SCS ENGINEERS

Transmittal

West Des Moines, IA

PROJECT:	Ottumwa,FY26 Env Comp,IA 27225312.26	DATE:	2/26/2026
SUBJECT:	Ottumwa-Wapello County Landfill,West MSWLF Unit-90-SDP-01-75P-2025 Annual Water Quality Report, Leachate Control System Performance Evaluation Report,& Landfill Gas Annual Report	TRANSMITTAL ID:	00001
PURPOSE:	For your approval	VIA:	Info Exchange

FROM

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TO

NAME	COMPANY	EMAIL	PHONE
Mike Smith 502 East 9th Street Des Moines IA 50319-0034 United States	Iowa, State of	mike.smith@dnr.iowa.gov	515-725-8200

REMARKS:

Good afternoon Mike-

SCS Engineers, on behalf of the Ottumwa-Wapello County Solid Waste Commission, is submitting the 2025 Annual Water Quality Report, Leachate Control System Performance Evaluation Report, and Landfill Gas Annual Report for the West MSWLF unit at the Ottumwa-Wapello County Landfill. If you have any questions or comments regarding these reports, please contact me at the number below. Thank you.

Nathan Ohrt
Senior Project Professional
SCS Engineers
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Transmittal

DATE: 2/26/2026
TRANSMITTAL ID: 00001

DESCRIPTION OF CONTENTS

QTY	DATED	TITLE	NOTES
1	2/26/2026	2025-02-26_Ottumwa-Wapello County Landfill,West MSWLF Unit-90-SDP-01-75P-2025 Annual Water Quality Report, Leachate Control System Performance Evaluation Report,& Landfill Gas Annual Report.pdf	

COPIES:

Nathan Ohrt	(SCS Engineers)
Lori Creech	(Ottumwa-Wapello County)
Tim Buelow	(SCS Engineers)
Becky Jolly	

February 26, 2026
File No. 27225312.26

Mr. Mike Smith, P.E.
Iowa Department of Natural Resources
Land Quality Bureau
6200 Park Avenue
Des Moines, Iowa 50321

Subject: 2025 Annual Water Quality Report, Leachate Control System Performance Evaluation Report, and Landfill Gas Annual Report
Ottumwa-Wapello County Landfill
West MSWLF Unit
Permit No. 90-SDP-01-75P

Dear Mike:

SCS Engineers, on behalf of the Ottumwa–Wapello County Solid Waste Commission, has completed the required groundwater monitoring and statistical evaluation for the West municipal solid waste landfill (MSWLF) unit at the Ottumwa-Wapello County Landfill (Landfill) for the year 2025. Services were performed in general accordance with Iowa Administrative Code (IAC) 567-113.10 and the current requirements for implementation of the Hydrologic Monitoring System Plan for the Landfill. Please find enclosed a copy of the 2025 Annual Water Quality Report (AWQR).

An evaluation of the leachate control system for the West MSWLF unit is included in accordance with IAC 567-113.7(5)"b"(14). The 2025 Leachate Control System Performance Evaluation Report is included as an appendix to the AWQR.

The gas monitoring results for the West MSWLF unit are included in accordance with IAC 567-113.9(2)"d". The 2025 Landfill Gas Annual Report is included as an appendix to the AWQR.

If you have any questions regarding these reports, please contact Nathan Ohrt at (319) 331-9613.

Sincerely,

Nathan Ohrt
Senior Project Professional
SCS Engineers

Timothy C. Buelow, P.E.
VP – Senior Project Advisor
SCS Engineers

NPO/TCB

Copies: Ms. Lori Creech, Ottumwa-Wapello County Landfill

2025 Annual Water Quality Report, Leachate Control System Performance Evaluation Report, & Landfill Gas Annual Report

Ottumwa-Wapello County Landfill
West MSWLF Unit
Ottumwa, Iowa

Solid Waste Permit No. 90-SDP-01-75P

SCS ENGINEERS

27225312.26 | February 2026

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Certification

Prepared by: _____ Date: 2/26/2026

Typed: Nathan Ohrt

Reviewed by: _____ Date: 2/26/2026

Typed: Timothy C. Buelow, P.E.

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

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

1.0 EXECUTIVE SUMMARY

1.1 PERIOD OF REPORT COVERAGE

The period of report coverage is January through December 2025 and includes the sampling events summarized in Table 2.

1.2 REPORT PRIORITY

The following summarizes report priorities associated with groundwater compliance at the West municipal solid waste landfill unit (West MSWLF unit):

- Department review urgency: None.
- Department review impact on rules schedule: None.
- Actions or activities on hold pending Department review or comment: None.
- Actions and/or permit amendments needed: It is requested that semi-annual sampling for sulfide in monitoring well MW-39R be discontinued as the parameter has not been detected in the most recent ten samples.

1.3 SITE STATUS AND APPLICABLE RULES

- Landfill Status: Active.
- Types of waste accepted: Municipal solid waste, construction and demolition waste, special waste.
- Applicable IAC rules: 2009 IAC 567-113.10.

1.4 COMMENTS

The Hydrologic Monitoring System Plan (HMSP) monitoring network for the West MSWLF unit includes monitoring points divided into multiple statistical monitoring programs, each with specific evaluation methods. The monitoring points and their current monitoring program are included in Table 1. A brief summary of the statistical methods and findings is included below, and a more detailed discussion of the results is included in Section 7.0 of this report. The statistical method and the statistical software output are included in Appendix D, Statistical Method and Output. Sampling during this reporting period was performed as outlined in the current permit and is summarized in Table 2.

1.4.1 Detection Monitoring

Detection monitoring points are evaluated for statistically significant increases (SSIs) above background using prediction limits for inorganic constituents detected in background and the double quantification rule for organic compounds and inorganic constituents not detected in background. Interwell statistical methods are used for monitoring wells, where downgradient monitoring wells are compared to the background dataset, which includes data from background monitoring wells MW-53 and MW-54. Intrawell statistical methods are used for groundwater underdrains GU-6 and GU-7, where the most recent sampling data are compared with historical data from the same monitoring point. No SSIs were identified for detection monitoring well 91-MW-14 or groundwater underdrain discharge point GU-6 during this reporting period. Groundwater underdrain discharge point GU-7 had

insufficient water to sample during the April 2025 sampling event, and groundwater underdrain discharge points GU-6 and GU-7 were dry during the August 2025 sampling event, so prediction limits were not calculated.

1.4.2 Assessment Monitoring

Assessment monitoring wells are evaluated using confidence intervals, or confidence bands if a statistically significant trend is present, to identify SSLs above the GWPSs. No SSLs above the GWPS were measured in the assessment monitoring wells MW-62 and 93-MW-32.

1.4.3 Attenuation Zone Point of Compliance (AZPOC)/Corrective Action

AZPOC monitoring well MW-81 is evaluated using confidence intervals, or confidence bands if a statistically significant trend is present, to identify SSLs above the GWPSs. No SSLs above the GWPS were measured in the AZPOC monitoring well MW-81. As monitoring well MW-81 has satisfied the exit requirements of 567 IAC 113.10(9)*e*(2), the monitoring well is evaluated as an assessment monitoring point. The DNR has concluded that 567 IAC 113.10(9)*e*(1) has not been satisfied due to VOCs measured above the GWPS in the impact delineation monitoring well MW-80 (Doc #110328), so corrective action is not considered complete.

1.4.4 Acid Mine Drainage Monitoring

Acid mine drainage (AMD) monitoring wells are considered to be impacted by previous coal strip mining activities. The AMD wells serve the dual purpose of monitoring the effects of AMD near the West MSWLF unit and groundwater impacts from the West MSWLF unit. Inorganic data are evaluated using both interwell and intrawell prediction limits to assess SSIs. If an SSI is indicated using both interwell and intrawell methods, the AMD data for the monitoring well will be reviewed. No monitoring well had SSIs indicated using both interwell and intrawell evaluations during this reporting period. Organic data for the AMD wells are evaluated using confidence intervals or confidence bands if a statistically significant trend is present. No SSLs above the GWPS were identified for the organic parameters in the AMD monitoring wells. Additional parameters are collected from the AMD wells to evaluate the change in AMD conditions near the West MSWLF unit. An evaluation of the status of AMD conditions is included in Section 7.3 of this report.

1.4.5 Source Characterization

Source characterization monitoring wells are evaluated using statistical trending to assess changes in Appendix I parameter concentrations. Additional parameters are collected from the source wells to assess the natural attenuation of the groundwater impact in their vicinity. An evaluation of natural attenuation is included in Section 7.4 of this report.

1.4.6 Corrective Action

Corrective action monitoring wells were sampled during this reporting period for parameters previously identified as SSLs to monitor the area of impact. The concentrations measured during this reporting period are included in Appendix C and summarized in Section 7.1.5.

1.4.7 Additional Comments

New locks will be installed on monitoring wells MW-61R, MW-73, MW-74, MW-80, and MW-81, and other monitoring well maintenance items noted in the field sheets in **Appendix A** will be addressed by March 31, 2026.

Monitoring well MW-61R will be redeveloped prior to the 1st 2026 semi-annual sampling event to attempt to reduce total suspended solids concentrations.

Monitoring well MW-79 will be redeveloped prior to the 1st 2026 semi-annual sampling event to attempt to reduce accumulated sediment.

2.0 ACRONYMS/ABBREVIATIONS

ACM = Assessment of Corrective Measures
AZPOC= Attenuation Zone Point of Compliance
CAMP = Corrective Action Groundwater Monitoring Program
CL = Control Limit - Mean plus Two Standard Deviations
DNR = Iowa Department of Natural Resources
DO = Dissolved Oxygen
DQR = Double Quantification Rule
GWPS = Groundwater Protection Standard
HMSP = Hydrologic Monitoring System Plan
LEL = Lower Explosive Limit
LCL = Lower Confidence Limit
LN = Lognormal
MCL = EPA Maximum Contaminant Level
MSW = Municipal Solid Waste
N = Normal
NC = No Change
NM = Not Measured
NP = Non-Parametric
ORP = Oxidation-Reduction Potential
P = Parametric
PL = Prediction Limit
RL = Reporting Limit
SWS = DNR Statewide Standard for a protected groundwater source
SSI = Statistically Significant Increase above background
SSL = Statistically Significant Level above groundwater protection standard
SSS = Site-Specific Standard (Site-Specific GWPS)
TSS = Total Suspended Solids
UCL = Upper Confidence Limit
VOC = Volatile Organic Compound

3.0 SITE BACKGROUND

3.1 SITE LOCATION

The Landfill property is depicted in **Figure 1**, Approved Monitoring Network, and is located along 165th Avenue, approximately 1.5 miles north of State Highway 23. The Landfill property consists of approximately 250 acres and is located within the SE ¼; the E 30 acres of the S ½, S ½, NE ¼; and a portion of the W 10 acres of the S ½, S ½, NE ¼; all in Section 33, T73N, R14W, Wapello County, Iowa, as well as approximately 30 acres in the W ½ of the NE Fractional Quarter of Section 4, T72N, R14W, Wapello County, Iowa.

3.2 GEOLOGY AND HYDROGEOLOGY OF THE SITE

Previous hydrologic investigations of the Landfill were conducted by Barker Lemar Engineering Consultants (November 1999 and June/July 2003), by Foth & Van Dyke (June 1997), and by Green Environmental Services (GES), Inc. (March 1992 and April 1993). Information from these reports was compiled to create the summary below.

The Landfill is located in the Southern Iowa Drift Plain in an area of moderately well-drained rolling terrain. The surficial material generally consists of loess and glacial drift of Pleistocene age and colluvial and alluvial deposits of Holocene age. Landfilled areas are on either side of the valley of an unnamed and generally intermittent creek, which flows from northeast to southwest across the Landfill property and separates the West MSWLF unit from the East MSWLF unit. Holocene alluvial and colluvial deposits are found along this creek as it extends through the Landfill property.

Coal–bearing Cherokee Group bedrock of Pennsylvanian age is also exposed at the Landfill. The west and northeast sides of the Landfill were used for strip mining coal between 1956 and 1976 and consequently have been extensively disturbed by that activity (GES, 1992). Much of the Landfill was developed by excavating coal mine spoils or the glacial till down to bedrock. In many places, the base of the West MSWLF unit was determined by depths of the coal-mine excavation or the West MSWLF unit was established on coal-mine spoils, which were also used as daily cover.

The two areas of highest natural elevation at the Landfill are on the northwest and east central perimeter areas with elevations ranging from 800 to 810 feet above sea level (ASL). The lowest natural elevation at the Landfill is approximately 670 feet ASL along the creek bed on the southern perimeter of the property. The majority of the Landfill property slopes toward the intermittent creek that divides the property. Drainage from the Landfill is generally to the intermittent creek and is conducted via sheet runoff and numerous natural drainage ways.

The Bedrock Map of Iowa (Iowa Geological Survey, 1969) indicates that bedrock in the vicinity of the Landfill is comprised of Pennsylvanian-age shale deposits of the lower Cherokee Group or the primarily carbonate deposits of the Mississippian-age Meramec Series. Previous studies conducted at the Landfill indicated that the bedrock beneath the unconsolidated deposits is comprised of thick Pennsylvanian-age shales of the Cherokee Group with minor facies changes to limestone, sandstone, and coal within the shale matrix.

Surface mining of coal was performed in the Ottumwa area beginning in the mid-1800s. The coal was mined from Pennsylvanian-age rocks of the lower Cherokee Group. The sedimentary strata were deposited nearly horizontally with lateral facies changes. As such, contemporaneous deposits are generally present at approximately the same elevation beneath the Landfill. According to the GES report (1992) research indicates that the mined coal deposit on the Landfill property was on the

order of four feet thick and occurred at an elevation of approximately 710 feet above mean sea level (ASL).

The shallower geologic materials at the Landfill would not qualify as aquifers for water supply wells because of low transmissivities (GES, 1992). However, the shallow materials are 100- to 1000-fold more conductive to groundwater flow than the deep shale. These shallow materials include mine spoils, alluvium (silt, sand, and gravel), shallow till with sand lenses, and weathered shale. The higher in-situ hydraulic conductivities show that these materials constitute the uppermost water bearing unit for monitoring purposes.

GES (1992) did not consider small, discontinuous beds of sandstone, limestone, and coal to function as aquifers, due to lack of continuity, even though these may be more permeable. The Mississippian limestone was also not thought to function as an aquifer due to low hydraulic conductivity.

The deeper part of the Pennsylvanian shale is considered to be an aquitard. This is shown by the low in-situ hydraulic conductivities, vertical flow gradients, and transmissivities. The steep vertical flow paths also show that the shale is an aquitard. Over 50 feet of shale protects the underlying Mississippian bedrock (GES, 1992).

According to the GES report (1992), the water table is the uppermost water bearing unit, which consists of mine spoils, alluvium (silt, sand, and gravel), shallow till with sand lenses, and weathered shale. The depth to the water table across the Landfill property as measured in previous assessments varied from an average of 1 to 11 feet below ground surface (bgs) in the valleys to 18 to 24 feet bgs on the hilltops. The deepest water table depths of 33 and 36 feet bgs measured during previous assessments were observed in the southwest corner of the Landfill property and are associated with sands in a buried channel.

The stratigraphy in the eastern portion of the Landfill property where coal mining does not appear to have occurred can generally be described as an overlying mantle of brown lean to sandy lean clay ranging in thickness from 0 to up to 30 feet, however, generally less than 10 feet in thickness, underlain by shale bedrock. The shallower shales are typically weathered and range in color from red to brown to gray. With depth, the bedrock becomes predominantly shale of varying shades of gray. Within the shale mass are intermittent layers of sandstone, limestone, and coal with limestone being the more predominant intermittent layer encountered. Coal was generally encountered associated with limestone layers, however, not in all cases. The interbedded limestone, sandstone, and coal layers did not appear sufficiently consistent throughout the borings to indicate a continuous layer beneath the Landfill property.

4.0 FIGURES DISCUSSION

The following figures are included in the Figures section of this report.

4.1 FIGURE 1 - APPROVED MONITORING NETWORK

The Landfill property, hydrologic monitoring system plan (HMSP) monitoring network, source characterization monitoring wells, and corrective action monitoring wells are depicted in **Figure 1**. **Figure 1** indicates the respective monitoring programs of the HMSP monitoring points as of the beginning of this reporting period.

4.2 FIGURE 2 - GROUNDWATER CONTOURS

A groundwater contour map based on groundwater levels measured during the April-May 2025 sampling events is included in **Figure 2**. Groundwater flow is generally to the southeast beneath both the active and closed portions of the West MSWLF unit in the direction of the intermittent creek. The flow direction is consistent with previous groundwater contour maps. It does not appear that significant change to the hydrologic setting or flow paths has occurred. Groundwater levels for the HMSP monitoring wells measured during this reporting period are included in **Table 4**.

4.3 FIGURE 3 - GROUNDWATER AND LEACHATE CONTOURS

A groundwater contour map based on groundwater levels measured during the April-May 2025 sampling events and leachate levels measured in May 2025 is included in **Figure 3**. The predominant flow path is to the south/southeast; however, the contour gradient becomes somewhat varied when leachate elevations are considered in the contours, more generally to the south beneath the southern $^{2}/_{3}^{rd}$ of the closed area and generally to the east beneath the eastern $^{1}/_{3}^{rd}$ of the closed area of the West MSWLF unit.

5.0 STANDARDS HISTORY GRAPHS

Standards history graphs for Appendix I metals are included in **Appendix G**. The prediction limits were generally below the associated statewide standards with the exception of cobalt and thallium.

A site-specific GWPS of 0.01691 mg/L for cobalt was established in the 2017 Annual Water Quality Report (Doc #91647) and approved in correspondence dated May 1, 2018 (Doc #92224). During this reporting period, the statistical software used a natural log transformation when calculating prediction limits for cobalt, resulting in a prediction limit of 0.0456 mg/L. As this value is not considered representative of background concentrations, the 2024 prediction limit of 0.0158 mg/L was used in the standards history graph for cobalt.

The prediction limit for thallium increased during the 2022 reporting period after the first detection in the background dataset; the concentration in the March 2022 sampling event was 0.00078 mg/L above the GWPS. Additional information regarding the prediction limits and GWPSs can be found in **Table 5**.

6.0 QA/QC SUMMARY

The quality assurance/quality control (QA/QC) program for the West MSWLF unit follows similar protocols as included in the HMSP. Data validation procedures were performed on analytical results for laboratory quality control samples, and a quality assurance assessment of the data was conducted as the data were generated. The QA review procedure provided documentation of the

accuracy and precision of the analytical data and confirmed that the analyses were sufficiently sensitive to detect constituents at levels below regulatory standards when technically feasible with the laboratory method utilized. SCS then conducted QA/QC data validation of the produced data, which included a review of sample handling, analytical sensitivity, blanks, accuracy, and precision. A summary of the laboratory QA/QC and data validation can be found in **Appendix B-1**, Laboratory Analytical Data Sheets, and **Appendix B-2,** Data Validation Documentation, respectively.

The samples for monitoring wells 93-MW-31R and MW-73 were analyzed outside the hold time for nitrate during the April 2025 sampling event. The concentrations were comparable to the June 2024 sampling event. Nitrate in monitoring well 93-MW-31 was 2.34 mg/L in 2025 and 2.21 mg/L in 2024 and nitrate in MW-73 was non-detect in both 2024 and 2025; the data was considered representative.

The sample from monitoring well MW-39R was analyzed outside the hold time for sulfide during the August 2025 sampling event. However, as the result was non-detect, and sulfide has not been detected in MW-39R since 2018, the data was considered representative.

Going forward, short hold time samples will either be shipped to the laboratory at the end of the day for multi-day sampling trips or sampled at the end of the day to reduce the likelihood of exceeding hold times.

The QA review indicated the remainder of the data collected during this reporting period was acceptable.

7.0 DATA EVALUATION AND SUMMARY

7.1 STATISTICAL EVALUATION

7.1.1 Detection Monitoring

Detection monitoring well 91-MW-14 is sampled annually and was sampled in April 2025 and statistically evaluated using interwell prediction limits compared to data from background monitoring wells MW-53 and MW-54. No SSIs were indicated.

Groundwater underdrain discharge monitoring point GU-6 was sampled during the April 2025 sampling event and evaluated using intrawell prediction limits. No SSIs were indicated. GU-6 was dry during the August 2025 sampling event. Groundwater underdrain discharge monitoring point GU-7 did not produce a sample (insufficient water in April and dry in August) during the 2025 sampling events.

Prediction limit summary tables and graphs for the 1st 2025 statistical evaluation are included in **Appendix D**, Statistical Method and Output. Current analytical results are included in **Attachment C**.

7.1.2 Assessment Monitoring

Assessment monitoring wells 93-MW-32 and MW-62 are sampled annually and were sampled during the April 2025 sampling event. Monitoring wells 93-MW-32 and MW-62 were statistically evaluated using confidence intervals or confidence bands, as appropriate, and Mann-Kendall trend testing. No SSLs above the GWPS were identified. Summary tables and graphs for confidence intervals for the 1st 2025 statistical evaluation are included in **Appendix D**, Statistical Method and Output. Current analytical results are included in **Attachment C**.

7.1.3 Attenuation Zone Point of Compliance (AZPOC)/Corrective Action

AZPOC monitoring well MW-81 was sampled during the April and August 2025 sampling events. Monitoring well MW-81 was statistically evaluated using confidence intervals or confidence bands, as appropriate, and Mann-Kendall trend testing. No SSLs above the GWPS were identified. Summary tables and graphs for confidence intervals and Mann-Kendall trend testing for the 2025 statistical evaluations are included in **Appendix D,** Statistical Method and Output. Current analytical results are included in **Attachment C**.

7.1.4 AMD Monitoring

An approved alternative source demonstration established that acid mine drainage (AMD), created by historical coal mining at the site, was the cause of elevated metal concentrations for monitoring wells on the east side of the West MSWLF unit. To evaluate both the effect of the AMD and to monitor for groundwater impact from the West MSWLF unit, samples from monitoring wells MW-39R, MW-40, 04-MW-56, MW-58, MW-59, MW-63R, MW-64, and MW-65 were analyzed for Appendix I, TSS, and AMD parameters (alkalinity, aluminum, iron, manganese, pH, and sulfate) during the April 2025 sampling event and Appendix I and TSS during the August 2025 sampling event.

Appendix I metals were analyzed by interwell and intrawell prediction limits for the AMD monitoring wells. If an SSI is indicated using both interwell and intrawell methods, the AMD data for the

monitoring well will be reviewed. Numerous interwell SSIs were indicated, and one intrawell SSI was indicated; however, no SSIs were indicated for both interwell and intrawell prediction limits.

For the AMD monitoring wells, organic parameters and sulfide were analyzed by confidence intervals or confidence bands, as appropriate. No SSLs above the GWPS were identified. Summary tables and graphs for confidence intervals for the 2025 statistical evaluations are included in **Appendix D**, Statistical Method and Output. Current analytical results are included in **Appendix C**. An evaluation of AMD data is included in Section 7.3 below.

Source Characterization Monitoring

Monitoring wells 93-MW-31R, MW-61R, MW-73, and MW-79 were designated as source characterization monitoring wells and replaced as points of compliance in the HMSP monitoring network by AZPOC monitoring well MW-81. The source characterization monitoring wells were analyzed for Appendix I, TSS, and natural attenuation parameters (total organic carbon, total iron, total manganese, nitrate, and sulfate) during the April 2025 sampling event, and for Appendix I and TSS during the August 2025 sampling event. Trending of the Appendix I parameters was evaluated by Mann-Kendall evaluation. The evaluation indicated that tetrachloroethene and trichloroethene in monitoring well MW-73 were decreasing at statistically significant rates at 99% confidence (α = 0.01). Nickel in monitoring well MW-61R and cobalt in monitoring well MW-79 were increasing at statistically significant rates at 99% confidence (α = 0.01).

Monitoring well MW-61R had historical SSLs for cobalt, cis-1,2-dichlorethene, methylene chloride, tetrachloroethene, trichloroethene, and vinyl chloride. During this reporting period, only cobalt was detected at a quantified concentration and was below the GWPS.

As shown in **Table 11**, there were 46 increasing trends indicated by a positive calculated Mann-Kendall statistic and 22 stable or decreasing trends indicated by a Mann-Kendall statistic of zero or less. A summary table and graphs of the Mann-Kendall trending evaluation are included in **Appendix H**. A summary of current analytical results for the source wells is included in **Appendix C**. An evaluation of natural attenuation data is included in Section 7.4 below.

7.1.5 Corrective Action Monitoring

Eight corrective action monitoring wells, located near the southwest side of the West MSWLF unit, are sampled for selected parameters to monitor groundwater impact in the area. Corrective action monitoring wells MW-66, MW-67, MW-71, and MW-74 during the April 2025 sampling event and monitoring wells MW-67, MW-71, and MW-74 during the August 2025 sampling event were dry.

Arsenic is regularly detected in monitoring wells MW-71 and MW-74, but these monitoring wells did not produce a sample during this reporting period. Arsenic has not been detected in monitoring wells MW-66, MW-67, and MW-68 since regular sampling began in 2020.

Cobalt detections are widespread, but no concentrations measured in 2022-2025 exceeded the site-specific GWPS of 0.01691 mg/L.

Measured concentrations of VOCs above the GWPS have been generally infrequent, with the exception of MW-80, which has consistent detections of vinyl chloride and cis-1,2-dichloroethene. Monitoring well MW-80 had a vinyl chloride concentration above the GWPS during both 2025 sampling events. Current analytical results are included in **Appendix C**.

7.2 DATA EVALUATION

Groundwater monitoring for the West MSWLF unit consists of samples from monitoring wells encompassing the downgradient perimeters of the unit and two groundwater underdrain discharge points. Background monitoring well MW-53 is located east of the West MSWLF unit.

The Monitoring Well Maintenance and Performance Revaluation Schedule is shown in **Table 3**. Water levels and well depths measured during this reporting period, and whether the screened intervals of the monitoring wells were submerged or exposed to the atmosphere, are included in **Table 4**, Monitoring Well Performance and Maintenance Summary. An evaluation of groundwater/waste separation is also included in **Table 4**.

GWPS exceedances for metals included arsenic in monitoring well MW-65, nickel in monitoring well MW-40, and cobalt in monitoring wells MW-39R, MW-40, 04-MW-56, MW-58, MW-59, and MW-63R. Each of these GWPS exceedances occurred in the AMD-impacted monitoring wells.

VOCs were measured in monitoring wells MW-40 and MW-65. The detected VOCs did not exceed the associated GWPSs.

7.3 ACID MINE DRAINAGE EVALUATION

Historical coal mining in the area now occupied by the West MSWLF unit has impacted groundwater quality through acid mine drainage, especially with respect to the mobilization of naturally occurring metals. The literature excerpt below includes some characteristics of acid mine drainage.

Releases of AMD have low pH, high specific conductivity, high concentrations of iron, aluminum, and manganese, and low concentration of toxic heavy metals (Akcil and Koldas, 2004).

As included in the permit, most recently renewed on January 25, 2026 (Doc #115849), monitoring wells MW-39R, MW-40, 04-MW-56, MW-58, MW-59, MW-63R, MW-64, and MW-65 are analyzed annually for alkalinity, aluminum, iron, manganese, and sulfate. The data indicated that iron, manganese, and sulfate were elevated, consistent with AMD impacts. Elevated aluminum concentrations are also typical of AMD impact; however, the aluminum concentrations were low, with only monitoring well MW-58 showing a quantifiable detection during this reporting period. Alkalinity was 164 mg/L in monitoring well MW-58, with concentrations in the other AMD wells ranging from 371 mg/L (MW-59) to 786 mg/L (MW-39R).

A Mann-Kendall trend evaluation at 80% confidence (α=0.2) was performed for AMD parameters alkalinity, aluminum, iron, manganese, and sulfate. Apparent impact from acid mine drainage (AMD) conditions remained during this reporting period. The majority of trends for AMD indicator parameters were stable at 80% confidence (α = 0.2), although 10 were statistically significant decreasing trends and 6 statistically significant increasing trends at this low threshold. Monitoring wells MW-39R, MW-40, and MW-63R had mostly stable trends, with zero or one statistically significant trend. Monitoring wells 04-MW-56, MW-58, and MW-56 each had two statistically significant trends. Monitoring well MW-64 showed statistically significant trends for all five parameters: four decreasing and sulfate increasing. Monitoring well MW-65 showed a stable manganese trend, a statistically significant decreasing sulfate trend, and three statistically significant increasing trends.

Annual sampling for the AMD parameters will continue as specified in the permit. The Mann-Kendall summary table is included in **Appendix I**.

7.4 NATURAL ATTENUATION EVALUATION

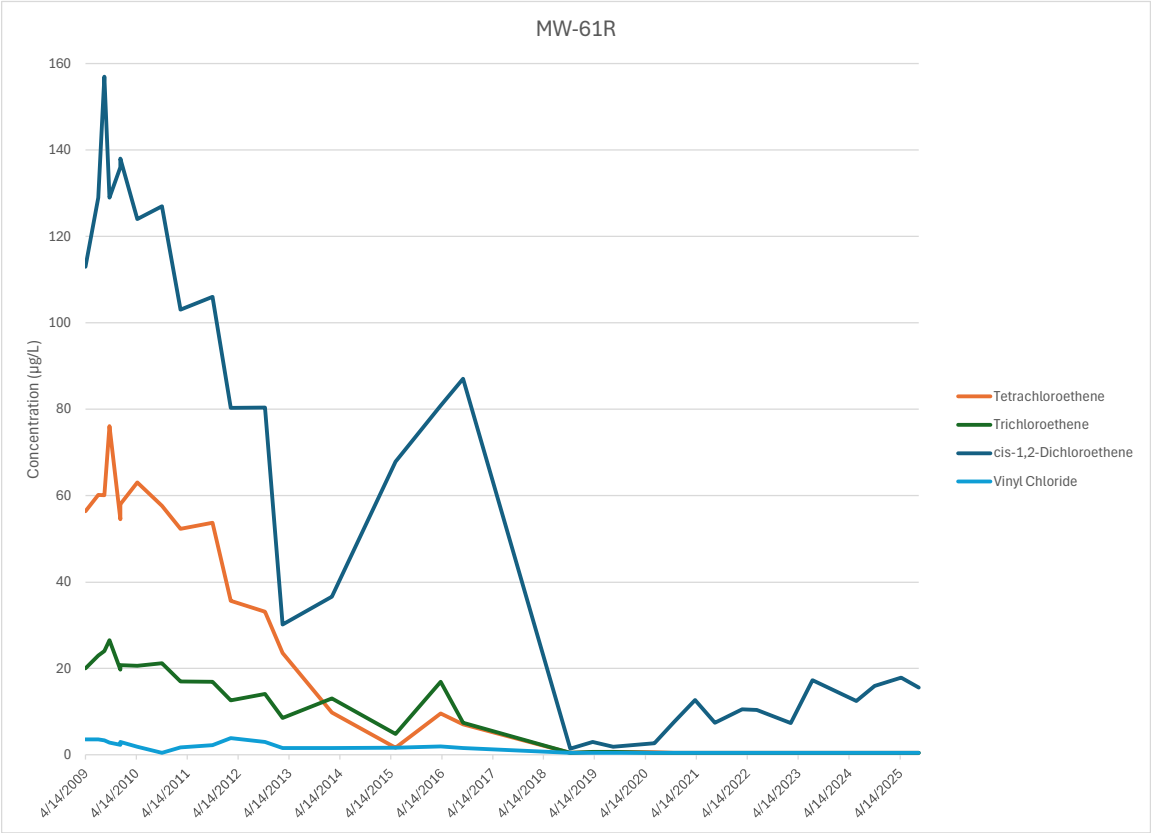
Natural attenuation is frequently viewed in terms of primary lines of evidence and secondary lines of evidence. Primary lines of evidence are generally based on concentration trends of constituent data defined as declining, stable, or increasing. Declining or stable concentration trends would indicate that natural attenuation is occurring. Secondary lines of evidence use geochemical indicators that monitor terminal electron acceptors. Both primary and secondary lines of evidence are discussed below.

7.4.1 Primary Evidence

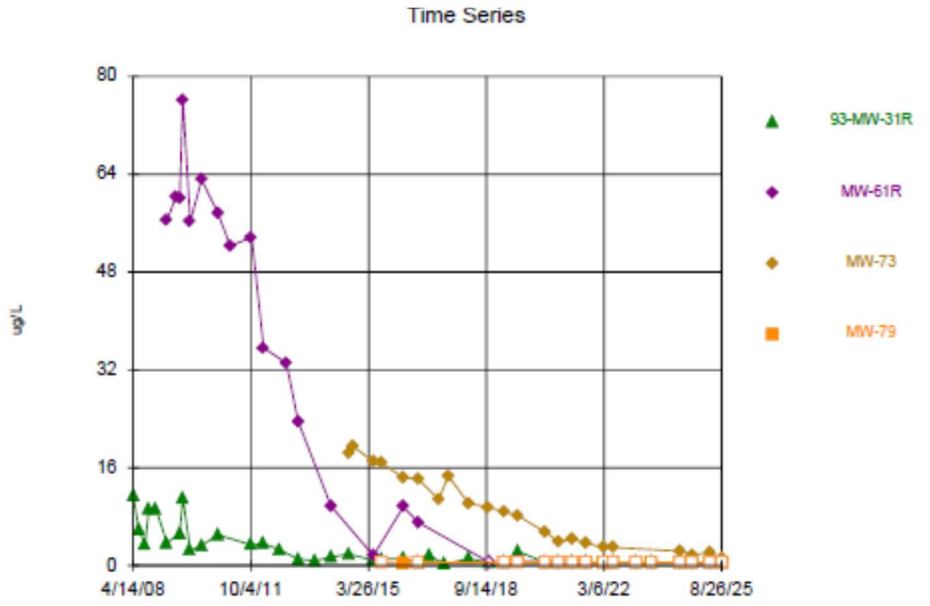
Source monitoring wells 93-MW-31R, MW-61R, MW-73, and MW-79 were analyzed for Appendix I, TSS, and natural attenuation parameters, including total organic carbon, iron, manganese, nitrate, and sulfate, during the April 2025 sampling event.

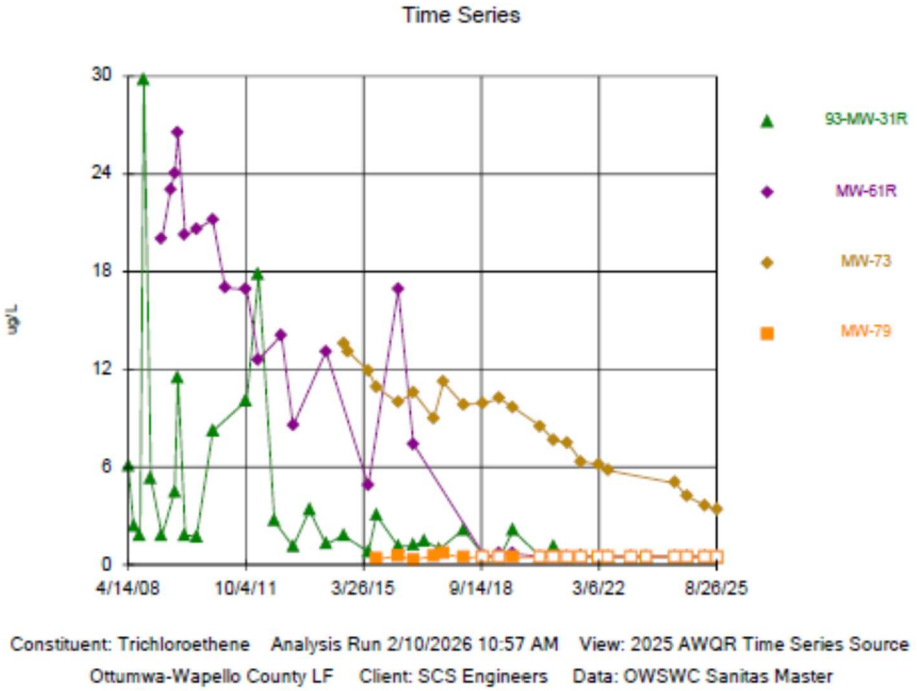
The trending of the Appendix I parameters in the source wells and AZPOC monitoring well MW-81 was evaluated using Mann-Kendall evaluation. The evaluation indicated that tetrachloroethene and trichloroethene in monitoring well MW-73 were decreasing at statistically significant rates at the 99% confidence level ($\alpha = 0.01$). Nickel in monitoring well MW-61R and cobalt in monitoring well MW-79 were increasing at statistically significant rates at 99% confidence ($\alpha = 0.01$). As shown in **Table 11**, there were 46 increasing trends indicated by a positive calculated Mann-Kendall statistic and 22 stable or decreasing trends indicated by a Mann-Kendall statistic of zero or less. Current analytical results for the source wells are included in **Appendix C**.

The decrease in chlorinated VOC concentrations in MW-61R provides a clear demonstration of active natural attenuation, as shown in the graph below. Reductive dechlorination occurs in a mother-daughter product relationship, with tetrachloroethene degrading to trichloroethene, which degrades to cis-1,2-dichloroethene (and trans-1,2-dichloroethene, not shown), which degrades to vinyl chloride before complete mineralization.



Tetrachloroethene and trichloroethene have exhibited declining concentrations in each of the source wells over multiple years, in some cases reaching non-detect levels. The time series plots of these parameters are shown below.





The four concentrations measured in 2024 and 2025 for tetrachloroethene and trichloroethene in monitoring well MW-73 were the lowest recorded in the monitoring well during the period of record, dating to 2014.

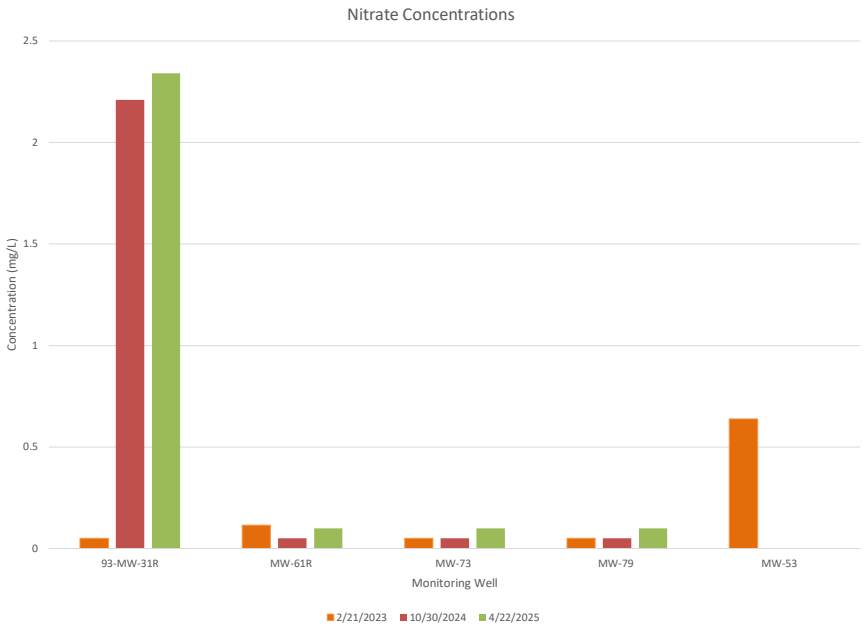
The declining concentrations of multiple organic parameters shown in the graphs above and in **Appendix D** provide primary evidence that natural attenuation is occurring.

7.4.2 Secondary Evidence

Nitrate, total manganese, total iron, sulfate, and total organic carbon (TOC) concentrations were utilized to evaluate secondary evidence of natural attenuation. These constituents, less TOC, constitute four electron acceptors that would be consumed by microbial activity in the presence of organics. The order of usage in terms of energy provided would be nitrate, manganese, iron, then sulfate. Their use as electron acceptors would result in increased concentrations of total manganese and total iron, as their reduced forms are more soluble, and decreased concentrations of nitrate and sulfate.

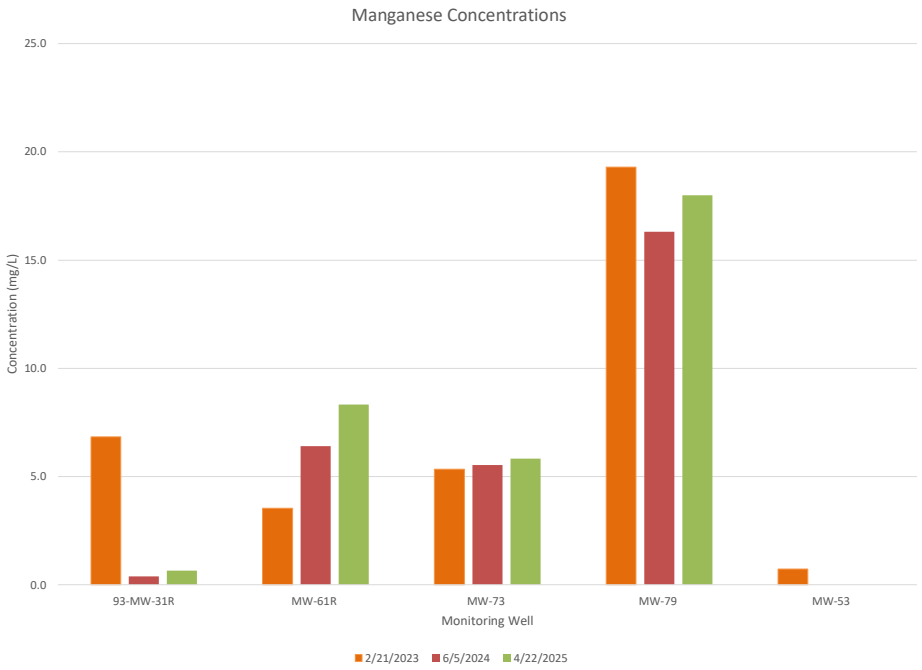
The following graphs illustrate the total manganese, total iron, nitrate, and sulfate concentrations by well, measured in April 2025, for the source characterization monitoring wells 93-MW-31R, MW-61R, MW-73, and MW-79, and historical data for background monitoring well MW-53.

As mentioned above, nitrate would be the first electron acceptor used of the four evaluated. Generally, groundwater impacted with biodegradable compounds would be expected to have little to no nitrate present, if nitrate were originally present prior to the groundwater becoming impacted. The graph below indicates that nitrate is present in the background as represented here by monitoring well MW-53. The nitrate concentrations in the source characterization monitoring wells were non-detect with the exception of a trace concentration measured in monitoring well MW-61R in 2023 and elevated concentrations measured in monitoring well 93-MW-31R during the 2024 and 2025 sampling events. As the nitrate concentration during the 2023 sampling event in monitoring well 93-MW-31R was non-detect, the 2023 concentration may be anomalous. Apart from the elevated concentrations for 93-MW-31R, the results are as expected: the monitoring wells with impact have lower nitrate than background, indicating that nitrate is likely being consumed as an electron acceptor.

