-MSD1)		Source: 1GD1048-01			Prepared & Analyzed: 04/24/23					
Total Organic Carbon	23.56	2.00	mg/L	20.0000	2.98	103	81-128	3.40	10	

Batch 1GD1354 - General Prep HPLC/IC

Blank (1GD1354-BLK1)		Prepared: 04/26/23 Analyzed: 04/27/23								
Nitrogen, Ammonia	ND	0.10	mg/L							
LCS (1GD1354-BS1)		Prepared: 04/26/23 Analyzed: 04/27/23								
Nitrogen, Ammonia	5.47	0.10	mg/L	5.00000		109	90-114			
Matrix Spike (1GD1354-MS1)		Source: 1GD1318-01			Prepared: 04/26/23 Analyzed: 04/27/23					
Nitrogen, Ammonia	5.28	0.10	mg/L	5.00000	ND	106	84-115			
Matrix Spike Dup (1GD1354-MSD1)		Source: 1GD1318-01			Prepared: 04/26/23 Analyzed: 04/27/23					
Nitrogen, Ammonia	5.31	0.10	mg/L	5.00000	ND	106	84-115	0.555	20	

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Determination of Inorganic Anions - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0826 - General Prep HPLC/IC

Blank (1GD0826-BLK1)			Prepared & Analyzed: 04/14/23							
Nitrogen, Nitrate	ND	0.1	mg/L							
Sulfate	ND	1.0	"							

LCS (1GD0826-BS1)			Prepared & Analyzed: 04/14/23							
Nitrogen, Nitrate	2.47	0.1	mg/L	2.64428		93.5	90-110			
Sulfate	33.62	1.0	"	34.1908		98.3	90-110			

LCS Dup (1GD0826-BSD1)			Prepared & Analyzed: 04/14/23							
Nitrogen, Nitrate	2.47	0.1	mg/L	2.64428		93.3	90-110	0.243	10	
Sulfate	33.61	1.0	"	34.1908		98.3	90-110	0.0179	10	

MRL Check (1GD0826-MRL1)			Prepared & Analyzed: 04/14/23							
Nitrogen, Nitrate	0.22	0.1	mg/L	0.107288		202	50-150			QS-05
Sulfate	1.19	1.0	"	1.10693		108	50-150			

Matrix Spike (1GD0826-MS1)			Source: 1GD1290-02		Prepared & Analyzed: 04/14/23					
Nitrogen, Nitrate	2.35	0.1	mg/L	2.64428	ND	89.0	80-120			
Sulfate	32.02	1.0	"	34.1908	ND	93.7	80-120			

Matrix Spike Dup (1GD0826-MSD1)			Source: 1GD1290-02		Prepared & Analyzed: 04/14/23					
Nitrogen, Nitrate	2.26	0.1	mg/L	2.64428	ND	85.6	80-120	3.90	10	
Sulfate	32.07	1.0	"	34.1908	ND	93.8	80-120	0.150	10	

Batch 1GD0882 - General Prep HPLC/IC

Blank (1GD0882-BLK1)			Prepared & Analyzed: 04/17/23							
Chloride	ND	1.0	mg/L							

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Work Order: 1GD1381

Determination of Inorganic Anions - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1GD0882 - General Prep HPLC/IC										
Blank (1GD0882-BLK2)				Prepared & Analyzed: 04/17/23						
Chloride	ND	1.0	mg/L							
LCS (1GD0882-BS1)				Prepared & Analyzed: 04/17/23						
Chloride	14.80	1.0	mg/L	15.2642		96.9	90-110			
LCS Dup (1GD0882-BSD1)				Prepared & Analyzed: 04/17/23						
Chloride	14.76	1.0	mg/L	15.2642		96.7	90-110	0.210	10	
MRL Check (1GD0882-MRL1)				Prepared & Analyzed: 04/17/23						
Chloride	0.64	1.0	mg/L	0.616331		103	50-150			
Matrix Spike (1GD0882-MS1)				Source: 1GD1545-03		Prepared & Analyzed: 04/17/23				
Chloride	393.4	10.0	mg/L	152.642	242.0	99.2	80-120			
Matrix Spike Dup (1GD0882-MSD1)				Source: 1GD1545-03		Prepared & Analyzed: 04/17/23				
Chloride	394.4	10.0	mg/L	152.642	242.0	99.8	80-120	0.246	10	

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Work Order: 1GD1381

Determination of Total Metals - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0767 - EPA 200.2 Total ICP-OES (200.7)

Blank (1GD0767-BLK1)

Prepared: 04/14/23 Analyzed: 04/19/23

Calcium, total	0.103	0.1	mg/L							QB-01
Iron, total	ND	0.100	"							QB-11
Magnesium, total	0.10	0.10	"							QB-01
Potassium, total	ND	1.00	"							
Sodium, total	ND	1.00	"							
Titanium, total	ND	0.050	"							QB-11

LCS (1GD0767-BS1)

Prepared: 04/14/23 Analyzed: 04/18/23

Calcium, total	2.32	0.1	mg/L	2.20000		106	85-115			
Iron, total	2.40	0.100	"	2.20000	0.100	109	85-115			
Magnesium, total	2.33	0.10	"	2.20000	3.38	106	85-115			
Potassium, total	4.22	1.00	"	4.00000	123	105	85-115			
Sodium, total	2.21	1.00	"	2.20000	418	101	85-115			
Titanium, total	0.207	0.050	"	0.200000	ND	103	85-115			

Matrix Spike (1GD0767-MS1)

Source: 1GD1253-01

Prepared: 04/14/23 Analyzed: 04/18/23

Calcium, total	76.0	0.1	mg/L	2.20000	76.0	NR	70-130			QM-4X
Iron, total	2.40	0.100	"	2.20000	0.100	105	70-130			
Magnesium, total	5.42	0.10	"	2.20000	3.38	93.1	70-130			
Potassium, total	121	1.00	"	4.00000	123	NR	70-130			QM-4X
Sodium, total	389	1.00	"	2.20000	418	NR	70-130			QM-4X
Titanium, total	0.203	0.050	"	0.200000	ND	102	70-130			

Matrix Spike Dup (1GD0767-MSD1)

Source: 1GD1253-01

Prepared: 04/14/23 Analyzed: 04/18/23

Calcium, total	76.3	0.1	mg/L	2.20000	76.0	11.3	70-130	0.406	20	QM-4X
Iron, total	2.53	0.100	"	2.20000	0.100	111	70-130	5.25	20	
Magnesium, total	5.57	0.10	"	2.20000	3.38	99.6	70-130	2.60	20	
Potassium, total	123	1.00	"	4.00000	123	1.75	70-130	1.16	20	QM-4X
Sodium, total	394	1.00	"	2.20000	418	NR	70-130	1.11	20	QM-4X
Titanium, total	0.217	0.050	"	0.200000	ND	108	70-130	6.58	20	

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Determination of Total Metals - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0767 - EPA 200.2 Total ICP-OES (200.7)

Post Spike (1GD0767-PS1)	Source: 1GD1253-01	Prepared: 04/14/23	Analyzed: 04/18/23							
Calcium, total	89.2	mg/L	8.80000	76.0	150	85-115				PS-4X
Iron, total	9.71	"	8.80000	0.100	109	85-115				
Magnesium, total	12.8	"	8.80000	3.38	107	85-115				
Potassium, total	146	"	16.0000	123	146	85-115				PS-4X
Sodium, total	431	"	8.80000	418	153	85-115				PS-4X
Titanium, total	0.820	"	0.800000	-0.000619	103	85-115				

Batch 1GD0916 - EPA 7470A Hg Water

Blank (1GD0916-BLK1)	Prepared: 04/19/23	Analyzed: 04/20/23								
Mercury, total	ND	0.00050	mg/L							
LCS (1GD0916-BS1)	Prepared: 04/19/23	Analyzed: 04/20/23								
Mercury, total	0.00263	0.00050	mg/L	0.00250000	105	85-115				
Matrix Spike (1GD0916-MS1)	Source: 1GD1096-01	Prepared: 04/19/23	Analyzed: 04/20/23							
Mercury, total	0.00242	0.00050	mg/L	0.00250000	ND	96.8	70-130			
Matrix Spike Dup (1GD0916-MSD1)	Source: 1GD1096-01	Prepared: 04/19/23	Analyzed: 04/20/23							
Mercury, total	0.00252	0.00050	mg/L	0.00250000	ND	101	70-130	4.13	10	