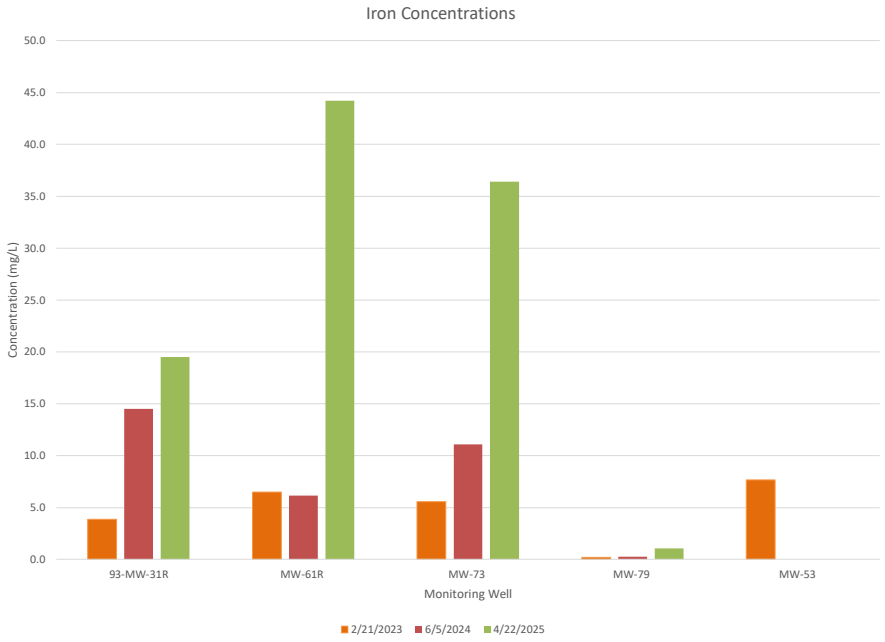


Manganese would be the second electron acceptor used of the four evaluated. The graph below shows elevated concentrations of total manganese in the source characterization monitoring wells, consistent with microorganisms using manganese as an electron acceptor. Each of the source

monitoring wells had concentrations higher than background, except for lower concentrations in the 2024 and 2025 samples from monitoring well 93-MW-31R.

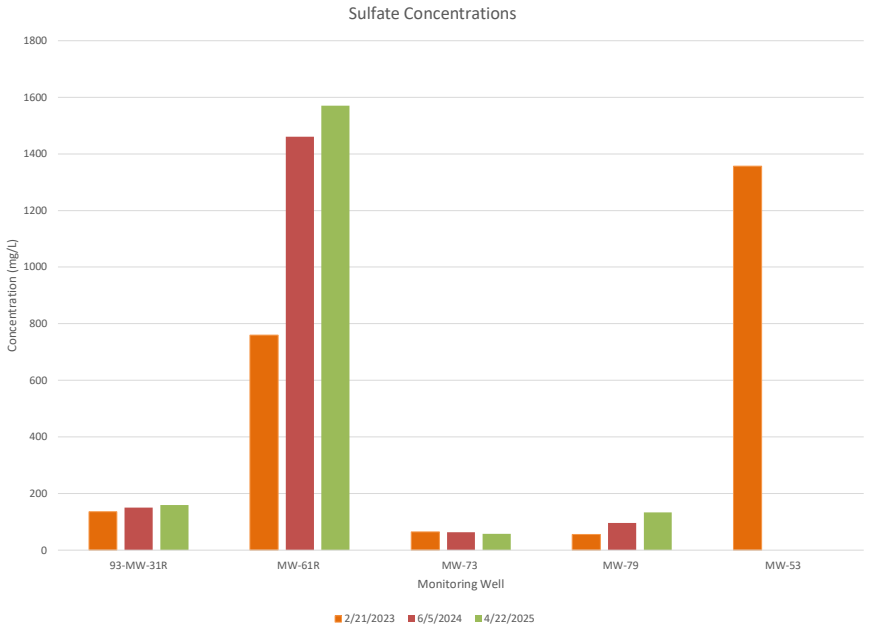


Iron would be the third electron acceptor used of the four evaluated. The graph below shows an increase in iron levels during this reporting period compared to previous samples for each source well. These concentrations may continue to increase as natural attenuation continues.



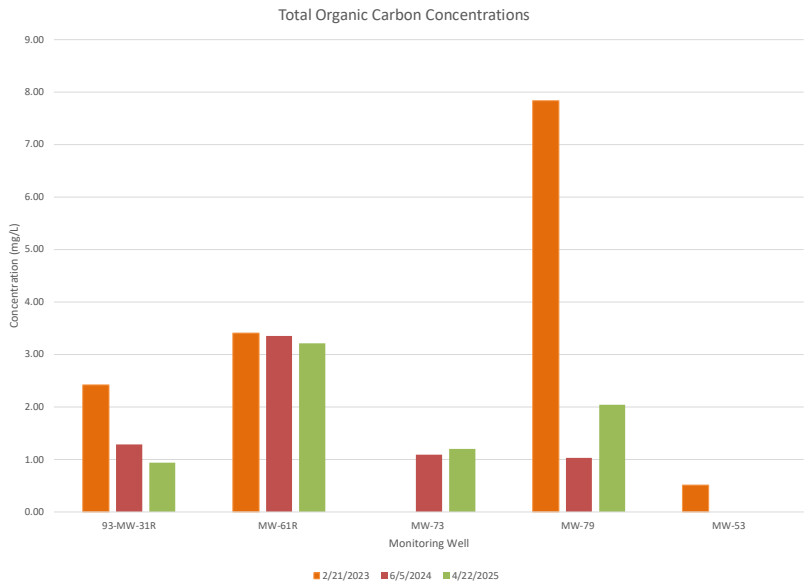
Sulfate would be the fourth electron acceptor used of the four evaluated. The graph below shows sulfate concentrations below background in the source monitoring wells, except for the 2024 and

2025 samples from monitoring well MW-61R. The lowered sulfate concentrations were expected, as sulfate concentrations would be decreased if sulfate was being used as an electron acceptor.



The generally low concentrations of nitrate and sulfate, and the generally elevated concentrations of manganese and iron, are expected results of ongoing natural attenuation. The secondary evidence supports that natural attenuation is occurring and generally stable. The higher concentrations of nitrate and lower concentrations of manganese in monitoring well 93-MW-31R may be an indication of the water quality transitioning toward background, with less impact to drive natural attenuation, as no VOCs were detected in the 2025 samples, and TOC was measured as a J flag.

Total organic carbon concentrations were analyzed. Concentrations above background indicate a carbon source present in the groundwater, primarily from landfill gas migration at the West MSWLF unit. Concentrations measured in 2024 and 2025 were comparable, whereas the 2023 concentrations were higher in three wells. Though difficult to infer from this limited dataset, this reduction may indicate the carbon source is being consumed faster than it is being input.


Total Organic Carbon Concentrations
9.00
8.00
7.00
6.00
5.00
4.00
3.00
2.00
1.00
0.00
Concentration (mg/L)
93-MW-31R
MW-61R
MW-73
MW-79
MW-53
Monitoring Well
2/21/2023
6/5/2024
4/22/2025

8.0 RECOMMENDATIONS

8.1 SITE IMPACT ON GROUNDWATER

8.1.1 Detection Monitoring

No SSIs were measured in detection monitoring well 91-MW-14 or groundwater underdrain discharge point GU-6 during this reporting period. Groundwater underdrain discharge point GU-6 was dry during the August 2025 sampling event and GU-7 was dry during both 2025 sampling events.

8.1.2 Assessment Monitoring

No SSLs were measured in assessment monitoring wells 93-MW-32 and MW-62 during this reporting period.

8.1.3 AZPOC/Corrective Action Monitoring

Confidence intervals calculated for monitoring well MW-81 for each of the historical SSLs demonstrate that the upper confidence limit for each parameter is below the corresponding GWPS and the data represent that the upper confidence limit was likely below the GWPS for each parameter for the past five consecutive years. Confidence intervals were not calculated for those historical SSLs that have not been detected in MW-81: arsenic, methylene chloride, and vinyl chloride. As monitoring well MW-81 has satisfied the exit requirements of 567 IAC 113.10(9)*e*(2), the monitoring well is analyzed in accordance with the assessment monitoring program.

8.1.4 AMD Monitoring

No SSLs were measured for the organic parameters and sulfide in monitoring wells MW-39R, MW-40, 04-MW-56, MW-58, MW-59, MW-63R, MW-64, and MW-65 during this reporting period. Apparent impact from acid mine drainage (AMD) conditions remained during this reporting period. No well/constituent pairs indicated SSIs for both interwell and intrawell prediction limits.

8.1.5 Source Characterization Monitoring

Trending in the source wells and AZPOC monitoring well MW-81 indicated two statistically significant decreasing trends and two statistically significant increasing trends. Overall, approximately 32% of the analyzed trends were stable or decreasing.

8.1.6 Corrective Action

Corrective action wells showed no clear trending for metal parameters, while VOC detections were largely infrequent. The only GWPS exceedance for a VOC during this reporting period was vinyl chloride in monitoring well MW-80.

8.2 PROPOSED MONITORING

Anticipated groundwater sampling for the 2026 reporting period is shown in Table 2.

8.3 PROPOSED MONITORING WELL CHANGES

There are no proposed changes to the monitoring well network at this time.

Tables

Table 1
Monitoring Program Summary Table
2025 Annual Water Quality Report
West MSWLF Unit
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

Monitoring Well	Formation[1]	Current Monitoring Program	Change for next sampling event	Constituents with SSIs during the 2025 Reporting Period	Constituents with SSLs	Total # of Samples in each monitoring program		
						Detection inorganic #/organic #	Assessment inorganic #/organic #	Corrective Action inorganic #/organic #
Detection Monitoring Wells								
MW-53	Shale	Background	No change	Not applicable	Not applicable	15/17	-	-
91-MW-14	Clayey silt, shale	Detection	No change	None	Not applicable	15/28	-	-
GU-6	Not applicable	Detection	No change	None	Not applicable	9/9	-	-
GU-7	Not applicable	Detection	No change	NA (no samples)	Not applicable	8/8	-	-
Assessment Monitoring Wells								
91-MW-32	Clayey silt, clayey silty sand	Assessment	No change	Arsenic, Barium, Cadmium, Nickel	None	-	15/29	-
MW-62	Sandy clay	Assessment	No change	None	None	-	15/27	-
Attenuation Zone Point of Compliance (AZPOC)/Corrective Action Monitoring Well								
MW-81 (AZPOC)	Sand	Corrective Action	Assessment	Barium	None		11/11	-
Acid Mine Drainage Monitoring Wells								
MW-39R	Sandy silty clay, shale	AMD Detection	No change	None	None	-	21/39	-
MW-40	Sandy silty clay, shale	AMD Detection	No change	Benzene, cis-1,2-Dichloroethene	None	-	21/39	-
04-MW-56	Sandy lean clay	AMD Detection	No change	Zinc	None	-	22/38	-
MW-58	Sandy silty clay, shale	AMD Detection	No change	None	None	-	21/38	-
MW-59	Sandy clay with sand and gravel seams	AMD Detection	No change	None	None	-	15/30	-
MW-63R	Shale	AMD Detection	No change	None	None	-	22/35	-
MW-64	Weathered shale	AMD Detection	No change	None	None	-	15/26	-
MW-65	Silty sandy clay, clayey sand	AMD Detection	No change	Benzene	None	-	20/38	-
Source Wells								
93-MW-31R	Sand	Source Characterization	No change	Not applicable	Not applicable	-	-	40/39
MW-61R	Sandy silty clay, silty sand	Source Characterization	No change	Not applicable	Not applicable	-	-	16/31
MW-73	Clayey sand, sandy clay	Source Characterization	No change	Not applicable	Not applicable	-	-	10/11
MW-79	Sandy silty clay, shale	Source Characterization	No change	Not applicable	Not applicable	-	-	13/13
Corrective Action Monitoring Wells								
MW-66	Sandy silty clay	Corrective Action						
MW-67	Clayey sand, sand	Corrective Action						
MW-68	Clayey sand, sand	Corrective Action						
MW-71	Clayey sand, silty sand, sand	Corrective Action						
MW-74	Clayey sand, sand	Corrective Action						
MW-75	Clayey sand, shale and sand	Corrective Action						
MW-78	Sandy silty clay, sand, sandy clay, shale	Corrective Action						
MW-80	Clayey sand, sandy clay, sand	Corrective Action						

Table 1
Monitoring Program Summary Table
2025 Annual Water Quality Report
West MSWLF Unit
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

Monitoring Well	Formation[1]	Current Monitoring Program	Change for next sampling event	Constituents with SSIs during the 2025 Reporting Period	Constituents with SSLs	Total # of Samples in each monitoring program		
						Detection inorganic #/organic #	Assessment inorganic #/organic #	Corrective Action inorganic #/organic #
Other monitoring points								
GWP-1	Not applicable	Groundwater/Waste Separation						
GWP-2	Not applicable	Groundwater/Waste Separation						
GWP-3	Not applicable	Groundwater/Waste Separation						
91-MW-6	Shale, sandstone	Water Level						
91-MW-7	Shale	Water Level						
MW-37	Unknown	Water Level						
91-MW-25	Unknown	Water Level						

(1) Obtained from screened interval on boring logs.

Notes:
SSI = Statistically Significant Increase above background.
SSL = Statistically Significant Level above groundwater protection standard.
AZPOC = Attenuation Zone Point of Compliance.

Comments:

1) As directed in Iowa DNR correspondence dated April 28, 2017 (Doc #89288), this report was prepared with non-low-flow inorganic data removed from statistical consideration. Samples collected since the beginning of low-flow sampling (which began with the August 2015 semi-annual sampling event) were used for analysis beginning with the 2nd 2017 semi-annual statistical evaluation.

2) The "Total # of Samples in each monitoring program" column represents inorganic samples collected since the initiation of low-flow sampling and the total samples collected for organic parameters. The samples are listed under the monitoring program of the monitoring point as of the end of this reporting period.

Table 2
Monitoring Program Implementation Schedule
2025 Annual Water Quality Report
West MSWLF Unit
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

Monitoring Point	Recent Sampling Dates and Constituents				Full Appendix II Sample Dates	
	April 2025	August 2025	1st 2026 Semi-Annual	2nd 2026 Semi-Annual	Previously Collected	Next Event
Detection Monitoring Points						
MW-53	Appendix I, TSS		Appendix I, TSS		Not applicable	Not applicable
91-MW-14	Appendix I metals list, TSS		Appendix I metals list, TSS		Not applicable	Not applicable
GU-6	Appendix I, TSS	Not sampled (dry)	Appendix I, TSS	Appendix I, TSS	Not applicable	Not applicable
GU-7	Not sampled (insufficient water)	Not sampled (dry)	Appendix I, TSS	Appendix I, TSS	Not applicable	Not applicable
Assessment Monitoring Wells						
93-MW-32	Appendix I metals list, TSS		Appendix I metals list, TSS		5/29/2012, 8/19/2013, 3/5/2018, 2/22/2023	2028
MW-62	Appendix I metals list, TSS		Appendix I metals list, TSS		8/19/2013, 8/21/2014, 4/2/2019, 6/6/2024	2029
MW-81 (AZPOC)	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	10/31/2022, 7/26/2023	2028
Acid-Mine Drainage Monitoring Wells						
MW-39R	Appendix I, TSS, Sulfide, AMD	Appendix I, TSS Sulfide	Appendix I, TSS, Sulfide, AMD	Appendix I, TSS, Sulfide	5/29/2012, 8/19/2013, 3/6/2018, 2/22/2023	2028
MW-40	Appendix I, TSS, AMD	Appendix I, TSS	Appendix II, TSS, AMD	Appendix I, TSS	8/27/2009, 10/14/2010, 2/24/2011, 1/9/2017, 4/7/2021	2026
04-MW-56	Appendix I metals list, TSS, Appendix I VOCs, AMD	Appendix I metals list, TSS, Appendix I VOC	Appendix I metals list, TSS, Appendix I VOCs, AMD	Appendix I metals list, TSS, Appendix I VOCs	5/29/2012, 8/19/2013, 3/5/2018, 2/22/2023	2028
MW-58	Appendix I, TSS, AMD	Appendix I, TSS	Appendix I, TSS, AMD	Appendix I, TSS	5/29/2012, 8/19/2013, 6/6/2018, 2/21/2023	2028
MW-59	Appendix I metals list, TSS, Appendix I VOCs, Sulfide, AMD		Appendix II, TSS, AMD		12/21/2009, 10/14/2010, 2/24/2011, 1/9/2017, 4/7/2021	2026
MW-63R	Appendix I, TSS, Sulfide, AMD	Appendix I, TSS, Sulfide	Appendix II, TSS, AMD	Appendix I, TSS, Sulfide	2/6/2020, 4/7/2021	2026
MW-64	Appendix I metals list, TSS, Appendix I VOCs, AMD		Appendix II, TSS, AMD		8/27/2009, 10/13/2011, 1/9/2017, 4/6/2021	2026
MW-65	Appendix I metals list, TSS, Appendix I VOCs, Sulfide, AMD	Appendix I metals list, TSS, Appendix I VOCs, Sulfide	Appendix I metals list, TSS, Appendix I VOCs, Sulfide, AMD	Appendix I metals list, TSS, Appendix I VOCs, Sulfide	5/29/2012, 8/19/2013, 3/6/2018, 2/21/2023	2028
Source Monitoring Wells						
93-MW-31R	Appendix I, TSS, Natural Attenuation	Appendix I, TSS	Appendix I, TSS, Natural Attenuation	Appendix I, TSS	8/27/2009, 10/14/2010, 10/13/2011, 1/9/2017	Not applicable
MW-61R	Appendix I, TSS, Natural Attenuation	Appendix I, TSS	Appendix I, TSS, Natural Attenuation	Appendix I, TSS	8/27/2009, 10/14/2010, 2/24/2011, 10/22/2018	Not applicable
MW-73	Appendix I, TSS, Natural Attenuation	Appendix I, TSS	Appendix I, TSS, Natural Attenuation	Appendix I, TSS	Not applicable	Not applicable
MW-79	Appendix I, TSS, Natural Attenuation	Appendix I, TSS	Appendix I, TSS, Natural Attenuation	Appendix I, TSS	Not applicable	Not applicable

Table 2
Monitoring Program Implementation Schedule
2025 Annual Water Quality Report
West MSWLF Unit
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

Monitoring Point	Recent Sampling Dates and Constituents				Full Appendix II Sample Dates	
	April 2025	August 2025	1st 2026 Semi-Annual	2nd 2026 Semi-Annual	Previously Collected	Next Event
Corrective Action Monitoring Wells						
MW-66	Not sampled (dry)	Arsenic, cobalt, TSS	Arsenic, cobalt, TSS		Not applicable	Not applicable
MW-67	Not sampled (dry)	Not sampled (dry)	Arsenic, cobalt, TSS, PCE	Arsenic, cobalt, TSS, PCE	Not applicable	Not applicable
MW-68	Arsenic, cobalt, TSS		Arsenic, cobalt, TSS		Not applicable	Not applicable
MW-71	Not sampled (dry)	Not sampled (dry)	Arsenic, cobalt, TSS, cis-1,2-DCE, TCE	Arsenic, cobalt, TSS, cis-1,2-DCE, TCE	Not applicable	Not applicable
MW-74	Not sampled (dry)	Not sampled (dry)	Arsenic, cobalt, TSS, benzene, cis-1,2-DCE, PCE, TCE, vinyl chloride	Arsenic, cobalt, TSS, benzene, cis-1,2-DCE, PCE, TCE, vinyl chloride	Not applicable	Not applicable
MW-75	Benzene, cis-1,2-DCE, PCE, TCE, vinyl chloride		Benzene, cis-1,2-DCE, PCE, TCE, vinyl chloride		Not applicable	Not applicable
MW-78	Cobalt, TSS, cis-1,2-DCE, TCE, PCE, vinyl chloride	Cobalt, TSS, cis-1,2-DCE, TCE, PCE, vinyl chloride	Cobalt, TSS, cis-1,2-DCE, TCE, PCE, vinyl chloride	Cobalt, TSS, cis-1,2-DCE, TCE, PCE, vinyl chloride	Not applicable	Not applicable
MW-80	cis-1,2-DCE, vinyl chloride	cis-1,2-DCE, vinyl chloride	cis-1,2-DCE, vinyl chloride	cis-1,2-DCE, vinyl chloride	Not applicable	Not applicable

TSS - Total Suspended Solids.

Appendix I metals list includes arsenic, barium, cadmium, copper, cobalt, lead, nickel, and zinc.

Natural Attenuation includes total organic carbon, nitrate, total iron, total manganese, and sulfate.

AMD - Acid Mine Drainage includes total alkalinity, total iron, total manganese, sulfate, and total aluminum.

cis-1,2-DCE - cis-1,2-Dichloroethene

TCE - Trichloroethene

PCE - Tetrachloroethene (perchloroethene)

Table 3
Monitoring Well Maintenance and Performance Re-Evaluation Schedule
2025 Annual Water Quality Report
West MSWLF Unit
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

Compliance with:	2023	2024	2025	2026	2027
567 IAC 113.10(2)"f"(1) high and low water levels	Completed	Completed	Included	Scheduled	Scheduled
567 IAC 113.10(2)"f"(2) changes in the hydrologic setting and flow paths	Completed	Completed	Included	Scheduled	Scheduled
567 IAC 113.10(2)"f"(3) well depths	Completed	Completed	Included	Scheduled	Scheduled
567 IAC 113.10(2)"f"(4) well recharge rates and chemistry		Completed		Scheduled	
Waste separation from ground water 113.6(2)i	Completed	Completed	Included	Scheduled	Scheduled

Table 4
Monitoring Well Performance and Maintenance Summary
2025 Annual Water Quality Report
West MSWLF Unit
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

Well	Top of casing	Top of Screen	Total Depth		Date of Measurements		Maximum Depth Discrepancy (ft)
					4/22/2025	8/26/25	
MW-53	702.55	684.7	25.4	Groundwater Level (ft)	13.10	Annual	-3.0
				Groundwater Elevation (Ft MSL)	689.45	NA	
				Measured Well Depth (ft)	28.7	NA	
				Submerged screen	Y	NA	
MW-91-14	688.64	678.8	19.3	Groundwater Level (ft)	3.41	Annual	-0.3
				Groundwater Elevation (Ft MSL)	685.23	NA	
				Measured Well Depth (ft)	19.6	NA	
				Submerged screen	Y	NA	
93-MW-31R	726.26	679.7	57.2	Groundwater Level (ft)	48.85	49.11	3.3
				Groundwater Elevation (Ft MSL)	677.41	677.15	
				Measured Well Depth (ft)	53.9	57.1	
				Submerged screen	N	N	
93-MW-32	690.56	677.5	23.0	Groundwater Level (ft)	12.62	Annual	0.6
				Groundwater Elevation (Ft MSL)	677.94	NA	
				Measured Well Depth (ft)	22.4	NA	
				Submerged screen	Y	NA	
MW-39R	733.81	721.3	22.5	Groundwater Level (ft)	15.32	18.23	-0.4
				Groundwater Elevation (Ft MSL)	718.49	715.58	
				Measured Well Depth (ft)	22.9	22.3	
				Submerged screen	N	N	
MW-40	728.76	712.8	26.4	Groundwater Level (ft)	19.12	20.20	4.9
				Groundwater Elevation (Ft MSL)	709.64	708.56	
				Measured Well Depth (ft)	26.5	21.5	
				Submerged screen	N	N	
04-MW-56	691.00	683.5	17.5	Groundwater Level (ft)	11.52	11.73	0.9
				Groundwater Elevation (Ft MSL)	679.48	679.27	
				Measured Well Depth (ft)	16.6	17.6	
				Submerged screen	N	N	
MW-58	702.61	692.3	20.3	Groundwater Level (ft)	8.91	11.87	2.9
				Groundwater Elevation (Ft MSL)	693.70	690.74	
				Measured Well Depth (ft)	17.5	17.5	
				Submerged screen	Y	N	
MW-59	699.36	689.0	20.4	Groundwater Level (ft)	9.32	Annual	2.8
				Groundwater Elevation (Ft MSL)	690.04	NA	
				Measured Well Depth (ft)	17.6	NA	
				Submerged screen	Y	NA	
MW-61R	710.05	683.0	41.5	Groundwater Level (ft)	31.91	32.15	-0.5
				Groundwater Elevation (Ft MSL)	678.14	677.90	
				Measured Well Depth (ft)	42.0	42.1	
				Submerged screen	N	N	
MW-62	747.29	732.4	24.9	Groundwater Level (ft)	3.41	Annual	-0.3
				Groundwater Elevation (Ft MSL)	743.88	NA	
				Measured Well Depth (ft)	25.2	NA	
				Submerged screen	Y	NA	
MW-63R	735.06	717.1	27.8	Groundwater Level (ft)	12.64	12.62	0.8
				Groundwater Elevation (Ft MSL)	722.42	722.44	
				Measured Well Depth (ft)	27.9	27.0	
				Submerged screen	Y	Y	
MW-64	697.76	669.8	43.0	Groundwater Level (ft)	16.25	Annual	1.4
				Groundwater Elevation (Ft MSL)	681.51	NA	
				Measured Well Depth (ft)	41.6	NA	
				Submerged screen	Y	NA	
MW-65	698.09	678.2	17.9	Groundwater Level (ft)	9.14	11.41	-3.1
				Groundwater Elevation (Ft MSL)	688.95	686.68	
				Measured Well Depth (ft)	20.0	21.0	
				Submerged screen	Y	Y	
MW-73	729.57	687.7	51.9	Groundwater Level (ft)	40.05	40.21	1.3
				Groundwater Elevation (Ft MSL)	689.52	689.36	
				Measured Well Depth (ft)	52.6	50.7	
				Submerged screen	Y	Y	
MW-79	737.22	689.0	63.2	Groundwater Level (ft)	37.30	39.36	10.6*
				Groundwater Elevation (Ft MSL)	699.92	697.86	
				Measured Well Depth (ft)	52.6	52.6	
				Submerged screen	Y	Y	
MW-81	699.60	679.3	35.3	Groundwater Level (ft)	23.20	23.44	2.2
				Groundwater Elevation (Ft MSL)	676.40	676.16	
				Measured Well Depth (ft)	33.1	33.4	
				Submerged screen	N	N	

Notes:
1) Well depths are measured every 5 years for wells with dedicated sampling pumps. Measurements for monitoring wells 93-MW-31R, MW-61R, and MW-73 will occur next in 2030.
2) * - Depth measurements have remained consistent in monitoring well MW-79 for several years. The correct well is being measured, as adjacent well MW-77 is much shallower. MW-79 will be redeveloped in 2026 to attempt to remove accumulated sediment.
3) The monitoring wells generally produced samples during this reporting period; it appears unlikely that siltation is affecting the ability of the wells to consistently produce samples.

NA: Not Available.

Table 4
Monitoring Well Performance and Maintenance Summary
2025 Annual Water Quality Report
West MSWLF Unit
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

Groundwater/Waste Separation

Well		Date of Measurements	
		4/2025	8/2025
GWP-1	Bottom of waste (feet MSL)	737.45	
	Groundwater Elevation (feet MSL)	Dry	Dry
	Separation distance compliant?	Yes	Yes
GWP-2	Bottom of waste (feet MSL)	738.88	
	Groundwater Elevation (feet MSL)	Dry	Dry
	Separation distance compliant?	Yes	Yes
GWP-3	Bottom of waste (feet MSL)	738.88	
	Groundwater Elevation (feet MSL)	Dry	Dry
	Separation distance compliant?	Yes	Yes

Groundwater piezometer GWP-1 was dry during the 2025 sampling events, indicating the required groundwater separation was maintained.

The engineered groundwater separation distance for the Phase 2 Cell monitored by GWP-2 is approximately 3 feet. The analysis to calculate the separation was included in correspondence dated April 29, 2013 (Doc #76776). As the piezometer was dry during this reporting period, the required separation distance was maintained.

Groundwater piezometer GWP-3 was dry during the 2025 sampling events, indicating the required groundwater separation was maintained.

Table 5
Background and GWPS Summary Tables
2025 Annual Water Quality Report
West MSWLF Unit
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

Interwell Background/GWPS (MW-53/MW-54)

Constituent	Units	Samples	Detections	Min	Max	Mean	Background Level	Statistical Test	GWPS	Source
Antimony (Sb)	mg/L	24	3	0.000184*	0.00256	0.00073	0.00256	PL (NP)	0.006	MCL
Arsenic (As)	mg/L	24	4	0.000455*	0.00208	0.00100	0.00208	PL (NP)	0.01	MCL
Barium (Ba)	mg/L	24	24	0.01120	0.02920	0.02030	0.03139	PL (P)	2	MCL
Beryllium (Be)	mg/L	24	3	0.000167*	0.000864*	0.00049	0.00086	PL (NP)	0.004	MCL
Cadmium (Cd)	mg/L	24	14	0.000042*	0.00100	0.00024	0.00087	PL (P)	0.005	MCL
Chromium (Cr)	mg/L	24	1	0.0025 (1/2 RL)	0.00339*	0.00254	0.00339	PL (NP)	0.1	MCL
Cobalt (Co)	mg/L	24	20	0.000046*	0.01200	0.00220	0.04557	PL (P)	0.01691	SSS
Copper (Cu)	mg/L	24	7	0.000562*	0.00837	0.00257	0.00837	PL (NP)	1.3	MCL
Lead (Pb)	mg/L	24	6	0.000218*	0.00232	0.00048	0.00232	PL (NP)	0.015	MCL
Nickel (Ni)	mg/L	24	20	0.00175*	0.03200	0.00727	0.03560	PL (P)	0.1	SWS
Selenium (Se)	mg/L	24	2	0.000985*	0.0044*	0.00241	0.00440	PL (NP)	0.05	MCL
Silver (Ag)	mg/L	24	3	0.000207*	0.000958*	0.00048	0.00096	PL (NP)	0.1	SWS
Thallium (Tl)	mg/L	24	1	0.0005 (1/2 RL)	0.00278	0.00064	0.00278	PL (NP)	0.00278	SSS
Vanadium (V)	mg/L	24	1	0.000637*	0.0025 (1/2 RL)	0.00242	0.00250	PL (NP)	0.035	SWS
Zinc (Zn)	mg/L	24	3	0.005 (1/2 RL)	0.03770	0.00973	0.03770	PL (NP)	2	SWS

Intrawell Background/GWPS (GU-6)

Constituent	Units	Samples	Detections	Min	Max	Mean	Background Level	Statistical Test	GWPS	Source
Antimony (Sb)	mg/L	8	2	0.0005 (1/2 RL)	0.00245	0.00118	0.00245	PL (NP)	0.006	MCL
Arsenic (As)	mg/L	8	4	0.001 (1/2 RL)	0.00670	0.00220	0.01054	PL (P)	0.01054	SSS
Barium (Ba)	mg/L	8	8	0.03490	0.14800	0.06226	0.14800	PL (NP)	2	MCL
Beryllium (Be)	mg/L	8	2	0.000362*	0.00156	0.00062	0.00156	PL (NP)	0.004	MCL
Cadmium (Cd)	mg/L	8	8	0.00013	0.00081	0.00033	0.00124	PL (P)	0.005	MCL
Chromium (Cr)	mg/L	8	2	0.0025 (1/2 RL)	0.01400	0.00473	0.01400	PL (NP)	0.1	MCL
Cobalt (Co)	mg/L	8	8	0.00200	0.01320	0.00953	0.02649	PL (P)	0.02649	SSS
Copper (Cu)	mg/L	8	3	0.0025 (1/2 RL)	0.01140	0.00422	0.01140	PL (NP)	1.3	MCL
Lead (Pb)	mg/L	8	4	0.000152*	0.00498	0.00141	0.01354	PL (P)	0.015	MCL
Nickel (Ni)	mg/L	8	8	0.02460	0.08090	0.04300	0.12500	PL (P)	0.125	SSS
Selenium (Se)	mg/L	8	8	0.00115*	0.00754	0.00382	0.01079	PL (P)	0.05	MCL
Silver (Ag)	mg/L	8	1	0.0005 (1/2 RL)	0.00101	0.00056	0.00101	PL (NP)	0.1	SWS
Thallium (Tl)	mg/L	8	1	0.0005 (1/2 RL)	0.00306	0.00082	0.00306	PL (NP)	0.00306	SSS
Vanadium (V)	mg/L	8	3	0.0025 (1/2 RL)	0.02230	0.00641	0.02230	PL (NP)	0.035	SWS
Zinc (Zn)	mg/L	8	8	0.0157*	0.06980	0.03654	0.11870	PL (P)	2	SWS

Intrawell Background/GWPS (GU-7)

Constituent	Units	Samples	Detections	Min	Max	Mean	Background Level	Statistical Test	GWPS	Source
Antimony (Sb)	mg/L	8	1	0.0005 (1/2 RL)	0.004 (1/2 RL)	0.00139	0.00400	PL (NP)	0.006	MCL
Arsenic (As)	mg/L	8	7	0.000854*	0.00424	0.00254	0.00814	PL (P)	0.01	MCL
Barium (Ba)	mg/L	8	8	0.01350	0.03340	0.02073	0.04650	PL (P)	2	MCL
Beryllium (Be)	mg/L	8	1	0.0005 (1/2 RL)	0.002 (1/2 RL)	0.00076	0.00200	PL (NP)	0.004	MCL
Cadmium (Cd)	mg/L	8	3	0.00005 (1/2 RL)	0.00075	0.00024	0.00075	PL (NP)	0.005	MCL
Chromium (Cr)	mg/L	8	1	0.00135*	0.01 (1/2 RL)	0.00329	0.01000	PL (NP)	0.1	MCL
Cobalt (Co)	mg/L	8	8	0.00846	0.24700	0.06173	0.47310	PL (P)	0.4731	SSS
Copper (Cu)	mg/L	8	1	0.00219*	0.01 (1/2 RL)	0.00340	0.01000	PL (NP)	1.3	MCL
Lead (Pb)	mg/L	8	1	0.00018	0.00025 (1/2 RL)	0.00024	0.00025	PL (NP)	0.015	MCL
Nickel (Ni)	mg/L	8	8	0.03350	0.48300	0.12788	1.01300	PL (P)	1.013	SSS
Selenium (Se)	mg/L	8	1	0.0025 (1/2 RL)	0.01 (1/2 RL)	0.00428	0.01000	PL (NP)	0.05	MCL
Silver (Ag)	mg/L	8	1	0.0005 (1/2 RL)	0.002 (1/2 RL)	0.00083	0.00200	PL (NP)	0.1	SWS
Thallium (Tl)	mg/L	8	1	0.0005 (1/2 RL)	0.00302	0.00082	0.00302	PL (NP)	0.00302	SSS
Vanadium (V)	mg/L	8	1	0.0015*	0.01 (1/2 RL)	0.00363	0.01000	PL (NP)	0.035	SWS
Zinc (Zn)	mg/L	8	4	0.01 (1/2 RL)	0.25700	0.05416	0.58490	PL (P)	2	SWS

Notes:

Background levels based on calculated prediction limits or the reporting limit, as applicable. Table information based on the 2nd 2024 statistical evaluation for GU-6 and GU-7 and the 2nd 2025 statistical evaluation for MW-53/MW-54.

* - Indicates J flag. The concentration is above the method detection limit but below the reporting limit. The concentration is estimated.

Acronyms/Abbreviations:
RL = Reporting Limit
GWPS = Groundwater Protection Standard
DQR = Double Quantification Rule
SSS = Site-Specific GWPS
SWS = Statewide Standard
PL = Prediction Limit
MCL = EPA Maximum Contaminant Level
NP = Non-Parametric
P = Parametric

1) Water quality results and effectiveness of the statistical data evaluation criteria: Statistical evaluations consist of prediction limits, double quantification rule, and confidence intervals/confidence bands, as appropriate. Data from the background wells is not used for development of the confidence intervals or confidence bands.

2) Changes to the previous statistical method during reporting period: There were no changes to the statistical method during this reporting period.

3) Justification for data exclusion: Inorganic data collected prior to the implementation of low-flow sampling in August 2015 was excluded from statistical consideration beginning with the 2nd 2017 statistical evaluation.

Inorganic data from monitoring well MW-61R collected during the August 2025 sampling event was excluded from statistical evaluation as the elevated TSS concentration indicated the sample was not representative.

Table 6
Summary of Well/Detected Constituent Pairs With No Previous SSIs
2025 Annual Water Quality Report
West MSWLF Unit
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

Well	Constituent	Units	Most recent result	Background Standard
None				

Comments:

1) Problems with the current detection network: None.

2) Schedule to implement remedies: Subsurface venting coupled with monitored natural attenuation are the approved remedy and are on-going.

3) Alternative constituent or sample frequency changes: The corrective action groundwater monitoring program (CAMP) was approved in the permit renewal dated January 15, 2021 (Doc #99596). The CAMP specified alternative constituent lists and sampling frequencies.

4) Significant changes to calculated prediction limits: None.

5) Resampling strategy: Retesting is performed on a 1-of-2 retesting scheme.

6) Data exclusion justification: Inorganic data collected prior to the implementation of low-flow sampling in August 2015 was excluded from statistical consideration beginning with the 2nd 2017 statistical evaluation.

Inorganic data from monitoring well MW-61R collected during the August 2025 sampling event was excluded from statistical evaluation as the elevated TSS concentration indicated the sample was not representative.

Table 7
Summary Table of Ongoing and Newly Identified SSIs
2025 Annual Water Quality Report
West MSWLF Unit
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

							Sample Dates		
Well	**Constituent**	**Units**	**Most Recent Result**	**Background Standard**	**Lower Confidence Limit**	**GWPS**	**Initial Exceedance**	**Resample(s)**	**5th Background Sample**
93-MW-32	Arsenic	mg/L	0.0677	0.00208	0.002371	0.01	4/22/2025	NA	12/16/2008
	Barium	mg/L	0.0677	0.03139	0.05341	2	4/22/2025	NA	12/16/2008
	Cadmium	mg/L	0.000937	0.00087	0.0002558	0.005	4/22/2025	NA	12/16/2008
	Nickel	mg/L	0.0651	0.03560	0.01137	0.1	4/22/2025	NA	12/16/2008
MW-81	Barium	mg/L	0.0639	0.03139	0.0579	2	4/22/2025	NA	10/31/2022
MW-40	Benzene	µg/L	0.4945	<0.5	0.6345	5	8/27/2009	NA	12/16/2008
	cis-1,2-Dichloroethene	µg/L	3.195	<1	0.3637	70	8/27/2009	NA	12/16/2008
MW-65	Benzene	µg/L	1.1715	<0.5	0.6419	5	8/8/2012	NA	12/16/2008

NA - Not applicable. Retesting is not applicable to monitoring wells in this monitoring program.

1) Problems with the current assessment network: None.
2) Proposed remedies: Not applicable - completed.
3) Approved alternative constituent or sample frequency changes: Alternative constituents and frequencies are summarized in Table 2 (Doc #98166).
4) Plume delineation strategies: Impact delineation monitoring wells are shown on Figure 1.
5) Property owner notifications: Property owners west of 165th Avenue across from the West MSWLF unit were notified in October 2013 and May 2020 of detected chlorinated VOCs adjacent to their properties.

Table 8
Summary Table of Ongoing and Newly Identified SSLs
2025 Annual Water Quality Report
West MSWLF Unit
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

Well	Constituent	Units	Most recent result	Upper Confidence Limit	GWPS	Initial Exceedance	Upper Confidence Limit Below GWPS					
							1st Year		2nd Year		3rd Year	
MW-81	Arsenic	mg/L	0.000567*	<GPWS	0.01	2018	4/2021	8/2021	3/2022	6/2022	2/2023	7/2023
	Cobalt	mg/L	0.00818	0.00324	0.01671	2009, 2019**	4/2021	8/2021	3/2022	6/2022	2/2023	7/2023
	Benzene	µg/L	<0.5	<GWPS	5	2009	4/2021	8/2021	3/2022	6/2022	2/2023	7/2023
	cis-1,2-Dichloroethene	µg/L	0.668*	1.779	70	2009	4/2021	8/2021	3/2022	6/2022	2/2023	7/2023
	Methylene Chloride	µg/L	<5	<GWPS	5	2011	4/2021	8/2021	3/2022	6/2022	2/2023	7/2023
	Tetrachloroethene	µg/L	0.548*	1.022	5	2009, 2019**	4/2021	8/2021	3/2022	6/2022	2/2023	7/2023
	Trichloroethene	µg/L	<1	<GWSP	5	2009, 2019**	4/2021	8/2021	3/2022	6/2022	2/2023	7/2023
	Vinyl Chloride	µg/L	<1	<GWPS	2	2009, 2019**	4/2021	8/2021	3/2022	6/2022	2/2023	7/2023

Notes:

1) Previous SSLs in monitoring wells 93-MW-31R, MW-61R, MW-73, and MW-79 are no longer present as these source wells have been replaced in the HMSP by attenuation zone point of compliance monitoring well MW-81.

2) * J flag - Concentration is below the reporting limit but above the method detection limit; the concentration is estimated.

3) ** - The initial exceedances occurred in MW-61R in 2009 and in monitoring well MW-73 (and MW-79 for vinyl chloride) in 2019.

4) As specified in IAC 567-113.10(9)*e* (2), concentrations of Appendix II constituents have not exceeded the groundwater protection standard(s) for a period of three consecutive years in monitoring well MW-81 as shown in the table. The requirement of IAC 567-113.10(9)*e* (2) continued during the 2024 and 2025 reporting periods.

5) The requirements of IAC 567-113.10(9)*e* (1) of compliance with the GWPSs at all points within the plume of contamination that lie beyond the groundwater monitoring well system are not complete due to measured concentrations above the GWPS for vinyl chloride in corrective action monitoring well MW-80 (Appendix C).

6) "<GWPS" indicates that the AZPOC monitoring well has no quantified concentrations, which are needed to calculate confidence limits. The lack of detections was considered to satisfy the statistical requirements of IAC 567-113.10(9)”e”(2).

Table 9
Summary of Groundwater Chemistry
2025 Annual Water Quality Report
West MSWLF Unit
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

The Summary of Groundwater Chemistry for this reporting period is located in Appendix C.

Analytical data prior to 2025 is available in the 2024 Annual Water Quality Report dated March 3, 2025 (Doc #112389).

Table 10
Historical SSI and SSL
2025 Annual Water Quality Report
West MSWLF Unit
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

Key

SSI - Statistically Significant Increase above background

SSL - Statistically Significant Level above groundwater protection standards

Well	Constituent	Spring 2018	Fall 2018	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	Spring 2024	Fall 2024	Spring 2025	Fall 2025
Detection Monitoring Points																	
91-MW-14*	None														NS		NS
GU-6**	None													NS	NS		NS
GU-7**	Benzene														NS	NS	NS
	cis-1,2-Dichloroethene														NS	NS	NS
Assessment Monitoring Wells																	
93-MW-32*	Arsenic														NS		NS
	Barium														NS		NS
	Cadmium														NS		NS
	Nickel														NS		NS
	2-Butanone														NS		NS
	Acetone														NS		NS
	Toluene														NS		NS
MW-62*	None														NS		NS
Acid Mine Drainage Monitoring Wells																	
MW-39R	Cobalt																
MW-40	Cobalt																
	1,1-Dichloroethane																
	Acetone																
	Benzene																
	cis-1,2-Dichloroethene																
	Vinyl Chloride																
04-MW-56	Cobalt																
MW-58	None																
MW-59	1,1-Dichloroethane																
	Acetone																
	Benzene																
MW-63R	Cadmium																
	Cobalt																
	Nickel																
	Zinc																
MW-64	1,1-Dichloroethane																
MW-65	Arsenic																
	Barium																
	1,1-Dichloroethane																
	Benzene																
	Chloroethane																
	cis-1,2-Dichloroethene																

Table 10
Historical SSI and SSL
2025 Annual Water Quality Report
West MSWLF Unit
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

Key

SSI - Statistically Significant Increase above background

SSL - Statistically Significant Level above groundwater protection standards

Well	Constituent	Spring 2018	Fall 2018	Spring 2019	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	Spring 2024	Fall 2024	Spring 2025	Fall 2025
AZPOC Monitoring Well																	
MW-81	Barium																
	Cadmium																
	Vanadium																
	Zinc																
	cis-1,2-Dichloroethene																
	Tetrachloroethene																
Source Characterization Monitoring Wells																	
93-MW-31R	Arsenic																
MW-61R	Cobalt																
	Benzene																
	cis-1,2-Dichloroethene																
	Methylene Chloride																
	Tetrachloroethene																
	Trichloroethene																
	Vinyl Chloride																
MW-73	Cobalt																
	Tetrachloroethene																
	Trichloroethene																
	Vinyl Chloride																
MW-79	Vinyl Chloride																

Comments:

Before 2024, indicated SSIs for inorganic parameters that were not confirmed were not included in this table. Beginning in 2024. indicated SSIs that were not confirmed are included on this table.