Batch 1GD0920 - EPA 200.2 Total ICP-MS

Blank (1GD0920-BLK1)	Prepared & Analyzed: 04/19/23										
Antimony, total	ND	0.0020	mg/L								
Arsenic, total	ND	0.0020	"								
Barium, total	ND	0.0020	"								
Cadmium, total	ND	0.0002	"								
Chromium, total	ND	0.0020	"								
Cobalt, total	ND	0.0020	"								
Copper, total	ND	0.0020	"								
Lead, total	ND	0.0008	"								
Molybdenum, total	ND	0.0030	"								QB-11
Nickel, total	ND	0.0040	"								
Selenium, total	ND	0.0040	"								
Silver, total	ND	0.0020	"								
Vanadium, total	ND	0.0080	"								
Zinc, total	ND	0.0200	"								
Tin, total	ND	0.0200	"								

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Determination of Total Metals - Quality Control
Keystone Laboratories - Newton

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0920 - EPA 200.2 Total ICP-MS

LCS (1GD0920-BS1)		Prepared: 04/19/23 Analyzed: 04/20/23								
Antimony, total	0.0949	0.0020	mg/L	0.100000		94.9	85-115			
Arsenic, total	0.0917	0.0020	"	0.100000		91.7	85-115			
Barium, total	0.101	0.0020	"	0.100000		101	85-115			
Cadmium, total	0.0928	0.0002	"	0.100000		92.8	85-115			
Chromium, total	0.0940	0.0020	"	0.100000		94.0	85-115			
Cobalt, total	0.0960	0.0020	"	0.100000		96.0	85-115			
Copper, total	0.0947	0.0020	"	0.100000		94.7	85-115			
Lead, total	0.0942	0.0008	"	0.100000		94.2	85-115			
Molybdenum, total	0.102	0.0030	"	0.100000		102	85-115			
Nickel, total	0.0936	0.0040	"	0.100000		93.6	85-115			
Selenium, total	0.0864	0.0040	"	0.100000		86.4	85-115			
Silver, total	0.0982	0.0020	"	0.100000		98.2	85-115			
Vanadium, total	0.0937	0.0080	"	0.100000		93.7	85-115			
Zinc, total	0.0887	0.0200	"	0.100000		88.7	85-115			
Tin, total	0.0970	0.0200	"	0.100000		97.0	85-115			

Matrix Spike (1GD0920-MS1)		Source: 1GD1381-01			Prepared: 04/19/23 Analyzed: 04/20/23					
Antimony, total	0.100	0.0020	mg/L	0.100000	0.0014	98.9	70-130			
Arsenic, total	0.130	0.0020	"	0.100000	0.0341	96.1	70-130			
Barium, total	0.854	0.0020	"	0.100000	0.723	131	70-130			QM-4X
Cadmium, total	0.0879	0.0002	"	0.100000	0.0001	87.8	70-130			
Chromium, total	0.100	0.0020	"	0.100000	0.0092	90.9	70-130			
Cobalt, total	0.109	0.0020	"	0.100000	0.0076	101	70-130			
Copper, total	0.0883	0.0020	"	0.100000	0.0012	87.1	70-130			
Lead, total	0.0885	0.0008	"	0.100000	ND	88.5	70-130			
Molybdenum, total	0.119	0.0030	"	0.100000	0.0035	115	70-130			
Nickel, total	0.172	0.0040	"	0.100000	0.0735	98.3	70-130			
Selenium, total	0.0885	0.0040	"	0.100000	0.0016	86.9	70-130			
Silver, total	0.0878	0.0020	"	0.100000	0.0017	86.1	70-130			
Vanadium, total	0.112	0.0080	"	0.100000	0.0149	97.6	70-130			
Zinc, total	0.0896	0.0200	"	0.100000	ND	89.6	70-130			
Tin, total	0.101	0.0200	"	0.100000	ND	101	70-130			

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Determination of Total Metals - Quality Control
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Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
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Batch 1GD0920 - EPA 200.2 Total ICP-MS

Matrix Spike Dup (1GD0920-MSD1)	Source: 1GD1381-01			Prepared: 04/19/23		Analyzed: 04/20/23				
Antimony, total	0.0983	0.0020	mg/L	0.100000	0.0014	96.9	70-130	1.94	20	
Arsenic, total	0.129	0.0020	"	0.100000	0.0341	95.3	70-130	0.609	20	
Barium, total	0.857	0.0020	"	0.100000	0.723	135	70-130	0.414	20	QM-4X
Cadmium, total	0.0864	0.0002	"	0.100000	0.0001	86.3	70-130	1.66	20	
Chromium, total	0.0991	0.0020	"	0.100000	0.0092	89.9	70-130	0.991	20	
Cobalt, total	0.110	0.0020	"	0.100000	0.0076	103	70-130	1.49	20	
Copper, total	0.0877	0.0020	"	0.100000	0.0012	86.5	70-130	0.635	20	
Lead, total	0.0867	0.0008	"	0.100000	ND	86.7	70-130	1.98	20	
Molybdenum, total	0.120	0.0030	"	0.100000	0.0035	117	70-130	1.37	20	
Nickel, total	0.172	0.0040	"	0.100000	0.0735	98.7	70-130	0.219	20	
Selenium, total	0.0863	0.0040	"	0.100000	0.0016	84.6	70-130	2.55	20	
Silver, total	0.0880	0.0020	"	0.100000	0.0017	86.3	70-130	0.262	20	
Vanadium, total	0.112	0.0080	"	0.100000	0.0149	97.6	70-130	0.0320	20	
Zinc, total	0.0876	0.0200	"	0.100000	ND	87.6	70-130	2.16	20	
Tin, total	0.0990	0.0200	"	0.100000	ND	99.0	70-130	2.22	20	

Post Spike (1GD0920-PS1)	Source: 1GD1381-01			Prepared: 04/19/23		Analyzed: 04/20/23				
Antimony, total	0.0815		mg/L	0.0800000	0.0014	100	70-130			
Arsenic, total	0.111		"	0.0800000	0.0334	97.6	70-130			
Barium, total	0.811		"	0.0800000	0.708	129	70-130			
Cadmium, total	0.0702		"	0.0800000	0.0001	87.7	70-130			
Chromium, total	0.0831		"	0.0800000	0.0090	92.6	70-130			
Cobalt, total	0.0895		"	0.0800000	0.0075	103	70-130			
Copper, total	0.0719		"	0.0800000	0.0012	88.4	70-130			
Lead, total	0.0702		"	0.0800000	0.0004	87.2	70-130			
Molybdenum, total	0.0982		"	0.0800000	0.0034	119	70-130			
Nickel, total	0.155		"	0.0800000	0.0721	103	70-130			
Selenium, total	0.0691		"	0.0800000	0.0016	84.4	70-130			
Silver, total	0.0725		"	0.0800000	0.0017	88.5	70-130			
Vanadium, total	0.0957		"	0.0800000	0.0146	101	70-130			
Zinc, total	0.0716		"	0.0800000	0.0071	80.6	70-130			
Tin, total	0.0850		"	0.0800000	0.0008	105	70-130			

ND = Non Detect; REC= Recovery; RPD= Relative Percent Difference

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Certified Analyses Included In This Report