A detected organic parameter is considered an SSI for the purposes of this table.

NS - Not sampled. Beginning in 2024, monitoring points were marked as NS if they were dry or are sampled annually.

* - Monitoring well is sampled annually.

** - Groundwater underdrain discharge monitoring points are frequently dry.

Table 11
Corrective Action Trend Analysis
2025 Annual Water Quality Report
West MSWLF Unit
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

Well	Constituent	Trend	Calculated S	Critical S	Total N
Statistically Significant Trends in Source Wells (including AZPOC well MW-81)					
MW-61R	Nickel	Increasing	27	21	8
MW-73	Tetrachloroethene	Decreasing	-24	-21	8
	Trichloroethene	Decreasing	-28	-21	8
MW-79	Cobalt	Increasing	22	21	8

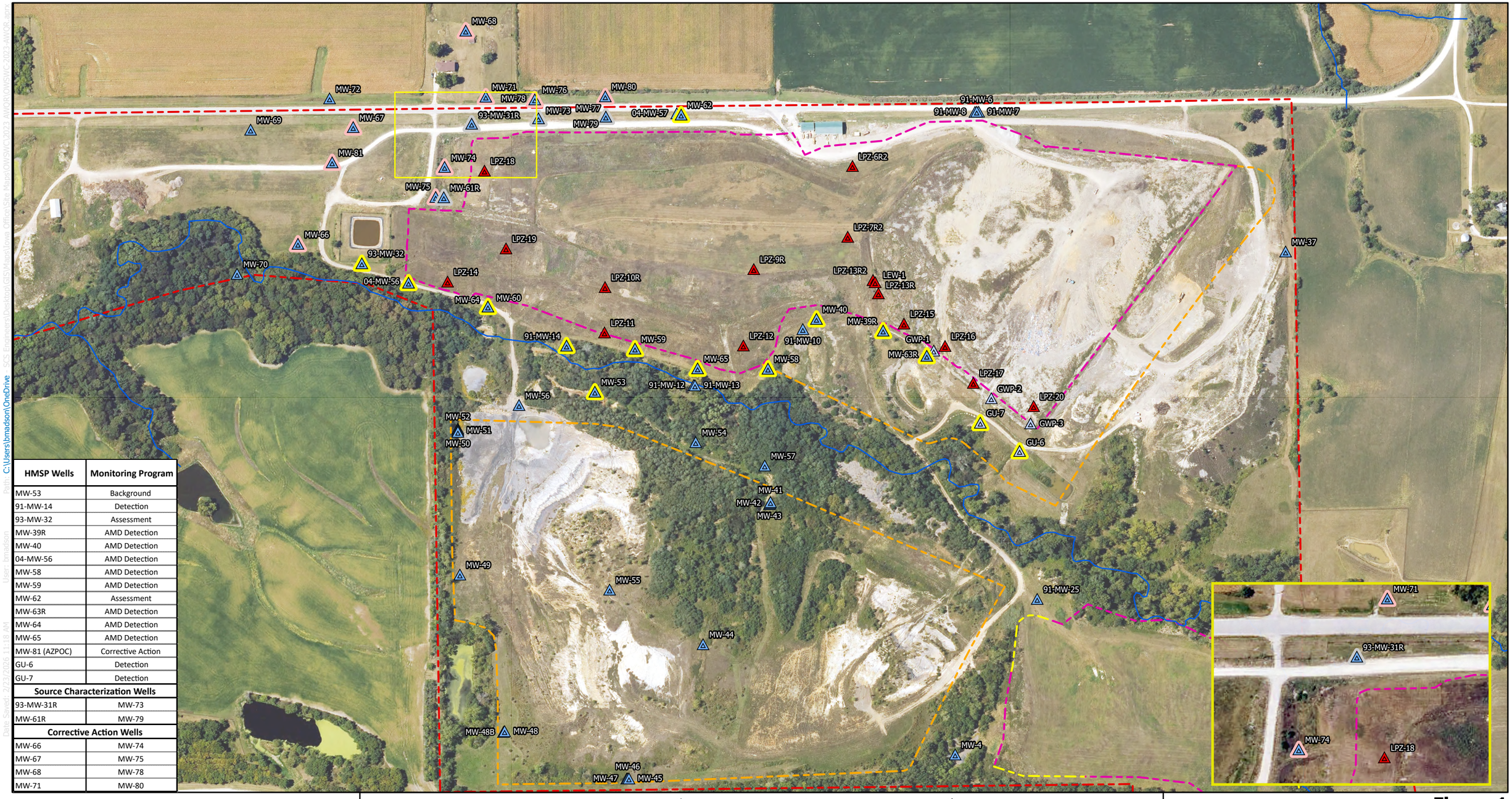
Overall Trends of Detected Appendix I Constituents in Source Wells						
	93-MW-31R	MW-61R	MW-73	MW-79	MW-81 (AZPOC)	Total
Increasing (S = >0):	4	13	8	13	8	46
Decreasing (S = ≤0):	9	0	10	2	1	22

Approximately 32% of the trends are stable or decreasing.
A summary table and graphs are included in Appendix K.

Notes:
N - Number of Samples
S - Mann-Kendall Statistic

Comments:
1) The approved remedy is monitored natural attenuation and subsurface gas venting (Doc #98166).
2) A subsurface landfill gas venting system in the southwestern corner of the site is addressing organic groundwater impact.

Figures



HMSP Wells	Monitoring Program
MW-53	Background
91-MW-14	Detection
93-MW-32	Assessment
MW-39R	AMD Detection
MW-40	AMD Detection
04-MW-56	AMD Detection
MW-58	AMD Detection
MW-59	AMD Detection
MW-62	Assessment
MW-63R	AMD Detection
MW-64	AMD Detection
MW-65	AMD Detection
MW-81 (AZPOC)	Corrective Action
GU-6	Detection
GU-7	Detection
Source Characterization Wells	
93-MW-31R	MW-73
MW-61R	MW-79
Corrective Action Wells	
MW-66	MW-74
MW-67	MW-75
MW-68	MW-78
MW-71	MW-80

SCS ENGINEERS
environmental consultants and contractors

Approved Monitoring Network

Legend

- HMSP Monitoring Well
- Corrective Action Monitoring Well
- Source Monitoring Well
- HMSP Groundwater Underdrain
- Monitoring Well
- Groundwater Underdrain
- Leachate Monitoring Point
- Approximate Existing Waste Boundary
- Approximate Future Waste Boundary
- Estimated Waste Boundary
- Approximate Property Boundary
- Stream

Ottumwa-Wapello County Landfill
Ottumwa, IA
Project No: 27225312.26
Drawing Date: October 2025

Figure 1

Overview Map Scale

0 80 160 320 Feet

0 287.5 575 1,150 Feet

W S N E

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, CONAE, USGS, USDA/NAIP, Iowa State University GIS Facility

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Groundwater Contours

Figure 2

SCS ENGINEERS
environmental consultants and contractors

Legend

- Approximate Groundwater Contours Based on Measurments Taken April 22-25, 2025
- Monitoring Well
- Groundwater Underdrain
- Leachate Monitoring Point
- Approximate Existing Waste Boundary
- Approximate Future Waste Boundary
- Estimated Waste Boundary
- Approximate Property Boundary
- Stream

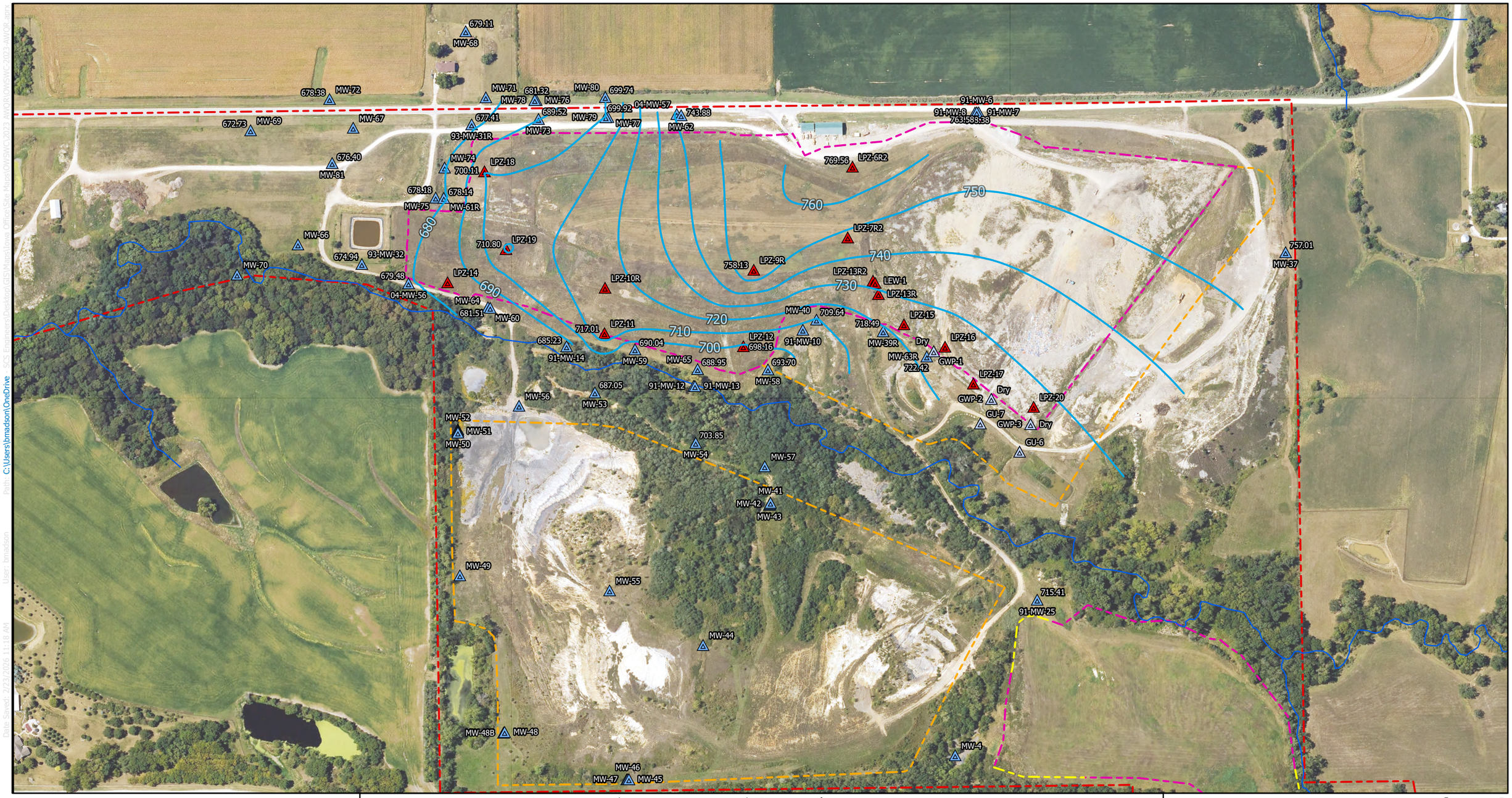
Ottumwa-Wapello County Landfill
Ottumwa, IA
Project No: 27225312.26
Drawing Date: October 2025

W S N E

0 287.5 575 1,150 Feet

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, CGIAR, USGS, USDA NAIP, Iowa State University GIS Facility

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Groundwater and Leachate Contours

Figure 3

Legend

- Approximate Groundwater/ Leachate Contours Based on Measuments Taken on April 22-25, 2025 and May 6, 2025
- Monitoring Well
- Groundwater Underdrain
- Leachate Monitoring Point
- Approximate Existing Waste Boundary
- Approximate Future Waste Boundary
- Estimated Waste Boundary
- Approximate Property Boundary
- Stream

Ottumwa-Wapello County Landfill
Ottumwa, IA
Project No: 27223157.25
Drawing Date: February 2025

W S N E

0 287.5 575 1,150 Feet

SCS ENGINEERS
environmental consultants and contractors

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, CGIAR, USGS, USDA NAIP, Iowa State University GIS Facility

Appendix A

Field Sampling Forms

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**91-MW-14**	Date:	**4/23/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	19.7
Initial Static Water Level (feet):	3.41
Initial Groundwater Elevation (ft-amsl):	685.23
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
2:13 PM	Purging start time.						
2:16 PM	12.8	2.4	1906.2	7.11	189.7	4.4	
2:19 PM	12.5	1.3	1908.6	7.07	192.9	4.4	
2:22 PM	12.1	1.2	1908.0	7.06	195.1	4.4	
2:25 PM	11.8	1.1	1905.4	7.06	196.9	4.6	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.2
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	183.33

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**93-MW-31R**	Date:	**4/23/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	53.9
Initial Static Water Level (feet):	48.85
Initial Groundwater Elevation (ft-amsl):	677.41
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
5:26 PM	Purging start time.						
5:29 PM	18.1	3.5	853.5	6.43	285.0	204.6	
5:32 PM	17.1	2.3	756.3	6.38	283.4	184.0	
5:35 PM	15.7	2.0	737.9	6.37	282.1	162.8	
5:38 PM	16.1	1.9	735.0	6.36	280.7	144.8	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	166.67

D. WELL MAINTENANCE

Does the well require any future maintenance?	No
If yes, explain:	

Additional Comments:	Color: Heavy orange tint Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**93-MW-32**	Date:	**4/22/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	22.4
Initial Static Water Level (feet):	12.62
Initial Groundwater Elevation (ft-amsl):	674.94
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
11:56 AM	Purging start time.						
11:59 AM	14.4	1.6	1015.2	5.49	294.8	37.3	
12:02 PM	13.9	0.9	1017.4	5.49	297.2	30.0	
12:05 PM	14.1	0.8	1015.8	5.50	296.4	30.0	
12:08 PM	13.9	0.7	1016.3	5.51	295.3	34.7	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.8
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	150.00

D. WELL MAINTENANCE

Does the well require any future maintenance?	Yes
If yes, explain:	Needs lock I labelled well case
Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-39R**	Date:	**4/24/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	22.4
Initial Static Water Level (feet):	15.32
Initial Groundwater Elevation (ft-amsl):	718.49
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
11:59 AM	Purging start time.						
12:02 PM	13.4	0.5	4650.1	6.20	-17.7	5.7	
12:05 PM	13.4	0.3	4653.9	6.21	-19.6	5.0	
12:08 PM	13.6	0.2	4654.3	6.22	-21.3	5.4	
12:11 PM	13.3	0.2	4617.9	6.23	-22.6	5.4	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.8
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	150.00

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Clear, reddish Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-40**	Date:	**4/23/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	26.5
Initial Static Water Level (feet):	19.12
Initial Groundwater Elevation (ft-amsl):	709.64
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
9:36 AM	Purging start time.						
9:39 AM	15.2	0.9	1667.7	5.93	55.0	21.8	
9:42 AM	15.2	0.3	1662.1	5.91	23.5	10.1	
9:45 AM	15.2	0.2	1660.2	5.90	10.9	9.5	
9:48 AM	15.2	0.2	1662.4	5.90	3.3	9.7	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	166.67

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Brownish cloudy, clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-53**	Date:	**4/23/2025**
Gradient:	Up	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	28.6
Initial Static Water Level (feet):	13.10
Initial Groundwater Elevation (ft-amsl):	689.45
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
3:12 PM	Purging start time.						
3:15 PM	13.3	2.7	3124.4	7.05	259.2	4.3	
3:18 PM	13.8	2.4	3099.6	7.04	259.5	4.6	
3:21 PM	15.4	2.3	3075.2	7.04	258.8	5.1	
3:24 PM	16.4	2.2	3121.8	7.03	258.4	4.8	
3:27 PM	17.2	2.2	3122.4	7.03	258.1	4.8	
3:30 PM	18.0	2.2	3124.5	7.02	257.7	5.0	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.7
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	18:00
Average Purge Rate (mL/min):	150.00

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**04-MW-56**	Date:	**4/23/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	16.6
Initial Static Water Level (feet):	11.52
Initial Groundwater Elevation (ft-amsl):	679.48
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
11:14 AM	Purging start time.						
11:17 AM	13.2	1.3	2015.1	6.21	110.6	13.2	
11:20 AM	12.6	0.6	2078.7	6.25	56.8	7.7	
11:23 AM	12.7	0.4	2117.3	6.27	26.1	6.3	
11:26 AM	12.7	0.3	2132.0	6.27	9.3	5.5	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.8
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	150.00

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Clear, slightly brownish Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-58**	Date:	**4/23/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	17.5
Initial Static Water Level (feet):	8.91
Initial Groundwater Elevation (ft-amsl):	693.70
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
10:20 AM	Purging start time.						
10:23 AM	10.7	5.2	1790.1	6.17	3.8	45.7	
10:26 AM	10.8	5.2	1779.9	6.16	20.2	29.6	
10:29 AM	10.6	5.2	1779.9	6.16	32.9	23.3	
10:32 AM	10.6	5.2	1775.8	6.15	44.1	20.4	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.9
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	158.33

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Clear with brownish tint Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-59**	Date:	**4/22/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	17.6
Initial Static Water Level (feet):	9.32
Initial Groundwater Elevation (ft-amsl):	690.04
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
2:25 PM	Purging start time.						
2:28 PM	13.8	2.0	2194.6	6.32	7.9	5.6	
2:31 PM	11.3	0.5	2271.9	6.33	-23.7	5.3	
2:34 PM	11.2	0.2	2294.6	6.34	-34.6	5.3	
2:37 PM	11.0	0.1	2317.7	6.35	-42.2	5.3	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.8
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	150.00

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-61R**	Date:	**4/23/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	42.0
Initial Static Water Level (feet):	31.91
Initial Groundwater Elevation (ft-amsl):	678.14
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
6:39 PM	Purging start time.						
6:42 PM	15.2	1.4	3110.6	6.15	283.9	273.5	
6:45 PM	15.0	0.8	3112.1	6.16	257.8	792.4	
6:48 PM	15.1	0.4	3106.4	6.16	240.7	1058.9	
6:51 PM	15.3	0.2	3091.9	6.17	225.2	958.4	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.8
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	233.33

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Dark brown Odor: Sulfur

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-62**	Date:	**4/23/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	25.2
Initial Static Water Level (feet):	3.41
Initial Groundwater Elevation (ft-amsl):	743.88
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
4:31 PM	Purging start time.						
4:34 PM	13.3	0.5	1588.8	6.40	231.8	4.9	
4:37 PM	13.2	0.2	1564.8	6.37	236.2	4.3	
4:40 PM	13.1	0.1	1564.1	6.37	237.1	4.8	
4:43 PM	13.1	0.1	1564.4	6.37	237.0	6.4	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.8
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	150.00

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-63R**	Date:	**4/22/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes	
Litter/Standing Water?	No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	27.9
Initial Static Water Level (feet):	12.64
Initial Groundwater Elevation (ft-amsl):	722.42
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
5:32 PM	Purging start time.						
5:35 PM	13.6	0.8	3819.5	6.67	181.5	5.4	
5:38 PM	13.7	0.4	3824.8	6.65	181.6	4.8	
5:41 PM	13.9	0.3	3821.1	6.65	179.8	5.5	
5:44 PM	14.1	0.2	3828.5	6.66	177.6	5.3	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.2
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	183.33

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-64**	Date:	**4/22/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	41.6
Initial Static Water Level (feet):	16.25
Initial Groundwater Elevation (ft-amsl):	681.51
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
4:40 PM	Purging start time.						
4:43 PM	14.6	0.9	2033.4	6.99	-37.4	13.0	
4:46 PM	14.3	0.5	2026.3	6.98	-31.2	11.8	
4:49 PM	14.1	0.3	2024.0	6.98	-22.8	11.6	
4:52 PM	14.4	0.3	2023.7	6.97	-15.9	11.5	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.9
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	158.33

D. WELL MAINTENANCE

Does the well require any future maintenance?	No
If yes, explain:	

Additional Comments:	Color: Orange, cloudy Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-65**	Date:	**4/22/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	21.0
Initial Static Water Level (feet):	9.14
Initial Groundwater Elevation (ft-amsl):	688.95
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
3:55 PM	Purging start time.						
3:58 PM	11.7	0.3	2342.9	6.56	-77.7	124.9	
4:01 PM	12.2	0.2	2343.6	6.56	-80.6	138.2	
4:04 PM	11.9	0.1	2342.9	6.56	-83.3	92.6	
4:07 PM	11.9	0.1	2342.2	6.56	-85.5	60.2	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	166.67

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Cloudy Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-66**	Date:	**4/22/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	18.1
Initial Static Water Level (feet):	Dry
Initial Groundwater Elevation (ft-amsl):	NA
Equipment Used:	

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
	Purging start time.						
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	0.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	NA
Average Purge Rate (mL/min):	0.00

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Monitoring well was dry.

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-67**	Date:	**4/22/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped? Yes	
Litter/Standing Water? No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	37.8
Initial Static Water Level (feet):	Dry
Initial Groundwater Elevation (ft-amsl):	NA
Equipment Used:	

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
	Purging start time.						
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	0.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	NA
Average Purge Rate (mL/min):	0.00

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Monitoring well was dry.

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-68**	Date:	**4/23/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	58.2
Initial Static Water Level (feet):	48.96
Initial Groundwater Elevation (ft-amsl):	679.11
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
10:53 AM	Purging start time.						
10:56 AM	15.6	10.2	526.4	6.71	172.6	54.3	
10:59 AM	13.6	8.9	506.5	6.46	185.4	34.2	
11:02 AM	13.4	6.9	500.4	6.30	195.8	22.2	
11:05 AM	13.8	5.7	495.3	6.24	203.2	24.1	
11:08 AM	14.3	5.7	497.0	6.23	209.1	24.7	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.1
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	15:00
Average Purge Rate (mL/min):	140.00

D. WELL MAINTENANCE

Does the well require any future maintenance?	Yes	
If yes, explain:	Needs proper tag.	

Additional Comments:	Color: Clear, slight orange Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-71**	Date:	**4/23/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	47.6
Initial Static Water Level (feet):	Dry
Initial Groundwater Elevation (ft-amsl):	NA
Equipment Used:	

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
	Purging start time.						
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	0.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	NA
Average Purge Rate (mL/min):	0.00

D. WELL MAINTENANCE

Does the well require any future maintenance?	Yes	
If yes, explain:	Needs new tag.	

Additional Comments:	Monitoring well was dry.

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-73**	Date:	**4/23/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	52.6
Initial Static Water Level (feet):	40.05
Initial Groundwater Elevation (ft-amsl):	689.52
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
7:36 PM	Purging start time.						
7:39 PM	14.9	0.6	1237.9	6.12	132.3	597.9	
7:42 PM	15.0	0.5	1223.2	6.11	108.5	384.3	
7:45 PM	14.9	0.5	1220.0	6.11	90.8	303.0	
7:48 PM	15.1	0.5	1217.8	6.11	85.7	274.2	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.9
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	158.33

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Heavy orange tint Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-74**	Date:	**4/22/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	43.5
Initial Static Water Level (feet):	Dry
Initial Groundwater Elevation (ft-amsl):	NA
Equipment Used:	

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
	Purging start time.						
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	0.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	NA
Average Purge Rate (mL/min):	0.00

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Monitoring well was dry.

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-75**	Date:	**4/22/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	41.6
Initial Static Water Level (feet):	32.19
Initial Groundwater Elevation (ft-amsl):	677.40
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
6:46 PM	Purging start time.						
6:49 PM	14.7	0.8	2531.0	5.98	98.2	46.8	
6:52 PM	14.7	0.4	2500.1	5.92	72.9	28.2	
6:55 PM	15.6	0.4	2485.6	5.91	61.6	26.5	
6:58 PM	15.5	0.4	2464.0	5.90	54.0	26.0	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.8
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	233.33

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Cloudy, Gray Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-78**	Date:	**4/23/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	56.9
Initial Static Water Level (feet):	52.02
Initial Groundwater Elevation (ft-amsl):	681.32
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
10:00 AM	Purging start time.						
10:03 AM	13.2	1.0	560.0	6.45	23.6	41.1	
10:06 AM	13.7	0.7	559.8	6.40	37.1	18.6	
10:09 AM	13.4	0.6	556.5	6.38	47.1	15.9	
10:12 AM	14.1	0.5	555.7	6.36	54.5	11.3	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.2
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	183.33

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Gray, cloudy, dark Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-79**	Date:	**4/23/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	52.6
Initial Static Water Level (feet):	37.30
Initial Groundwater Elevation (ft-amsl):	699.92
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
8:34 AM	Purging start time.						
8:37 AM	14.6	1.8	1821.4	6.17	101.9	210.7	
8:40 AM	14.1	0.8	1825.7	6.15	92.7	63.6	
8:43 AM	14.2	0.7	1819.3	6.15	92.8	44.3	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.9
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	158.33

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Clear Odor: Sulfur

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-80**	Date:	**4/22/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	40.9
Initial Static Water Level (feet):	36.06
Initial Groundwater Elevation (ft-amsl):	699.74
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
9:25 AM	Purging start time.						
9:28 AM	14.2	0.9	1896.4	5.82	179.4	213.0	
9:31 AM	14.4	0.4	1890.7	5.83	140.2	156.0	
9:34 AM	14.6	0.2	1890.8	5.84	106.7	97.6	
9:37 AM	14.6	0.2	1892.1	5.84	82.1	69.5	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.4
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	200.00

D. WELL MAINTENANCE

Does the well require any future maintenance?	Yes	
If yes, explain:	Well casing cracked in two places at the top of the case.	

Additional Comments:	Color: Dark, gray, cloudy Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-81**	Date:	**4/23/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	33.1
Initial Static Water Level (feet):	23.20
Initial Groundwater Elevation (ft-amsl):	676.40
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
12:36 PM	Purging start time.						
12:39 PM	15.1	2.5	614.3	6.28	291.3	10.1	
12:42 PM	14.9	2.1	613.0	6.29	291.3	5.9	
12:45 PM	14.6	1.9	615.6	6.29	291.3	5.0	
12:48 PM	14.4	1.8	618.3	6.30	290.8	5.0	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.7
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	141.67

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Clear Odor: None

FORM FOR SURFACE WATER SAMPLING

Site Name	Ottumwa-Wapello County Landfill	Permit No.	90-SDP-01-75P
Surface Monitoring Point No.	GU-6	Date	4-23-25

Name of Person Sampling: Garrett Horan

A. TYPE OF MOINITORING POINT

Stream		Open Tile	
Road Ditch		Tile with Riser	
Drainage Ditch		Other	X
None			

B. PURPOSE OF MONITORING POINT

Upstream		Downstream	
Within Landfill	X	Other	

C. MONITORING POINT CONDITIONS/LOCATION

Groundwater underdrain outlet for Phases 1A and 1B of the 2008 North Lateral Expansion of the West MSWLF unit

Was monitoring point dry?	NO
Was water flowing?	yes
Standing Water?	yes
Was water discolored?	yes
Does water have odor?	NO
Was ground discolored?	yes
Litter present?	yes

D. FIELD MEASUREMENTS

Weather Conditions: Sunny, 75°F

Time: 1:35

Field Measurements:

Temperature	20.9	Units	Celsius
Equipment Used	YSI - ProDSS		
pH	6.77	Units	Standard units
Equipment Used	YSI - ProDSS		
Spec.Conductance	1665	Units	uS/cm
Equipment Used			

COMMENTS

Tripod to Sumplp with little water. Turb. reads may be high

IDNR Form 542-1324

FORM FOR SURFACE WATER SAMPLING

Site Name: Ottumwa-Wapello County Landfill
Permit No.: 90-SDP-01-75P
Surface Monitoring Point No.: GU-7
Date:

Name of Person Sampling: Garrett Horan

A. TYPE OF MOINITORING POINT

Stream		Open Tile	
Road Ditch		Tile with Riser	
Drainage Ditch		Other	X
None			

B. PURPOSE OF MONITORING POINT

Upstream		Downstream	
Within Landfill	X	Other	

C. MONITORING POINT CONDITIONS/LOCATION

Groundwater underdrain outlet for Phase 2 of the 2008 North Lateral Expansion of the West MSWLF unit.

Was monitoring point dry?	NO
Was water flowing?	yes
Standing Water?	NO
Was water discolored?	yes
Does water have odor?	NO
Was ground discolored?	yes
Litter present?	yes

D. FIELD MEASUREMENTS

Weather Conditions:

Time:

Field Measurements:

Temperature		Units	Celsius
Equipment Used			
pH		Units	Standard units
Equipment Used			
Spec.Conductance		Units	uS/cm
Equipment Used			

COMMENTS

Insufficient water for sampling

IDNR Form 542-1324

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**93-MW-31R**	Date:	**8/27/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	57.1
Initial Static Water Level (feet):	49.11
Initial Groundwater Elevation (ft-amsl):	677.15
Equipment Used:	Non-Dedicated Submersible Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
6:20 PM	Purging start time.						
6:23 PM	19.0	2.0	864.4	6.66	-19.4	125.7	
6:26 PM	18.6	1.7	749.7	6.50	-0.3	107.5	
6:29 PM	16.4	1.5	704.1	6.43	19.9	82.6	
6:32 PM	16.7	1.4	693.0	6.37	36.6	84.1	
6:35 PM	16.6	1.4	684.3	6.34	51.0	83.6	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.4
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	15:00
Average Purge Rate (mL/min):	200.00

D. WELL MAINTENANCE

Does the well require any future maintenance?	Yes
If yes, explain:	Dedicated submersible pump is not working.
Additional Comments:	Color: Brown Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-39R**	Date:	**8/26/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes	
Litter/Standing Water?	No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	22.3
Initial Static Water Level (feet):	18.23
Initial Groundwater Elevation (ft-amsl):	715.58
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
3:10 PM	Purging start time.						
3:13 PM	17.5	0.8	4425.6	5.87	-43.3	2.5	
3:16 PM	16.4	0.4	4461.5	5.98	-60.7	3.0	
3:19 PM	16.6	0.3	4508.9	6.03	-67.8	3.2	
3:22 PM	16.3	0.3	4545.7	6.07	-72.1	3.5	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.9
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	158.33

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Clear Odor: Sulfur

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-40**	Date:	**8/26/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	21.5
Initial Static Water Level (feet):	20.20
Initial Groundwater Elevation (ft-amsl):	708.56
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
3:58 PM	Purging start time.						
4:01 PM	18.9	0.6	1776.6	5.34	71.4	61.3	
4:04 PM	19.0	0.4	1628.2	5.28	79.9	89.1	
4:07 PM	18.4	0.3	1600.0	5.28	79.8	74.8	
4:10 PM	18.4	0.2	1593.0	5.31	74.7	53.1	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.8
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	150.00

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Orange Odor: Sulfur Duplicate

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**04-MW-56**	Date:	**8/27/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes	
Litter/Standing Water?	No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	17.6
Initial Static Water Level (feet):	11.73
Initial Groundwater Elevation (ft-amsl):	679.27
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
4:00 PM	Purging start time.						
4:03 PM	15.7	0.7	1995.2	6.15	11.1	4.3	
4:06 PM	15.5	0.4	2012.7	6.15	-3.5	5.0	
4:09 PM	15.6	0.3	2029.1	6.16	-11.3	6.0	
4:12 PM	15.7	0.3	2038.2	6.16	-16.0	6.2	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.9
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	158.33

D. WELL MAINTENANCE

Does the well require any future maintenance?	Yes	
If yes, explain:	Brush needs to be cleared.	

Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-58**	Date:	**8/27/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	17.5
Initial Static Water Level (feet):	11.87
Initial Groundwater Elevation (ft-amsl):	690.74
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
4:39 PM	Purging start time.						
4:42 PM	15.6	0.8	3156.6	6.09	3.5	13.8	
4:45 PM	16.1	0.4	3175.1	6.04	12.4	20.0	
4:48 PM	15.7	0.3	3155.8	6.04	15.6	15.3	
4:51 PM	15.8	0.2	3146.6	6.03	17.6	15.1	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.3
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	191.67

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-61R**	Date:	**8/27/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	42.1
Initial Static Water Level (feet):	32.15
Initial Groundwater Elevation (ft-amsl):	677.90
Equipment Used:	Non-Dedicated Submersible Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
9:17 AM	Purging start time.						
9:20 AM	15.3	1.4	2822.1	6.05	173.6	565.7	
9:23 AM	15.6	0.8	2846.2	6.09	111.2	842.1	
9:26 AM	15.7	0.5	2856.6	6.10	80.2	1616.5	
9:29 AM	15.3	0.3	2863.6	6.11	61.6	2170.7	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.8
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	233.33

D. WELL MAINTENANCE

Does the well require any future maintenance?	Yes	
If yes, explain:	Needs lock.	

Additional Comments:	Color: Brown Odor: None Waited as long as possible for turbidity to drop before collecting sample.

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-63R**	Date:	**8/28/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes	
Litter/Standing Water?	No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	27.8
Initial Static Water Level (feet):	12.62
Initial Groundwater Elevation (ft-amsl):	722.44
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
10:27 AM	Purging start time.						
10:30 AM	17.1	0.7	3490.5	6.65	0.0	6.1	
10:33 AM	17.1	0.5	3495.1	6.69	-32.6	7.3	
10:36 AM	17.2	0.4	3501.8	6.69	-34.5	8.0	
10:39 AM	17.2	0.3	3499.9	6.68	-27.2	8.9	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.1
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	175.00

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-65**	Date:	**8/27/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes	
Litter/Standing Water?	No	

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	21.0
Initial Static Water Level (feet):	11.41
Initial Groundwater Elevation (ft-amsl):	686.68
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
5:15 PM	Purging start time.						
5:18 PM	17.8	1.4	2280.6	6.47	-54.2	18.3	
5:21 PM	17.2	1.1	2197.9	6.48	-66.7	20.4	
5:24 PM	17.1	1.0	2162.0	6.47	-70.5	22.7	
5:27 PM	17.2	1.1	2161.6	6.47	-72.5	18.4	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.1
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	175.00

D. WELL MAINTENANCE

Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Brown Odor: Sulfur Duplicate

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-66**	Date:	**8/27/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	18.1
Initial Static Water Level (feet):	11.51
Initial Groundwater Elevation (ft-amsl):	674.38
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
12:18 PM	Purging start time.						
12:21 PM	17.3	3.1	325.5	6.10	87.1	99.9	
12:24 PM	17.7	3.7	303.1	5.77	130.4	87.9	
12:27 PM	17.3	3.2	299.8	5.67	157.1	59.1	
12:30 PM	17.5	2.3	300.4	5.65	170.3	29.1	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.6
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	216.67

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Beige Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-67**	Date:	**8/27/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	37.9
Initial Static Water Level (feet):	Dry
Initial Groundwater Elevation (ft-amsl):	NA
Equipment Used:	

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
	Purging start time.						
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	0.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	NA
Average Purge Rate (mL/min):	0.00

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Monitoring well was dry.

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-71**	Date:	**8/27/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	54.0
Initial Static Water Level (feet):	Dry
Initial Groundwater Elevation (ft-amsl):	NA
Equipment Used:	

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
	Purging start time.						
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	0.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	NA
Average Purge Rate (mL/min):	0.00

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Monitoring well was dry.

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-73**	Date:	**8/27/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	50.7
Initial Static Water Level (feet):	40.21
Initial Groundwater Elevation (ft-amsl):	689.36
Equipment Used:	Non-Dedicated Submersible Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
10:43 AM	Purging start time.						
10:46 AM	15.8	1.5	1304.6	6.15	49.2	1301.0	
10:49 AM	15.4	0.9	1177.8	6.08	39.3	1922.6	
10:52 AM	15.4	0.8	1173.6	6.06	37.0	1919.2	
10:55 AM	15.7	0.8	1173.3	6.05	35.7	1474.4	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.3
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	191.67

D. WELL MAINTENANCE

Does the well require any future maintenance?	Yes	
If yes, explain:	Needs lock and dedicated submersible pump does not work.	

Additional Comments:	Color: Brown Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-74**	Date:	**8/27/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	43.4
Initial Static Water Level (feet):	Dry
Initial Groundwater Elevation (ft-amsl):	NA
Equipment Used:	

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
	Purging start time.						
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	0.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	NA
Average Purge Rate (mL/min):	0.00

D. WELL MAINTENANCE

Does the well require any future maintenance?	Yes	
If yes, explain:	Needs lock.	

Additional Comments:	Monitoring well was dry.

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-78**	Date:	**8/27/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	62.8
Initial Static Water Level (feet):	52.31
Initial Groundwater Elevation (ft-amsl):	681.03
Equipment Used:	Dedicated Submersible

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
2:04 PM	Purging start time.						
2:07 PM	17.1	0.9	525.8	6.18	133.0	175.4	
2:10 PM	17.2	0.7	528.2	6.20	135.2	110.3	
2:13 PM	17.8	0.6	528.8	6.21	137.6	61.7	
2:16 PM	18.2	0.6	527.1	6.21	139.7	34.6	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.3
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	191.67

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Brown Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-79**	Date:	**8/27/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	52.6
Initial Static Water Level (feet):	39.36
Initial Groundwater Elevation (ft-amsl):	697.86
Equipment Used:	Dedicated Submersible

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
11:27 AM	Purging start time.						
11:30 AM	16.4	1.0	1652.6	6.07	50.6	168.8	
11:33 AM	16.7	0.6	1667.5	6.05	59.5	114.8	
11:36 AM	16.9	0.5	1664.7	6.06	58.9	96.1	
11:39 AM	17.2	0.4	1656.3	6.07	52.0	90.2	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.6
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	133.33

D. WELL MAINTENANCE		
Does the well require any future maintenance?	No	
If yes, explain:		

Additional Comments:	Color: Brown Odor: Sulfur

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-80**	Date:	**8/27/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	40.8
Initial Static Water Level (feet):	36.78
Initial Groundwater Elevation (ft-amsl):	699.02
Equipment Used:	Dedicated Submersible

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
3:08 PM	Purging start time.						
3:11 PM	16.6	0.6	1746.6	5.81	21.9	64.5	
3:14 PM	16.2	0.3	1757.9	5.86	7.8	49.9	
3:17 PM	16.2	0.3	1759.7	5.89	1.6	27.3	
3:20 PM	16.0	0.2	1757.0	5.91	-2.6	20.4	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.2
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	183.33

D. WELL MAINTENANCE

Does the well require any future maintenance?	Yes	
If yes, explain:	Needs lock and brush/poison ivy needs cleared.	

Additional Comments:	Color: Grey Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**Ottumwa-Wapello County Landfill**		
Monitoring Well/Piezometer ID:	**MW-81**	Date:	**8/26/2025**
Gradient:	Down	Sampler:	Garrett Horak

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	Yes
Litter/Standing Water?	No

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)

Measured Well Total Depth (feet):	33.4
Initial Static Water Level (feet):	23.44
Initial Groundwater Elevation (ft-amsl):	676.16
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductance (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
2:18 PM	Purging start time.						
2:21 PM	17.5	2.5	550.2	6.32	296.3	5.8	
2:24 PM	16.9	2.2	539.7	6.22	299.7	4.5	
2:27 PM	16.4	2.1	536.9	6.20	301.4	5.1	
2:30 PM	16.7	2.0	538.8	6.20	300.1	4.9	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.7
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	141.67

D. WELL MAINTENANCE

Does the well require any future maintenance?	Yes
If yes, explain:	Needs lock.
Additional Comments:	Color: Clear Odor: None

FORM FOR SURFACE WATER SAMPLING

Site Name: Ottumwa-Wapello County Landfill
Surface Monitoring Point No.: GU-6
Permit No.: 90-SDP-01-75P
Date: ~~9-25-25~~ 9-28-25

Name of Person Sampling: Garrett Horals

A. TYPE OF MOINITORING POINT

Stream		Open Tile	
Road Ditch		Tile with Riser	
Drainage Ditch		Other	X
None			

B. PURPOSE OF MONITORING POINT

Upstream		Downstream	
Within Landfill	X	Other	

C. MONITORING POINT CONDITIONS/LOCATION

Groundwater underdrain outlet for Phases 1A and 1B of the 2008 North Lateral Expansion of the West MSWLF unit

Was monitoring point dry?	yes	Too little water to sample?	yes
Was water flowing?	no	Gallons per minute	
Standing Water?	~~yes~~		
Was water discolored?	yes - orange		
Does water have odor?	sulfur		
Was ground discolored?	no		
Litter present?	yes		

D. FIELD MEASUREMENTS

Weather Conditions: 80°F Sunny, light wind

Time: ~~1 PM~~ 10:15a

Field Measurements:

Temperature Equipment Used		Units	Celsius
pH Equipment Used		Units	Standard units
Spec.Conductance Equipment Used		Units	uS/cm

COMMENTS

IDNR Form 542-1324

FORM FOR SURFACE WATER SAMPLING

Site Name: Ottumwa-Wapello County Landfill
Permit No.: 90-SDP-01-75P
Surface Monitoring Point No.: GU-7
Date: 8-26-25
Name of Person Sampling: Garrett Harris

A. TYPE OF MOINITORING POINT

Stream		Open Tile	
Road Ditch		Tile with Riser	
Drainage Ditch		Other	X
None			

B. PURPOSE OF MONITORING POINT

Upstream		Downstream	
Within Landfill	X	Other	

C. MONITORING POINT CONDITIONS/LOCATION

Groundwater underdrain outlet for Phase 2 of the 2008 North Lateral Expansion of the West MSWLF unit.

Was monitoring point dry?	yes	Too little water to sample?	yes
Was water flowing?	no	Gallons per minute	—
Standing Water?	yes		
Was water discolored?	yes. Black		
Does water have odor?	yes. Sulfur		
Was ground discolored?	no		
Litter present?	no		

D. FIELD MEASUREMENTS

Weather Conditions:
Time:
Field Measurements:

Temperature		Units	Celsius
Equipment Used			
pH		Units	Standard units
Equipment Used			
Spec.Conductance		Units	uS/cm
Equipment Used			

COMMENTS

Appendix B-1

Laboratory Analytical Data Sheets

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Nathan Ohrt
SCS Engineers
1690 All State Court
Suite 100
West Des Moines, Iowa 50265

Generated 5/16/2025 8:48:04 AM Revision 1

JOB DESCRIPTION

Ottumwa 1st 2025 HMSP
Ottumwa-Wapello County Landfill

JOB NUMBER

310-305118-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Revision 1

Authorized for release by
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Job ID: 310-305118-1 — Eurofins Cedar Falls

Job Narrative
310-305118-1

REVISION

The report being provided is a revision of the original report sent on 5/6/2025. The report (revision 1) is being revised due to Added TOC to sample results.

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 4/25/2025 4:08 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were 0.6°C, 3.1°C, 3.3°C and 4.3°C.

GC/MS VOA
Method 8260D: The initial calibration verification (ICV) result for batch 310-452858 was above the upper control limit. The affected analyte is: 1,1,1,2-Tetrachloroethane. Sample results were non-detects, and have been reported as qualified data.

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-452858 recovered above the upper control limit for Trichlorofluoromethane (28.3%D). The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is:(CCV 310-452858/4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC
Method 9056A_ORGFM_48H: The following sample was received outside of holding time: MW-73 (310-305118-17).