Method/Matrix	Analyte	Certifications
200.7 in Water	Calcium, total	SIA1X,KS-NT
	Iron, total	SIA1X,KS-NT
	Magnesium, total	SIA1X,KS-NT
	Potassium, total	SIA1X,KS-NT
	Sodium, total	SIA1X,KS-NT
2320B in Water	Alkalinity, as CaCO3	KS-NT,SIA1X
245.1 in Water	Mercury, total	SIA1X,KS-NT
300.0 in Water	Chloride	KS-NT,SIA1X
	Nitrogen, Nitrate	KS-NT,SIA1X
	Sulfate	KS-NT,SIA1X
5310B in Drink Wtr	Total Organic Carbon	SIA1X
5310B in Water	Total Organic Carbon	KS-NT,SIA1X
ASTM D7511-12(2017) in Water	Cyanide, total	KS-NT,SIA1X
EPA 1664A in Water	Oil and Grease	KS-NT,SIA1X
EPA 200.7 in Water	Titanium, total	SIA1X,KS-NT
EPA 200.8 in Water	Antimony, total	SIA1X,KS-NT
	Arsenic, total	SIA1X,KS-NT
	Barium, total	SIA1X,KS-NT
	Cadmium, total	SIA1X,KS-NT
	Chromium, total	SIA1X,KS-NT
	Cobalt, total	SIA1X,KS-NT
	Copper, total	SIA1X,KS-NT
	Lead, total	SIA1X,KS-NT
	Molybdenum, total	SIA1X,KS-NT
	Nickel, total	SIA1X,KS-NT
	Selenium, total	SIA1X,KS-NT
	Silver, total	SIA1X,KS-NT
	Vanadium, total	SIA1X,KS-NT
	Zinc, total	SIA1X,KS-NT
	Tin, total	KS-NT,SIA1X
EPA 410.4 in Water	COD, total	KS-NT,SIA1X
EPA 608 in Water	Gamma-BHC [Lindane]	KS-NT,SIA1X
	Beta-BHC	KS-NT,SIA1X
	Heptachlor	KS-NT,SIA1X
	Delta-BHC	KS-NT,SIA1X

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Aldrin	KS-NT,SIA1X
Heptachlor Epoxide	KS-NT,SIA1X
Endosulfan I	KS-NT,SIA1X
4,4'-DDE	KS-NT,SIA1X
Dieldrin	KS-NT,SIA1X
Endrin	KS-NT,SIA1X
4,4'-DDD	KS-NT,SIA1X
Endosulfan II	KS-NT,SIA1X
4,4'-DDT	KS-NT,SIA1X
Endrin Aldehyde	KS-NT,SIA1X
Endosulfan Sulfate	KS-NT,SIA1X
Chlordane	KS-NT,SIA1X
Toxaphene	KS-NT,SIA1X
Arochlor 1016	KS-NT,SIA1X
Arochlor 1221	KS-NT,SIA1X
Arochlor 1232	KS-NT,SIA1X
Arochlor 1242	KS-NT,SIA1X
Arochlor 1248	KS-NT,SIA1X
Arochlor 1254	KS-NT,SIA1X
Arochlor 1260	KS-NT,SIA1X

EPA 624 in Water

Chloromethane	KS-NT,SIA1X
Vinyl Chloride	KS-NT,SIA1X
Bromomethane	KS-NT,SIA1X
Chloroethane	KS-NT,SIA1X
1,1-Dichloroethylene	KS-NT,SIA1X
Methylene Chloride	KS-NT,SIA1X
trans-1,2-Dichloroethylene	KS-NT
1,1-Dichloroethane	KS-NT,SIA1X
cis-1,2-Dichloroethylene	SIA1X
2-Butanone (MEK)	SIA1X
Chloroform	KS-NT,SIA1X
1,1,1-Trichloroethane	KS-NT,SIA1X
Carbon Tetrachloride	KS-NT,SIA1X
Benzene	KS-NT,SIA1X
1,2-Dichloroethane	KS-NT,SIA1X
Trichloroethylene	KS-NT
1,2-Dichloropropane	KS-NT,SIA1X
Dibromomethane	SIA1X
Bromodichloromethane	KS-NT,SIA1X
2-Chloroethylvinyl ether	KS-NT,SIA1X
cis-1,3-Dichloropropene	KS-NT,SIA1X
Toluene	KS-NT
trans-1,3-Dichloropropene	KS-NT
1,1,2-Trichloroethane	KS-NT,SIA1X
Tetrachloroethylene	KS-NT,SIA1X
Dibromochloromethane	KS-NT,SIA1X
Chlorobenzene	KS-NT,SIA1X
Ethylbenzene	KS-NT,SIA1X
Xylenes, total	SIA1X
Bromoform	KS-NT,SIA1X

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EPA 625 in Water

1,1,2,2-Tetrachloroethane	KS-NT,SIA1X
1,3-Dichlorobenzene	KS-NT,SIA1X
1,4-Dichlorobenzene	KS-NT,SIA1X
1,2-Dichlorobenzene	KS-NT,SIA1X
Bis(2-Chloroethyl) Ether	KS-NT,SIA1X
2-Chlorophenol	KS-NT,SIA1X
Bis[2-Chloroisopropyl]ether	SIA1X
n-Nitroso-di-n-propylamine	KS-NT,SIA1X
Hexachloroethane	KS-NT,SIA1X
Nitrobenzene	KS-NT,SIA1X
Isophorone	KS-NT,SIA1X
2-Nitrophenol	KS-NT,SIA1X
2,4-Dimethylphenol	KS-NT,SIA1X
Bis (2-Chloroethoxy) Methane	KS-NT,SIA1X
2,4-Dichlorophenol	KS-NT,SIA1X
1,2,4-Trichlorobenzene	KS-NT,SIA1X
Naphthalene	KS-NT,SIA1X
Hexachlorobutadiene	KS-NT,SIA1X
4-Chloro-3-methylphenol	KS-NT,SIA1X
Hexachlorocyclopentadiene	KS-NT,SIA1X
2,4,6-Trichlorophenol	KS-NT,SIA1X
2,4,5-Trichlorophenol	SIA1X
2-Chloronaphthalene	KS-NT,SIA1X
Dimethylphthalate	KS-NT,SIA1X
Acenaphthylene	KS-NT,SIA1X
2,6-Dinitrotoluene	KS-NT,SIA1X
Acenaphthene	KS-NT,SIA1X
2,4-Dinitrophenol	KS-NT,SIA1X
2,4-Dinitrotoluene	KS-NT,SIA1X
4-Nitrophenol	KS-NT,SIA1X
Diethyl Phthalate	KS-NT,SIA1X
Fluorene	KS-NT,SIA1X
4-Chlorophenyl Phenyl Ether	KS-NT,SIA1X
4,6-Dinitro-2-methylphenol	KS-NT,SIA1X
N-Nitrosodiphenylamine	KS-NT,SIA1X
4-Bromophenyl Phenyl Ether	KS-NT,SIA1X
Hexachlorobenzene	KS-NT,SIA1X
Pentachlorophenol	KS-NT,SIA1X
Phenanthrene	KS-NT,SIA1X
Anthracene	KS-NT,SIA1X
Di-n-butyl Phthalate	KS-NT,SIA1X
Fluoranthene	KS-NT,SIA1X
Fluoranthene	KS-NT,SIA1X
Pyrene	KS-NT,SIA1X
Butyl Benzyl Phthalate	KS-NT,SIA1X
Benzo(a)anthracene	KS-NT,SIA1X
Chrysene	KS-NT,SIA1X
Bis(2-Ethylhexyl) Phthalate	KS-NT,SIA1X
Bis(2-Ethylhexyl) Phthalate	KS-NT,SIA1X
Di-n-octyl Phthalate	KS-NT,SIA1X

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	Indeno(1,2,3-cd)Pyrene	KS-NT,SIA1X
	3,3'-Dichlorobenzidine	SIA1X
	Benzo(b)Fluoranthene	KS-NT,SIA1X
	Benzo(k)Fluoranthene	KS-NT,SIA1X
	Benzo(a)Pyrene	KS-NT,SIA1X
	Dibenzo(a,h)anthracene	KS-NT,SIA1X
	Benzo(g,h,i)perylene	KS-NT,SIA1X
SM 4500 H+ B in Water		
	pH	KS-NT,SIA1X
SM 5210 B in Water		
	BOD (5 day)	SIA1X,KS-NT
TIMBERLINE in Water		
	Nitrogen, Ammonia	SIA1X,KS-NT
USGS I-1750-85 in Water		
	Solids, total dissolved	KS-NT,SIA1X
USGS I-3765-85 in Water		
	Solids, total suspended	SIA1X,KS-NT

Code	Description	Number	Expires
KS-KC	Kansas Department of Health and Environment-KC	E-10110	04/30/2024
KS-NT	Kansas Department of Health and Environment (NELAP)	E-10287	10/31/2023
MO-KC	Missouri Department of Natural Resources (KC)	140	04/30/2023
MO-NT	Missouri Department of Natural Resources (Newton)	10170	04/30/2026
SIA1X	Iowa Dept. of Natural Resources	95	02/01/2024

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety. Samples were preserved in accordance with 40 CFR for pH adjustment unless otherwise noted. MRL= Method Reporting Limit.