Method 9056A_ORGFM_48H: The following sample(s) was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: 93-MW-31R (310-305118-15).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-305118-1	MW-53	Ground Water	04/23/25 15:47	04/25/25 16:08
310-305118-2	91-MW-14	Ground Water	04/23/25 14:35	04/25/25 16:08
310-305118-3	GU-6	Ground Water	04/23/25 13:35	04/25/25 16:08
310-305118-4	93-MW-32	Ground Water	04/23/25 12:20	04/25/25 16:08
310-305118-5	MW-62	Ground Water	04/23/25 16:53	04/25/25 16:08
310-305118-6	MW-81	Ground Water	04/23/25 13:02	04/25/25 16:08
310-305118-7	MW-39R	Ground Water	04/24/25 12:22	04/25/25 16:08
310-305118-8	MW-40	Ground Water	04/24/25 10:07	04/25/25 16:08
310-305118-9	04-MW-56	Ground Water	04/24/25 11:43	04/25/25 16:08
310-305118-10	MW-58	Ground Water	04/24/25 10:51	04/25/25 16:08
310-305118-11	MW-59	Ground Water	04/22/25 14:58	04/25/25 16:08
310-305118-12	MW-63R	Ground Water	04/22/25 18:09	04/25/25 16:08
310-305118-13	MW-64	Ground Water	04/22/25 17:07	04/25/25 16:08
310-305118-14	MW-65	Ground Water	04/22/25 16:26	04/25/25 16:08
310-305118-15	93-MW-31R	Ground Water	04/23/25 17:54	04/25/25 16:08
310-305118-16	MW-61R	Ground Water	04/23/25 19:56	04/25/25 16:08
310-305118-17	MW-73	Ground Water	04/23/25 08:56	04/25/25 16:08
310-305118-18	MW-79	Ground Water	04/24/25 08:56	04/25/25 16:08
310-305118-19	Trip Blank 1	Water	04/22/25 00:00	04/25/25 16:08
310-305118-20	Trip Blank 2	Water	04/22/25 00:00	04/25/25 16:08
310-305118-21	Trip Blank 3	Water	04/22/25 00:00	04/25/25 16:08
310-305118-22	Trip Blank 4	Water	04/22/25 00:00	04/25/25 16:08

Detection Summary

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-53 — Lab Sample ID: 310-305118-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0229		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000226		0.000200	0.000100	mg/L	1		6020B	Total/NA
Total Suspended Solids	1.63	J	1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: 91-MW-14 — Lab Sample ID: 310-305118-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0174		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000178	J	0.000500	0.000170	mg/L	1		6020B	Total/NA

Client Sample ID: GU-6 — Lab Sample ID: 310-305118-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.000567	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0345		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00818		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0332		0.00500	0.00230	mg/L	1		6020B	Total/NA
Zinc	0.0231		0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	89.3		10.0	7.00	mg/L	1		I-3765-85	Total/NA

Client Sample ID: 93-MW-32 — Lab Sample ID: 310-305118-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00308		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0677		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000937		0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.00898		0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.000852		0.000500	0.000330	mg/L	1		6020B	Total/NA
Nickel	0.0651		0.00500	0.00230	mg/L	1		6020B	Total/NA
Zinc	0.0313		0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	37.0		7.50	5.25	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-62 — Lab Sample ID: 310-305118-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0273		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000521		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00749		0.00500	0.00230	mg/L	1		6020B	Total/NA

Client Sample ID: MW-81 — Lab Sample ID: 310-305118-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.832	J	1.00	0.210	ug/L	1		8260D	Total/NA
Tetrachloroethene	0.548	J	1.00	0.480	ug/L	1		8260D	Total/NA
Barium	0.0707		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000273		0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.000821		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00630		0.00500	0.00230	mg/L	1		6020B	Total/NA

Client Sample ID: MW-39R — Lab Sample ID: 310-305118-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1840		50.0	21.0	mg/L	50		9056A	Total/NA
Iron	67.8		0.500	0.0790	mg/L	1		6010D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-39R (Continued) — Lab Sample ID: 310-305118-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	37.9		0.0100	0.00410	mg/L	1		6010D	Total/NA
Arsenic	0.00251		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.00904		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.0358		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0202		0.00500	0.00230	mg/L	1		6020B	Total/NA
Total Suspended Solids	75.0		15.0	10.5	mg/L	1		I-3765-85	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	786		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	786		5.00	2.50	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-40 — Lab Sample ID: 310-305118-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.521	J	1.00	0.220	ug/L	1		8260D	Total/NA
Benzene	0.955		0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	0.841	J	4.00	0.790	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	8.51		1.00	0.210	ug/L	1		8260D	Total/NA
Vinyl chloride	0.738	J	1.00	0.180	ug/L	1		8260D	Total/NA
Sulfate	394		50.0	21.0	mg/L	50		9056A	Total/NA
Aluminum	0.0998	J	0.100	0.0310	mg/L	1		6010D	Total/NA
Iron	68.0		0.500	0.0790	mg/L	1		6010D	Total/NA
Manganese	49.0		0.0100	0.00410	mg/L	1		6010D	Total/NA
Arsenic	0.00614		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0161		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.122		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.00358	J	0.00500	0.00320	mg/L	1		6020B	Total/NA
Lead	0.000384	J	0.000500	0.000330	mg/L	1		6020B	Total/NA
Nickel	0.0674		0.00500	0.00230	mg/L	1		6020B	Total/NA
Total Suspended Solids	23.0		7.50	5.25	mg/L	1		I-3765-85	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	414		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	414		5.00	2.50	mg/L	1		SM 2320B	Total/NA

Client Sample ID: 04-MW-56 — Lab Sample ID: 310-305118-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	4.65	J	10.0	3.10	ug/L	1		8260D	Total/NA
Sulfate	507		50.0	21.0	mg/L	50		9056A	Total/NA
Iron	45.0		0.500	0.0790	mg/L	1		6010D	Total/NA
Manganese	11.9		0.0100	0.00410	mg/L	1		6010D	Total/NA
Arsenic	0.00490		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0242		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.0197		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0395		0.00500	0.00230	mg/L	1		6020B	Total/NA
Zinc	0.0136	J	0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	49.0		7.50	5.25	mg/L	1		I-3765-85	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	565		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	565		5.00	2.50	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-58 — Lab Sample ID: 310-305118-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	703		50.0	21.0	mg/L	50		9056A	Total/NA
Aluminum	0.258		0.100	0.0310	mg/L	1		6010D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-58 (Continued) — Lab Sample ID: 310-305118-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.799		0.500	0.0790	mg/L	1		6010D	Total/NA
Manganese	0.0828		0.0100	0.00410	mg/L	1		6010D	Total/NA
Barium	0.0149		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000144	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.000626		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00480	J	0.00500	0.00230	mg/L	1		6020B	Total/NA
Thallium	0.00109		0.00100	0.000570	mg/L	1		6020B	Total/NA
Zinc	0.0166	J	0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	5.33		5.00	3.50	mg/L	1		I-3765-85	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	164		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	164		5.00	2.50	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-59 — Lab Sample ID: 310-305118-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	6.31	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	0.284	J	0.500	0.220	ug/L	1		8260D	Total/NA
Sulfate	944		50.0	21.0	mg/L	50		9056A	Total/NA
Iron	43.6		0.500	0.0790	mg/L	1		6010D	Total/NA
Manganese	12.0		0.0100	0.00410	mg/L	1		6010D	Total/NA
Arsenic	0.00494		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0324		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.0181		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0197		0.00500	0.00230	mg/L	1		6020B	Total/NA
Total Suspended Solids	69.0		15.0	10.5	mg/L	1		I-3765-85	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	371		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	371		5.00	2.50	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-63R — Lab Sample ID: 310-305118-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1960		50.0	21.0	mg/L	50		9056A	Total/NA
Aluminum	0.0956	J	0.100	0.0310	mg/L	1		6010D	Total/NA
Manganese	0.578		0.0100	0.00410	mg/L	1		6010D	Total/NA
Barium	0.0142		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.00189		0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.00319		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0165		0.00500	0.00230	mg/L	1		6020B	Total/NA
Zinc	0.109		0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	2.00		1.88	1.31	mg/L	1		I-3765-85	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	476		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	476		5.00	2.50	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-64 — Lab Sample ID: 310-305118-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	87.9		50.0	21.0	mg/L	50		9056A	Total/NA
Iron	1.34		0.500	0.0790	mg/L	1		6010D	Total/NA
Manganese	0.159		0.0100	0.00410	mg/L	1		6010D	Total/NA
Arsenic	0.000652	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.169		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000275	J	0.000500	0.000170	mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-64 (Continued) — Lab Sample ID: 310-305118-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.0214		0.00500	0.00230	mg/L	1		6020B	Total/NA
Total Suspended Solids	3.13		1.88	1.31	mg/L	1		I-3765-85	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	604		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	604		5.00	2.50	mg/L	1		SM 2320B	Total/NA

Client Sample ID: MW-65 — Lab Sample ID: 310-305118-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.555	J	1.00	0.220	ug/L	1		8260D	Total/NA
Chloroethane	1.82	J	4.00	0.790	ug/L	1		8260D	Total/NA
Sulfate	264		50.0	21.0	mg/L	50		9056A	Total/NA
Iron	69.4		0.500	0.0790	mg/L	1		6010D	Total/NA
Manganese	3.86		0.0100	0.00410	mg/L	1		6010D	Total/NA
Arsenic	0.0310		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.322		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00228		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	118		15.0	10.5	mg/L	1		I-3765-85	Total/NA
Total Alkalinity as CaCO3 to pH 4.5	767		5.00	2.50	mg/L	1		SM 2320B	Total/NA
Bicarbonate Alkalinity as CaCO3	767		5.00	2.50	mg/L	1		SM 2320B	Total/NA

Client Sample ID: 93-MW-31R — Lab Sample ID: 310-305118-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nitrate as N	2.34	H	0.200	0.0780	mg/L	1		9056A	Total/NA
Sulfate	159		20.0	8.40	mg/L	20		9056A	Total/NA
Iron	19.5		0.500	0.0790	mg/L	1		6010D	Total/NA
Manganese	0.666		0.0100	0.00410	mg/L	1		6010D	Total/NA
Arsenic	0.0134		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.101		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000384		0.000200	0.000100	mg/L	1		6020B	Total/NA
Chromium	0.00795		0.00500	0.00180	mg/L	1		6020B	Total/NA
Cobalt	0.00445		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.00454	J	0.00500	0.00320	mg/L	1		6020B	Total/NA
Lead	0.00281		0.000500	0.000330	mg/L	1		6020B	Total/NA
Nickel	0.00988		0.00500	0.00230	mg/L	1		6020B	Total/NA
Selenium	0.00474	J	0.00500	0.00140	mg/L	1		6020B	Total/NA
Vanadium	0.00905		0.00500	0.00170	mg/L	1		6020B	Total/NA
Zinc	0.0329		0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	66.0		15.0	10.5	mg/L	1		I-3765-85	Total/NA
TOC Result 1	1.03		1.00	0.470	mg/L	1		SM 5310C	Total/NA
TOC Result 2	0.852	J	1.00	0.470	mg/L	1		SM 5310C	Total/NA

Client Sample ID: MW-61R — Lab Sample ID: 310-305118-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.576	J	1.00	0.220	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	17.9		1.00	0.210	ug/L	1		8260D	Total/NA
Sulfate	1570		50.0	21.0	mg/L	50		9056A	Total/NA
Iron	44.2		0.500	0.0790	mg/L	1		6010D	Total/NA
Manganese	8.33		0.0100	0.00410	mg/L	1		6010D	Total/NA
Antimony	0.00144	J	0.00200	0.00100	mg/L	1		6020B	Total/NA
Arsenic	0.0327		0.00200	0.000530	mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-61R (Continued) — Lab Sample ID: 310-305118-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.363		0.00200	0.000660	mg/L	1		6020B	Total/NA
Beryllium	0.00186		0.00100	0.000330	mg/L	1		6020B	Total/NA
Cadmium	0.00130		0.000200	0.000100	mg/L	1		6020B	Total/NA
Chromium	0.0621		0.00500	0.00180	mg/L	1		6020B	Total/NA
Cobalt	0.0275		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.0371		0.00500	0.00320	mg/L	1		6020B	Total/NA
Lead	0.0241		0.000500	0.000330	mg/L	1		6020B	Total/NA
Nickel	0.0805		0.00500	0.00230	mg/L	1		6020B	Total/NA
Selenium	0.00626		0.00500	0.00140	mg/L	1		6020B	Total/NA
Vanadium	0.0845		0.00500	0.00170	mg/L	1		6020B	Total/NA
Zinc	0.150		0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	764		60.0	42.0	mg/L	1		I-3765-85	Total/NA
TOC Result 1	3.40		1.00	0.470	mg/L	1		SM 5310C	Total/NA
TOC Result 2	3.03		1.00	0.470	mg/L	1		SM 5310C	Total/NA

Client Sample ID: MW-73 — Lab Sample ID: 310-305118-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	3.39		1.00	0.220	ug/L	1		8260D	Total/NA
1,2-Dichloropropane	0.784	J	1.00	0.270	ug/L	1		8260D	Total/NA
Benzene	0.353	J	0.500	0.220	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	45.3		1.00	0.210	ug/L	1		8260D	Total/NA
Tetrachloroethene	2.11		1.00	0.480	ug/L	1		8260D	Total/NA
Trichloroethene	3.64		1.00	0.430	ug/L	1		8260D	Total/NA
Vinyl chloride	0.923	J	1.00	0.180	ug/L	1		8260D	Total/NA
Sulfate	57.5		5.00	2.10	mg/L	5		9056A	Total/NA
Iron	36.4		0.500	0.0790	mg/L	1		6010D	Total/NA
Manganese	5.83		0.0100	0.00410	mg/L	1		6010D	Total/NA
Arsenic	0.0310		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.232		0.00200	0.000660	mg/L	1		6020B	Total/NA
Beryllium	0.000693	J	0.00100	0.000330	mg/L	1		6020B	Total/NA
Cadmium	0.0460		0.000200	0.000100	mg/L	1		6020B	Total/NA
Chromium	0.0533		0.00500	0.00180	mg/L	1		6020B	Total/NA
Cobalt	0.0612		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.0219		0.00500	0.00320	mg/L	1		6020B	Total/NA
Lead	0.00644		0.000500	0.000330	mg/L	1		6020B	Total/NA
Nickel	0.0527		0.00500	0.00230	mg/L	1		6020B	Total/NA
Thallium	0.00143		0.00100	0.000570	mg/L	1		6020B	Total/NA
Vanadium	0.00806		0.00500	0.00170	mg/L	1		6020B	Total/NA
Zinc	0.362		0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	356		30.0	21.0	mg/L	1		I-3765-85	Total/NA
TOC Result 1	1.47		1.00	0.470	mg/L	1		SM 5310C	Total/NA
TOC Result 2	0.934	J	1.00	0.470	mg/L	1		SM 5310C	Total/NA

Client Sample ID: MW-79 — Lab Sample ID: 310-305118-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	3.61		1.00	0.220	ug/L	1		8260D	Total/NA
1,2-Dichloropropane	0.408	J	1.00	0.270	ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	1.10		1.00	0.230	ug/L	1		8260D	Total/NA
Benzene	0.285	J	0.500	0.220	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	55.0		1.00	0.210	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-79 (Continued) — Lab Sample ID: 310-305118-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
trans-1,2-Dichloroethene	0.696	J	1.00	0.270	ug/L	1		8260D	Total/NA
Vinyl chloride	7.08		1.00	0.180	ug/L	1		8260D	Total/NA
Sulfate	133		20.0	8.40	mg/L	20		9056A	Total/NA
Iron	1.06		0.500	0.0790	mg/L	1		6010D	Total/NA
Manganese	18.0		0.0100	0.00410	mg/L	1		6010D	Total/NA
Arsenic	0.000928	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.109		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.0177		0.000200	0.000100	mg/L	1		6020B	Total/NA
Chromium	0.00245	J	0.00500	0.00180	mg/L	1		6020B	Total/NA
Cobalt	0.00450		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.0131		0.00500	0.00320	mg/L	1		6020B	Total/NA
Lead	0.00110		0.000500	0.000330	mg/L	1		6020B	Total/NA
Nickel	0.0351		0.00500	0.00230	mg/L	1		6020B	Total/NA
Thallium	0.00121		0.00100	0.000570	mg/L	1		6020B	Total/NA
Vanadium	0.00495	J	0.00500	0.00170	mg/L	1		6020B	Total/NA
Zinc	0.122		0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	31.0		5.00	3.50	mg/L	1		I-3765-85	Total/NA
TOC Result 1	2.28		1.00	0.470	mg/L	1		SM 5310C	Total/NA
TOC Result 2	1.80		1.00	0.470	mg/L	1		SM 5310C	Total/NA

Client Sample ID: Trip Blank 1 — Lab Sample ID: 310-305118-19

No Detections.

Client Sample ID: Trip Blank 2 — Lab Sample ID: 310-305118-20

No Detections.

Client Sample ID: Trip Blank 3 — Lab Sample ID: 310-305118-21

No Detections.

Client Sample ID: Trip Blank 4 — Lab Sample ID: 310-305118-22

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-53

Date Collected: 04/23/25 15:47
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-1

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 01:00	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 01:00	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 01:00	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 01:00	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			04/29/25 01:00	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 01:00	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 01:00	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 01:00	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 01:00	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 01:00	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 01:00	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/29/25 01:00	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/29/25 01:00	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 01:00	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 01:00	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 01:00	1
Acetone	<10.0		10.0	3.10	ug/L			04/29/25 01:00	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 01:00	1
Benzene	<0.500		0.500	0.220	ug/L			04/29/25 01:00	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 01:00	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 01:00	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 01:00	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 01:00	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 01:00	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 01:00	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 01:00	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 01:00	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/29/25 01:00	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 01:00	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 01:00	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/29/25 01:00	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 01:00	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 01:00	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 01:00	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 01:00	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 01:00	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 01:00	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/29/25 01:00	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 01:00	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/29/25 01:00	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 01:00	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 01:00	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 01:00	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 01:00	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 01:00	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/29/25 01:00	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 01:00	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*76 - 130*		*04/29/25 01:00*	*1*

Client Sample ID: MW-53
Date Collected: 04/23/25 15:47
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-1
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*94*		*80 - 120*		*04/29/25 01:00*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*04/29/25 01:00*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/29/25 09:00	05/01/25 16:28	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/29/25 09:00	05/01/25 16:28	1
Barium	**0.0229**		0.00200	0.000660	mg/L		04/29/25 09:00	05/01/25 16:28	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/29/25 09:00	05/01/25 16:28	1
Cadmium	**0.000226**		0.000200	0.000100	mg/L		04/29/25 09:00	05/01/25 16:28	1
Chromium	<0.00500		0.00500	0.00180	mg/L		04/29/25 09:00	05/01/25 16:28	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		04/29/25 09:00	05/01/25 16:28	1
Copper	<0.00500		0.00500	0.00320	mg/L		04/29/25 09:00	05/01/25 16:28	1
Lead	<0.000500		0.000500	0.000330	mg/L		04/29/25 09:00	05/01/25 16:28	1
Nickel	<0.00500		0.00500	0.00230	mg/L		04/29/25 09:00	05/01/25 16:28	1
Selenium	<0.00500		0.00500	0.00140	mg/L		04/29/25 09:00	05/01/25 16:28	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/29/25 09:00	05/01/25 16:28	1
Thallium	<0.00100		0.00100	0.000570	mg/L		04/29/25 09:00	05/01/25 16:28	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		04/29/25 09:00	05/01/25 16:28	1
Zinc	<0.0200		0.0200	0.0130	mg/L		04/29/25 09:00	05/01/25 16:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**1.63**	**J**	1.88	1.31	mg/L			04/28/25 19:51	1

Client Sample Results

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: 91-MW-14

Date Collected: 04/23/25 14:35
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-2

Matrix: Ground Water

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/29/25 09:00	04/30/25 15:36	1
Barium	**0.0174**		0.00200	0.000660	mg/L		04/29/25 09:00	04/30/25 15:36	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/29/25 09:00	04/30/25 15:36	1
Cobalt	**0.000178**	**J**	0.000500	0.000170	mg/L		04/29/25 09:00	04/30/25 15:36	1
Copper	<0.00500		0.00500	0.00320	mg/L		04/29/25 09:00	04/30/25 15:36	1
Lead	<0.000500		0.000500	0.000330	mg/L		04/29/25 09:00	04/30/25 15:36	1
Nickel	<0.00500		0.00500	0.00230	mg/L		04/29/25 09:00	04/30/25 15:36	1
Zinc	<0.0200		0.0200	0.0130	mg/L		04/29/25 09:00	04/30/25 15:36	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	1.31	mg/L			04/28/25 19:51	1

Client Sample ID: GU-6

Date Collected: 04/23/25 13:35
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-3

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 01:22	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 01:22	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 01:22	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 01:22	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			04/29/25 01:22	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 01:22	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 01:22	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 01:22	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 01:22	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 01:22	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 01:22	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/29/25 01:22	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/29/25 01:22	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 01:22	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 01:22	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 01:22	1
Acetone	<10.0		10.0	3.10	ug/L			04/29/25 01:22	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 01:22	1
Benzene	<0.500		0.500	0.220	ug/L			04/29/25 01:22	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 01:22	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 01:22	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 01:22	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 01:22	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 01:22	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 01:22	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 01:22	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 01:22	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/29/25 01:22	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 01:22	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 01:22	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/29/25 01:22	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 01:22	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 01:22	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 01:22	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 01:22	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 01:22	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 01:22	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/29/25 01:22	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 01:22	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/29/25 01:22	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 01:22	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 01:22	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 01:22	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 01:22	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 01:22	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/29/25 01:22	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 01:22	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*76 - 130*		*04/29/25 01:22*	*1*

Client Sample ID: GU-6

Date Collected: 04/23/25 13:35
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-3

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*		*04/29/25 01:22*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*04/29/25 01:22*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/29/25 09:00	04/30/25 15:39	1
Arsenic	**0.000567**	**J**	0.00200	0.000530	mg/L		04/29/25 09:00	04/30/25 15:39	1
Barium	**0.0345**		0.00200	0.000660	mg/L		04/29/25 09:00	04/30/25 15:39	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/29/25 09:00	04/30/25 15:39	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/29/25 09:00	04/30/25 15:39	1
Chromium	<0.00500		0.00500	0.00180	mg/L		04/29/25 09:00	04/30/25 15:39	1
Cobalt	**0.00818**		0.000500	0.000170	mg/L		04/29/25 09:00	04/30/25 15:39	1
Copper	<0.00500		0.00500	0.00320	mg/L		04/29/25 09:00	04/30/25 15:39	1
Lead	<0.000500		0.000500	0.000330	mg/L		04/29/25 09:00	04/30/25 15:39	1
Nickel	**0.0332**		0.00500	0.00230	mg/L		04/29/25 09:00	04/30/25 15:39	1
Selenium	<0.00500		0.00500	0.00140	mg/L		04/29/25 09:00	04/30/25 15:39	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/29/25 09:00	04/30/25 15:39	1
Thallium	<0.00100		0.00100	0.000570	mg/L		04/29/25 09:00	04/30/25 15:39	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		04/29/25 09:00	04/30/25 15:39	1
Zinc	**0.0231**		0.0200	0.0130	mg/L		04/29/25 09:00	04/30/25 15:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**89.3**		10.0	7.00	mg/L			04/28/25 19:51	1

Client Sample Results

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: 93-MW-32

Date Collected: 04/23/25 12:20
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-4

Matrix: Ground Water

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00308		0.00200	0.000530	mg/L		04/29/25 09:00	04/30/25 15:42	1
Barium	0.0677		0.00200	0.000660	mg/L		04/29/25 09:00	04/30/25 15:42	1
Cadmium	0.000937		0.000200	0.000100	mg/L		04/29/25 09:00	04/30/25 15:42	1
Cobalt	0.00898		0.000500	0.000170	mg/L		04/29/25 09:00	04/30/25 15:42	1
Copper	<0.00500		0.00500	0.00320	mg/L		04/29/25 09:00	04/30/25 15:42	1
Lead	0.000852		0.000500	0.000330	mg/L		04/29/25 09:00	04/30/25 15:42	1
Nickel	0.0651		0.00500	0.00230	mg/L		04/29/25 09:00	04/30/25 15:42	1
Zinc	0.0313		0.0200	0.0130	mg/L		04/29/25 09:00	04/30/25 15:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	37.0		7.50	5.25	mg/L			04/28/25 19:22	1

Client Sample Results

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-62

Date Collected: 04/23/25 16:53
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-5

Matrix: Ground Water

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/29/25 09:00	04/30/25 15:45	1
Barium	**0.0273**		0.00200	0.000660	mg/L		04/29/25 09:00	04/30/25 15:45	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/29/25 09:00	04/30/25 15:45	1
Cobalt	**0.000521**		0.000500	0.000170	mg/L		04/29/25 09:00	04/30/25 15:45	1
Copper	<0.00500		0.00500	0.00320	mg/L		04/29/25 09:00	04/30/25 15:45	1
Lead	<0.000500		0.000500	0.000330	mg/L		04/29/25 09:00	04/30/25 15:45	1
Nickel	**0.00749**		0.00500	0.00230	mg/L		04/29/25 09:00	04/30/25 15:45	1
Zinc	<0.0200		0.0200	0.0130	mg/L		04/29/25 09:00	04/30/25 15:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	1.31	mg/L			04/28/25 19:51	1

Client Sample ID: MW-81
Date Collected: 04/23/25 13:02
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-6
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 01:45	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 01:45	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 01:45	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 01:45	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			04/29/25 01:45	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 01:45	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 01:45	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 01:45	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 01:45	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 01:45	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 01:45	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/29/25 01:45	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/29/25 01:45	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 01:45	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 01:45	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 01:45	1
Acetone	<10.0		10.0	3.10	ug/L			04/29/25 01:45	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 01:45	1
Benzene	<0.500		0.500	0.220	ug/L			04/29/25 01:45	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 01:45	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 01:45	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 01:45	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 01:45	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 01:45	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 01:45	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 01:45	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 01:45	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/29/25 01:45	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 01:45	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 01:45	1
cis-1,2-Dichloroethene	**0.832**	**J**	1.00	0.210	ug/L			04/29/25 01:45	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 01:45	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 01:45	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 01:45	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 01:45	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 01:45	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 01:45	1
Tetrachloroethene	**0.548**	**J**	1.00	0.480	ug/L			04/29/25 01:45	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 01:45	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/29/25 01:45	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 01:45	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 01:45	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 01:45	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 01:45	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 01:45	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/29/25 01:45	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 01:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*76 - 130*		*04/29/25 01:45*	*1*

Client Sample ID: MW-81
Date Collected: 04/23/25 13:02
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-6
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*80 - 120*		*04/29/25 01:45*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*04/29/25 01:45*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/29/25 09:00	04/30/25 15:48	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/29/25 09:00	04/30/25 15:48	1
Barium	**0.0707**		0.00200	0.000660	mg/L		04/29/25 09:00	04/30/25 15:48	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/29/25 09:00	04/30/25 15:48	1
Cadmium	**0.000273**		0.000200	0.000100	mg/L		04/29/25 09:00	04/30/25 15:48	1
Chromium	<0.00500		0.00500	0.00180	mg/L		04/29/25 09:00	04/30/25 15:48	1
Cobalt	**0.000821**		0.000500	0.000170	mg/L		04/29/25 09:00	04/30/25 15:48	1
Copper	<0.00500		0.00500	0.00320	mg/L		04/29/25 09:00	04/30/25 15:48	1
Lead	<0.000500		0.000500	0.000330	mg/L		04/29/25 09:00	04/30/25 15:48	1
Nickel	**0.00630**		0.00500	0.00230	mg/L		04/29/25 09:00	04/30/25 15:48	1
Selenium	<0.00500		0.00500	0.00140	mg/L		04/29/25 09:00	04/30/25 15:48	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/29/25 09:00	04/30/25 15:48	1
Thallium	<0.00100		0.00100	0.000570	mg/L		04/29/25 09:00	04/30/25 15:48	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		04/29/25 09:00	04/30/25 15:48	1
Zinc	<0.0200		0.0200	0.0130	mg/L		04/29/25 09:00	04/30/25 15:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	1.31	mg/L			04/28/25 19:22	1

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-39R
Date Collected: 04/24/25 12:22
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-7
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 04:46	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 04:46	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 04:46	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 04:46	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			04/29/25 04:46	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 04:46	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 04:46	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 04:46	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 04:46	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 04:46	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 04:46	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/29/25 04:46	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/29/25 04:46	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 04:46	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 04:46	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 04:46	1
Acetone	<10.0		10.0	3.10	ug/L			04/29/25 04:46	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 04:46	1
Benzene	<0.500		0.500	0.220	ug/L			04/29/25 04:46	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 04:46	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 04:46	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 04:46	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 04:46	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 04:46	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 04:46	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 04:46	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 04:46	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/29/25 04:46	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 04:46	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 04:46	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/29/25 04:46	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 04:46	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 04:46	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 04:46	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 04:46	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 04:46	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 04:46	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/29/25 04:46	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 04:46	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/29/25 04:46	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 04:46	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 04:46	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 04:46	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 04:46	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 04:46	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/29/25 04:46	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 04:46	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*118*		*76 - 130*		*04/29/25 04:46*	*1*

Client Sample ID: MW-39R

Date Collected: 04/24/25 12:22
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-7

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*91*		*80 - 120*		*04/29/25 04:46*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*04/29/25 04:46*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**1840**		50.0	21.0	mg/L			05/01/25 13:14	50

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.100		0.100	0.0310	mg/L		04/29/25 09:00	04/29/25 17:15	1
Iron	**67.8**		0.500	0.0790	mg/L		04/29/25 09:00	04/29/25 17:15	1
Manganese	**37.9**		0.0100	0.00410	mg/L		04/29/25 09:00	04/29/25 17:15	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/29/25 09:00	04/30/25 15:51	1
Arsenic	**0.00251**		0.00200	0.000530	mg/L		04/29/25 09:00	04/30/25 15:51	1
Barium	**0.00904**		0.00200	0.000660	mg/L		04/29/25 09:00	04/30/25 15:51	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/29/25 09:00	04/30/25 15:51	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/29/25 09:00	04/30/25 15:51	1
Chromium	<0.00500		0.00500	0.00180	mg/L		04/29/25 09:00	04/30/25 15:51	1
Cobalt	**0.0358**		0.000500	0.000170	mg/L		04/29/25 09:00	04/30/25 15:51	1
Copper	<0.00500		0.00500	0.00320	mg/L		04/29/25 09:00	04/30/25 15:51	1
Lead	<0.000500		0.000500	0.000330	mg/L		04/29/25 09:00	04/30/25 15:51	1
Nickel	**0.0202**		0.00500	0.00230	mg/L		04/29/25 09:00	04/30/25 15:51	1
Selenium	<0.00500		0.00500	0.00140	mg/L		04/29/25 09:00	04/30/25 15:51	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/29/25 09:00	04/30/25 15:51	1
Thallium	<0.00100		0.00100	0.000570	mg/L		04/29/25 09:00	04/30/25 15:51	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		04/29/25 09:00	04/30/25 15:51	1
Zinc	<0.0200		0.0200	0.0130	mg/L		04/29/25 09:00	04/30/25 15:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.00		1.00	0.231	mg/L		04/29/25 18:25	04/29/25 23:34	1
Total Suspended Solids (USGS I-3765-85)	**75.0**		15.0	10.5	mg/L			04/30/25 11:54	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B)	**786**		5.00	2.50	mg/L			05/05/25 15:59	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**786**		5.00	2.50	mg/L			05/05/25 15:59	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.00		5.00	2.50	mg/L			05/05/25 15:59	1

Client Sample ID: MW-40
Date Collected: 04/24/25 10:07
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-8
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 05:09	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 05:09	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 05:09	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 05:09	1
1,1-Dichloroethane	**0.521**	**J**	1.00	0.220	ug/L			04/29/25 05:09	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 05:09	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 05:09	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 05:09	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 05:09	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 05:09	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 05:09	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/29/25 05:09	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/29/25 05:09	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 05:09	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 05:09	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 05:09	1
Acetone	<10.0		10.0	3.10	ug/L			04/29/25 05:09	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 05:09	1
Benzene	**0.955**		0.500	0.220	ug/L			04/29/25 05:09	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 05:09	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 05:09	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 05:09	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 05:09	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 05:09	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 05:09	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 05:09	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 05:09	1
Chloroethane	**0.841**	**J**	4.00	0.790	ug/L			04/29/25 05:09	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 05:09	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 05:09	1
cis-1,2-Dichloroethene	**8.51**		1.00	0.210	ug/L			04/29/25 05:09	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 05:09	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 05:09	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 05:09	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 05:09	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 05:09	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 05:09	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/29/25 05:09	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 05:09	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/29/25 05:09	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 05:09	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 05:09	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 05:09	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 05:09	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 05:09	1
Vinyl chloride	**0.738**	**J**	1.00	0.180	ug/L			04/29/25 05:09	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 05:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*76 - 130*		*04/29/25 05:09*	*1*

Client Sample ID: MW-40
Date Collected: 04/24/25 10:07
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-8
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*		*04/29/25 05:09*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*04/29/25 05:09*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**394**		50.0	21.0	mg/L			05/01/25 13:53	50

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.0998**	**J**	0.100	0.0310	mg/L		04/29/25 09:00	04/29/25 17:16	1
Iron	**68.0**		0.500	0.0790	mg/L		04/29/25 09:00	04/29/25 17:16	1
Manganese	**49.0**		0.0100	0.00410	mg/L		04/29/25 09:00	04/29/25 17:16	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/29/25 09:00	04/30/25 15:54	1
Arsenic	**0.00614**		0.00200	0.000530	mg/L		04/29/25 09:00	04/30/25 15:54	1
Barium	**0.0161**		0.00200	0.000660	mg/L		04/29/25 09:00	04/30/25 15:54	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/29/25 09:00	04/30/25 15:54	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/29/25 09:00	04/30/25 15:54	1
Chromium	<0.00500		0.00500	0.00180	mg/L		04/29/25 09:00	04/30/25 15:54	1
Cobalt	**0.122**		0.000500	0.000170	mg/L		04/29/25 09:00	04/30/25 15:54	1
Copper	**0.00358**	**J**	0.00500	0.00320	mg/L		04/29/25 09:00	04/30/25 15:54	1
Lead	**0.000384**	**J**	0.000500	0.000330	mg/L		04/29/25 09:00	04/30/25 15:54	1
Nickel	**0.0674**		0.00500	0.00230	mg/L		04/29/25 09:00	04/30/25 15:54	1
Selenium	<0.00500		0.00500	0.00140	mg/L		04/29/25 09:00	04/30/25 15:54	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/29/25 09:00	04/30/25 15:54	1
Thallium	<0.00100		0.00100	0.000570	mg/L		04/29/25 09:00	04/30/25 15:54	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		04/29/25 09:00	04/30/25 15:54	1
Zinc	<0.0200		0.0200	0.0130	mg/L		04/29/25 09:00	04/30/25 15:54	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**23.0**		7.50	5.25	mg/L			04/30/25 11:54	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B)	**414**		5.00	2.50	mg/L			05/05/25 16:13	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**414**		5.00	2.50	mg/L			05/05/25 16:13	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.00		5.00	2.50	mg/L			05/05/25 16:13	1

Client Sample ID: 04-MW-56

Date Collected: 04/24/25 11:43
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-9

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 05:31	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 05:31	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 05:31	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 05:31	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			04/29/25 05:31	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 05:31	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 05:31	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 05:31	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 05:31	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 05:31	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 05:31	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/29/25 05:31	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/29/25 05:31	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 05:31	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 05:31	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 05:31	1
Acetone	**4.65**	**J**	10.0	3.10	ug/L			04/29/25 05:31	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 05:31	1
Benzene	<0.500		0.500	0.220	ug/L			04/29/25 05:31	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 05:31	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 05:31	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 05:31	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 05:31	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 05:31	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 05:31	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 05:31	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 05:31	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/29/25 05:31	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 05:31	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 05:31	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/29/25 05:31	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 05:31	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 05:31	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 05:31	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 05:31	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 05:31	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 05:31	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/29/25 05:31	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 05:31	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/29/25 05:31	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 05:31	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 05:31	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 05:31	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 05:31	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 05:31	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/29/25 05:31	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 05:31	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*119*		*76 - 130*		*04/29/25 05:31*	*1*

Client Sample ID: 04-MW-56

Date Collected: 04/24/25 11:43
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-9

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*91*		*80 - 120*		*04/29/25 05:31*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*04/29/25 05:31*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**507**		50.0	21.0	mg/L			05/01/25 14:06	50

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.100		0.100	0.0310	mg/L		04/29/25 09:00	04/29/25 17:17	1
Iron	**45.0**		0.500	0.0790	mg/L		04/29/25 09:00	04/29/25 17:17	1
Manganese	**11.9**		0.0100	0.00410	mg/L		04/29/25 09:00	04/29/25 17:17	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00490**		0.00200	0.000530	mg/L		04/29/25 09:00	05/01/25 15:57	1
Barium	**0.0242**		0.00200	0.000660	mg/L		04/29/25 09:00	05/01/25 15:57	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/29/25 09:00	05/01/25 15:57	1
Cobalt	**0.0197**		0.000500	0.000170	mg/L		04/29/25 09:00	05/01/25 15:57	1
Copper	<0.00500		0.00500	0.00320	mg/L		04/29/25 09:00	05/01/25 15:57	1
Lead	<0.000500		0.000500	0.000330	mg/L		04/29/25 09:00	05/01/25 15:57	1
Nickel	**0.0395**		0.00500	0.00230	mg/L		04/29/25 09:00	05/01/25 15:57	1
Zinc	**0.0136**	**J**	0.0200	0.0130	mg/L		04/29/25 09:00	05/01/25 15:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**49.0**		7.50	5.25	mg/L			04/28/25 20:30	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B)	**565**		5.00	2.50	mg/L			05/05/25 16:23	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**565**		5.00	2.50	mg/L			05/05/25 16:23	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.00		5.00	2.50	mg/L			05/05/25 16:23	1

Client Sample ID: MW-58
Date Collected: 04/24/25 10:51
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-10
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 02:08	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 02:08	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 02:08	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 02:08	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			04/29/25 02:08	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 02:08	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 02:08	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 02:08	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 02:08	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 02:08	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 02:08	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/29/25 02:08	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/29/25 02:08	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 02:08	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 02:08	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 02:08	1
Acetone	<10.0		10.0	3.10	ug/L			04/29/25 02:08	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 02:08	1
Benzene	<0.500		0.500	0.220	ug/L			04/29/25 02:08	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 02:08	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 02:08	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 02:08	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 02:08	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 02:08	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 02:08	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 02:08	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 02:08	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/29/25 02:08	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 02:08	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 02:08	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/29/25 02:08	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 02:08	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 02:08	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 02:08	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 02:08	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 02:08	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 02:08	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/29/25 02:08	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 02:08	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/29/25 02:08	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 02:08	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 02:08	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 02:08	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 02:08	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 02:08	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/29/25 02:08	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 02:08	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*76 - 130*		*04/29/25 02:08*	*1*

Client Sample ID: MW-58
Date Collected: 04/24/25 10:51
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-10
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*04/29/25 02:08*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*04/29/25 02:08*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**703**		50.0	21.0	mg/L			05/01/25 14:19	50

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.258**		0.100	0.0310	mg/L		04/29/25 09:00	04/29/25 17:19	1
Iron	**0.799**		0.500	0.0790	mg/L		04/29/25 09:00	04/29/25 17:19	1
Manganese	**0.0828**		0.0100	0.00410	mg/L		04/29/25 09:00	04/29/25 17:19	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/29/25 09:00	05/01/25 15:59	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/29/25 09:00	05/01/25 15:59	1
Barium	**0.0149**		0.00200	0.000660	mg/L		04/29/25 09:00	05/01/25 15:59	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/29/25 09:00	05/01/25 15:59	1
Cadmium	**0.000144**	**J**	0.000200	0.000100	mg/L		04/29/25 09:00	05/01/25 15:59	1
Chromium	<0.00500		0.00500	0.00180	mg/L		04/29/25 09:00	05/01/25 15:59	1
Cobalt	**0.000626**		0.000500	0.000170	mg/L		04/29/25 09:00	05/01/25 15:59	1
Copper	<0.00500		0.00500	0.00320	mg/L		04/29/25 09:00	05/01/25 15:59	1
Lead	<0.000500		0.000500	0.000330	mg/L		04/29/25 09:00	05/01/25 15:59	1
Nickel	**0.00480**	**J**	0.00500	0.00230	mg/L		04/29/25 09:00	05/01/25 15:59	1
Selenium	<0.00500		0.00500	0.00140	mg/L		04/29/25 09:00	05/01/25 15:59	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/29/25 09:00	05/01/25 15:59	1
Thallium	**0.00109**		0.00100	0.000570	mg/L		04/29/25 09:00	05/01/25 15:59	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		04/29/25 09:00	05/01/25 15:59	1
Zinc	**0.0166**	**J**	0.0200	0.0130	mg/L		04/29/25 09:00	05/01/25 15:59	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**5.33**		5.00	3.50	mg/L			04/29/25 14:10	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B)	**164**		5.00	2.50	mg/L			05/05/25 16:36	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**164**		5.00	2.50	mg/L			05/05/25 16:36	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.00		5.00	2.50	mg/L			05/05/25 16:36	1

Client Sample ID: MW-59
Date Collected: 04/22/25 14:58
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-11
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 06:16	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 06:16	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 06:16	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 06:16	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			04/29/25 06:16	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 06:16	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 06:16	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 06:16	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 06:16	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 06:16	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 06:16	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/29/25 06:16	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/29/25 06:16	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 06:16	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 06:16	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 06:16	1
Acetone	**6.31**	**J**	10.0	3.10	ug/L			04/29/25 06:16	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 06:16	1
Benzene	**0.284**	**J**	0.500	0.220	ug/L			04/29/25 06:16	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 06:16	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 06:16	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 06:16	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 06:16	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 06:16	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 06:16	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 06:16	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 06:16	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/29/25 06:16	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 06:16	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 06:16	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/29/25 06:16	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 06:16	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 06:16	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 06:16	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 06:16	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 06:16	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 06:16	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/29/25 06:16	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 06:16	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/29/25 06:16	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 06:16	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 06:16	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 06:16	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 06:16	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 06:16	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/29/25 06:16	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 06:16	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*123*		*76 - 130*		*04/29/25 06:16*	*1*

Client Sample ID: MW-59
Date Collected: 04/22/25 14:58
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-11
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*88*		*80 - 120*		*04/29/25 06:16*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*04/29/25 06:16*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**944**		50.0	21.0	mg/L			05/01/25 14:32	50

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.100		0.100	0.0310	mg/L		04/29/25 09:00	04/29/25 17:22	1
Iron	**43.6**		0.500	0.0790	mg/L		04/29/25 09:00	04/29/25 17:22	1
Manganese	**12.0**		0.0100	0.00410	mg/L		04/29/25 09:00	04/29/25 17:22	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00494**		0.00200	0.000530	mg/L		04/29/25 09:00	05/01/25 16:01	1
Barium	**0.0324**		0.00200	0.000660	mg/L		04/29/25 09:00	05/01/25 16:01	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/29/25 09:00	05/01/25 16:01	1
Cobalt	**0.0181**		0.000500	0.000170	mg/L		04/29/25 09:00	05/01/25 16:01	1
Copper	<0.00500		0.00500	0.00320	mg/L		04/29/25 09:00	05/01/25 16:01	1
Lead	<0.000500		0.000500	0.000330	mg/L		04/29/25 09:00	05/01/25 16:01	1
Nickel	**0.0197**		0.00500	0.00230	mg/L		04/29/25 09:00	05/01/25 16:01	1
Zinc	<0.0200		0.0200	0.0130	mg/L		04/29/25 09:00	05/01/25 16:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.00		1.00	0.231	mg/L		04/29/25 18:10	04/29/25 23:18	1
Total Suspended Solids (USGS I-3765-85)	**69.0**		15.0	10.5	mg/L			04/28/25 12:56	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B)	**371**		5.00	2.50	mg/L			05/05/25 12:22	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**371**		5.00	2.50	mg/L			05/05/25 12:22	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.00		5.00	2.50	mg/L			05/05/25 12:22	1

Client Sample ID: MW-63R

Date Collected: 04/22/25 18:09
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-12

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 02:30	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 02:30	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 02:30	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 02:30	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			04/29/25 02:30	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 02:30	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 02:30	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 02:30	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 02:30	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 02:30	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 02:30	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/29/25 02:30	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/29/25 02:30	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 02:30	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 02:30	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 02:30	1
Acetone	<10.0		10.0	3.10	ug/L			04/29/25 02:30	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 02:30	1
Benzene	<0.500		0.500	0.220	ug/L			04/29/25 02:30	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 02:30	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 02:30	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 02:30	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 02:30	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 02:30	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 02:30	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 02:30	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 02:30	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/29/25 02:30	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 02:30	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 02:30	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/29/25 02:30	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 02:30	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 02:30	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 02:30	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 02:30	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 02:30	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 02:30	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/29/25 02:30	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 02:30	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/29/25 02:30	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 02:30	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 02:30	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 02:30	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 02:30	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 02:30	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/29/25 02:30	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 02:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*76 - 130*		*04/29/25 02:30*	*1*

Client Sample ID: MW-63R

Date Collected: 04/22/25 18:09
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-12

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*80 - 120*		*04/29/25 02:30*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*04/29/25 02:30*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**1960**		50.0	21.0	mg/L			05/01/25 14:45	50

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	**0.0956**	**J**	0.100	0.0310	mg/L		04/29/25 09:00	04/29/25 17:24	1
Iron	<0.500		0.500	0.0790	mg/L		04/29/25 09:00	04/29/25 17:24	1
Manganese	**0.578**		0.0100	0.00410	mg/L		04/29/25 09:00	04/29/25 17:24	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/29/25 09:00	05/01/25 16:11	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/29/25 09:00	05/01/25 16:11	1
Barium	**0.0142**		0.00200	0.000660	mg/L		04/29/25 09:00	05/01/25 16:11	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/29/25 09:00	05/01/25 16:11	1
Cadmium	**0.00189**		0.000200	0.000100	mg/L		04/29/25 09:00	05/01/25 16:11	1
Chromium	<0.00500		0.00500	0.00180	mg/L		04/29/25 09:00	05/01/25 16:11	1
Cobalt	**0.00319**		0.000500	0.000170	mg/L		04/29/25 09:00	05/01/25 16:11	1
Copper	<0.00500		0.00500	0.00320	mg/L		04/29/25 09:00	05/01/25 16:11	1
Lead	<0.000500		0.000500	0.000330	mg/L		04/29/25 09:00	05/01/25 16:11	1
Nickel	**0.0165**		0.00500	0.00230	mg/L		04/29/25 09:00	05/01/25 16:11	1
Selenium	<0.00500		0.00500	0.00140	mg/L		04/29/25 09:00	05/01/25 16:11	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/29/25 09:00	05/01/25 16:11	1
Thallium	<0.00100		0.00100	0.000570	mg/L		04/29/25 09:00	05/01/25 16:11	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		04/29/25 09:00	05/01/25 16:11	1
Zinc	**0.109**		0.0200	0.0130	mg/L		04/29/25 09:00	05/01/25 16:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.00		1.00	0.231	mg/L		04/29/25 18:15	04/29/25 23:23	1
Total Suspended Solids (USGS I-3765-85)	**2.00**		1.88	1.31	mg/L			04/28/25 12:56	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B)	**476**		5.00	2.50	mg/L			05/05/25 12:32	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**476**		5.00	2.50	mg/L			05/05/25 12:32	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.00		5.00	2.50	mg/L			05/05/25 12:32	1

Client Sample ID: MW-64
Date Collected: 04/22/25 17:07
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-13
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 02:53	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 02:53	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 02:53	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 02:53	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			04/29/25 02:53	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 02:53	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 02:53	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 02:53	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 02:53	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 02:53	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 02:53	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/29/25 02:53	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/29/25 02:53	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 02:53	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 02:53	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 02:53	1
Acetone	<10.0		10.0	3.10	ug/L			04/29/25 02:53	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 02:53	1
Benzene	<0.500		0.500	0.220	ug/L			04/29/25 02:53	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 02:53	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 02:53	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 02:53	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 02:53	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 02:53	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 02:53	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 02:53	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 02:53	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/29/25 02:53	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 02:53	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 02:53	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/29/25 02:53	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 02:53	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 02:53	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 02:53	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 02:53	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 02:53	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 02:53	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/29/25 02:53	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 02:53	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/29/25 02:53	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 02:53	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 02:53	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 02:53	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 02:53	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 02:53	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/29/25 02:53	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 02:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*76 - 130*		*04/29/25 02:53*	*1*

Client Sample ID: MW-64
Date Collected: 04/22/25 17:07
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-13
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*04/29/25 02:53*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*04/29/25 02:53*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**87.9**		50.0	21.0	mg/L			05/01/25 15:25	50

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.100		0.100	0.0310	mg/L		04/29/25 09:00	04/29/25 17:25	1
Iron	**1.34**		0.500	0.0790	mg/L		04/29/25 09:00	04/29/25 17:25	1
Manganese	**0.159**		0.0100	0.00410	mg/L		04/29/25 09:00	04/29/25 17:25	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.000652**	**J**	0.00200	0.000530	mg/L		04/29/25 09:00	05/01/25 16:13	1
Barium	**0.169**		0.00200	0.000660	mg/L		04/29/25 09:00	05/01/25 16:13	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/29/25 09:00	05/01/25 16:13	1
Cobalt	**0.000275**	**J**	0.000500	0.000170	mg/L		04/29/25 09:00	05/01/25 16:13	1
Copper	<0.00500		0.00500	0.00320	mg/L		04/29/25 09:00	05/01/25 16:13	1
Lead	<0.000500		0.000500	0.000330	mg/L		04/29/25 09:00	05/01/25 16:13	1
Nickel	**0.0214**		0.00500	0.00230	mg/L		04/29/25 09:00	05/01/25 16:13	1
Zinc	<0.0200		0.0200	0.0130	mg/L		04/29/25 09:00	05/01/25 16:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**3.13**		1.88	1.31	mg/L			04/28/25 12:56	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B)	**604**		5.00	2.50	mg/L			05/05/25 12:44	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**604**		5.00	2.50	mg/L			05/05/25 12:44	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.00		5.00	2.50	mg/L			05/05/25 12:44	1

Client Sample ID: MW-65
Date Collected: 04/22/25 16:26
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-14
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 05:54	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 05:54	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 05:54	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 05:54	1
1,1-Dichloroethane	**0.555**	**J**	1.00	0.220	ug/L			04/29/25 05:54	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 05:54	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 05:54	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 05:54	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 05:54	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 05:54	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 05:54	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/29/25 05:54	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/29/25 05:54	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 05:54	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 05:54	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 05:54	1
Acetone	<10.0		10.0	3.10	ug/L			04/29/25 05:54	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 05:54	1
Benzene	<0.500		0.500	0.220	ug/L			04/29/25 05:54	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 05:54	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 05:54	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 05:54	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 05:54	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 05:54	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 05:54	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 05:54	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 05:54	1
Chloroethane	**1.82**	**J**	4.00	0.790	ug/L			04/29/25 05:54	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 05:54	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 05:54	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/29/25 05:54	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 05:54	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 05:54	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 05:54	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 05:54	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 05:54	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 05:54	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/29/25 05:54	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 05:54	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/29/25 05:54	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 05:54	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 05:54	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 05:54	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 05:54	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 05:54	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/29/25 05:54	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 05:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*76 - 130*		*04/29/25 05:54*	*1*

Client Sample ID: MW-65
Date Collected: 04/22/25 16:26
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-14
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*92*		*80 - 120*		*04/29/25 05:54*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*04/29/25 05:54*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	**264**		50.0	21.0	mg/L			05/01/25 15:38	50

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.100		0.100	0.0310	mg/L		04/29/25 09:00	04/29/25 17:26	1
Iron	**69.4**		0.500	0.0790	mg/L		04/29/25 09:00	04/29/25 17:26	1
Manganese	**3.86**		0.0100	0.00410	mg/L		04/29/25 09:00	04/29/25 17:26	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0310**		0.00200	0.000530	mg/L		04/29/25 09:00	05/01/25 16:16	1
Barium	**0.322**		0.00200	0.000660	mg/L		04/29/25 09:00	05/01/25 16:16	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/29/25 09:00	05/01/25 16:16	1
Cobalt	**0.00228**		0.000500	0.000170	mg/L		04/29/25 09:00	05/01/25 16:16	1
Copper	<0.00500		0.00500	0.00320	mg/L		04/29/25 09:00	05/01/25 16:16	1
Lead	<0.000500		0.000500	0.000330	mg/L		04/29/25 09:00	05/01/25 16:16	1
Nickel	<0.00500		0.00500	0.00230	mg/L		04/29/25 09:00	05/01/25 16:16	1
Zinc	<0.0200		0.0200	0.0130	mg/L		04/29/25 09:00	05/01/25 16:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.00		1.00	0.231	mg/L		04/29/25 18:20	04/29/25 23:29	1
Total Suspended Solids (USGS I-3765-85)	**118**		15.0	10.5	mg/L			04/28/25 12:56	1
Total Alkalinity as CaCO3 to pH 4.5 (SM 2320B)	**767**		5.00	2.50	mg/L			05/05/25 12:56	1
Bicarbonate Alkalinity as CaCO3 (SM 2320B)	**767**		5.00	2.50	mg/L			05/05/25 12:56	1
Carbonate Alkalinity as CaCO3 (SM 2320B)	<5.00		5.00	2.50	mg/L			05/05/25 12:56	1

Client Sample ID: 93-MW-31R

Date Collected: 04/23/25 17:54
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-15

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 03:15	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 03:15	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 03:15	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 03:15	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			04/29/25 03:15	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 03:15	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 03:15	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 03:15	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 03:15	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 03:15	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 03:15	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/29/25 03:15	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/29/25 03:15	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 03:15	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 03:15	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 03:15	1
Acetone	<10.0		10.0	3.10	ug/L			04/29/25 03:15	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 03:15	1
Benzene	<0.500		0.500	0.220	ug/L			04/29/25 03:15	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 03:15	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 03:15	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 03:15	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 03:15	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 03:15	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 03:15	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 03:15	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 03:15	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/29/25 03:15	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 03:15	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 03:15	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/29/25 03:15	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 03:15	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 03:15	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 03:15	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 03:15	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 03:15	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 03:15	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/29/25 03:15	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 03:15	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/29/25 03:15	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 03:15	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 03:15	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 03:15	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 03:15	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 03:15	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/29/25 03:15	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 03:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*76 - 130*		*04/29/25 03:15*	*1*

Client Sample ID: 93-MW-31R

Date Collected: 04/23/25 17:54
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-15

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*04/29/25 03:15*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*04/29/25 03:15*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	**2.34**	**H**	0.200	0.0780	mg/L			04/25/25 18:27	1
Sulfate	**159**		20.0	8.40	mg/L			04/26/25 13:42	20

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**19.5**		0.500	0.0790	mg/L		04/29/25 09:00	04/29/25 17:28	1
Manganese	**0.666**		0.0100	0.00410	mg/L		04/29/25 09:00	04/29/25 17:28	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/29/25 09:00	05/01/25 16:18	1
Arsenic	**0.0134**		0.00200	0.000530	mg/L		04/29/25 09:00	05/01/25 16:18	1
Barium	**0.101**		0.00200	0.000660	mg/L		04/29/25 09:00	05/01/25 16:18	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/29/25 09:00	05/01/25 16:18	1
Cadmium	**0.000384**		0.000200	0.000100	mg/L		04/29/25 09:00	05/01/25 16:18	1
Chromium	**0.00795**		0.00500	0.00180	mg/L		04/29/25 09:00	05/01/25 16:18	1
Cobalt	**0.00445**		0.000500	0.000170	mg/L		04/29/25 09:00	05/01/25 16:18	1
Copper	**0.00454**	**J**	0.00500	0.00320	mg/L		04/29/25 09:00	05/01/25 16:18	1
Lead	**0.00281**		0.000500	0.000330	mg/L		04/29/25 09:00	05/01/25 16:18	1
Nickel	**0.00988**		0.00500	0.00230	mg/L		04/29/25 09:00	05/01/25 16:18	1
Selenium	**0.00474**	**J**	0.00500	0.00140	mg/L		04/29/25 09:00	05/01/25 16:18	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/29/25 09:00	05/01/25 16:18	1
Thallium	<0.00100		0.00100	0.000570	mg/L		04/29/25 09:00	05/01/25 16:18	1
Vanadium	**0.00905**		0.00500	0.00170	mg/L		04/29/25 09:00	05/01/25 16:18	1
Zinc	**0.0329**		0.0200	0.0130	mg/L		04/29/25 09:00	05/01/25 16:18	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**66.0**		15.0	10.5	mg/L			04/28/25 19:22	1
TOC Result 1 (SM 5310C)	**1.03**		1.00	0.470	mg/L			05/01/25 14:39	1
TOC Result 2 (SM 5310C)	**0.852**	**J**	1.00	0.470	mg/L			05/01/25 14:39	1

Client Sample ID: MW-61R

Date Collected: 04/23/25 19:56
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-16

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 03:38	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 03:38	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 03:38	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 03:38	1
1,1-Dichloroethane	**0.576**	**J**	1.00	0.220	ug/L			04/29/25 03:38	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 03:38	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 03:38	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 03:38	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 03:38	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 03:38	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 03:38	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/29/25 03:38	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/29/25 03:38	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 03:38	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 03:38	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 03:38	1
Acetone	<10.0		10.0	3.10	ug/L			04/29/25 03:38	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 03:38	1
Benzene	<0.500		0.500	0.220	ug/L			04/29/25 03:38	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 03:38	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 03:38	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 03:38	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 03:38	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 03:38	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 03:38	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 03:38	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 03:38	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/29/25 03:38	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 03:38	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 03:38	1
cis-1,2-Dichloroethene	**17.9**		1.00	0.210	ug/L			04/29/25 03:38	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 03:38	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 03:38	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 03:38	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 03:38	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 03:38	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 03:38	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/29/25 03:38	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 03:38	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/29/25 03:38	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 03:38	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 03:38	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 03:38	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 03:38	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 03:38	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/29/25 03:38	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 03:38	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*76 - 130*		*04/29/25 03:38*	*1*

Client Sample ID: MW-61R

Date Collected: 04/23/25 19:56
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-16

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*04/29/25 03:38*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*04/29/25 03:38*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200	0.0780	mg/L			04/25/25 17:40	1
Sulfate	**1570**		50.0	21.0	mg/L			04/26/25 13:11	50

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**44.2**		0.500	0.0790	mg/L		04/29/25 09:00	04/29/25 17:29	1
Manganese	**8.33**		0.0100	0.00410	mg/L		04/29/25 09:00	04/29/25 17:29	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00144**	**J**	0.00200	0.00100	mg/L		04/30/25 09:00	04/30/25 17:45	1
Arsenic	**0.0327**		0.00200	0.000530	mg/L		04/30/25 09:00	04/30/25 17:45	1
Barium	**0.363**		0.00200	0.000660	mg/L		04/30/25 09:00	04/30/25 17:45	1
Beryllium	**0.00186**		0.00100	0.000330	mg/L		04/30/25 09:00	04/30/25 17:45	1
Cadmium	**0.00130**		0.000200	0.000100	mg/L		04/30/25 09:00	04/30/25 17:45	1
Chromium	**0.0621**		0.00500	0.00180	mg/L		04/30/25 09:00	04/30/25 17:45	1
Cobalt	**0.0275**		0.000500	0.000170	mg/L		04/30/25 09:00	04/30/25 17:45	1
Copper	**0.0371**		0.00500	0.00320	mg/L		04/30/25 09:00	04/30/25 17:45	1
Lead	**0.0241**		0.000500	0.000330	mg/L		04/30/25 09:00	04/30/25 17:45	1
Nickel	**0.0805**		0.00500	0.00230	mg/L		04/30/25 09:00	04/30/25 17:45	1
Selenium	**0.00626**		0.00500	0.00140	mg/L		04/30/25 09:00	04/30/25 17:45	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/30/25 09:00	04/30/25 17:45	1
Thallium	<0.00100		0.00100	0.000570	mg/L		04/30/25 09:00	04/30/25 17:45	1
Vanadium	**0.0845**		0.00500	0.00170	mg/L		04/30/25 09:00	04/30/25 17:45	1
Zinc	**0.150**		0.0200	0.0130	mg/L		04/30/25 09:00	04/30/25 17:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**764**		60.0	42.0	mg/L			04/28/25 19:22	1
TOC Result 1 (SM 5310C)	**3.40**		1.00	0.470	mg/L			05/01/25 15:11	1
TOC Result 2 (SM 5310C)	**3.03**		1.00	0.470	mg/L			05/01/25 15:11	1

Client Sample ID: MW-73
Date Collected: 04/23/25 08:56
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-17
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 04:01	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 04:01	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 04:01	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 04:01	1
1,1-Dichloroethane	**3.39**		1.00	0.220	ug/L			04/29/25 04:01	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 04:01	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 04:01	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 04:01	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 04:01	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 04:01	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 04:01	1
1,2-Dichloropropane	**0.784**	**J**	1.00	0.270	ug/L			04/29/25 04:01	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/29/25 04:01	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 04:01	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 04:01	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 04:01	1
Acetone	<10.0		10.0	3.10	ug/L			04/29/25 04:01	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 04:01	1
Benzene	**0.353**	**J**	0.500	0.220	ug/L			04/29/25 04:01	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 04:01	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 04:01	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 04:01	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 04:01	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 04:01	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 04:01	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 04:01	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 04:01	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/29/25 04:01	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 04:01	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 04:01	1
cis-1,2-Dichloroethene	**45.3**		1.00	0.210	ug/L			04/29/25 04:01	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 04:01	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 04:01	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 04:01	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 04:01	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 04:01	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 04:01	1
Tetrachloroethene	**2.11**		1.00	0.480	ug/L			04/29/25 04:01	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 04:01	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/29/25 04:01	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 04:01	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 04:01	1
Trichloroethene	**3.64**		1.00	0.430	ug/L			04/29/25 04:01	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 04:01	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 04:01	1
Vinyl chloride	**0.923**	**J**	1.00	0.180	ug/L			04/29/25 04:01	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 04:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*76 - 130*		*04/29/25 04:01*	*1*

Client Sample ID: MW-73
Date Collected: 04/23/25 08:56
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-17
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*		*04/29/25 04:01*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*04/29/25 04:01*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200	H H3	0.200	0.0780	mg/L			04/25/25 17:56	1
Sulfate	**57.5**		5.00	2.10	mg/L			05/01/25 09:42	5

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**36.4**		0.500	0.0790	mg/L		04/29/25 09:00	04/29/25 17:31	1
Manganese	**5.83**		0.0100	0.00410	mg/L		04/29/25 09:00	04/29/25 17:31	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/29/25 09:00	05/01/25 16:23	1
Arsenic	**0.0310**		0.00200	0.000530	mg/L		04/29/25 09:00	05/01/25 16:23	1
Barium	**0.232**		0.00200	0.000660	mg/L		04/29/25 09:00	05/01/25 16:23	1
Beryllium	**0.000693**	**J**	0.00100	0.000330	mg/L		04/29/25 09:00	05/01/25 16:23	1
Cadmium	**0.0460**		0.000200	0.000100	mg/L		04/29/25 09:00	05/01/25 16:23	1
Chromium	**0.0533**		0.00500	0.00180	mg/L		04/29/25 09:00	05/01/25 16:23	1
Cobalt	**0.0612**		0.000500	0.000170	mg/L		04/29/25 09:00	05/01/25 16:23	1
Copper	**0.0219**		0.00500	0.00320	mg/L		04/29/25 09:00	05/01/25 16:23	1
Lead	**0.00644**		0.000500	0.000330	mg/L		04/29/25 09:00	05/01/25 16:23	1
Nickel	**0.0527**		0.00500	0.00230	mg/L		04/29/25 09:00	05/01/25 16:23	1
Selenium	<0.00500		0.00500	0.00140	mg/L		04/29/25 09:00	05/01/25 16:23	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/29/25 09:00	05/01/25 16:23	1
Thallium	**0.00143**		0.00100	0.000570	mg/L		04/29/25 09:00	05/01/25 16:23	1
Vanadium	**0.00806**		0.00500	0.00170	mg/L		04/29/25 09:00	05/01/25 16:23	1
Zinc	**0.362**		0.0200	0.0130	mg/L		04/29/25 09:00	05/01/25 16:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**356**		30.0	21.0	mg/L			04/28/25 20:30	1
TOC Result 1 (SM 5310C)	**1.47**		1.00	0.470	mg/L			05/01/25 15:43	1
TOC Result 2 (SM 5310C)	**0.934**	**J**	1.00	0.470	mg/L			05/01/25 15:43	1

Client Sample ID: MW-79
Date Collected: 04/24/25 08:56
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-18
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 04:23	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 04:23	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 04:23	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 04:23	1
1,1-Dichloroethane	**3.61**		1.00	0.220	ug/L			04/29/25 04:23	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 04:23	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 04:23	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 04:23	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 04:23	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 04:23	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 04:23	1
1,2-Dichloropropane	**0.408**	**J**	1.00	0.270	ug/L			04/29/25 04:23	1
1,4-Dichlorobenzene	**1.10**		1.00	0.230	ug/L			04/29/25 04:23	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 04:23	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 04:23	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 04:23	1
Acetone	<10.0		10.0	3.10	ug/L			04/29/25 04:23	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 04:23	1
Benzene	**0.285**	**J**	0.500	0.220	ug/L			04/29/25 04:23	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 04:23	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 04:23	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 04:23	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 04:23	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 04:23	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 04:23	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 04:23	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 04:23	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/29/25 04:23	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 04:23	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 04:23	1
cis-1,2-Dichloroethene	**55.0**		1.00	0.210	ug/L			04/29/25 04:23	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 04:23	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 04:23	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 04:23	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 04:23	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 04:23	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 04:23	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/29/25 04:23	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 04:23	1
trans-1,2-Dichloroethene	**0.696**	**J**	1.00	0.270	ug/L			04/29/25 04:23	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 04:23	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 04:23	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 04:23	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 04:23	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 04:23	1
Vinyl chloride	**7.08**		1.00	0.180	ug/L			04/29/25 04:23	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 04:23	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*118*		*76 - 130*		*04/29/25 04:23*	*1*

Client Sample ID: MW-79
Date Collected: 04/24/25 08:56
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-18
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*90*		*80 - 120*		*04/29/25 04:23*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*04/29/25 04:23*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200	0.0780	mg/L			04/25/25 18:12	1
Sulfate	**133**		20.0	8.40	mg/L			04/26/25 13:26	20

Method: SW846 6010D - Metals (ICP)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	**1.06**		0.500	0.0790	mg/L		04/29/25 09:00	04/29/25 17:33	1
Manganese	**18.0**		0.0100	0.00410	mg/L		04/29/25 09:00	04/29/25 17:33	1

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/29/25 09:00	05/01/25 16:21	1
Arsenic	**0.000928**	**J**	0.00200	0.000530	mg/L		04/29/25 09:00	05/01/25 16:21	1
Barium	**0.109**		0.00200	0.000660	mg/L		04/29/25 09:00	05/01/25 16:21	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/29/25 09:00	05/01/25 16:21	1
Cadmium	**0.0177**		0.000200	0.000100	mg/L		04/29/25 09:00	05/01/25 16:21	1
Chromium	**0.00245**	**J**	0.00500	0.00180	mg/L		04/29/25 09:00	05/01/25 16:21	1
Cobalt	**0.00450**		0.000500	0.000170	mg/L		04/29/25 09:00	05/01/25 16:21	1
Copper	**0.0131**		0.00500	0.00320	mg/L		04/29/25 09:00	05/01/25 16:21	1
Lead	**0.00110**		0.000500	0.000330	mg/L		04/29/25 09:00	05/01/25 16:21	1
Nickel	**0.0351**		0.00500	0.00230	mg/L		04/29/25 09:00	05/01/25 16:21	1
Selenium	<0.00500		0.00500	0.00140	mg/L		04/29/25 09:00	05/01/25 16:21	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/29/25 09:00	05/01/25 16:21	1
Thallium	**0.00121**		0.00100	0.000570	mg/L		04/29/25 09:00	05/01/25 16:21	1
Vanadium	**0.00495**	**J**	0.00500	0.00170	mg/L		04/29/25 09:00	05/01/25 16:21	1
Zinc	**0.122**		0.0200	0.0130	mg/L		04/29/25 09:00	05/01/25 16:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**31.0**		5.00	3.50	mg/L			04/29/25 15:25	1
TOC Result 1 (SM 5310C)	**2.28**		1.00	0.470	mg/L			05/01/25 16:16	1
TOC Result 2 (SM 5310C)	**1.80**		1.00	0.470	mg/L			05/01/25 16:16	1

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: Trip Blank 1
Date Collected: 04/22/25 00:00
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-19
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/28/25 23:07	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/28/25 23:07	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/28/25 23:07	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/28/25 23:07	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			04/28/25 23:07	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/28/25 23:07	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/28/25 23:07	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/28/25 23:07	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/28/25 23:07	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/28/25 23:07	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/28/25 23:07	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/28/25 23:07	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/28/25 23:07	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/28/25 23:07	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/28/25 23:07	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/28/25 23:07	1
Acetone	<10.0		10.0	3.10	ug/L			04/28/25 23:07	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/28/25 23:07	1
Benzene	<0.500		0.500	0.220	ug/L			04/28/25 23:07	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/28/25 23:07	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/28/25 23:07	1
Bromoform	<5.00		5.00	0.780	ug/L			04/28/25 23:07	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/28/25 23:07	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/28/25 23:07	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/28/25 23:07	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/28/25 23:07	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/28/25 23:07	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/28/25 23:07	1
Chloroform	<3.00		3.00	1.30	ug/L			04/28/25 23:07	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/28/25 23:07	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/28/25 23:07	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/28/25 23:07	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/28/25 23:07	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/28/25 23:07	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/28/25 23:07	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/28/25 23:07	1
Styrene	<1.00		1.00	0.370	ug/L			04/28/25 23:07	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/28/25 23:07	1
Toluene	<1.00		1.00	0.430	ug/L			04/28/25 23:07	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/28/25 23:07	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/28/25 23:07	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/28/25 23:07	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/28/25 23:07	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/28/25 23:07	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/28/25 23:07	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/28/25 23:07	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/28/25 23:07	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*76 - 130*		*04/28/25 23:07*	*1*

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: Trip Blank 1
Date Collected: 04/22/25 00:00
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-19
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	94		80 - 120		04/28/25 23:07	1
4-Bromofluorobenzene (Surr)	104		80 - 120		04/28/25 23:07	1

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: Trip Blank 2

Date Collected: 04/22/25 00:00
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-20

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/28/25 23:30	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/28/25 23:30	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/28/25 23:30	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/28/25 23:30	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			04/28/25 23:30	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/28/25 23:30	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/28/25 23:30	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/28/25 23:30	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/28/25 23:30	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/28/25 23:30	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/28/25 23:30	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/28/25 23:30	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/28/25 23:30	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/28/25 23:30	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/28/25 23:30	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/28/25 23:30	1
Acetone	<10.0		10.0	3.10	ug/L			04/28/25 23:30	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/28/25 23:30	1
Benzene	<0.500		0.500	0.220	ug/L			04/28/25 23:30	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/28/25 23:30	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/28/25 23:30	1
Bromoform	<5.00		5.00	0.780	ug/L			04/28/25 23:30	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/28/25 23:30	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/28/25 23:30	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/28/25 23:30	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/28/25 23:30	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/28/25 23:30	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/28/25 23:30	1
Chloroform	<3.00		3.00	1.30	ug/L			04/28/25 23:30	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/28/25 23:30	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/28/25 23:30	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/28/25 23:30	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/28/25 23:30	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/28/25 23:30	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/28/25 23:30	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/28/25 23:30	1
Styrene	<1.00		1.00	0.370	ug/L			04/28/25 23:30	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/28/25 23:30	1
Toluene	<1.00		1.00	0.430	ug/L			04/28/25 23:30	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/28/25 23:30	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/28/25 23:30	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/28/25 23:30	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/28/25 23:30	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/28/25 23:30	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/28/25 23:30	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/28/25 23:30	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/28/25 23:30	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*76 - 130*		*04/28/25 23:30*	*1*

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: Trip Blank 2
Date Collected: 04/22/25 00:00
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-20
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*92*		*80 - 120*		*04/28/25 23:30*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*04/28/25 23:30*	*1*

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: Trip Blank 3

Date Collected: 04/22/25 00:00
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-21

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/28/25 23:52	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/28/25 23:52	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/28/25 23:52	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/28/25 23:52	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			04/28/25 23:52	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/28/25 23:52	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/28/25 23:52	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/28/25 23:52	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/28/25 23:52	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/28/25 23:52	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/28/25 23:52	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/28/25 23:52	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/28/25 23:52	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/28/25 23:52	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/28/25 23:52	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/28/25 23:52	1
Acetone	<10.0		10.0	3.10	ug/L			04/28/25 23:52	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/28/25 23:52	1
Benzene	<0.500		0.500	0.220	ug/L			04/28/25 23:52	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/28/25 23:52	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/28/25 23:52	1
Bromoform	<5.00		5.00	0.780	ug/L			04/28/25 23:52	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/28/25 23:52	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/28/25 23:52	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/28/25 23:52	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/28/25 23:52	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/28/25 23:52	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/28/25 23:52	1
Chloroform	<3.00		3.00	1.30	ug/L			04/28/25 23:52	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/28/25 23:52	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/28/25 23:52	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/28/25 23:52	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/28/25 23:52	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/28/25 23:52	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/28/25 23:52	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/28/25 23:52	1
Styrene	<1.00		1.00	0.370	ug/L			04/28/25 23:52	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/28/25 23:52	1
Toluene	<1.00		1.00	0.430	ug/L			04/28/25 23:52	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/28/25 23:52	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/28/25 23:52	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/28/25 23:52	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/28/25 23:52	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/28/25 23:52	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/28/25 23:52	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/28/25 23:52	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/28/25 23:52	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*76 - 130*		*04/28/25 23:52*	*1*

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: Trip Blank 3
Date Collected: 04/22/25 00:00
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-21
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	93		80 - 120		04/28/25 23:52	1
4-Bromofluorobenzene (Surr)	103		80 - 120		04/28/25 23:52	1

Client Sample ID: Trip Blank 4

Date Collected: 04/22/25 00:00
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-22

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/29/25 00:15	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/29/25 00:15	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/29/25 00:15	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/29/25 00:15	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			04/29/25 00:15	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/29/25 00:15	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/29/25 00:15	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/29/25 00:15	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/29/25 00:15	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/29/25 00:15	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/29/25 00:15	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/29/25 00:15	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/29/25 00:15	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/29/25 00:15	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/29/25 00:15	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/29/25 00:15	1
Acetone	<10.0		10.0	3.10	ug/L			04/29/25 00:15	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/29/25 00:15	1
Benzene	<0.500		0.500	0.220	ug/L			04/29/25 00:15	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/29/25 00:15	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/29/25 00:15	1
Bromoform	<5.00		5.00	0.780	ug/L			04/29/25 00:15	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/29/25 00:15	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/29/25 00:15	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/29/25 00:15	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/29/25 00:15	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/29/25 00:15	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/29/25 00:15	1
Chloroform	<3.00		3.00	1.30	ug/L			04/29/25 00:15	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/29/25 00:15	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/29/25 00:15	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/29/25 00:15	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/29/25 00:15	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/29/25 00:15	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/29/25 00:15	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/29/25 00:15	1
Styrene	<1.00		1.00	0.370	ug/L			04/29/25 00:15	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/29/25 00:15	1
Toluene	<1.00		1.00	0.430	ug/L			04/29/25 00:15	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/29/25 00:15	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/29/25 00:15	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/29/25 00:15	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 00:15	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/29/25 00:15	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/29/25 00:15	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/29/25 00:15	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/29/25 00:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*76 - 130*		*04/29/25 00:15*	*1*

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: Trip Blank 4
Date Collected: 04/22/25 00:00
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-22
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	93		80 - 120		04/29/25 00:15	1
4-Bromofluorobenzene (Surr)	102		80 - 120		04/29/25 00:15	1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
H3	Sample was received and analyzed past holding time. This does not meet regulatory requirements.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(76-130)	(80-120)	(80-120)
310-305118-1	MW-53	113	94	105
310-305118-3	GU-6	117	93	103
310-305118-3 MS	GU-6	102	99	98
310-305118-3 MSD	GU-6	101	96	98
310-305118-6	MW-81	117	91	105
310-305118-7	MW-39R	118	91	102
310-305118-8	MW-40	117	93	105
310-305118-9	04-MW-56	119	91	102
310-305118-10	MW-58	117	90	105
310-305118-11	MW-59	123	88	100
310-305118-12	MW-63R	117	92	101
310-305118-13	MW-64	116	90	106
310-305118-14	MW-65	116	92	104
310-305118-15	93-MW-31R	114	90	101
310-305118-16	MW-61R	115	90	101
310-305118-17	MW-73	116	93	102
310-305118-18	MW-79	118	90	101

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(76-130)	(80-120)	(80-120)
310-305118-19	Trip Blank 1	116	94	104
310-305118-20	Trip Blank 2	116	92	106
310-305118-21	Trip Blank 3	113	93	103
310-305118-22	Trip Blank 4	113	93	102
LCS 310-452858/7	Lab Control Sample	98	98	101
LCS 310-452858/8	Lab Control Sample	115	92	102
MB 310-452858/6	Method Blank	117	90	103

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-452858/6
Matrix: Water
Analysis Batch: 452858

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			04/28/25 21:59	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			04/28/25 21:59	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			04/28/25 21:59	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			04/28/25 21:59	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			04/28/25 21:59	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			04/28/25 21:59	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			04/28/25 21:59	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			04/28/25 21:59	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			04/28/25 21:59	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			04/28/25 21:59	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			04/28/25 21:59	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			04/28/25 21:59	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			04/28/25 21:59	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			04/28/25 21:59	1
2-Hexanone	<10.0		10.0	2.00	ug/L			04/28/25 21:59	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			04/28/25 21:59	1
Acetone	<10.0		10.0	3.10	ug/L			04/28/25 21:59	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			04/28/25 21:59	1
Benzene	<0.500		0.500	0.220	ug/L			04/28/25 21:59	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			04/28/25 21:59	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			04/28/25 21:59	1
Bromoform	<5.00		5.00	0.780	ug/L			04/28/25 21:59	1
Bromomethane	<4.00		4.00	1.10	ug/L			04/28/25 21:59	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			04/28/25 21:59	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			04/28/25 21:59	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			04/28/25 21:59	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			04/28/25 21:59	1
Chloroethane	<4.00		4.00	0.790	ug/L			04/28/25 21:59	1
Chloroform	<3.00		3.00	1.30	ug/L			04/28/25 21:59	1
Chloromethane	<3.00		3.00	0.610	ug/L			04/28/25 21:59	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/28/25 21:59	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			04/28/25 21:59	1
Dibromomethane	<1.00		1.00	0.330	ug/L			04/28/25 21:59	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			04/28/25 21:59	1
Iodomethane	<10.0		10.0	7.00	ug/L			04/28/25 21:59	1
Methylene chloride	<5.00		5.00	1.70	ug/L			04/28/25 21:59	1
Styrene	<1.00		1.00	0.370	ug/L			04/28/25 21:59	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/28/25 21:59	1
Toluene	<1.00		1.00	0.430	ug/L			04/28/25 21:59	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			04/28/25 21:59	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			04/28/25 21:59	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			04/28/25 21:59	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/28/25 21:59	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			04/28/25 21:59	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			04/28/25 21:59	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/28/25 21:59	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			04/28/25 21:59	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-452858/6
Matrix: Water
Analysis Batch: 452858

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*117*		*76 - 130*		*04/28/25 21:59*	*1*
Toluene-d8 (Surr)	*90*		*80 - 120*		*04/28/25 21:59*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*04/28/25 21:59*	*1*

Lab Sample ID: LCS 310-452858/7
Matrix: Water
Analysis Batch: 452858

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	22.93		ug/L		115	70 - 121
1,1,1-Trichloroethane	20.0	21.46		ug/L		107	69 - 130
1,1,2,2-Tetrachloroethane	20.0	18.23		ug/L		91	70 - 122
1,1,2-Trichloroethane	20.0	20.05		ug/L		100	75 - 121
1,1-Dichloroethane	20.0	19.35		ug/L		97	69 - 127
1,1-Dichloroethene	20.0	21.58		ug/L		108	64 - 134
1,2,3-Trichloropropane	20.0	18.33		ug/L		92	70 - 122
1,2-Dibromo-3-chloropropane	20.0	18.71		ug/L		94	62 - 132
1,2-Dibromoethane (EDB)	20.0	20.76		ug/L		104	74 - 122
1,2-Dichlorobenzene	20.0	20.41		ug/L		102	74 - 120
1,2-Dichloroethane	20.0	20.84		ug/L		104	68 - 125
1,2-Dichloropropane	20.0	20.28		ug/L		101	72 - 128
1,4-Dichlorobenzene	20.0	19.06		ug/L		95	72 - 120
2-Butanone (MEK)	40.0	35.05		ug/L		88	60 - 134
2-Hexanone	40.0	39.41		ug/L		99	62 - 139
4-Methyl-2-pentanone (MIBK)	40.0	36.78		ug/L		92	62 - 136
Acetone	40.0	39.05		ug/L		98	59 - 136
Acrylonitrile	200	208.9		ug/L		104	50 - 150
Benzene	20.0	19.74		ug/L		99	71 - 125
Bromochloromethane	20.0	20.76		ug/L		104	69 - 131
Bromodichloromethane	20.0	20.60		ug/L		103	70 - 122
Bromoform	20.0	18.58		ug/L		93	62 - 122
Carbon disulfide	20.0	22.80		ug/L		114	58 - 137
Carbon tetrachloride	20.0	23.77		ug/L		119	63 - 136
Chlorobenzene	20.0	19.39		ug/L		97	74 - 120
Chlorodibromomethane	20.0	19.03		ug/L		95	69 - 121
Chloroform	20.0	21.64		ug/L		108	72 - 122
cis-1,2-Dichloroethene	20.0	21.33		ug/L		107	72 - 123
cis-1,3-Dichloropropene	20.0	18.91		ug/L		95	72 - 123
Dibromomethane	20.0	21.67		ug/L		108	72 - 122
Ethylbenzene	20.0	20.09		ug/L		100	75 - 120
Iodomethane	20.0	15.11		ug/L		76	18 - 150
Methylene chloride	20.0	24.00		ug/L		120	72 - 128
Styrene	20.0	20.94		ug/L		105	74 - 122
Tetrachloroethene	20.0	21.82		ug/L		109	70 - 128
Toluene	20.0	20.27		ug/L		101	74 - 120
trans-1,2-Dichloroethene	20.0	21.90		ug/L		110	67 - 127
trans-1,3-Dichloropropene	20.0	19.52		ug/L		98	67 - 123
trans-1,4-Dichloro-2-butene	20.0	17.73		ug/L		89	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-452858/7
Matrix: Water
Analysis Batch: 452858

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	20.57		ug/L		103	70 - 128
Vinyl acetate	40.0	37.80		ug/L		94	50 - 150
Xylenes, Total	40.0	41.46		ug/L		104	74 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*98*		*76 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Lab Sample ID: LCS 310-452858/8
Matrix: Water
Analysis Batch: 452858

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	17.37		ug/L		87	33 - 138
Chloroethane	20.0	20.88		ug/L		104	59 - 139
Chloromethane	20.0	22.34		ug/L		112	52 - 146
Trichlorofluoromethane	20.0	24.45		ug/L		122	55 - 150
Vinyl chloride	20.0	22.10		ug/L		111	60 - 142

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*115*		*76 - 130*
Toluene-d8 (Surr)	*92*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: 310-305118-3 MS
Matrix: Ground Water
Analysis Batch: 452858

Client Sample ID: GU-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	<1.00		25.0	26.80		ug/L		107	55 - 121
1,1,1-Trichloroethane	<1.00		25.0	23.31		ug/L		93	53 - 130
1,1,2,2-Tetrachloroethane	<1.00		25.0	21.73		ug/L		87	55 - 123
1,1,2-Trichloroethane	<1.00		25.0	25.05		ug/L		100	60 - 121
1,1-Dichloroethane	<1.00		25.0	22.88		ug/L		92	53 - 127
1,1-Dichloroethene	<2.00		25.0	24.70		ug/L		99	51 - 134
1,2,3-Trichloropropane	<1.00		25.0	22.34		ug/L		89	56 - 122
1,2-Dibromo-3-chloropropane	<5.00		25.0	21.38		ug/L		86	44 - 138
1,2-Dibromoethane (EDB)	<1.00		25.0	25.78		ug/L		103	60 - 122
1,2-Dichlorobenzene	<1.00		25.0	24.18		ug/L		97	60 - 120
1,2-Dichloroethane	<1.00		25.0	25.47		ug/L		102	48 - 128
1,2-Dichloropropane	<1.00		25.0	25.35		ug/L		101	59 - 128
1,4-Dichlorobenzene	<1.00		25.0	23.05		ug/L		92	58 - 120
2-Butanone (MEK)	<10.0		50.0	48.03		ug/L		96	46 - 134
2-Hexanone	<10.0		50.0	44.85		ug/L		90	46 - 141
4-Methyl-2-pentanone (MIBK)	<10.0		50.0	42.94		ug/L		86	49 - 138
Acetone	<10.0		50.0	53.39		ug/L		107	39 - 141
Acrylonitrile	<5.00		250	251.4		ug/L		101	41 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-305118-3 MS
Matrix: Ground Water
Analysis Batch: 452858

Client Sample ID: GU-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	<0.500		25.0	22.83		ug/L		91	48 - 125
Bromochloromethane	<5.00		25.0	27.36		ug/L		109	55 - 131
Bromodichloromethane	<1.00		25.0	24.56		ug/L		98	53 - 122
Bromoform	<5.00		25.0	22.56		ug/L		90	47 - 122
Carbon disulfide	<1.00		25.0	27.77		ug/L		111	45 - 137
Carbon tetrachloride	<2.00		25.0	24.85		ug/L		99	45 - 136
Chlorobenzene	<1.00		25.0	23.28		ug/L		93	59 - 120
Chlorodibromomethane	<5.00		25.0	23.18		ug/L		93	53 - 121
Chloroform	<3.00		25.0	25.67		ug/L		103	52 - 122
cis-1,2-Dichloroethene	<1.00		25.0	26.77		ug/L		107	51 - 123
cis-1,3-Dichloropropene	<5.00		25.0	22.47		ug/L		90	55 - 123
Dibromomethane	<1.00		25.0	26.93		ug/L		108	57 - 122
Ethylbenzene	<1.00		25.0	23.06		ug/L		92	53 - 120
Iodomethane	<10.0		25.0	22.99		ug/L		92	18 - 150
Methylene chloride	<5.00		25.0	30.22		ug/L		121	59 - 128
Styrene	<1.00		25.0	25.30		ug/L		101	50 - 125
Tetrachloroethene	<1.00		25.0	24.25		ug/L		97	51 - 128
Toluene	<1.00		25.0	23.91		ug/L		96	52 - 120
trans-1,2-Dichloroethene	<1.00		25.0	25.35		ug/L		101	53 - 127
trans-1,3-Dichloropropene	<5.00		25.0	23.97		ug/L		96	50 - 123
trans-1,4-Dichloro-2-butene	<10.0		25.0	20.21		ug/L		81	28 - 150
Trichloroethene	<1.00		25.0	23.98		ug/L		96	50 - 128
Vinyl acetate	<10.0		50.0	35.12		ug/L		70	31 - 150
Xylenes, Total	<3.00		50.0	49.10		ug/L		98	50 - 122

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*76 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Lab Sample ID: 310-305118-3 MSD
Matrix: Ground Water
Analysis Batch: 452858

Client Sample ID: GU-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<1.00		25.0	26.11		ug/L		104	55 - 121	3	20
1,1,1-Trichloroethane	<1.00		25.0	23.15		ug/L		93	53 - 130	1	20
1,1,2,2-Tetrachloroethane	<1.00		25.0	21.83		ug/L		87	55 - 123	0	20
1,1,2-Trichloroethane	<1.00		25.0	25.40		ug/L		102	60 - 121	1	20
1,1-Dichloroethane	<1.00		25.0	21.22		ug/L		85	53 - 127	8	20
1,1-Dichloroethene	<2.00		25.0	23.08		ug/L		92	51 - 134	7	20
1,2,3-Trichloropropane	<1.00		25.0	22.02		ug/L		88	56 - 122	1	21
1,2-Dibromo-3-chloropropane	<5.00		25.0	23.41		ug/L		94	44 - 138	9	24
1,2-Dibromoethane (EDB)	<1.00		25.0	25.15		ug/L		101	60 - 122	2	20
1,2-Dichlorobenzene	<1.00		25.0	23.65		ug/L		95	60 - 120	2	20
1,2-Dichloroethane	<1.00		25.0	24.98		ug/L		100	48 - 128	2	20
1,2-Dichloropropane	<1.00		25.0	24.16		ug/L		97	59 - 128	5	20
1,4-Dichlorobenzene	<1.00		25.0	21.36		ug/L		85	58 - 120	8	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-305118-3 MSD
Matrix: Ground Water
Analysis Batch: 452858

Client Sample ID: GU-6
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Butanone (MEK)	<10.0		50.0	44.65		ug/L		89	46 - 134	7	23
2-Hexanone	<10.0		50.0	46.52		ug/L		93	46 - 141	4	20
4-Methyl-2-pentanone (MIBK)	<10.0		50.0	44.90		ug/L		90	49 - 138	4	20
Acetone	<10.0		50.0	55.81		ug/L		112	39 - 141	4	23
Acrylonitrile	<5.00		250	256.1		ug/L		102	41 - 150	2	20
Benzene	<0.500		25.0	22.39		ug/L		90	48 - 125	2	20
Bromochloromethane	<5.00		25.0	25.18		ug/L		101	55 - 131	8	21
Bromodichloromethane	<1.00		25.0	23.63		ug/L		95	53 - 122	4	20
Bromoform	<5.00		25.0	22.37		ug/L		89	47 - 122	1	20
Carbon disulfide	<1.00		25.0	24.29		ug/L		97	45 - 137	13	24
Carbon tetrachloride	<2.00		25.0	25.54		ug/L		102	45 - 136	3	20
Chlorobenzene	<1.00		25.0	21.94		ug/L		88	59 - 120	6	20
Chlorodibromomethane	<5.00		25.0	22.70		ug/L		91	53 - 121	2	20
Chloroform	<3.00		25.0	24.60		ug/L		98	52 - 122	4	20
cis-1,2-Dichloroethene	<1.00		25.0	25.02		ug/L		100	51 - 123	7	20
cis-1,3-Dichloropropene	<5.00		25.0	22.04		ug/L		88	55 - 123	2	20
Dibromomethane	<1.00		25.0	25.59		ug/L		102	57 - 122	5	20
Ethylbenzene	<1.00		25.0	22.40		ug/L		90	53 - 120	3	20
Iodomethane	<10.0		25.0	24.78		ug/L		99	18 - 150	7	32
Methylene chloride	<5.00		25.0	27.57		ug/L		110	59 - 128	9	20
Styrene	<1.00		25.0	23.44		ug/L		94	50 - 125	8	20
Tetrachloroethene	<1.00		25.0	24.46		ug/L		98	51 - 128	1	20
Toluene	<1.00		25.0	22.77		ug/L		91	52 - 120	5	20
trans-1,2-Dichloroethene	<1.00		25.0	23.73		ug/L		95	53 - 127	7	20
trans-1,3-Dichloropropene	<5.00		25.0	23.18		ug/L		93	50 - 123	3	20
trans-1,4-Dichloro-2-butene	<10.0		25.0	20.01		ug/L		80	28 - 150	1	24
Trichloroethene	<1.00		25.0	23.54		ug/L		94	50 - 128	2	20
Vinyl acetate	<10.0		50.0	37.57		ug/L		75	31 - 150	7	25
Xylenes, Total	<3.00		50.0	46.53		ug/L		93	50 - 122	5	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*101*		*76 - 130*
Toluene-d8 (Surr)	*96*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-453105/3
Matrix: Water
Analysis Batch: 453105

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200	0.0780	mg/L			04/24/25 15:44	1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: LCS 310-453105/4
Matrix: Water
Analysis Batch: 453105

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Nitrate as N			2.00	2.042		mg/L		102	90 - 110		

Lab Sample ID: MB 310-453413/3
Matrix: Water
Analysis Batch: 453413

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.00		1.00	0.420	mg/L			04/30/25 14:22	1

Lab Sample ID: LCS 310-453413/4
Matrix: Water
Analysis Batch: 453413

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			10.0	9.906		mg/L		99	90 - 110		

Lab Sample ID: MB 310-453674/3
Matrix: Water
Analysis Batch: 453674

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	<1.00		1.00	0.420	mg/L			05/01/25 12:48	1

Lab Sample ID: LCS 310-453674/4
Matrix: Water
Analysis Batch: 453674

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate			10.0	9.940		mg/L		99	90 - 110		

Lab Sample ID: 310-305118-7 MS
Matrix: Ground Water
Analysis Batch: 453674

Client Sample ID: MW-39R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfate	1840		250	2018	4	mg/L		72	80 - 120		

Lab Sample ID: 310-305118-7 MSD
Matrix: Ground Water
Analysis Batch: 453674

Client Sample ID: MW-39R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfate	1840		250	2007	4	mg/L		67	80 - 120	1	15

Method: 6010D - Metals (ICP)

Lab Sample ID: MB 310-452926/1-A
Matrix: Water
Analysis Batch: 453193

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452926

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aluminum	<0.100		0.100	0.0310	mg/L		04/29/25 09:00	04/29/25 17:03	1
Iron	<0.500		0.500	0.0790	mg/L		04/29/25 09:00	04/29/25 17:03	1
Manganese	<0.0100		0.0100	0.00410	mg/L		04/29/25 09:00	04/29/25 17:03	1

Lab Sample ID: LCS 310-452926/2-A
Matrix: Water
Analysis Batch: 453193

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452926

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Aluminum	2.00	2.126		mg/L		106	80 - 120
Iron	2.00	2.075		mg/L		104	80 - 120
Manganese	1.00	1.032		mg/L		103	80 - 120

Lab Sample ID: 310-305118-16 DU
Matrix: Ground Water
Analysis Batch: 453193

Client Sample ID: MW-61R
Prep Type: Total/NA
Prep Batch: 452926

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Aluminum	35.5		36.83		mg/L		4	20
Iron	44.2		43.48		mg/L		2	20
Manganese	8.33		8.171		mg/L		2	20

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-452923/1-A
Matrix: Water
Analysis Batch: 453317

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452923

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/29/25 09:00	04/30/25 15:10	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/29/25 09:00	04/30/25 15:10	1
Barium	<0.00200		0.00200	0.000660	mg/L		04/29/25 09:00	04/30/25 15:10	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/29/25 09:00	04/30/25 15:10	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/29/25 09:00	04/30/25 15:10	1
Chromium	<0.00500		0.00500	0.00180	mg/L		04/29/25 09:00	04/30/25 15:10	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		04/29/25 09:00	04/30/25 15:10	1
Copper	<0.00500		0.00500	0.00320	mg/L		04/29/25 09:00	04/30/25 15:10	1
Lead	<0.000500		0.000500	0.000330	mg/L		04/29/25 09:00	04/30/25 15:10	1
Nickel	<0.00500		0.00500	0.00230	mg/L		04/29/25 09:00	04/30/25 15:10	1
Selenium	<0.00500		0.00500	0.00140	mg/L		04/29/25 09:00	04/30/25 15:10	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/29/25 09:00	04/30/25 15:10	1
Thallium	<0.00100		0.00100	0.000570	mg/L		04/29/25 09:00	04/30/25 15:10	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		04/29/25 09:00	04/30/25 15:10	1
Zinc	<0.0200		0.0200	0.0130	mg/L		04/29/25 09:00	04/30/25 15:10	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-452923/2-A
Matrix: Water
Analysis Batch: 453317

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452923

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2006		mg/L		100	80 - 120
Arsenic	0.200	0.1957		mg/L		98	80 - 120
Barium	0.100	0.1003		mg/L		100	80 - 120
Beryllium	0.100	0.1053		mg/L		105	80 - 120
Cadmium	0.100	0.1009		mg/L		101	80 - 120
Chromium	0.100	0.1079		mg/L		108	80 - 120
Cobalt	0.100	0.1103		mg/L		110	80 - 120
Copper	0.200	0.2188		mg/L		109	80 - 120
Lead	0.200	0.2101		mg/L		105	80 - 120
Nickel	0.200	0.2170		mg/L		108	80 - 120
Selenium	0.400	0.3763		mg/L		94	80 - 120
Silver	0.100	0.1125		mg/L		112	80 - 120
Thallium	0.100	0.09690		mg/L		97	80 - 120
Vanadium	0.100	0.1051		mg/L		105	80 - 120
Zinc	0.200	0.1974		mg/L		99	80 - 120

Lab Sample ID: 310-305118-11 DU
Matrix: Ground Water
Analysis Batch: 453470

Client Sample ID: MW-59
Prep Type: Total/NA
Prep Batch: 452923

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<0.00200		<0.00200		mg/L		NC	20
Arsenic	0.00494		0.005281		mg/L		7	20
Barium	0.0324		0.03415		mg/L		5	20
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Cadmium	<0.000200		<0.000200		mg/L		NC	20
Chromium	<0.00500		<0.00500		mg/L		NC	20
Cobalt	0.0181		0.01864		mg/L		3	20
Copper	<0.00500		<0.00500		mg/L		NC	20
Lead	<0.000500		<0.000500		mg/L		NC	20
Nickel	0.0197		0.02063		mg/L		5	20
Selenium	<0.00500		<0.00500		mg/L		NC	20
Silver	<0.00100		<0.00100		mg/L		NC	20
Thallium	<0.00100		<0.00100		mg/L		NC	20
Vanadium	<0.00500		<0.00500		mg/L		NC	20
Zinc	<0.0200		<0.0200		mg/L		NC	20

Lab Sample ID: MB 310-453085/1-A
Matrix: Water
Analysis Batch: 453310

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 453085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		04/30/25 09:00	04/30/25 17:21	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		04/30/25 09:00	04/30/25 17:21	1
Barium	<0.00200		0.00200	0.000660	mg/L		04/30/25 09:00	04/30/25 17:21	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		04/30/25 09:00	04/30/25 17:21	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		04/30/25 09:00	04/30/25 17:21	1
Chromium	<0.00500		0.00500	0.00180	mg/L		04/30/25 09:00	04/30/25 17:21	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		04/30/25 09:00	04/30/25 17:21	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 310-453085/1-A
Matrix: Water
Analysis Batch: 453310

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 453085

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	<0.00500		0.00500	0.00320	mg/L		04/30/25 09:00	04/30/25 17:21	1
Lead	<0.000500		0.000500	0.000330	mg/L		04/30/25 09:00	04/30/25 17:21	1
Nickel	<0.00500		0.00500	0.00230	mg/L		04/30/25 09:00	04/30/25 17:21	1
Selenium	<0.00500		0.00500	0.00140	mg/L		04/30/25 09:00	04/30/25 17:21	1
Silver	<0.00100		0.00100	0.000500	mg/L		04/30/25 09:00	04/30/25 17:21	1
Thallium	<0.00100		0.00100	0.000570	mg/L		04/30/25 09:00	04/30/25 17:21	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		04/30/25 09:00	04/30/25 17:21	1
Zinc	<0.0200		0.0200	0.0130	mg/L		04/30/25 09:00	04/30/25 17:21	1

Lab Sample ID: LCS 310-453085/2-A
Matrix: Water
Analysis Batch: 453310

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 453085

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2114		mg/L		106	80 - 120
Arsenic	0.200	0.2079		mg/L		104	80 - 120
Barium	0.100	0.1050		mg/L		105	80 - 120
Beryllium	0.100	0.09472		mg/L		95	80 - 120
Cadmium	0.100	0.1003		mg/L		100	80 - 120
Chromium	0.100	0.1014		mg/L		101	80 - 120
Cobalt	0.100	0.1037		mg/L		104	80 - 120
Copper	0.200	0.2041		mg/L		102	80 - 120
Lead	0.200	0.1953		mg/L		98	80 - 120
Nickel	0.200	0.2026		mg/L		101	80 - 120
Selenium	0.400	0.3818		mg/L		95	80 - 120
Silver	0.100	0.1084		mg/L		108	80 - 120
Thallium	0.100	0.09289		mg/L		93	80 - 120
Vanadium	0.100	0.1008		mg/L		101	80 - 120
Zinc	0.200	0.2004		mg/L		100	80 - 120

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-815680/1-A
Matrix: Water
Analysis Batch: 815681

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 815680

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.00		1.00	0.231	mg/L		04/29/25 18:00	04/29/25 23:07	1

Lab Sample ID: LCS 500-815680/2-A
Matrix: Water
Analysis Batch: 815681

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 815680

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	3.97	3.745		mg/L		94	80 - 120

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-452917/1
Matrix: Water
Analysis Batch: 452917

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			04/28/25 12:56	1

Lab Sample ID: LCS 310-452917/2
Matrix: Water
Analysis Batch: 452917

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	93.00		mg/L		93	81 - 116

Lab Sample ID: MB 310-452958/1
Matrix: Water
Analysis Batch: 452958

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			04/28/25 19:22	1

Lab Sample ID: LCS 310-452958/2
Matrix: Water
Analysis Batch: 452958

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	102.0		mg/L		102	81 - 116

Lab Sample ID: MB 310-452960/1
Matrix: Water
Analysis Batch: 452960

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			04/28/25 19:51	1

Lab Sample ID: LCS 310-452960/2
Matrix: Water
Analysis Batch: 452960

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	100.0		mg/L		100	81 - 116

Lab Sample ID: MB 310-452961/1
Matrix: Water
Analysis Batch: 452961

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			04/28/25 20:30	1

Lab Sample ID: LCS 310-452961/2
Matrix: Water
Analysis Batch: 452961

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	98.00		mg/L		98	81 - 116

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-453092/1
Matrix: Water
Analysis Batch: 453092

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			04/29/25 14:10	1

Lab Sample ID: LCS 310-453092/2
Matrix: Water
Analysis Batch: 453092

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	85.00		mg/L		85	81 - 116

Lab Sample ID: MB 310-453110/1
Matrix: Water
Analysis Batch: 453110

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			04/29/25 15:25	1

Lab Sample ID: LCS 310-453110/2
Matrix: Water
Analysis Batch: 453110

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	97.00		mg/L		97	81 - 116

Lab Sample ID: MB 310-453225/1
Matrix: Water
Analysis Batch: 453225

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			04/30/25 11:54	1

Lab Sample ID: LCS 310-453225/2
Matrix: Water
Analysis Batch: 453225

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	94.00		mg/L		94	81 - 116

Lab Sample ID: 310-305118-7 DU
Matrix: Ground Water
Analysis Batch: 453225

Client Sample ID: MW-39R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	75.0		80.00		mg/L		6	35

Method: SM 2320B - Alkalinity

Lab Sample ID: LCS 310-453772/2
Matrix: Water
Analysis Batch: 453772

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3 to pH 4.5	1000	1044		mg/L		104	86 - 111

Lab Sample ID: LCS 310-453772/25
Matrix: Water
Analysis Batch: 453772

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Alkalinity as CaCO3 to pH 4.5	1000	1008		mg/L		101	86 - 111

Lab Sample ID: 310-305118-10 DU
Matrix: Ground Water
Analysis Batch: 453772

Client Sample ID: MW-58
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Alkalinity as CaCO3 to pH 4.5	164		163.5		mg/L		0.4	16
Bicarbonate Alkalinity as CaCO3	164		163.5		mg/L		0.4	
Carbonate Alkalinity as CaCO3	<5.00		<5.00		mg/L		NC	

Method: SM 5310C - TOC

Lab Sample ID: MB 500-816268/7
Matrix: Water
Analysis Batch: 816268

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TOC Result 1	<1.00		1.00	0.470	mg/L			05/01/25 13:34	1
TOC Result 2	<1.00		1.00	0.470	mg/L			05/01/25 13:34	1

Lab Sample ID: LCS 500-816268/8
Matrix: Water
Analysis Batch: 816268

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
TOC Result 1	10.0	10.58		mg/L		106	86 - 116
TOC Result 2	10.0	10.66		mg/L		107	86 - 116

GC/MS VOA

Analysis Batch: 452858

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-1	MW-53	Total/NA	Ground Water	8260D	
310-305118-3	GU-6	Total/NA	Ground Water	8260D	
310-305118-6	MW-81	Total/NA	Ground Water	8260D	
310-305118-7	MW-39R	Total/NA	Ground Water	8260D	
310-305118-8	MW-40	Total/NA	Ground Water	8260D	
310-305118-9	04-MW-56	Total/NA	Ground Water	8260D	
310-305118-10	MW-58	Total/NA	Ground Water	8260D	
310-305118-11	MW-59	Total/NA	Ground Water	8260D	
310-305118-12	MW-63R	Total/NA	Ground Water	8260D	
310-305118-13	MW-64	Total/NA	Ground Water	8260D	
310-305118-14	MW-65	Total/NA	Ground Water	8260D	
310-305118-15	93-MW-31R	Total/NA	Ground Water	8260D	
310-305118-16	MW-61R	Total/NA	Ground Water	8260D	
310-305118-17	MW-73	Total/NA	Ground Water	8260D	
310-305118-18	MW-79	Total/NA	Ground Water	8260D	
310-305118-19	Trip Blank 1	Total/NA	Water	8260D	
310-305118-20	Trip Blank 2	Total/NA	Water	8260D	
310-305118-21	Trip Blank 3	Total/NA	Water	8260D	
310-305118-22	Trip Blank 4	Total/NA	Water	8260D	
MB 310-452858/6	Method Blank	Total/NA	Water	8260D	
LCS 310-452858/7	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-452858/8	Lab Control Sample	Total/NA	Water	8260D	
310-305118-3 MS	GU-6	Total/NA	Ground Water	8260D	
310-305118-3 MSD	GU-6	Total/NA	Ground Water	8260D	

HPLC/IC

Analysis Batch: 453105

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-15	93-MW-31R	Total/NA	Ground Water	9056A	
310-305118-15	93-MW-31R	Total/NA	Ground Water	9056A	
310-305118-16	MW-61R	Total/NA	Ground Water	9056A	
310-305118-16	MW-61R	Total/NA	Ground Water	9056A	
310-305118-17	MW-73	Total/NA	Ground Water	9056A	
310-305118-18	MW-79	Total/NA	Ground Water	9056A	
310-305118-18	MW-79	Total/NA	Ground Water	9056A	
MB 310-453105/3	Method Blank	Total/NA	Water	9056A	
LCS 310-453105/4	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 453413

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-17	MW-73	Total/NA	Ground Water	9056A	
MB 310-453413/3	Method Blank	Total/NA	Water	9056A	
LCS 310-453413/4	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 453674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-7	MW-39R	Total/NA	Ground Water	9056A	
310-305118-8	MW-40	Total/NA	Ground Water	9056A	
310-305118-9	04-MW-56	Total/NA	Ground Water	9056A	
310-305118-10	MW-58	Total/NA	Ground Water	9056A	

HPLC/IC (Continued)

Analysis Batch: 453674 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-11	MW-59	Total/NA	Ground Water	9056A	
310-305118-12	MW-63R	Total/NA	Ground Water	9056A	
310-305118-13	MW-64	Total/NA	Ground Water	9056A	
310-305118-14	MW-65	Total/NA	Ground Water	9056A	
MB 310-453674/3	Method Blank	Total/NA	Water	9056A	
LCS 310-453674/4	Lab Control Sample	Total/NA	Water	9056A	
310-305118-7 MS	MW-39R	Total/NA	Ground Water	9056A	
310-305118-7 MSD	MW-39R	Total/NA	Ground Water	9056A	

Metals

Prep Batch: 452923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-1	MW-53	Total/NA	Ground Water	3005A	
310-305118-2	91-MW-14	Total/NA	Ground Water	3005A	
310-305118-3	GU-6	Total/NA	Ground Water	3005A	
310-305118-4	93-MW-32	Total/NA	Ground Water	3005A	
310-305118-5	MW-62	Total/NA	Ground Water	3005A	
310-305118-6	MW-81	Total/NA	Ground Water	3005A	
310-305118-7	MW-39R	Total/NA	Ground Water	3005A	
310-305118-8	MW-40	Total/NA	Ground Water	3005A	
310-305118-9	04-MW-56	Total/NA	Ground Water	3005A	
310-305118-10	MW-58	Total/NA	Ground Water	3005A	
310-305118-11	MW-59	Total/NA	Ground Water	3005A	
310-305118-12	MW-63R	Total/NA	Ground Water	3005A	
310-305118-13	MW-64	Total/NA	Ground Water	3005A	
310-305118-14	MW-65	Total/NA	Ground Water	3005A	
310-305118-15	93-MW-31R	Total/NA	Ground Water	3005A	
310-305118-17	MW-73	Total/NA	Ground Water	3005A	
310-305118-18	MW-79	Total/NA	Ground Water	3005A	
MB 310-452923/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-452923/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-305118-11 DU	MW-59	Total/NA	Ground Water	3005A	

Prep Batch: 452926

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-7	MW-39R	Total/NA	Ground Water	3005A	
310-305118-8	MW-40	Total/NA	Ground Water	3005A	
310-305118-9	04-MW-56	Total/NA	Ground Water	3005A	
310-305118-10	MW-58	Total/NA	Ground Water	3005A	
310-305118-11	MW-59	Total/NA	Ground Water	3005A	
310-305118-12	MW-63R	Total/NA	Ground Water	3005A	
310-305118-13	MW-64	Total/NA	Ground Water	3005A	
310-305118-14	MW-65	Total/NA	Ground Water	3005A	
310-305118-15	93-MW-31R	Total/NA	Ground Water	3005A	
310-305118-16	MW-61R	Total/NA	Ground Water	3005A	
310-305118-17	MW-73	Total/NA	Ground Water	3005A	
310-305118-18	MW-79	Total/NA	Ground Water	3005A	
MB 310-452926/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-452926/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-305118-16 DU	MW-61R	Total/NA	Ground Water	3005A	

Metals

Prep Batch: 453085

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-16	MW-61R	Total/NA	Ground Water	3005A	
MB 310-453085/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-453085/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 453193

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-7	MW-39R	Total/NA	Ground Water	6010D	452926
310-305118-8	MW-40	Total/NA	Ground Water	6010D	452926
310-305118-9	04-MW-56	Total/NA	Ground Water	6010D	452926
310-305118-10	MW-58	Total/NA	Ground Water	6010D	452926
310-305118-11	MW-59	Total/NA	Ground Water	6010D	452926
310-305118-12	MW-63R	Total/NA	Ground Water	6010D	452926
310-305118-13	MW-64	Total/NA	Ground Water	6010D	452926
310-305118-14	MW-65	Total/NA	Ground Water	6010D	452926
310-305118-15	93-MW-31R	Total/NA	Ground Water	6010D	452926
310-305118-16	MW-61R	Total/NA	Ground Water	6010D	452926
310-305118-17	MW-73	Total/NA	Ground Water	6010D	452926
310-305118-18	MW-79	Total/NA	Ground Water	6010D	452926
MB 310-452926/1-A	Method Blank	Total/NA	Water	6010D	452926
LCS 310-452926/2-A	Lab Control Sample	Total/NA	Water	6010D	452926
310-305118-16 DU	MW-61R	Total/NA	Ground Water	6010D	452926

Analysis Batch: 453310

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-16	MW-61R	Total/NA	Ground Water	6020B	453085
MB 310-453085/1-A	Method Blank	Total/NA	Water	6020B	453085
LCS 310-453085/2-A	Lab Control Sample	Total/NA	Water	6020B	453085

Analysis Batch: 453317

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-2	91-MW-14	Total/NA	Ground Water	6020B	452923
310-305118-3	GU-6	Total/NA	Ground Water	6020B	452923
310-305118-4	93-MW-32	Total/NA	Ground Water	6020B	452923
310-305118-5	MW-62	Total/NA	Ground Water	6020B	452923
310-305118-6	MW-81	Total/NA	Ground Water	6020B	452923
310-305118-7	MW-39R	Total/NA	Ground Water	6020B	452923
310-305118-8	MW-40	Total/NA	Ground Water	6020B	452923
MB 310-452923/1-A	Method Blank	Total/NA	Water	6020B	452923
LCS 310-452923/2-A	Lab Control Sample	Total/NA	Water	6020B	452923

Analysis Batch: 453470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-1	MW-53	Total/NA	Ground Water	6020B	452923
310-305118-9	04-MW-56	Total/NA	Ground Water	6020B	452923
310-305118-10	MW-58	Total/NA	Ground Water	6020B	452923
310-305118-11	MW-59	Total/NA	Ground Water	6020B	452923
310-305118-12	MW-63R	Total/NA	Ground Water	6020B	452923
310-305118-13	MW-64	Total/NA	Ground Water	6020B	452923
310-305118-14	MW-65	Total/NA	Ground Water	6020B	452923
310-305118-15	93-MW-31R	Total/NA	Ground Water	6020B	452923
310-305118-17	MW-73	Total/NA	Ground Water	6020B	452923

Metals (Continued)

Analysis Batch: 453470 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-18	MW-79	Total/NA	Ground Water	6020B	452923
310-305118-11 DU	MW-59	Total/NA	Ground Water	6020B	452923

General Chemistry

Analysis Batch: 452917

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-11	MW-59	Total/NA	Ground Water	I-3765-85	
310-305118-12	MW-63R	Total/NA	Ground Water	I-3765-85	
310-305118-13	MW-64	Total/NA	Ground Water	I-3765-85	
310-305118-14	MW-65	Total/NA	Ground Water	I-3765-85	
MB 310-452917/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-452917/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 452958

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-4	93-MW-32	Total/NA	Ground Water	I-3765-85	
310-305118-6	MW-81	Total/NA	Ground Water	I-3765-85	
310-305118-15	93-MW-31R	Total/NA	Ground Water	I-3765-85	
310-305118-16	MW-61R	Total/NA	Ground Water	I-3765-85	
MB 310-452958/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-452958/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 452960

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-1	MW-53	Total/NA	Ground Water	I-3765-85	
310-305118-2	91-MW-14	Total/NA	Ground Water	I-3765-85	
310-305118-3	GU-6	Total/NA	Ground Water	I-3765-85	
310-305118-5	MW-62	Total/NA	Ground Water	I-3765-85	
MB 310-452960/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-452960/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 452961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-9	04-MW-56	Total/NA	Ground Water	I-3765-85	
310-305118-17	MW-73	Total/NA	Ground Water	I-3765-85	
MB 310-452961/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-452961/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 453092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-10	MW-58	Total/NA	Ground Water	I-3765-85	
MB 310-453092/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-453092/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 453110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-18	MW-79	Total/NA	Ground Water	I-3765-85	
MB 310-453110/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-453110/2	Lab Control Sample	Total/NA	Water	I-3765-85	

General Chemistry

Analysis Batch: 453225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-7	MW-39R	Total/NA	Ground Water	I-3765-85	
310-305118-8	MW-40	Total/NA	Ground Water	I-3765-85	
MB 310-453225/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-453225/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-305118-7 DU	MW-39R	Total/NA	Ground Water	I-3765-85	

Analysis Batch: 453772

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-7	MW-39R	Total/NA	Ground Water	SM 2320B	
310-305118-8	MW-40	Total/NA	Ground Water	SM 2320B	
310-305118-9	04-MW-56	Total/NA	Ground Water	SM 2320B	
310-305118-10	MW-58	Total/NA	Ground Water	SM 2320B	
310-305118-11	MW-59	Total/NA	Ground Water	SM 2320B	
310-305118-12	MW-63R	Total/NA	Ground Water	SM 2320B	
310-305118-13	MW-64	Total/NA	Ground Water	SM 2320B	
310-305118-14	MW-65	Total/NA	Ground Water	SM 2320B	
LCS 310-453772/2	Lab Control Sample	Total/NA	Water	SM 2320B	
LCS 310-453772/25	Lab Control Sample	Total/NA	Water	SM 2320B	
310-305118-10 DU	MW-58	Total/NA	Ground Water	SM 2320B	

Prep Batch: 815680

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-7	MW-39R	Total/NA	Ground Water	9030B	
310-305118-11	MW-59	Total/NA	Ground Water	9030B	
310-305118-12	MW-63R	Total/NA	Ground Water	9030B	
310-305118-14	MW-65	Total/NA	Ground Water	9030B	
MB 500-815680/1-A	Method Blank	Total/NA	Water	9030B	
LCS 500-815680/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 815681

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-7	MW-39R	Total/NA	Ground Water	9034	815680
310-305118-11	MW-59	Total/NA	Ground Water	9034	815680
310-305118-12	MW-63R	Total/NA	Ground Water	9034	815680
310-305118-14	MW-65	Total/NA	Ground Water	9034	815680
MB 500-815680/1-A	Method Blank	Total/NA	Water	9034	815680
LCS 500-815680/2-A	Lab Control Sample	Total/NA	Water	9034	815680

Analysis Batch: 816268

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305118-15	93-MW-31R	Total/NA	Ground Water	SM 5310C	
310-305118-16	MW-61R	Total/NA	Ground Water	SM 5310C	
310-305118-17	MW-73	Total/NA	Ground Water	SM 5310C	
310-305118-18	MW-79	Total/NA	Ground Water	SM 5310C	
MB 500-816268/7	Method Blank	Total/NA	Water	SM 5310C	
LCS 500-816268/8	Lab Control Sample	Total/NA	Water	SM 5310C	

Lab Chronicle

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-53
Date Collected: 04/23/25 15:47
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-1
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 01:00
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453470	NFT2	EET CF	05/01/25 16:28
Total/NA	Analysis	I-3765-85		1	452960	MDU9	EET CF	04/28/25 19:51

Client Sample ID: 91-MW-14
Date Collected: 04/23/25 14:35
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-2
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453317	ZRI4	EET CF	04/30/25 15:36
Total/NA	Analysis	I-3765-85		1	452960	MDU9	EET CF	04/28/25 19:51

Client Sample ID: GU-6
Date Collected: 04/23/25 13:35
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-3
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 01:22
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453317	ZRI4	EET CF	04/30/25 15:39
Total/NA	Analysis	I-3765-85		1	452960	MDU9	EET CF	04/28/25 19:51

Client Sample ID: 93-MW-32
Date Collected: 04/23/25 12:20
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-4
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453317	ZRI4	EET CF	04/30/25 15:42
Total/NA	Analysis	I-3765-85		1	452958	MDU9	EET CF	04/28/25 19:22

Client Sample ID: MW-62
Date Collected: 04/23/25 16:53
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-5
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453317	ZRI4	EET CF	04/30/25 15:45
Total/NA	Analysis	I-3765-85		1	452960	MDU9	EET CF	04/28/25 19:51

Lab Chronicle

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-81
Date Collected: 04/23/25 13:02
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-6
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 01:45
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453317	ZRI4	EET CF	04/30/25 15:48
Total/NA	Analysis	I-3765-85		1	452958	MDU9	EET CF	04/28/25 19:22

Client Sample ID: MW-39R
Date Collected: 04/24/25 12:22
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-7
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 04:46
Total/NA	Analysis	9056A		50	453674	QTZ5	EET CF	05/01/25 13:14
Total/NA	Prep	3005A			452926	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6010D		1	453193	ZRI4	EET CF	04/29/25 17:15
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453317	ZRI4	EET CF	04/30/25 15:51
Total/NA	Prep	9030B			815680	CLB	EET CHI	04/29/25 18:25 - 04/29/25 18:30 [1]
Total/NA	Analysis	9034		1	815681	CLB	EET CHI	04/29/25 23:34 - 04/29/25 23:40 [1]
Total/NA	Analysis	I-3765-85		1	453225	HE7K	EET CF	04/30/25 11:54
Total/NA	Analysis	SM 2320B		1	453772	HE7K	EET CF	05/05/25 15:59

Client Sample ID: MW-40
Date Collected: 04/24/25 10:07
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-8
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 05:09
Total/NA	Analysis	9056A		50	453674	QTZ5	EET CF	05/01/25 13:53
Total/NA	Prep	3005A			452926	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6010D		1	453193	ZRI4	EET CF	04/29/25 17:16
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453317	ZRI4	EET CF	04/30/25 15:54
Total/NA	Analysis	I-3765-85		1	453225	HE7K	EET CF	04/30/25 11:54
Total/NA	Analysis	SM 2320B		1	453772	HE7K	EET CF	05/05/25 16:13

Client Sample ID: 04-MW-56
Date Collected: 04/24/25 11:43
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-9
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 05:31
Total/NA	Analysis	9056A		50	453674	QTZ5	EET CF	05/01/25 14:06
Total/NA	Prep	3005A			452926	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6010D		1	453193	ZRI4	EET CF	04/29/25 17:17

Lab Chronicle

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: 04-MW-56
Date Collected: 04/24/25 11:43
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-9
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453470	NFT2	EET CF	05/01/25 15:57
Total/NA	Analysis	I-3765-85		1	452961	MDU9	EET CF	04/28/25 20:30
Total/NA	Analysis	SM 2320B		1	453772	HE7K	EET CF	05/05/25 16:23

Client Sample ID: MW-58
Date Collected: 04/24/25 10:51
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-10
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 02:08
Total/NA	Analysis	9056A		50	453674	QTZ5	EET CF	05/01/25 14:19
Total/NA	Prep	3005A			452926	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6010D		1	453193	ZRI4	EET CF	04/29/25 17:19
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453470	NFT2	EET CF	05/01/25 15:59
Total/NA	Analysis	I-3765-85		1	453092	XJ7V	EET CF	04/29/25 14:10
Total/NA	Analysis	SM 2320B		1	453772	HE7K	EET CF	05/05/25 16:36

Client Sample ID: MW-59
Date Collected: 04/22/25 14:58
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-11
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 06:16
Total/NA	Analysis	9056A		50	453674	QTZ5	EET CF	05/01/25 14:32
Total/NA	Prep	3005A			452926	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6010D		1	453193	ZRI4	EET CF	04/29/25 17:22
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453470	NFT2	EET CF	05/01/25 16:01
Total/NA	Prep	9030B			815680	CLB	EET CHI	04/29/25 18:10 - 04/29/25 18:15 [1]
Total/NA	Analysis	9034		1	815681	CLB	EET CHI	04/29/25 23:18 - 04/29/25 23:23 [1]
Total/NA	Analysis	I-3765-85		1	452917	DGU1	EET CF	04/28/25 12:56
Total/NA	Analysis	SM 2320B		1	453772	HE7K	EET CF	05/05/25 12:22

Client Sample ID: MW-63R
Date Collected: 04/22/25 18:09
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-12
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 02:30
Total/NA	Analysis	9056A		50	453674	QTZ5	EET CF	05/01/25 14:45
Total/NA	Prep	3005A			452926	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6010D		1	453193	ZRI4	EET CF	04/29/25 17:24

Lab Chronicle

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-63R
Date Collected: 04/22/25 18:09
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-12
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453470	NFT2	EET CF	05/01/25 16:11
Total/NA	Prep	9030B			815680	CLB	EET CHI	04/29/25 18:15 - 04/29/25 18:20 [1]
Total/NA	Analysis	9034		1	815681	CLB	EET CHI	04/29/25 23:23 - 04/29/25 23:29 [1]
Total/NA	Analysis	I-3765-85		1	452917	DGU1	EET CF	04/28/25 12:56
Total/NA	Analysis	SM 2320B		1	453772	HE7K	EET CF	05/05/25 12:32

Client Sample ID: MW-64
Date Collected: 04/22/25 17:07
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-13
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 02:53
Total/NA	Analysis	9056A		50	453674	QTZ5	EET CF	05/01/25 15:25
Total/NA	Prep	3005A			452926	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6010D		1	453193	ZRI4	EET CF	04/29/25 17:25
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453470	NFT2	EET CF	05/01/25 16:13
Total/NA	Analysis	I-3765-85		1	452917	DGU1	EET CF	04/28/25 12:56
Total/NA	Analysis	SM 2320B		1	453772	HE7K	EET CF	05/05/25 12:44

Client Sample ID: MW-65
Date Collected: 04/22/25 16:26
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-14
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 05:54
Total/NA	Analysis	9056A		50	453674	QTZ5	EET CF	05/01/25 15:38
Total/NA	Prep	3005A			452926	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6010D		1	453193	ZRI4	EET CF	04/29/25 17:26
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453470	NFT2	EET CF	05/01/25 16:16
Total/NA	Prep	9030B			815680	CLB	EET CHI	04/29/25 18:20 - 04/29/25 18:25 [1]
Total/NA	Analysis	9034		1	815681	CLB	EET CHI	04/29/25 23:29 - 04/29/25 23:34 [1]
Total/NA	Analysis	I-3765-85		1	452917	DGU1	EET CF	04/28/25 12:56
Total/NA	Analysis	SM 2320B		1	453772	HE7K	EET CF	05/05/25 12:56

Client Sample ID: 93-MW-31R
Date Collected: 04/23/25 17:54
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-15
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 03:15
Total/NA	Analysis	9056A		1	453105	QTZ5	EET CF	04/25/25 18:27

Lab Chronicle

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: 93-MW-31R
Date Collected: 04/23/25 17:54
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-15
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		20	453105	QTZ5	EET CF	04/26/25 13:42
Total/NA	Prep	3005A			452926	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6010D		1	453193	ZRI4	EET CF	04/29/25 17:28
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453470	NFT2	EET CF	05/01/25 16:18
Total/NA	Analysis	I-3765-85		1	452958	MDU9	EET CF	04/28/25 19:22
Total/NA	Analysis	SM 5310C		1	816268	TR	EET CHI	05/01/25 14:39

Client Sample ID: MW-61R
Date Collected: 04/23/25 19:56
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-16
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 03:38
Total/NA	Analysis	9056A		1	453105	QTZ5	EET CF	04/25/25 17:40
Total/NA	Analysis	9056A		50	453105	QTZ5	EET CF	04/26/25 13:11
Total/NA	Prep	3005A			452926	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6010D		1	453193	ZRI4	EET CF	04/29/25 17:29
Total/NA	Prep	3005A			453085	QTZ5	EET CF	04/30/25 09:00
Total/NA	Analysis	6020B		1	453310	NFT2	EET CF	04/30/25 17:45
Total/NA	Analysis	I-3765-85		1	452958	MDU9	EET CF	04/28/25 19:22
Total/NA	Analysis	SM 5310C		1	816268	TR	EET CHI	05/01/25 15:11

Client Sample ID: MW-73
Date Collected: 04/23/25 08:56
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-17
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 04:01
Total/NA	Analysis	9056A		1	453105	QTZ5	EET CF	04/25/25 17:56
Total/NA	Analysis	9056A		5	453413	QTZ5	EET CF	05/01/25 09:42
Total/NA	Prep	3005A			452926	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6010D		1	453193	ZRI4	EET CF	04/29/25 17:31
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453470	NFT2	EET CF	05/01/25 16:23
Total/NA	Analysis	I-3765-85		1	452961	MDU9	EET CF	04/28/25 20:30
Total/NA	Analysis	SM 5310C		1	816268	TR	EET CHI	05/01/25 15:43

Client Sample ID: MW-79
Date Collected: 04/24/25 08:56
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-18
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 04:23

Lab Chronicle

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-79
Date Collected: 04/24/25 08:56
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-18
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		1	453105	QTZ5	EET CF	04/25/25 18:12
Total/NA	Analysis	9056A		20	453105	QTZ5	EET CF	04/26/25 13:26
Total/NA	Prep	3005A			452926	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6010D		1	453193	ZRI4	EET CF	04/29/25 17:33
Total/NA	Prep	3005A			452923	QTZ5	EET CF	04/29/25 09:00
Total/NA	Analysis	6020B		1	453470	NFT2	EET CF	05/01/25 16:21
Total/NA	Analysis	I-3765-85		1	453110	XJ7V	EET CF	04/29/25 15:25
Total/NA	Analysis	SM 5310C		1	816268	TR	EET CHI	05/01/25 16:16

Client Sample ID: Trip Blank 1
Date Collected: 04/22/25 00:00
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-19
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/28/25 23:07

Client Sample ID: Trip Blank 2
Date Collected: 04/22/25 00:00
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-20
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/28/25 23:30

Client Sample ID: Trip Blank 3
Date Collected: 04/22/25 00:00
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-21
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/28/25 23:52

Client Sample ID: Trip Blank 4
Date Collected: 04/22/25 00:00
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305118-22
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452858	WSE8	EET CF	04/29/25 00:15

[1] This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

Laboratory: Eurofins Chicago

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	082	05-01-26

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
SM 5310C		Ground Water	TOC Result 1
SM 5310C		Ground Water	TOC Result 2

Method Summary

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 HMSP

Job ID: 310-305118-1
SDG: Ottumwa-Wapello County Landfill

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
9056A	Anions, Ion Chromatography	SW846	EET CF
6010D	Metals (ICP)	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CHI
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 2320B	Alkalinity	SM	EET CF
SM 5310C	TOC	SM	EET CHI
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CHI

Protocol References:

SM = "Standard Methods For The Examination Of Water And Wastewater"

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

eurofins | Environment Testing America

310-305118 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY West Des Moines STATE IA | Project:

Receipt Information

Date/Time Received: DATE 4/25/25 TIME 1605 | Received By: SR

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☑ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID

Multiple Coolers? ~~☐ Yes~~ ☒ No SR *If yes:* Cooler # 1 of 4

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes.* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☐ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

GW-7, 93-MW-32, MW-81, 91-MW-14, MW-62, MW-53, GW-6

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other _____ ☐ NONE

Thermometer ID: AA | Correction Factor (°C): 0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.3 | Corrected Temp (°C) 3.3

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State. CITY West Des Moines STATE IA Project.

Receipt Information

Date/Time Received. DATE 4/25/25 TIME 1608 Received By. SR

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☑ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes* Cooler ID

Multiple Coolers? ☑ Yes ☐ No *If yes:* Cooler # 2 of 4

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

MW-63R, MW-64, MW-65, MW-59

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE

Thermometer ID: AA Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 3.1 Corrected Temp (°C): 3.1

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C).		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY West Des Moines STATE IA Project:

Receipt Information

Date/Time Received. DATE 4/25/25 TIME 1608 Received By: SR

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☑ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☑ Yes ☐ No *If yes:* Cooler # 3 of 4

Cooler Custody Seals Present? ☐ Yes ☑ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☑ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

MW-40, MW-58, MW-39R + DUP-MW-56

Temperature Record

Coolant: ☑ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: AA Correction Factor (°C). 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 4.3 Corrected Temp (°C) 4.3

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used.		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY West Des Moines | STATE IA | Project:

Receipt Information

Date/Time Received: DATE 4/25/25 | TIME 1608 | Received By: SR

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☒ No *If yes:* Which VOA samples are in cooler? ↓

SR SR

93-MW-31R, MW-61R, 73, 79

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: AA | Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.6 | Corrected Temp (°C): 0.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE: If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613-6907
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Nathan Ohrt	Site Contact: Lori Creech	Date:	COC No
Nathan Ohrt	Email nohrt@scsengineers.com	Lab Contact: Sam Miller	Carrier:	1 of 2 COCs
SCS Engineers	Cell 319-331-9613			Sampler:
1690 All State Court, Suite 100	Analysis Turnaround Time			For Lab Use Only.
West Des Moines Iowa 50265	☐ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
	Other:			Lab Sampling
Project Name Ottumwa 1st 2025 HMSP	☐ 2 weeks			
Site Ottumwa-Wapello County Landfill	☐ 1 week			Job / SDG No
P O # 27223157 25	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Appendix I	Appendix I metals list	Total Suspended Solids	AMD	Sulfide	Appendix I VOCs		Trip Blank	Sample Specific Notes
MW-53	4-23	15:47	G	GW		N		X		X						
91-MW-14	4-23	14:35	G	GW		N			X	X						
GU-6	4-23	13:35	G	GW		N		X		X						
GU-7			G	GW		N		X		X						
93-MW-32	4-23	12:20	G	GW		N			X	X						
MW-62	4-23	16:53	G	GW		N			X	X						
MW-81	4-23	13:02	G	GW		N		X		X						
MW-39R	4-24	12:22	G	GW		N		X		X	X	X				
MW-40	4-24	10:07	G	GW		N		X		X	X					
04-MW-56	4-24	11:43	G	GW		N			X	X	X		X			
MW-58	4-24	10:51	G	GW		N		X		X	X					
MW-59	4-22	14:58	G	GW		N			X	X	X	X	X			
Trip Blank															X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification.
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:
"Appendix I metals list" includes arsenic, barium, cadmium, copper, cobalt, lead, nickel, and zinc.
"AMD" includes total alkalinity, total iron, total manganese, total aluminum, and sulfate.
"Natural Attenuation" includes total organic carbon, nitrate, total iron, total manganese, and sulfate.

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd _____ Corr'd _____	Therm ID No _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Garrett Horak	SCS	4-25 11,40			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time 4-28-25 1608

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

5/16/2025 (Rev. 1)

Eurofins TestAmerica, Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613-6907
phone 319 277 2401 fax 319 277 2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Nathan Ohrt	Site Contact: Lori Creech	Date:	COC No
Nathan Ohrt	Email: nohrt@scsengineers.com	Lab Contact: Sam Miller	Carrier:	1 of 2 COCs
SCS Engineers	Cell 319-331-9613			Sampler:
1690 All State Court, Suite 100	Analysis Turnaround Time			For Lab Use Only:
West Des Moines, Iowa 50265	☐ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
	Other:			Lab Sampling
Project Name: Ottumwa 1st 2025 HMSP	☐ 2 weeks			
Site Ottumwa-Wapello County Landfill	☐ 1 week			Job / SDG No
P O # 27223157.25	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I	Appendix I metals list	Total Suspended Solids	AMD	Sulfide	Natural Attenuation	Endosulfan I	Appendix I VOCs		Trip Blank							Sample Specific Notes
MW-63R	4-22	14:09	G	GW		N		X		X	X	X												
MW-64	4-22	17.07	G	GW		N			X	X	X				X									
MW-65	4-22	16:26	G	GW		N			X	X	X	X			X									
93-MW-31R	4-23	17.54	G	GW		N		X		X			X											
MW-61R	4-23	19:56	G	GW		N		X		X			X											
MW-73	4-23	8.56	G	GW		N		X		X			X											
MW-79	4-24	8.56	G	GW		N		X		X			X											
Trip Blank																	X							

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments
"Appendix I metals list" includes arsenic, barium, cadmium, copper, cobalt, lead, nickel, and zinc.
"AMD" includes total alkalinity, total iron, total manganese, total aluminum, and sulfate.
"Natural Attenuation" includes total organic carbon, nitrate, total iron, total manganese, and sulfate.

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd _____ Corr'd. _____ | Therm ID No _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Garrett Horak	SCS	4-25 11:42			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
		4 PM			
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time
					4/25/25 1608

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

5/16/2025 (Rev. 1)

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

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Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Miller, Samuel	Carrier Tracking No(s): N/A	COC No: 310-82451 1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Samuel Miller@et.eurofinsus com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State Program - Iowa		Job #: 310-305118-1
Address: 18410 Crossing Drive, Suite E,	Due Date Requested: 5/8/2025			Preservation Codes: -
City: Tinley Park	TAT Requested (days): N/A			
State, Zip: IL, 60487				
Phone: 708-534-5200(Tel) 708-534-5211(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: Ottumwa 1st 2025 HMSP	Project #: 31002405			
Site: 310-SCS Ottumwa-Wapello Co Landfill	SSOW#: N/A			Other: N/A

Analysis Requested

310-305118 COC

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B	5310C/ TOC	Total Number of containers	Special Instructions/Note:
			Preservation Code:							
MW-39R (310-305118-7)	4/24/25	12 22 Central	G	Water			X		1	
MW-59 (310-305118-11)	4/22/25	14 58 Central	G	Water			X		1	
MW-63R (310-305118-12)	4/22/25	18 09 Central	G	Water			X		1	
MW-65 (310-305118-14)	4/22/25	16 26 Central	G	Water			X		1	
93-MW-31R (310-305118-15)	4/23/25	17 54 Central	G	Water				X	3	
MW-61R (310-305118-16)	4/23/25	19 56 Central	G	Water				X	3	
MW-73 (310-305118-17)	4/23/25	08 56 Central	G	Water				X	3	
MW-79 (310-305118-18)	4/24/25	08 56 Central	G	Water				X	3	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method analyte & accreditation compliance upon our subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing North Central LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central LLC attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central LLC

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III, IV, Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by:	Date	Time	Method of Shipment.

Relinquished by	Date/Time:	Company	Received by	Date/Time	Company
[signature]	4/25 1710		Stephanie Hmanay	4/29/25 0905	
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks
		5 → 5 +

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-305118-1
SDG Number: Ottumwa-Wapello County Landfill

Login Number: 305118
List Number: 1
Creator: Hirsch, Preston

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-305118-1
SDG Number: Ottumwa-Wapello County Landfill

Login Number: 305118
List Number: 2
Creator: Hernandez, Stephanie

List Source: Eurofins Chicago
List Creation: 04/29/25 03:09 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	5.4
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

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ANALYTICAL REPORT

PREPARED FOR

Attn: Nathan Ohrt
SCS Engineers
1690 All State Court
Suite 100
West Des Moines, Iowa 50265

Generated 5/8/2025 11:13:22 AM

JOB DESCRIPTION

Ottumwa 1st 2025 Bracketing

JOB NUMBER

310-305160-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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5/8/2025 11:13:22 AM

Authorized for release by
Samuel Miller, Project Management Assistant I
Samuel.Miller@et.eurofinsus.com
(319)595-2008

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Job Narrative
310-305160-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt
The samples were received on 4/25/2025 4:08 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.8°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) associated with batch 310-453066 recovered above the upper control limit for Vinyl chloride (34.3%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is:(CCV 310-453066/4).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: SCS Engineers
Job ID: 310-305160-1
Project/Site: Ottumwa 1st 2025 Bracketing

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-305160-1	MW-68	Ground Water	04/23/25 11:14	04/25/25 16:08
310-305160-2	MW-75	Ground Water	04/22/25 19:02	04/25/25 16:08
310-305160-3	MW-78	Ground Water	04/23/25 10:20	04/25/25 16:08
310-305160-4	MW-80	Ground Water	04/23/25 09:32	04/25/25 16:08
310-305160-5	Trip Blank	Ground Water	04/23/25 00:00	04/25/25 16:08

Detection Summary

Client: SCS Engineers
Job ID: 310-305160-1
Project/Site: Ottumwa 1st 2025 Bracketing

Client Sample ID: MW-68 — Lab Sample ID: 310-305160-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.000929	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Cobalt	0.00363		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	123		7.50	5.25	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-75 — Lab Sample ID: 310-305160-2

No Detections.

Client Sample ID: MW-78 — Lab Sample ID: 310-305160-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.05		1.00	0.210	ug/L	1		8260D	Total/NA
Tetrachloroethene	0.712	J	1.00	0.480	ug/L	1		8260D	Total/NA
Cobalt	0.00247		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	3.87		1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-80 — Lab Sample ID: 310-305160-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	23.2		1.00	0.210	ug/L	1		8260D	Total/NA
Vinyl chloride	6.63		1.00	0.180	ug/L	1		8260D	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-305160-5

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: SCS Engineers
Job ID: 310-305160-1
Project/Site: Ottumwa 1st 2025 Bracketing

Client Sample ID: MW-68
Lab Sample ID: 310-305160-1
Date Collected: 04/23/25 11:14
Matrix: Ground Water
Date Received: 04/25/25 16:08

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.000929	J	0.00200	0.000530	mg/L		05/05/25 10:00	05/07/25 16:49	1
Cobalt	0.00363		0.000500	0.000170	mg/L		05/05/25 10:00	05/07/25 16:49	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	123		7.50	5.25	mg/L			04/28/25 20:30	1

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 Bracketing

Job ID: 310-305160-1

Client Sample ID: MW-75
Date Collected: 04/22/25 19:02
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305160-2
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500	0.220	ug/L			04/30/25 06:18	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/30/25 06:18	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/30/25 06:18	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/30/25 06:18	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/30/25 06:18	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*76 - 130*		*04/30/25 06:18*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*04/30/25 06:18*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*04/30/25 06:18*	*1*

Client: SCS Engineers
Job ID: 310-305160-1
Project/Site: Ottumwa 1st 2025 Bracketing

Client Sample ID: MW-78
Lab Sample ID: 310-305160-3
Date Collected: 04/23/25 10:20
Matrix: Ground Water
Date Received: 04/25/25 16:08

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.05		1.00	0.210	ug/L			04/30/25 06:40	1
Tetrachloroethene	0.712	J	1.00	0.480	ug/L			04/30/25 06:40	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/30/25 06:40	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/30/25 06:40	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*107*		*76 - 130*		*04/30/25 06:40*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*04/30/25 06:40*	*1*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*		*04/30/25 06:40*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00247		0.000500	0.000170	mg/L		05/05/25 10:00	05/06/25 21:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	3.87		1.88	1.31	mg/L			04/28/25 20:30	1

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 Bracketing

Job ID: 310-305160-1

Client Sample ID: MW-80
Date Collected: 04/23/25 09:32
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305160-4
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	23.2		1.00	0.210	ug/L			04/30/25 07:02	1
Vinyl chloride	6.63		1.00	0.180	ug/L			05/01/25 15:01	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*76 - 130*		*04/30/25 07:02*	*1*
Dibromofluoromethane (Surr)	*104*		*76 - 130*		*05/01/25 15:01*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*04/30/25 07:02*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/01/25 15:01*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*04/30/25 07:02*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/01/25 15:01*	*1*

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 Bracketing

Job ID: 310-305160-1

Client Sample ID: Trip Blank
Date Collected: 04/23/25 00:00
Date Received: 04/25/25 16:08

Lab Sample ID: 310-305160-5
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/06/25 10:17	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/06/25 10:17	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/06/25 10:17	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/06/25 10:17	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/06/25 10:17	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/06/25 10:17	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/06/25 10:17	1
Benzene	<0.500		0.500	0.220	ug/L			05/06/25 10:17	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/06/25 10:17	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/06/25 10:17	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/06/25 10:17	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/06/25 10:17	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/06/25 10:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*76 - 130*		*05/06/25 10:17*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*05/06/25 10:17*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*05/06/25 10:17*	*1*

Definitions/Glossary

Client: SCS Engineers
Job ID: 310-305160-1
Project/Site: Ottumwa 1st 2025 Bracketing

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: SCS Engineers
Project/Site: Ottumwa 1st 2025 Bracketing

Job ID: 310-305160-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(76-130)	(80-120)	(80-120)
310-305160-2	MW-75	117	94	100
310-305160-3	MW-78	107	94	100
310-305160-4	MW-80	113	96	98
310-305160-4	MW-80	104	100	99
310-305160-5	Trip Blank	114	95	98

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(76-130)	(80-120)	(80-120)
LCS 310-453066/6	Lab Control Sample	105	101	99
LCS 310-453066/7	Lab Control Sample	114	93	99
LCS 310-453338/7	Lab Control Sample	96	102	98
LCS 310-453338/8	Lab Control Sample	105	100	100
LCS 310-453665/7	Lab Control Sample	104	99	102
LCS 310-453665/8	Lab Control Sample	118	95	99
MB 310-453066/5	Method Blank	113	94	99
MB 310-453338/6	Method Blank	105	100	99
MB 310-453665/6	Method Blank	113	92	96

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-453066/5
Matrix: Water
Analysis Batch: 453066

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500	0.220	ug/L			04/29/25 23:15	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			04/29/25 23:15	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			04/29/25 23:15	1
Trichloroethene	<1.00		1.00	0.430	ug/L			04/29/25 23:15	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			04/29/25 23:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*76 - 130*		*04/29/25 23:15*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*04/29/25 23:15*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*04/29/25 23:15*	*1*

Lab Sample ID: LCS 310-453066/6
Matrix: Water
Analysis Batch: 453066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	20.0	19.67		ug/L		98	71 - 125
cis-1,2-Dichloroethene	20.0	21.01		ug/L		105	72 - 123
Tetrachloroethene	20.0	20.10		ug/L		101	70 - 128
Trichloroethene	20.0	18.95		ug/L		95	70 - 128

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*105*		*76 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: LCS 310-453066/7
Matrix: Water
Analysis Batch: 453066

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	20.0	27.34		ug/L		137	60 - 142

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*114*		*76 - 130*
Toluene-d8 (Surr)	*93*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Lab Sample ID: MB 310-453338/6
Matrix: Water
Analysis Batch: 453338

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/01/25 12:21	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/01/25 12:21	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-453338/6
Matrix: Water
Analysis Batch: 453338

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*105*		*76 - 130*		*05/01/25 12:21*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*05/01/25 12:21*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*05/01/25 12:21*	*1*

Lab Sample ID: LCS 310-453338/7
Matrix: Water
Analysis Batch: 453338

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
cis-1,2-Dichloroethene	20.0	19.20		ug/L		96	72 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	*96*		*76 - 130*
Toluene-d8 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*

Lab Sample ID: LCS 310-453338/8
Matrix: Water
Analysis Batch: 453338

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	20.0	17.25		ug/L		86	60 - 142

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	*105*		*76 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*

Lab Sample ID: MB 310-453665/6
Matrix: Water
Analysis Batch: 453665

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			05/06/25 08:47	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			05/06/25 08:47	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			05/06/25 08:47	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			05/06/25 08:47	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			05/06/25 08:47	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			05/06/25 08:47	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			05/06/25 08:47	1
Benzene	<0.500		0.500	0.220	ug/L			05/06/25 08:47	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			05/06/25 08:47	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			05/06/25 08:47	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			05/06/25 08:47	1
Trichloroethene	<1.00		1.00	0.430	ug/L			05/06/25 08:47	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			05/06/25 08:47	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-453665/6
Matrix: Water
Analysis Batch: 453665

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*113*		*76 - 130*		*05/06/25 08:47*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*05/06/25 08:47*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*05/06/25 08:47*	*1*

Lab Sample ID: LCS 310-453665/7
Matrix: Water
Analysis Batch: 453665

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	18.47		ug/L		92	70 - 121
1,1,1-Trichloroethane	20.0	20.09		ug/L		100	69 - 130
1,1,2,2-Tetrachloroethane	20.0	17.18		ug/L		86	70 - 122
1,1,2-Trichloroethane	20.0	17.99		ug/L		90	75 - 121
1,1-Dichloroethane	20.0	20.68		ug/L		103	69 - 127
1,1-Dichloroethene	20.0	22.03		ug/L		110	64 - 134
1,2-Dichloroethane	20.0	20.04		ug/L		100	68 - 125
Benzene	20.0	19.90		ug/L		100	71 - 125
cis-1,2-Dichloroethene	20.0	20.07		ug/L		100	72 - 123
Tetrachloroethene	20.0	19.82		ug/L		99	70 - 128
trans-1,2-Dichloroethene	20.0	20.60		ug/L		103	67 - 127
Trichloroethene	20.0	17.90		ug/L		90	70 - 128

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	*104*		*76 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: LCS 310-453665/8
Matrix: Water
Analysis Batch: 453665

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	20.0	16.96		ug/L		85	60 - 142

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	*118*		*76 - 130*
Toluene-d8 (Surr)	*95*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-453549/1-A
Matrix: Water
Analysis Batch: 454092

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 453549

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		05/05/25 10:00	05/07/25 15:38	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/05/25 10:00	05/07/25 15:38	1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-453549/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 454092
Prep Batch: 453549

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Arsenic			0.200	0.2102		mg/L		105	80 - 120		
Cobalt			0.100	0.1030		mg/L		103	80 - 120		

Lab Sample ID: MB 310-453550/1-A
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 453930
Prep Batch: 453550

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.000500		0.000500	0.000170	mg/L		05/05/25 10:00	05/06/25 20:00	1

Lab Sample ID: LCS 310-453550/2-A
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 453930
Prep Batch: 453550

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Cobalt			0.100	0.1084		mg/L		108	80 - 120		

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-452961/1
Client Sample ID: Method Blank
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 452961

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			04/28/25 20:30	1

Lab Sample ID: LCS 310-452961/2
Client Sample ID: Lab Control Sample
Matrix: Water
Prep Type: Total/NA
Analysis Batch: 452961

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Total Suspended Solids			100	98.00		mg/L		98	81 - 116		

GC/MS VOA

Analysis Batch: 453066

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305160-2	MW-75	Total/NA	Ground Water	8260D	
310-305160-3	MW-78	Total/NA	Ground Water	8260D	
310-305160-4	MW-80	Total/NA	Ground Water	8260D	
MB 310-453066/5	Method Blank	Total/NA	Water	8260D	
LCS 310-453066/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-453066/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 453338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305160-4	MW-80	Total/NA	Ground Water	8260D	
MB 310-453338/6	Method Blank	Total/NA	Water	8260D	
LCS 310-453338/7	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-453338/8	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 453665

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305160-5	Trip Blank	Total/NA	Ground Water	8260D	
MB 310-453665/6	Method Blank	Total/NA	Water	8260D	
LCS 310-453665/7	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-453665/8	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 453549

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305160-1	MW-68	Total/NA	Ground Water	3005A	
MB 310-453549/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-453549/2-A	Lab Control Sample	Total/NA	Water	3005A	

Prep Batch: 453550

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305160-3	MW-78	Total/NA	Ground Water	3005A	
MB 310-453550/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-453550/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 453930

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305160-3	MW-78	Total/NA	Ground Water	6020B	453550
MB 310-453550/1-A	Method Blank	Total/NA	Water	6020B	453550
LCS 310-453550/2-A	Lab Control Sample	Total/NA	Water	6020B	453550

Analysis Batch: 454092

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305160-1	MW-68	Total/NA	Ground Water	6020B	453549
MB 310-453549/1-A	Method Blank	Total/NA	Water	6020B	453549
LCS 310-453549/2-A	Lab Control Sample	Total/NA	Water	6020B	453549

General Chemistry

Analysis Batch: 452961

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305160-1	MW-68	Total/NA	Ground Water	I-3765-85	

General Chemistry (Continued)

Analysis Batch: 452961 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-305160-3	MW-78	Total/NA	Ground Water	I-3765-85	
MB 310-452961/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-452961/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Lab Chronicle

Client: SCS Engineers
Job ID: 310-305160-1
Project/Site: Ottumwa 1st 2025 Bracketing

Client Sample ID: MW-68
Lab Sample ID: 310-305160-1
Date Collected: 04/23/25 11:14
Matrix: Ground Water
Date Received: 04/25/25 16:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			453549	QTZ5	EET CF	05/05/25 10:00
Total/NA	Analysis	6020B		1	454092	NFT2	EET CF	05/07/25 16:49
Total/NA	Analysis	I-3765-85		1	452961	MDU9	EET CF	04/28/25 20:30

Client Sample ID: MW-75
Lab Sample ID: 310-305160-2
Date Collected: 04/22/25 19:02
Matrix: Ground Water
Date Received: 04/25/25 16:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	453066	FE5V	EET CF	04/30/25 06:18

Client Sample ID: MW-78
Lab Sample ID: 310-305160-3
Date Collected: 04/23/25 10:20
Matrix: Ground Water
Date Received: 04/25/25 16:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	453066	FE5V	EET CF	04/30/25 06:40
Total/NA	Prep	3005A			453550	QTZ5	EET CF	05/05/25 10:00
Total/NA	Analysis	6020B		1	453930	NFT2	EET CF	05/06/25 21:16
Total/NA	Analysis	I-3765-85		1	452961	MDU9	EET CF	04/28/25 20:30

Client Sample ID: MW-80
Lab Sample ID: 310-305160-4
Date Collected: 04/23/25 09:32
Matrix: Ground Water
Date Received: 04/25/25 16:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	453338	FE5V	EET CF	05/01/25 15:01
Total/NA	Analysis	8260D		1	453066	FE5V	EET CF	04/30/25 07:02

Client Sample ID: Trip Blank
Lab Sample ID: 310-305160-5
Date Collected: 04/23/25 00:00
Matrix: Ground Water
Date Received: 04/25/25 16:08

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	453665	WSE8	EET CF	05/06/25 10:17

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Accreditation/Certification Summary

Client: SCS Engineers
Job ID: 310-305160-1
Project/Site: Ottumwa 1st 2025 Bracketing

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

Method Summary

Client: SCS Engineers
Job ID: 310-305160-1
Project/Site: Ottumwa 1st 2025 Bracketing

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

eurofins | Environment Testing America

310-305160 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: ~~ACS~~

City/State: ~~CITY~~ W Des Moines ~~STATE~~ IA | Project:

Receipt Information

Date/Time Received: ~~DATE~~ 4/25/25 ~~TIME~~ 1608 | Received By: XB

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☑ Yes ☐ No *If yes:* Cooler ID:

Multiple Coolers? ☐ Yes ☒ No *If yes:* Cooler # _____ of _____

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes:* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes:* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☐ No *If yes:* Which VOA samples are in cooler? ↓

all

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID. 2 | Correction Factor (°C): 0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 0.8 | Corrected Temp (°C): 0.8

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Supplemental

Eurofins TestAmerica, Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613-6907
phone 319 277.2401 fax 319 277 2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Nathan Ohrt	Site Contact: Lori Creech	Date:	COC No
Nathan Ohrt	Email. nohrt@scsengineers.com	Lab Contact: Sam Miller	Carrier:	2 of 2 COCs
SCS Engineers	Cell. 319-331-9613			Sampler
1690 All State Court, Suite 100	Analysis Turnaround Time			For Lab Use Only:
West Des Moines Iowa 50265	☐ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
	Other:			Lab Sampling
Project Name Ottumwa 1st 2025 Bracketing	☐ 2 weeks			
Site Ottumwa-Wapello County Landfill	☐ 1 week			Job / SDG No
P O # 27223157 25	☐ 2 days ☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Arsenic	Cobalt	Total Suspended Solids	Trichloroethene	Tetrachloroethene	cis-1,2-Dichloroethene	Vinyl Chloride	Benzene	Trip Blank	Sample Specific Notes
MW-66			G	GW		N		X	X	X							
MW-67			G	GW		N		X	X	X		X					
MW-68	4-23	11:14	G	GW		N		X	X	X							
MW-71	"	"	G	GW		N		X	X	X	X		X				
MW-74			G	GW		N		X	X	X	X	X	X	X	X		
MW-75	4-22	19:02	G	GW		N					X	X	X	X	X		
MW-78	4-23	10.20	G	GW		N			X	X	X	X	X	X			
MW-80	4-23	9.32	G	GW		N							X	X			
Trip Blank																X	

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No	Cooler Temp (°C) Obs'd _____ Corr'd _____	Therm ID No _____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Garrett Kraft	SCS	4-25 11:40			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by	Company	Date/Time
					4/25/25 1608

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

5/8/2025

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-305160-1

Login Number: 305160

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Collins, Charlotte G

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

eurofins | Environment Testing

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15

ANALYTICAL REPORT

PREPARED FOR

Attn: Nathan Ohrt
SCS Engineers
1690 All State Court
Suite 100
West Des Moines, Iowa 50265

Generated 9/11/2025 10:22:01 AM

JOB DESCRIPTION

Ottumwa 2nd 2025 HMSP and Bracketing
Ottumwa-Wapello County Landfill

JOB NUMBER

310-314564-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing North Central, LLC Project Manager.

Authorization



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Authorized for release by
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Job Narrative
310-314564-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt
The samples were received on 8/29/2025 4:30 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 4 coolers at receipt time were -1.2°C, -1.1°C, 1.2°C and 8.2°C.

GC/MS VOA
Method 8260D: The continuing calibration verification (CCV) analyzed in batch 310-465661 was outside the method criteria for the following analyte(s): Chloromethane (-21.0%D) and Bromomethane (-33.5%D). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. As indicated in the reference method, sample analysis may proceed; however, any detection for the affected analyte(s) is considered estimated.

Method 8260D: The preservative used in the sample containers provided is not compatible with one of the Method 8260 analytes requested. The following sample(s) was received preserved with hydrochloric acid. Vial preservation was pH <2 rather than pH 4-5. : Trip Blank 4 (310-314564-17). The requested target analyte list includes Acrylonitrile.

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-465784 recovered outside of the control limits for Bromomethane (-25.6%D). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-465784/4). &>.

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-465969 recovered above the upper control limit for 2-Butanone (MEK) (33.8%D. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is:(CCV 310-465969/3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-465969 recovered above the upper control limit for Chloromethane (31.1%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is:(CCV 310-465969/4).

Method 8260D: The initial calibration verification (ICV) result for batch 310-465326 was above the upper control limit. The affected analyte is: 1,1,1,2-Tetrachloroethane. Sample results were non-detects, and have been reported as qualified data.

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-465326 recovered above the upper control limit for Carbon disulfide (20.6%D). The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is:(CCV 310-465326/3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-465326 recovered above the upper control limit for Chloroethane (25.8%D), Chloromethane (20.7%D), Trichlorofluoromethane (22.7%D), and Vinyl chloride (24.4%D). The LCS associated with this CCV passed CCV criteria for the affected analytes; therefore, the data have been reported. The associated sample is:(CCV 310-465326/4).

Method 8260D: The laboratory control sample (LCS) for analytical batch 310-465326 recovered outside control limits for the following analyte: cis-1,2-Dichloroethene. This analyte was biased high in the LCS and was not detected in the associated samples; therefore, the data have been reported.

Job ID: 310-314564-1 (Continued) Eurofins Cedar Falls

Method 8260D: The method requirement for no headspace was not met. The following volatile sample was analyzed with headspace in the sample container: Trip Blank 1 (310-314564-14).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals
No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

General Chemistry
Method 9034_Calc: The following sample was received at the Chicago lab outside of holding time: MW-39R (310-314564-2).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Sample Summary

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
310-314564-1	MW-81	Ground Water	08/26/25 14:48	08/29/25 16:30	Iowa
310-314564-2	MW-39R	Ground Water	08/26/25 15:43	08/29/25 16:30	Iowa
310-314564-3	MW-40	Ground Water	08/26/25 16:28	08/29/25 16:30	Iowa
310-314564-4	04-MW-56	Ground Water	08/27/25 16:25	08/29/25 16:30	Iowa
310-314564-5	MW-58	Ground Water	08/27/25 17:02	08/29/25 16:30	Iowa
310-314564-6	MW-63R	Ground Water	08/28/25 10:56	08/29/25 16:30	Iowa
310-314564-7	MW-65	Ground Water	08/27/25 06:02	08/29/25 16:30	Iowa
310-314564-8	93-MW-31R	Ground Water	08/27/25 18:40	08/29/25 16:30	Iowa
310-314564-9	MW-61R	Ground Water	08/27/25 09:48	08/29/25 16:30	Iowa
310-314564-10	MW-73	Ground Water	08/27/25 11:08	08/29/25 16:30	Iowa
310-314564-11	MW-79	Ground Water	08/27/25 11:54	08/29/25 16:30	Iowa
310-314564-12	MW-D1	Ground Water	08/26/25 16:28	08/29/25 16:30	Iowa
310-314564-13	MW-D2	Ground Water	08/27/25 06:02	08/29/25 16:30	Iowa
310-314564-14	Trip Blank 1	Water	08/28/25 00:00	08/29/25 16:30	Iowa
310-314564-15	Trip Blank 2	Water	08/28/25 00:00	08/29/25 16:30	Iowa
310-314564-16	Trip Blank 3	Water	08/28/25 00:00	08/29/25 16:30	Iowa
310-314564-17	Trip Blank 4	Water	08/28/25 00:00	08/29/25 16:30	Iowa
310-314564-18	MW-66	Water	08/27/25 12:42	08/29/25 16:30	Iowa
310-314564-19	MW-78	Water	08/27/25 14:37	08/29/25 16:30	Iowa
310-314564-20	MW-80	Water	08/27/25 15:27	08/29/25 16:30	Iowa

Detection Summary

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-81 — Lab Sample ID: 310-314564-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	0.668	J	1.00	0.210	ug/L	1		8260D	Total/NA
Barium	0.0639		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000106	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.000370	J	0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00424	J	0.00500	0.00230	mg/L	1		6020B	Total/NA
Total Suspended Solids	3.75		1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-39R — Lab Sample ID: 310-314564-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00461		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.00968		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.0174		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00488	J	0.00500	0.00230	mg/L	1		6020B	Total/NA
Total Suspended Solids	100		30.0	21.0	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-40 — Lab Sample ID: 310-314564-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.665		0.500	0.220	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	3.97		1.00	0.210	ug/L	1		8260D	Total/NA
Vinyl chloride	0.630	J	1.00	0.180	ug/L	1		8260D	Total/NA
Arsenic	0.00715		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0122		0.00200	0.000660	mg/L	1		6020B	Total/NA
Beryllium	0.000484	J	0.00100	0.000330	mg/L	1		6020B	Total/NA
Cobalt	0.110		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.118		0.00500	0.00230	mg/L	1		6020B	Total/NA
Zinc	0.0869		0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	54.0		15.0	10.5	mg/L	1		I-3765-85	Total/NA

Client Sample ID: 04-MW-56 — Lab Sample ID: 310-314564-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.98	J	10.0	3.10	ug/L	1		8260D	Total/NA
Arsenic	0.00588		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0262		0.00200	0.000660	mg/L	1		6020B	Total/NA
Chromium	0.00301	J	0.00500	0.00180	mg/L	1		6020B	Total/NA
Cobalt	0.0228		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0407		0.00500	0.00230	mg/L	1		6020B	Total/NA
Zinc	0.0176	J	0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	29.0		15.0	10.5	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-58 — Lab Sample ID: 310-314564-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00121	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0160		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000629		0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.0423		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0718		0.00500	0.00230	mg/L	1		6020B	Total/NA
Zinc	0.0953		0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	10.3		1.88	1.31	mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-63R — Lab Sample ID: 310-314564-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.000944	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0138		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.00919		0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.0217		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.00339	J	0.00500	0.00320	mg/L	1		6020B	Total/NA
Nickel	0.0769		0.00500	0.00230	mg/L	1		6020B	Total/NA
Zinc	0.194		0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	10.0		1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-65 — Lab Sample ID: 310-314564-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.28	J	10.0	3.10	ug/L	1		8260D	Total/NA
Benzene	0.523		0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	2.38	J	4.00	0.790	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.745	J	1.00	0.210	ug/L	1		8260D	Total/NA
Arsenic	0.0221		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.291		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00161		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00388	J	0.00500	0.00230	mg/L	1		6020B	Total/NA
Total Suspended Solids	77.0		15.0	10.5	mg/L	1		I-3765-85	Total/NA

Client Sample ID: 93-MW-31R — Lab Sample ID: 310-314564-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00118	J	0.00200	0.00100	mg/L	1		6020B	Total/NA
Arsenic	0.00407		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0482		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000190	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.00100		0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.00110		0.000500	0.000330	mg/L	1		6020B	Total/NA
Selenium	0.00336	J	0.00500	0.00140	mg/L	1		6020B	Total/NA
Vanadium	0.00219	J	0.00500	0.00170	mg/L	1		6020B	Total/NA
Total Suspended Solids	54.0		3.75	2.63	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-61R — Lab Sample ID: 310-314564-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	15.6		1.00	0.210	ug/L	1		8260D	Total/NA
Arsenic	0.0141		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0206		0.00200	0.000660	mg/L	1		6020B	Total/NA
Beryllium	0.00276		0.00100	0.000330	mg/L	1		6020B	Total/NA
Cadmium	0.00274		0.000200	0.000100	mg/L	1		6020B	Total/NA
Chromium	0.0123		0.00500	0.00180	mg/L	1		6020B	Total/NA
Cobalt	0.0308		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.0419		0.00500	0.00320	mg/L	1		6020B	Total/NA
Lead	0.0195		0.000500	0.000330	mg/L	1		6020B	Total/NA
Nickel	0.0969		0.00500	0.00230	mg/L	1		6020B	Total/NA
Selenium	0.00630		0.00500	0.00140	mg/L	1		6020B	Total/NA
Vanadium	0.0355		0.00500	0.00170	mg/L	1		6020B	Total/NA
Zinc	0.172		0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	3170		60.0	42.0	mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-73 — Lab Sample ID: 310-314564-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	3.49		1.00	0.220	ug/L	1		8260D	Total/NA
1,2-Dichloropropane	0.686	J	1.00	0.270	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	37.9		1.00	0.210	ug/L	1		8260D	Total/NA
Tetrachloroethene	1.21		1.00	0.480	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	0.403	J	1.00	0.270	ug/L	1		8260D	Total/NA
Trichloroethene	3.40		1.00	0.430	ug/L	1		8260D	Total/NA
Vinyl chloride	2.25		1.00	0.180	ug/L	1		8260D	Total/NA
Arsenic	0.0150		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.158		0.00200	0.000660	mg/L	1		6020B	Total/NA
Beryllium	0.000737	J	0.00100	0.000330	mg/L	1		6020B	Total/NA
Cadmium	0.0839		0.000200	0.000100	mg/L	1		6020B	Total/NA
Chromium	0.00331	J	0.00500	0.00180	mg/L	1		6020B	Total/NA
Cobalt	0.0603		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.0299		0.00500	0.00320	mg/L	1		6020B	Total/NA
Lead	0.00792		0.000500	0.000330	mg/L	1		6020B	Total/NA
Nickel	0.0330		0.00500	0.00230	mg/L	1		6020B	Total/NA
Vanadium	0.00384	J	0.00500	0.00170	mg/L	1		6020B	Total/NA
Zinc	0.492		0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	657		15.0	10.5	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-79 — Lab Sample ID: 310-314564-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	3.41		1.00	0.220	ug/L	1		8260D	Total/NA
1,2-Dichloropropane	0.413	J	1.00	0.270	ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	1.02		1.00	0.230	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	45.9		1.00	0.210	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	0.602	J	1.00	0.270	ug/L	1		8260D	Total/NA
Vinyl chloride	4.68		1.00	0.180	ug/L	1		8260D	Total/NA
Arsenic	0.000635	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0946		0.00200	0.000660	mg/L	1		6020B	Total/NA
Beryllium	0.00170		0.00100	0.000330	mg/L	1		6020B	Total/NA
Cadmium	0.0130		0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.00407		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.00331	J	0.00500	0.00320	mg/L	1		6020B	Total/NA
Lead	0.00123		0.000500	0.000330	mg/L	1		6020B	Total/NA
Nickel	0.0338		0.00500	0.00230	mg/L	1		6020B	Total/NA
Vanadium	0.00390	J	0.00500	0.00170	mg/L	1		6020B	Total/NA
Zinc	0.108		0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	61.5		7.50	5.25	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-D1 — Lab Sample ID: 310-314564-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.676	J	1.00	0.220	ug/L	1		8260D	Total/NA
Benzene	0.324	J	0.500	0.220	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	2.42		1.00	0.210	ug/L	1		8260D	Total/NA
Vinyl chloride	0.410	J	1.00	0.180	ug/L	1		8260D	Total/NA
Arsenic	0.00201		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0115		0.00200	0.000660	mg/L	1		6020B	Total/NA
Beryllium	0.00101		0.00100	0.000330	mg/L	1		6020B	Total/NA
Cobalt	0.109		0.000500	0.000170	mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-D1 (Continued) — Lab Sample ID: 310-314564-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.149		0.00500	0.00230	mg/L	1		6020B	Total/NA
Zinc	0.166		0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	14.3		3.75	2.63	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-D2 — Lab Sample ID: 310-314564-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	0.815	J	1.00	0.220	ug/L	1		8260D	Total/NA
Benzene	1.82		0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	2.58	J	4.00	0.790	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.973	J	1.00	0.210	ug/L	1		8260D	Total/NA
Arsenic	0.0265		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.355		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00170		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00292	J	0.00500	0.00230	mg/L	1		6020B	Total/NA
Total Suspended Solids	104		15.0	10.5	mg/L	1		I-3765-85	Total/NA

Client Sample ID: Trip Blank 1 — Lab Sample ID: 310-314564-14

No Detections.

Client Sample ID: Trip Blank 2 — Lab Sample ID: 310-314564-15

No Detections.

Client Sample ID: Trip Blank 3 — Lab Sample ID: 310-314564-16

No Detections.

Client Sample ID: Trip Blank 4 — Lab Sample ID: 310-314564-17

No Detections.

Client Sample ID: MW-66 — Lab Sample ID: 310-314564-18

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.000986		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	9.00		1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-78 — Lab Sample ID: 310-314564-19

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	1.05		1.00	0.210	ug/L	1		8260D	Total/NA
Tetrachloroethene	1.05		1.00	0.480	ug/L	1		8260D	Total/NA
Trichloroethene	0.517	J	1.00	0.430	ug/L	1		8260D	Total/NA
Cobalt	0.00451		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	35.0		3.75	2.63	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-80 — Lab Sample ID: 310-314564-20

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	23.0		1.00	0.210	ug/L	1		8260D	Total/NA
Vinyl chloride	6.54		1.00	0.180	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-81
Date Collected: 08/26/25 14:48
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-1
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 12:50	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 12:50	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 12:50	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 12:50	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/02/25 12:50	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 12:50	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 12:50	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 12:50	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 12:50	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 12:50	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 12:50	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 12:50	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 12:50	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 12:50	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 12:50	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 12:50	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 12:50	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 12:50	1
Benzene	<0.500		0.500	0.220	ug/L			09/02/25 12:50	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 12:50	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 12:50	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 12:50	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 12:50	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 12:50	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 12:50	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 12:50	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 12:50	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 12:50	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 12:50	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 12:50	1
cis-1,2-Dichloroethene	**0.668**	**J**	1.00	0.210	ug/L			09/05/25 15:34	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 12:50	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 12:50	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 12:50	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 12:50	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 12:50	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 12:50	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 12:50	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 12:50	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 12:50	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 12:50	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 12:50	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 12:50	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 12:50	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 12:50	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/02/25 12:50	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 12:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*119*		*76 - 130*		*09/02/25 12:50*	*1*

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-81
Date Collected: 08/26/25 14:48
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-1
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*76 - 130*		*09/05/25 15:34*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*09/02/25 12:50*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*09/05/25 15:34*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*09/02/25 12:50*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*09/05/25 15:34*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		09/08/25 10:00	09/10/25 16:01	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		09/08/25 10:00	09/10/25 16:01	1
Barium	**0.0639**		0.00200	0.000660	mg/L		09/08/25 10:00	09/10/25 16:01	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		09/08/25 10:00	09/10/25 16:01	1
Cadmium	**0.000106**	**J**	0.000200	0.000100	mg/L		09/08/25 10:00	09/10/25 16:01	1
Chromium	<0.00500		0.00500	0.00180	mg/L		09/08/25 10:00	09/10/25 16:01	1
Cobalt	**0.000370**	**J**	0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 16:01	1
Copper	<0.00500		0.00500	0.00320	mg/L		09/08/25 10:00	09/10/25 16:01	1
Lead	<0.000500		0.000500	0.000330	mg/L		09/08/25 10:00	09/10/25 16:01	1
Nickel	**0.00424**	**J**	0.00500	0.00230	mg/L		09/08/25 10:00	09/10/25 16:01	1
Selenium	<0.00500		0.00500	0.00140	mg/L		09/08/25 10:00	09/10/25 16:01	1
Silver	<0.00100		0.00100	0.000500	mg/L		09/08/25 10:00	09/10/25 16:01	1
Thallium	<0.00100		0.00100	0.000570	mg/L		09/08/25 10:00	09/10/25 16:01	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		09/08/25 10:00	09/10/25 16:01	1
Zinc	<0.0200		0.0200	0.0130	mg/L		09/08/25 10:00	09/10/25 16:01	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**3.75**		1.88	1.31	mg/L			09/02/25 11:23	1

Client Sample ID: MW-39R
Lab Sample ID: 310-314564-2
Date Collected: 08/26/25 15:43
Matrix: Ground Water
Date Received: 08/29/25 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 13:12	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 13:12	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 13:12	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 13:12	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/02/25 13:12	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 13:12	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 13:12	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 13:12	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 13:12	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 13:12	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 13:12	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 13:12	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 13:12	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 13:12	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 13:12	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 13:12	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 13:12	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 13:12	1
Benzene	<0.500		0.500	0.220	ug/L			09/02/25 13:12	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 13:12	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 13:12	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 13:12	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 13:12	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 13:12	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 13:12	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 13:12	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 13:12	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 13:12	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 13:12	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 13:12	1
cis-1,2-Dichloroethene	<1.00	*+	1.00	0.210	ug/L			09/02/25 13:12	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 13:12	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 13:12	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 13:12	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 13:12	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 13:12	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 13:12	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 13:12	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 13:12	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 13:12	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 13:12	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 13:12	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 13:12	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 13:12	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 13:12	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/02/25 13:12	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 13:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*118*		*76 - 130*		*09/02/25 13:12*	*1*

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-39R
Date Collected: 08/26/25 15:43
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-2
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*		*09/02/25 13:12*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*09/02/25 13:12*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		09/08/25 10:00	09/10/25 16:04	1
Arsenic	**0.00461**		0.00200	0.000530	mg/L		09/08/25 10:00	09/10/25 16:04	1
Barium	**0.00968**		0.00200	0.000660	mg/L		09/08/25 10:00	09/10/25 16:04	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		09/08/25 10:00	09/10/25 16:04	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		09/08/25 10:00	09/10/25 16:04	1
Chromium	<0.00500		0.00500	0.00180	mg/L		09/08/25 10:00	09/10/25 16:04	1
Cobalt	**0.0174**		0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 16:04	1
Copper	<0.00500		0.00500	0.00320	mg/L		09/08/25 10:00	09/10/25 16:04	1
Lead	<0.000500		0.000500	0.000330	mg/L		09/08/25 10:00	09/10/25 16:04	1
Nickel	**0.00488**	**J**	0.00500	0.00230	mg/L		09/08/25 10:00	09/10/25 16:04	1
Selenium	<0.00500		0.00500	0.00140	mg/L		09/08/25 10:00	09/10/25 16:04	1
Silver	<0.00100		0.00100	0.000500	mg/L		09/08/25 10:00	09/10/25 16:04	1
Thallium	<0.00100		0.00100	0.000570	mg/L		09/08/25 10:00	09/10/25 16:04	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		09/08/25 10:00	09/10/25 16:04	1
Zinc	<0.0200		0.0200	0.0130	mg/L		09/08/25 10:00	09/10/25 16:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.00	H	1.00	0.231	mg/L		09/03/25 18:10	09/03/25 22:52	1
Total Suspended Solids (USGS I-3765-85)	**100**		30.0	21.0	mg/L			09/02/25 11:23	1

Client Sample ID: MW-40

Date Collected: 08/26/25 16:28
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-3

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 13:34	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 13:34	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 13:34	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 13:34	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/02/25 13:34	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 13:34	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 13:34	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 13:34	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 13:34	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 13:34	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 13:34	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 13:34	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 13:34	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 13:34	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 13:34	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 13:34	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 13:34	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 13:34	1
Benzene	**0.665**		0.500	0.220	ug/L			09/02/25 13:34	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 13:34	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 13:34	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 13:34	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 13:34	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 13:34	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 13:34	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 13:34	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 13:34	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 13:34	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 13:34	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 13:34	1
cis-1,2-Dichloroethene	**3.97**		1.00	0.210	ug/L			09/05/25 15:56	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 13:34	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 13:34	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 13:34	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 13:34	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 13:34	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 13:34	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 13:34	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 13:34	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 13:34	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 13:34	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 13:34	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 13:34	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 13:34	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 13:34	1
Vinyl chloride	**0.630**	**J**	1.00	0.180	ug/L			09/02/25 13:34	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 13:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*121*		*76 - 130*		*09/02/25 13:34*	*1*

Client Sample ID: MW-40
Date Collected: 08/26/25 16:28
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-3
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*76 - 130*		*09/05/25 15:56*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*09/02/25 13:34*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*09/05/25 15:56*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*09/02/25 13:34*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*09/05/25 15:56*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		09/08/25 10:00	09/10/25 16:06	1
Arsenic	**0.00715**		0.00200	0.000530	mg/L		09/08/25 10:00	09/10/25 16:06	1
Barium	**0.0122**		0.00200	0.000660	mg/L		09/08/25 10:00	09/10/25 16:06	1
Beryllium	**0.000484**	**J**	0.00100	0.000330	mg/L		09/08/25 10:00	09/10/25 16:06	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		09/08/25 10:00	09/10/25 16:06	1
Chromium	<0.00500		0.00500	0.00180	mg/L		09/08/25 10:00	09/10/25 16:06	1
Cobalt	**0.110**		0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 16:06	1
Copper	<0.00500		0.00500	0.00320	mg/L		09/08/25 10:00	09/10/25 16:06	1
Lead	<0.000500		0.000500	0.000330	mg/L		09/08/25 10:00	09/10/25 16:06	1
Nickel	**0.118**		0.00500	0.00230	mg/L		09/08/25 10:00	09/10/25 16:06	1
Selenium	<0.00500		0.00500	0.00140	mg/L		09/08/25 10:00	09/10/25 16:06	1
Silver	<0.00100		0.00100	0.000500	mg/L		09/08/25 10:00	09/10/25 16:06	1
Thallium	<0.00100		0.00100	0.000570	mg/L		09/08/25 10:00	09/10/25 16:06	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		09/08/25 10:00	09/10/25 16:06	1
Zinc	**0.0869**		0.0200	0.0130	mg/L		09/08/25 10:00	09/10/25 16:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**54.0**		15.0	10.5	mg/L			09/02/25 11:23	1

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: 04-MW-56
Date Collected: 08/27/25 16:25
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-4
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 13:57	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 13:57	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 13:57	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 13:57	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/02/25 13:57	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 13:57	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 13:57	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 13:57	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 13:57	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 13:57	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 13:57	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 13:57	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 13:57	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 13:57	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 13:57	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 13:57	1
Acetone	**3.98**	**J**	10.0	3.10	ug/L			09/02/25 13:57	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 13:57	1
Benzene	<0.500		0.500	0.220	ug/L			09/02/25 13:57	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 13:57	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 13:57	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 13:57	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 13:57	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 13:57	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 13:57	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 13:57	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 13:57	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 13:57	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 13:57	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 13:57	1
cis-1,2-Dichloroethene	<1.00	*+	1.00	0.210	ug/L			09/02/25 13:57	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 13:57	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 13:57	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 13:57	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 13:57	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 13:57	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 13:57	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 13:57	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 13:57	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 13:57	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 13:57	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 13:57	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 13:57	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 13:57	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 13:57	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/02/25 13:57	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 13:57	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*76 - 130*		*09/02/25 13:57*	*1*

Client Sample ID: 04-MW-56

Date Collected: 08/27/25 16:25
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-4

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*		*09/02/25 13:57*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*09/02/25 13:57*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		09/08/25 10:00	09/10/25 16:09	1
Arsenic	**0.00588**		0.00200	0.000530	mg/L		09/08/25 10:00	09/10/25 16:09	1
Barium	**0.0262**		0.00200	0.000660	mg/L		09/08/25 10:00	09/10/25 16:09	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		09/08/25 10:00	09/10/25 16:09	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		09/08/25 10:00	09/10/25 16:09	1
Chromium	**0.00301**	**J**	0.00500	0.00180	mg/L		09/08/25 10:00	09/10/25 16:09	1
Cobalt	**0.0228**		0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 16:09	1
Copper	<0.00500		0.00500	0.00320	mg/L		09/08/25 10:00	09/10/25 16:09	1
Lead	<0.000500		0.000500	0.000330	mg/L		09/08/25 10:00	09/10/25 16:09	1
Nickel	**0.0407**		0.00500	0.00230	mg/L		09/08/25 10:00	09/10/25 16:09	1
Selenium	<0.00500		0.00500	0.00140	mg/L		09/08/25 10:00	09/10/25 16:09	1
Silver	<0.00100		0.00100	0.000500	mg/L		09/08/25 10:00	09/10/25 16:09	1
Thallium	<0.00100		0.00100	0.000570	mg/L		09/08/25 10:00	09/10/25 16:09	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		09/08/25 10:00	09/10/25 16:09	1
Zinc	**0.0176**	**J**	0.0200	0.0130	mg/L		09/08/25 10:00	09/10/25 16:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**29.0**		15.0	10.5	mg/L			09/02/25 11:23	1

Client Sample ID: MW-58
Lab Sample ID: 310-314564-5
Date Collected: 08/27/25 17:02
Matrix: Ground Water
Date Received: 08/29/25 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 14:19	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 14:19	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 14:19	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 14:19	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/02/25 14:19	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 14:19	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 14:19	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 14:19	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 14:19	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 14:19	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 14:19	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 14:19	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 14:19	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 14:19	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 14:19	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 14:19	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 14:19	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 14:19	1
Benzene	<0.500		0.500	0.220	ug/L			09/02/25 14:19	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 14:19	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 14:19	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 14:19	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 14:19	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 14:19	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 14:19	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 14:19	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 14:19	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 14:19	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 14:19	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 14:19	1
cis-1,2-Dichloroethene	<1.00	*+	1.00	0.210	ug/L			09/02/25 14:19	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 14:19	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 14:19	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 14:19	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 14:19	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 14:19	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 14:19	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 14:19	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 14:19	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 14:19	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 14:19	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 14:19	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 14:19	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 14:19	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 14:19	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/02/25 14:19	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 14:19	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*121*		*76 - 130*		*09/02/25 14:19*	*1*

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-58
Date Collected: 08/27/25 17:02
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-5
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*		*09/02/25 14:19*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*09/02/25 14:19*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		09/08/25 10:00	09/10/25 16:11	1
Arsenic	**0.00121**	**J**	0.00200	0.000530	mg/L		09/08/25 10:00	09/10/25 16:11	1
Barium	**0.0160**		0.00200	0.000660	mg/L		09/08/25 10:00	09/10/25 16:11	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		09/08/25 10:00	09/10/25 16:11	1
Cadmium	**0.000629**		0.000200	0.000100	mg/L		09/08/25 10:00	09/10/25 16:11	1
Chromium	<0.00500		0.00500	0.00180	mg/L		09/08/25 10:00	09/10/25 16:11	1
Cobalt	**0.0423**		0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 16:11	1
Copper	<0.00500		0.00500	0.00320	mg/L		09/08/25 10:00	09/10/25 16:11	1
Lead	<0.000500		0.000500	0.000330	mg/L		09/08/25 10:00	09/10/25 16:11	1
Nickel	**0.0718**		0.00500	0.00230	mg/L		09/08/25 10:00	09/10/25 16:11	1
Selenium	<0.00500		0.00500	0.00140	mg/L		09/08/25 10:00	09/10/25 16:11	1
Silver	<0.00100		0.00100	0.000500	mg/L		09/08/25 10:00	09/10/25 16:11	1
Thallium	<0.00100		0.00100	0.000570	mg/L		09/08/25 10:00	09/10/25 16:11	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		09/08/25 10:00	09/10/25 16:11	1
Zinc	**0.0953**		0.0200	0.0130	mg/L		09/08/25 10:00	09/10/25 16:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**10.3**		1.88	1.31	mg/L			09/02/25 11:23	1

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-63R
Date Collected: 08/28/25 10:56
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-6
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 14:42	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 14:42	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 14:42	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 14:42	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/02/25 14:42	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 14:42	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 14:42	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 14:42	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 14:42	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 14:42	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 14:42	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 14:42	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 14:42	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 14:42	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 14:42	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 14:42	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 14:42	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 14:42	1
Benzene	<0.500		0.500	0.220	ug/L			09/02/25 14:42	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 14:42	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 14:42	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 14:42	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 14:42	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 14:42	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 14:42	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 14:42	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 14:42	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 14:42	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 14:42	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 14:42	1
cis-1,2-Dichloroethene	<1.00	*+	1.00	0.210	ug/L			09/02/25 14:42	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 14:42	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 14:42	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 14:42	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 14:42	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 14:42	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 14:42	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 14:42	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 14:42	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 14:42	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 14:42	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 14:42	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 14:42	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 14:42	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 14:42	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/02/25 14:42	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 14:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*120*		*76 - 130*		*09/02/25 14:42*	*1*

Client Sample ID: MW-63R
Lab Sample ID: 310-314564-6
Date Collected: 08/28/25 10:56
Matrix: Ground Water
Date Received: 08/29/25 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*		*09/02/25 14:42*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*09/02/25 14:42*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		09/08/25 10:00	09/10/25 16:14	1
Arsenic	**0.000944**	**J**	0.00200	0.000530	mg/L		09/08/25 10:00	09/10/25 16:14	1
Barium	**0.0138**		0.00200	0.000660	mg/L		09/08/25 10:00	09/10/25 16:14	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		09/08/25 10:00	09/10/25 16:14	1
Cadmium	**0.00919**		0.000200	0.000100	mg/L		09/08/25 10:00	09/10/25 16:14	1
Chromium	<0.00500		0.00500	0.00180	mg/L		09/08/25 10:00	09/10/25 16:14	1
Cobalt	**0.0217**		0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 16:14	1
Copper	**0.00339**	**J**	0.00500	0.00320	mg/L		09/08/25 10:00	09/10/25 16:14	1
Lead	<0.000500		0.000500	0.000330	mg/L		09/08/25 10:00	09/10/25 16:14	1
Nickel	**0.0769**		0.00500	0.00230	mg/L		09/08/25 10:00	09/10/25 16:14	1
Selenium	<0.00500		0.00500	0.00140	mg/L		09/08/25 10:00	09/10/25 16:14	1
Silver	<0.00100		0.00100	0.000500	mg/L		09/08/25 10:00	09/10/25 16:14	1
Thallium	<0.00100		0.00100	0.000570	mg/L		09/08/25 10:00	09/10/25 16:14	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		09/08/25 10:00	09/10/25 16:14	1
Zinc	**0.194**		0.0200	0.0130	mg/L		09/08/25 10:00	09/10/25 16:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.00		1.00	0.231	mg/L		09/03/25 18:25	09/03/25 23:14	1
Total Suspended Solids (USGS I-3765-85)	**10.0**		1.88	1.31	mg/L			09/03/25 07:21	1

Client Sample ID: MW-65

Date Collected: 08/27/25 06:02
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-7

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 15:04	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 15:04	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 15:04	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 15:04	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/02/25 15:04	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 15:04	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 15:04	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 15:04	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 15:04	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 15:04	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 15:04	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 15:04	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 15:04	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 15:04	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 15:04	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 15:04	1
Acetone	**3.28**	**J**	10.0	3.10	ug/L			09/02/25 15:04	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 15:04	1
Benzene	**0.523**		0.500	0.220	ug/L			09/02/25 15:04	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 15:04	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 15:04	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 15:04	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 15:04	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 15:04	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 15:04	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 15:04	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 15:04	1
Chloroethane	**2.38**	**J**	4.00	0.790	ug/L			09/02/25 15:04	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 15:04	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 15:04	1
cis-1,2-Dichloroethene	**0.745**	**J**	1.00	0.210	ug/L			09/05/25 16:18	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 15:04	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 15:04	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 15:04	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 15:04	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 15:04	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 15:04	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 15:04	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 15:04	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 15:04	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 15:04	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 15:04	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 15:04	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 15:04	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 15:04	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/02/25 15:04	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 15:04	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*120*		*76 - 130*		*09/02/25 15:04*	*1*

Client Sample ID: MW-65
Date Collected: 08/27/25 06:02
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-7
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*76 - 130*		*09/05/25 16:18*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*09/02/25 15:04*	*1*
Toluene-d8 (Surr)	*95*		*80 - 120*		*09/05/25 16:18*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*09/02/25 15:04*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*09/05/25 16:18*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		09/08/25 10:00	09/10/25 16:16	1
Arsenic	**0.0221**		0.00200	0.000530	mg/L		09/08/25 10:00	09/10/25 16:16	1
Barium	**0.291**		0.00200	0.000660	mg/L		09/08/25 10:00	09/10/25 16:16	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		09/08/25 10:00	09/10/25 16:16	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		09/08/25 10:00	09/10/25 16:16	1
Chromium	<0.00500		0.00500	0.00180	mg/L		09/08/25 10:00	09/10/25 16:16	1
Cobalt	**0.00161**		0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 16:16	1
Copper	<0.00500		0.00500	0.00320	mg/L		09/08/25 10:00	09/10/25 16:16	1
Lead	<0.000500		0.000500	0.000330	mg/L		09/08/25 10:00	09/10/25 16:16	1
Nickel	**0.00388**	**J**	0.00500	0.00230	mg/L		09/08/25 10:00	09/10/25 16:16	1
Selenium	<0.00500		0.00500	0.00140	mg/L		09/08/25 10:00	09/10/25 16:16	1
Silver	<0.00100		0.00100	0.000500	mg/L		09/08/25 10:00	09/10/25 16:16	1
Thallium	<0.00100		0.00100	0.000570	mg/L		09/08/25 10:00	09/10/25 16:16	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		09/08/25 10:00	09/10/25 16:16	1
Zinc	<0.0200		0.0200	0.0130	mg/L		09/08/25 10:00	09/10/25 16:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.00		1.00	0.231	mg/L		09/03/25 18:15	09/03/25 23:00	1
Total Suspended Solids (USGS I-3765-85)	**77.0**		15.0	10.5	mg/L			09/02/25 11:23	1

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: 93-MW-31R
Date Collected: 08/27/25 18:40
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-8
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 15:27	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 15:27	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 15:27	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 15:27	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/02/25 15:27	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 15:27	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 15:27	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 15:27	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 15:27	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 15:27	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 15:27	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 15:27	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 15:27	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 15:27	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 15:27	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 15:27	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 15:27	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 15:27	1
Benzene	<0.500		0.500	0.220	ug/L			09/02/25 15:27	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 15:27	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 15:27	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 15:27	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 15:27	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 15:27	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 15:27	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 15:27	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 15:27	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 15:27	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 15:27	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 15:27	1
cis-1,2-Dichloroethene	<1.00	*+	1.00	0.210	ug/L			09/02/25 15:27	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 15:27	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 15:27	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 15:27	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 15:27	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 15:27	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 15:27	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 15:27	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 15:27	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 15:27	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 15:27	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 15:27	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 15:27	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 15:27	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 15:27	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/02/25 15:27	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 15:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*118*		*76 - 130*		*09/02/25 15:27*	*1*

Client Sample ID: 93-MW-31R

Date Collected: 08/27/25 18:40
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-8

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*93*		*80 - 120*		*09/02/25 15:27*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*09/02/25 15:27*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	**0.00118**	**J**	0.00200	0.00100	mg/L		09/08/25 10:00	09/10/25 16:24	1
Arsenic	**0.00407**		0.00200	0.000530	mg/L		09/08/25 10:00	09/10/25 16:24	1
Barium	**0.0482**		0.00200	0.000660	mg/L		09/08/25 10:00	09/10/25 16:24	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		09/08/25 10:00	09/10/25 16:24	1
Cadmium	**0.000190**	**J**	0.000200	0.000100	mg/L		09/08/25 10:00	09/10/25 16:24	1
Chromium	<0.00500		0.00500	0.00180	mg/L		09/08/25 10:00	09/10/25 16:24	1
Cobalt	**0.00100**		0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 16:24	1
Copper	<0.00500		0.00500	0.00320	mg/L		09/08/25 10:00	09/10/25 16:24	1
Lead	**0.00110**		0.000500	0.000330	mg/L		09/08/25 10:00	09/10/25 16:24	1
Nickel	<0.00500		0.00500	0.00230	mg/L		09/08/25 10:00	09/10/25 16:24	1
Selenium	**0.00336**	**J**	0.00500	0.00140	mg/L		09/08/25 10:00	09/10/25 16:24	1
Silver	<0.00100		0.00100	0.000500	mg/L		09/08/25 10:00	09/10/25 16:24	1
Thallium	<0.00100		0.00100	0.000570	mg/L		09/08/25 10:00	09/10/25 16:24	1
Vanadium	**0.00219**	**J**	0.00500	0.00170	mg/L		09/08/25 10:00	09/10/25 16:24	1
Zinc	<0.0200		0.0200	0.0130	mg/L		09/08/25 10:00	09/10/25 16:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**54.0**		3.75	2.63	mg/L			09/02/25 11:23	1

Client Sample ID: MW-61R

Date Collected: 08/27/25 09:48
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-9

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 15:49	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 15:49	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 15:49	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 15:49	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/02/25 15:49	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 15:49	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 15:49	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 15:49	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 15:49	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 15:49	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 15:49	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 15:49	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 15:49	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 15:49	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 15:49	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 15:49	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 15:49	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 15:49	1
Benzene	<0.500		0.500	0.220	ug/L			09/02/25 15:49	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 15:49	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 15:49	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 15:49	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 15:49	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 15:49	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 15:49	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 15:49	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 15:49	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 15:49	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 15:49	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 15:49	1
cis-1,2-Dichloroethene	**15.6**		1.00	0.210	ug/L			09/05/25 16:40	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 15:49	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 15:49	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 15:49	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 15:49	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 15:49	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 15:49	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 15:49	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 15:49	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 15:49	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 15:49	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 15:49	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 15:49	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 15:49	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 15:49	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/02/25 15:49	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 15:49	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*120*		*76 - 130*		*09/02/25 15:49*	*1*

Client Sample ID: MW-61R
Date Collected: 08/27/25 09:48
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-9
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*116*		*76 - 130*		*09/05/25 16:40*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*09/02/25 15:49*	*1*
Toluene-d8 (Surr)	*96*		*80 - 120*		*09/05/25 16:40*	*1*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*		*09/02/25 15:49*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*09/05/25 16:40*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		09/08/25 10:00	09/10/25 16:29	1
Arsenic	**0.0141**		0.00200	0.000530	mg/L		09/08/25 10:00	09/10/25 16:29	1
Barium	**0.0206**		0.00200	0.000660	mg/L		09/08/25 10:00	09/10/25 16:29	1
Beryllium	**0.00276**		0.00100	0.000330	mg/L		09/08/25 10:00	09/10/25 16:29	1
Cadmium	**0.00274**		0.000200	0.000100	mg/L		09/08/25 10:00	09/10/25 16:29	1
Chromium	**0.0123**		0.00500	0.00180	mg/L		09/08/25 10:00	09/10/25 16:29	1
Cobalt	**0.0308**		0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 16:29	1
Copper	**0.0419**		0.00500	0.00320	mg/L		09/08/25 10:00	09/10/25 16:29	1
Lead	**0.0195**		0.000500	0.000330	mg/L		09/08/25 10:00	09/10/25 16:29	1
Nickel	**0.0969**		0.00500	0.00230	mg/L		09/08/25 10:00	09/10/25 16:29	1
Selenium	**0.00630**		0.00500	0.00140	mg/L		09/08/25 10:00	09/10/25 16:29	1
Silver	<0.00100		0.00100	0.000500	mg/L		09/08/25 10:00	09/10/25 16:29	1
Thallium	<0.00100		0.00100	0.000570	mg/L		09/08/25 10:00	09/10/25 16:29	1
Vanadium	**0.0355**		0.00500	0.00170	mg/L		09/08/25 10:00	09/10/25 16:29	1
Zinc	**0.172**		0.0200	0.0130	mg/L		09/08/25 10:00	09/10/25 16:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**3170**		60.0	42.0	mg/L			09/02/25 11:23	1

Client Sample ID: MW-73

Date Collected: 08/27/25 11:08
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-10

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 16:12	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 16:12	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 16:12	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 16:12	1
1,1-Dichloroethane	**3.49**		1.00	0.220	ug/L			09/02/25 16:12	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 16:12	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 16:12	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 16:12	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 16:12	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 16:12	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 16:12	1
1,2-Dichloropropane	**0.686**	**J**	1.00	0.270	ug/L			09/02/25 16:12	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 16:12	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 16:12	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 16:12	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 16:12	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 16:12	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 16:12	1
Benzene	<0.500		0.500	0.220	ug/L			09/02/25 16:12	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 16:12	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 16:12	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 16:12	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 16:12	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 16:12	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 16:12	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 16:12	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 16:12	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 16:12	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 16:12	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 16:12	1
cis-1,2-Dichloroethene	**37.9**		1.00	0.210	ug/L			09/05/25 17:02	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 16:12	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 16:12	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 16:12	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 16:12	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 16:12	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 16:12	1
Tetrachloroethene	**1.21**		1.00	0.480	ug/L			09/02/25 16:12	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 16:12	1
trans-1,2-Dichloroethene	**0.403**	**J**	1.00	0.270	ug/L			09/02/25 16:12	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 16:12	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 16:12	1
Trichloroethene	**3.40**		1.00	0.430	ug/L			09/02/25 16:12	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 16:12	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 16:12	1
Vinyl chloride	**2.25**		1.00	0.180	ug/L			09/02/25 16:12	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 16:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*124*		*76 - 130*		*09/02/25 16:12*	*1*

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-73
Date Collected: 08/27/25 11:08
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-10
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*76 - 130*		*09/05/25 17:02*	*1*
Toluene-d8 (Surr)	*92*		*80 - 120*		*09/02/25 16:12*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*09/05/25 17:02*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*09/02/25 16:12*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*09/05/25 17:02*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		09/08/25 10:00	09/10/25 16:32	1
Arsenic	**0.0150**		0.00200	0.000530	mg/L		09/08/25 10:00	09/10/25 16:32	1
Barium	**0.158**		0.00200	0.000660	mg/L		09/08/25 10:00	09/10/25 16:32	1
Beryllium	**0.000737**	**J**	0.00100	0.000330	mg/L		09/08/25 10:00	09/10/25 16:32	1
Cadmium	**0.0839**		0.000200	0.000100	mg/L		09/08/25 10:00	09/10/25 16:32	1
Chromium	**0.00331**	**J**	0.00500	0.00180	mg/L		09/08/25 10:00	09/10/25 16:32	1
Cobalt	**0.0603**		0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 16:32	1
Copper	**0.0299**		0.00500	0.00320	mg/L		09/08/25 10:00	09/10/25 16:32	1
Lead	**0.00792**		0.000500	0.000330	mg/L		09/08/25 10:00	09/10/25 16:32	1
Nickel	**0.0330**		0.00500	0.00230	mg/L		09/08/25 10:00	09/10/25 16:32	1
Selenium	<0.00500		0.00500	0.00140	mg/L		09/08/25 10:00	09/10/25 16:32	1
Silver	<0.00100		0.00100	0.000500	mg/L		09/08/25 10:00	09/10/25 16:32	1
Thallium	<0.00100		0.00100	0.000570	mg/L		09/08/25 10:00	09/10/25 16:32	1
Vanadium	**0.00384**	**J**	0.00500	0.00170	mg/L		09/08/25 10:00	09/10/25 16:32	1
Zinc	**0.492**		0.0200	0.0130	mg/L		09/08/25 10:00	09/10/25 16:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**657**		15.0	10.5	mg/L			09/02/25 11:23	1

Client Sample ID: MW-79

Date Collected: 08/27/25 11:54
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-11

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 16:35	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 16:35	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 16:35	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 16:35	1
1,1-Dichloroethane	**3.41**		1.00	0.220	ug/L			09/02/25 16:35	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 16:35	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 16:35	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 16:35	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 16:35	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 16:35	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 16:35	1
1,2-Dichloropropane	**0.413**	**J**	1.00	0.270	ug/L			09/02/25 16:35	1
1,4-Dichlorobenzene	**1.02**		1.00	0.230	ug/L			09/02/25 16:35	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 16:35	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 16:35	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 16:35	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 16:35	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 16:35	1
Benzene	<0.500		0.500	0.220	ug/L			09/02/25 16:35	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 16:35	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 16:35	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 16:35	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 16:35	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 16:35	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 16:35	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 16:35	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 16:35	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 16:35	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 16:35	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 16:35	1
cis-1,2-Dichloroethene	**45.9**		1.00	0.210	ug/L			09/05/25 17:25	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 16:35	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 16:35	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 16:35	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 16:35	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 16:35	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 16:35	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 16:35	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 16:35	1
trans-1,2-Dichloroethene	**0.602**	**J**	1.00	0.270	ug/L			09/02/25 16:35	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 16:35	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 16:35	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 16:35	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 16:35	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 16:35	1
Vinyl chloride	**4.68**		1.00	0.180	ug/L			09/02/25 16:35	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 16:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*123*		*76 - 130*		*09/02/25 16:35*	*1*

Client Sample ID: MW-79
Date Collected: 08/27/25 11:54
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-11
Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*115*		*76 - 130*		*09/05/25 17:25*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*09/02/25 16:35*	*1*
Toluene-d8 (Surr)	*94*		*80 - 120*		*09/05/25 17:25*	*1*
4-Bromofluorobenzene (Surr)	*105*		*80 - 120*		*09/02/25 16:35*	*1*
4-Bromofluorobenzene (Surr)	*106*		*80 - 120*		*09/05/25 17:25*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		09/08/25 10:00	09/10/25 16:34	1
Arsenic	**0.000635**	**J**	0.00200	0.000530	mg/L		09/08/25 10:00	09/10/25 16:34	1
Barium	**0.0946**		0.00200	0.000660	mg/L		09/08/25 10:00	09/10/25 16:34	1
Beryllium	**0.00170**		0.00100	0.000330	mg/L		09/08/25 10:00	09/10/25 16:34	1
Cadmium	**0.0130**		0.000200	0.000100	mg/L		09/08/25 10:00	09/10/25 16:34	1
Chromium	<0.00500		0.00500	0.00180	mg/L		09/08/25 10:00	09/10/25 16:34	1
Cobalt	**0.00407**		0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 16:34	1
Copper	**0.00331**	**J**	0.00500	0.00320	mg/L		09/08/25 10:00	09/10/25 16:34	1
Lead	**0.00123**		0.000500	0.000330	mg/L		09/08/25 10:00	09/10/25 16:34	1
Nickel	**0.0338**		0.00500	0.00230	mg/L		09/08/25 10:00	09/10/25 16:34	1
Selenium	<0.00500		0.00500	0.00140	mg/L		09/08/25 10:00	09/10/25 16:34	1
Silver	<0.00100		0.00100	0.000500	mg/L		09/08/25 10:00	09/10/25 16:34	1
Thallium	<0.00100		0.00100	0.000570	mg/L		09/08/25 10:00	09/10/25 16:34	1
Vanadium	**0.00390**	**J**	0.00500	0.00170	mg/L		09/08/25 10:00	09/10/25 16:34	1
Zinc	**0.108**		0.0200	0.0130	mg/L		09/08/25 10:00	09/10/25 16:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**61.5**		7.50	5.25	mg/L			09/02/25 11:23	1

Client Sample ID: MW-D1

Date Collected: 08/26/25 16:28
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-12

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 16:11	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 16:11	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 16:11	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 16:11	1
1,1-Dichloroethane	**0.676**	**J**	1.00	0.220	ug/L			09/02/25 16:11	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 16:11	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 16:11	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 16:11	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 16:11	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 16:11	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 16:11	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 16:11	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 16:11	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 16:11	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 16:11	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 16:11	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 16:11	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 16:11	1
Benzene	**0.324**	**J**	0.500	0.220	ug/L			09/02/25 16:11	1
Bromochloromethane	<5.00	F2	5.00	0.540	ug/L			09/02/25 16:11	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 16:11	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 16:11	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 16:11	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 16:11	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 16:11	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 16:11	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 16:11	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 16:11	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 16:11	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 16:11	1
cis-1,2-Dichloroethene	**2.42**		1.00	0.210	ug/L			09/02/25 16:11	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 16:11	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 16:11	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 16:11	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 16:11	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 16:11	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 16:11	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 16:11	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 16:11	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 16:11	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 16:11	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 16:11	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 16:11	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 16:11	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 16:11	1
Vinyl chloride	**0.410**	**J**	1.00	0.180	ug/L			09/02/25 16:11	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 16:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*114*		*76 - 130*		*09/02/25 16:11*	*1*

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-D1

Date Collected: 08/26/25 16:28
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-12

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*98*		*80 - 120*		*09/02/25 16:11*	*1*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*		*09/02/25 16:11*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		09/08/25 10:00	09/10/25 16:37	1
Arsenic	**0.00201**		0.00200	0.000530	mg/L		09/08/25 10:00	09/10/25 16:37	1
Barium	**0.0115**		0.00200	0.000660	mg/L		09/08/25 10:00	09/10/25 16:37	1
Beryllium	**0.00101**		0.00100	0.000330	mg/L		09/08/25 10:00	09/10/25 16:37	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		09/08/25 10:00	09/10/25 16:37	1
Chromium	<0.00500		0.00500	0.00180	mg/L		09/08/25 10:00	09/10/25 16:37	1
Cobalt	**0.109**		0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 16:37	1
Copper	<0.00500		0.00500	0.00320	mg/L		09/08/25 10:00	09/10/25 16:37	1
Lead	<0.000500		0.000500	0.000330	mg/L		09/08/25 10:00	09/10/25 16:37	1
Nickel	**0.149**		0.00500	0.00230	mg/L		09/08/25 10:00	09/10/25 16:37	1
Selenium	<0.00500		0.00500	0.00140	mg/L		09/08/25 10:00	09/10/25 16:37	1
Silver	<0.00100		0.00100	0.000500	mg/L		09/08/25 10:00	09/10/25 16:37	1
Thallium	<0.00100		0.00100	0.000570	mg/L		09/08/25 10:00	09/10/25 16:37	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		09/08/25 10:00	09/10/25 16:37	1
Zinc	**0.166**		0.0200	0.0130	mg/L		09/08/25 10:00	09/10/25 16:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**14.3**		3.75	2.63	mg/L			09/02/25 11:23	1

Client Sample ID: MW-D2

Date Collected: 08/27/25 06:02
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-13

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 16:33	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 16:33	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 16:33	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 16:33	1
1,1-Dichloroethane	**0.815**	**J**	1.00	0.220	ug/L			09/02/25 16:33	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 16:33	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 16:33	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 16:33	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 16:33	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 16:33	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 16:33	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 16:33	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 16:33	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 16:33	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 16:33	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 16:33	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 16:33	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 16:33	1
Benzene	**1.82**		0.500	0.220	ug/L			09/02/25 16:33	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 16:33	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 16:33	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 16:33	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 16:33	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 16:33	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 16:33	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 16:33	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 16:33	1
Chloroethane	**2.58**	**J**	4.00	0.790	ug/L			09/02/25 16:33	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 16:33	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 16:33	1
cis-1,2-Dichloroethene	**0.973**	**J**	1.00	0.210	ug/L			09/02/25 16:33	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 16:33	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 16:33	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 16:33	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 16:33	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 16:33	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 16:33	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 16:33	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 16:33	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 16:33	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 16:33	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 16:33	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 16:33	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 16:33	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 16:33	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/02/25 16:33	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 16:33	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*112*		*76 - 130*		*09/02/25 16:33*	*1*

Client Sample ID: MW-D2

Date Collected: 08/27/25 06:02
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-13

Matrix: Ground Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Toluene-d8 (Surr)	*99*		*80 - 120*		*09/02/25 16:33*	*1*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*09/02/25 16:33*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		09/08/25 10:00	09/10/25 16:39	1
Arsenic	**0.0265**		0.00200	0.000530	mg/L		09/08/25 10:00	09/10/25 16:39	1
Barium	**0.355**		0.00200	0.000660	mg/L		09/08/25 10:00	09/10/25 16:39	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		09/08/25 10:00	09/10/25 16:39	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		09/08/25 10:00	09/10/25 16:39	1
Chromium	<0.00500		0.00500	0.00180	mg/L		09/08/25 10:00	09/10/25 16:39	1
Cobalt	**0.00170**		0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 16:39	1
Copper	<0.00500		0.00500	0.00320	mg/L		09/08/25 10:00	09/10/25 16:39	1
Lead	<0.000500		0.000500	0.000330	mg/L		09/08/25 10:00	09/10/25 16:39	1
Nickel	**0.00292**	**J**	0.00500	0.00230	mg/L		09/08/25 10:00	09/10/25 16:39	1
Selenium	<0.00500		0.00500	0.00140	mg/L		09/08/25 10:00	09/10/25 16:39	1
Silver	<0.00100		0.00100	0.000500	mg/L		09/08/25 10:00	09/10/25 16:39	1
Thallium	<0.00100		0.00100	0.000570	mg/L		09/08/25 10:00	09/10/25 16:39	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		09/08/25 10:00	09/10/25 16:39	1
Zinc	<0.0200		0.0200	0.0130	mg/L		09/08/25 10:00	09/10/25 16:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<1.00		1.00	0.231	mg/L		09/03/25 18:20	09/03/25 23:07	1
Total Suspended Solids (USGS I-3765-85)	**104**		15.0	10.5	mg/L			09/02/25 11:23	1

Client Sample ID: Trip Blank 1

Date Collected: 08/28/25 00:00
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-14

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 12:25	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 12:25	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 12:25	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 12:25	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/02/25 12:25	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 12:25	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 12:25	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 12:25	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 12:25	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 12:25	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 12:25	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 12:25	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 12:25	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 12:25	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 12:25	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 12:25	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 12:25	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 12:25	1
Benzene	<0.500		0.500	0.220	ug/L			09/02/25 12:25	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 12:25	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 12:25	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 12:25	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 12:25	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 12:25	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 12:25	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 12:25	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 12:25	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 12:25	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 12:25	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 12:25	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			09/02/25 12:25	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 12:25	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 12:25	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 12:25	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 12:25	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 12:25	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 12:25	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 12:25	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 12:25	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 12:25	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 12:25	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 12:25	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 12:25	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 12:25	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 12:25	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/02/25 12:25	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 12:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*111*		*76 - 130*		*09/02/25 12:25*	*1*

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: Trip Blank 1
Date Collected: 08/28/25 00:00
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-14
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		09/02/25 12:25	1
4-Bromofluorobenzene (Surr)	103		80 - 120		09/02/25 12:25	1

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: Trip Blank 2
Date Collected: 08/28/25 00:00
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-15
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 12:53	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 12:53	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 12:53	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 12:53	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/02/25 12:53	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 12:53	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 12:53	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 12:53	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 12:53	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 12:53	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 12:53	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 12:53	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 12:53	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 12:53	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 12:53	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 12:53	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 12:53	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 12:53	1
Benzene	<0.500		0.500	0.220	ug/L			09/02/25 12:53	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 12:53	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 12:53	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 12:53	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 12:53	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 12:53	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 12:53	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 12:53	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 12:53	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 12:53	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 12:53	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 12:53	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			09/02/25 12:53	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 12:53	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 12:53	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 12:53	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 12:53	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 12:53	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 12:53	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 12:53	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 12:53	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 12:53	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 12:53	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 12:53	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 12:53	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 12:53	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 12:53	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/02/25 12:53	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 12:53	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*113*		*76 - 130*		*09/02/25 12:53*	*1*

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: Trip Blank 2
Date Collected: 08/28/25 00:00
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-15
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		09/02/25 12:53	1
4-Bromofluorobenzene (Surr)	100		80 - 120		09/02/25 12:53	1

Client Sample ID: Trip Blank 3

Lab Sample ID: 310-314564-16

Date Collected: 08/28/25 00:00

Matrix: Water

Date Received: 08/29/25 16:30

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 13:15	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 13:15	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 13:15	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 13:15	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/02/25 13:15	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 13:15	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 13:15	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 13:15	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 13:15	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 13:15	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 13:15	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 13:15	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 13:15	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 13:15	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 13:15	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 13:15	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 13:15	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 13:15	1
Benzene	<0.500		0.500	0.220	ug/L			09/02/25 13:15	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 13:15	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 13:15	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 13:15	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 13:15	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 13:15	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 13:15	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 13:15	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 13:15	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 13:15	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 13:15	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 13:15	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			09/02/25 13:15	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 13:15	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 13:15	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 13:15	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 13:15	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 13:15	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 13:15	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 13:15	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 13:15	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 13:15	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 13:15	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 13:15	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 13:15	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 13:15	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 13:15	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/02/25 13:15	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 13:15	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*117*		*76 - 130*		*09/02/25 13:15*	*1*

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: Trip Blank 3
Date Collected: 08/28/25 00:00
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-16
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	*102*		*80 - 120*		*09/02/25 13:15*	*1*
4-Bromofluorobenzene (Surr)	*96*		*80 - 120*		*09/02/25 13:15*	*1*

Client Sample ID: Trip Blank 4
Date Collected: 08/28/25 00:00
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-17
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/05/25 02:20	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/05/25 02:20	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/05/25 02:20	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/05/25 02:20	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/05/25 02:20	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/05/25 02:20	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/05/25 02:20	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/05/25 02:20	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/05/25 02:20	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/05/25 02:20	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/05/25 02:20	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/05/25 02:20	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/05/25 02:20	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/05/25 02:20	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/05/25 02:20	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/05/25 02:20	1
Acetone	<10.0		10.0	3.10	ug/L			09/05/25 02:20	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/05/25 02:20	1
Benzene	<0.500		0.500	0.220	ug/L			09/05/25 02:20	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/05/25 02:20	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/05/25 02:20	1
Bromoform	<5.00		5.00	0.780	ug/L			09/05/25 02:20	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/08/25 13:59	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/05/25 02:20	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/05/25 02:20	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/05/25 02:20	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/05/25 02:20	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/05/25 02:20	1
Chloroform	<3.00		3.00	1.30	ug/L			09/05/25 02:20	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/08/25 13:59	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			09/05/25 02:20	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/05/25 02:20	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/05/25 02:20	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/05/25 02:20	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/08/25 13:59	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/05/25 02:20	1
Styrene	<1.00		1.00	0.370	ug/L			09/05/25 02:20	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/05/25 02:20	1
Toluene	<1.00		1.00	0.430	ug/L			09/05/25 02:20	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/05/25 02:20	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/05/25 02:20	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/05/25 02:20	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/05/25 02:20	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/05/25 02:20	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/05/25 02:20	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/05/25 02:20	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/05/25 02:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*76 - 130*		*09/05/25 02:20*	*1*

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: Trip Blank 4
Date Collected: 08/28/25 00:00
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-17
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	103		76 - 130		09/08/25 13:59	1
Toluene-d8 (Surr)	97		80 - 120		09/05/25 02:20	1
Toluene-d8 (Surr)	103		80 - 120		09/08/25 13:59	1
4-Bromofluorobenzene (Surr)	101		80 - 120		09/05/25 02:20	1
4-Bromofluorobenzene (Surr)	104		80 - 120		09/08/25 13:59	1

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-66
Date Collected: 08/27/25 12:42
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-18
Matrix: Water

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		09/08/25 10:00	09/10/25 16:42	1
Cobalt	**0.000986**		0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 16:42	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**9.00**		1.88	1.31	mg/L			09/02/25 11:23	1

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-78

Date Collected: 08/27/25 14:37
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-19

Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	1.05		1.00	0.210	ug/L			09/05/25 03:51	1
Tetrachloroethene	1.05		1.00	0.480	ug/L			09/05/25 03:51	1
Trichloroethene	0.517	J	1.00	0.430	ug/L			09/05/25 03:51	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/05/25 03:51	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*101*		*76 - 130*		*09/05/25 03:51*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*09/05/25 03:51*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*09/05/25 03:51*	*1*

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00451		0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 16:45	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	35.0		3.75	2.63	mg/L			09/02/25 11:23	1

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-80
Date Collected: 08/27/25 15:27
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-20
Matrix: Water

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	23.0		1.00	0.210	ug/L			09/05/25 04:14	1
Vinyl chloride	6.54		1.00	0.180	ug/L			09/05/25 04:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*76 - 130*		*09/05/25 04:14*	*1*
Toluene-d8 (Surr)	*98*		*80 - 120*		*09/05/25 04:14*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*09/05/25 04:14*	*1*

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
E	Result exceeded calibration range.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Ground Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(76-130)	(80-120)	(80-120)
310-314564-1	MW-81	119	93	103
310-314564-1	MW-81	117	96	106
310-314564-1 MS	MW-81	98	103	94
310-314564-1 MSD	MW-81	96	101	92
310-314564-2	MW-39R	118	93	106
310-314564-3	MW-40	121	93	105
310-314564-3	MW-40	116	98	101
310-314564-4	04-MW-56	114	93	101
310-314564-5	MW-58	121	93	102
310-314564-6	MW-63R	120	93	101
310-314564-7	MW-65	120	94	99
310-314564-7	MW-65	116	95	98
310-314564-8	93-MW-31R	118	93	104
310-314564-9	MW-61R	120	92	102
310-314564-9	MW-61R	116	96	101
310-314564-10	MW-73	124	92	104
310-314564-10	MW-73	115	94	103
310-314564-11	MW-79	123	93	105
310-314564-11	MW-79	115	94	106
310-314564-12	MW-D1	114	98	97
310-314564-12 MS	MW-D1	100	101	95
310-314564-12 MSD	MW-D1	103	104	94
310-314564-13	MW-D2	112	99	94

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water — **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