HLW Engineering
PO Box 314
Story City, IA 50248

May 05, 2023
Page 35 of 37

Work Order: 1GD1381

Notes and Definitions

- B-06 Unseeded Blank equals .6mg/L
- I-03 Analyte required to be analyzed within 15 minutes of sampling. Analysis performed upon receipt of sample at laboratory.
- I-06 Analysis requested by client past EPA recommended hold time.
- PH-3 Insufficient preservative to adjust the sample pH to less than 2, value measured at 6 pH units.
- PH-3a Insufficient preservative to adjust the sample pH to less than 2, value measured at 8 pH units.
- PS-4X The spike recovery was outside of QC acceptance limits for the Post Spike due to analyte concentration at 4 times or greater the spike concentration.
- QB-01 The method blank contains analyte at a concentration above the MRL; however, concentration is less than 10% of the sample result, which is negligible according to method criteria.
- QB-11 The analyte was found in the blank at a concentration greater than 2.2 times the MDL. However, the concentration of the analyte in the blank was less than the reporting limit so the data was accepted.
- QM-05 The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD due to matrix interference. The LCS and/or LCSD were within acceptance limits showing that the laboratory is in control and the data is acceptable.
- QM-07 The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
- QM-4X The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration.
- QR-02 The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
- QR-04 The Duplicate RPD for this analyte exceeded acceptance limits.
- QR-06 The reference standard was outside of established control limits.
- QS-03 The blank spike recovery was below established acceptance limits.
- QS-05 The spike recovery for this QC sample exceeded established acceptance limits.

End of Report



Keystone Laboratories

Sue Thompson
Client Services Manager



600 East 17th Street South
 Newton, IA 50208
 641-792-8451



1 G D 1 3 8 1

HLW Engineering
 PM: Sue Thompson

SITE INFORMATION

Sampler: JGH
 Project: SCILa - Leachate

REPORT TO

Todd Whipple
 HLW Engineering
 PO Box 314
 Story City, IA 50248

INVOICE TO

Marcia Beeier
 South Central Iowa Landfill
 2490 State Hwy 92
 Winterset, IA 50273

SPECIAL INSTRUCTIONS

None

Turn Around Time
 Standard RUSH, need by ___/___/___

LAB USE ONLY

Work Order 1601381
 Temperature 0.2
 Turn-Cooler: -

EE
 AMH

Custody Seal
 Containers Intact
 COC/Labels Agree
 Preservation Confirmed
 Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
01-001	Leachate	Water	GRAB	4/13/23	15:50	16	608-107 624-105 625-901 alk-caco3-2320 ba-i-200.8 ca-i-200.7 ci-300.0 cod-i-410.4 cr-i-200.8 fe-i-200.7 k-i-200.7 mo-i-200.8 nh3-amberline no3-300.0 pb-i-200.8 sb-i-200.8 sn-i-200.8 624@dibromochloromethane 625-116 ag-i-200.8 as-i-200.8 bod-5210 cd-i-200.8 cu-i-7511 co-i-200.8 cu-i-200.8 hg-i-245.1 mg-i-200.7 na-i-200.7 ni-i-200.8 og-i-1664 pb-150.1 se-i-200.8 so4-300.0	01

J. COFFEY 4/13/23
 Relinquished By Date/Time

Received By Date/Time

Relinquished By maker 4/13/23 9:56
 Date/Time

Received for Lab By Date/Time

Original - Lab Copy Yellow - Sampler Copy

Remarks:



600 East 17th Street South
 Newton, IA 50208
 641-792-8451



1 G D 1 3 8 1

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 PM: Sue Thompson

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SPECIAL INSTRUCTIONS

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Turn Around Time

Standard RUSH, need by ___/___/___

LAB USE ONLY

Work Order 1GD1381
 Temperature 0.2
 Turn-Cooler: -

- Custody Seal
- Containers Intact
- COC/Labels Agree
- Preservation Confirmed
- Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
							tds-i-1750-85 loc-5310b v-t-200.8 ii-i-200.7 iss-i-3765-85 zn-t-200.8	

Relinquished By _____ Date/Time _____

Received By _____ Date/Time _____

Relinquished By Kylee Laffoon Date/Time 4/13/23 9:56
 Received for Lab By _____ Date/Time _____
 Original - Lab Copy Yellow - Sampler Copy

Remarks: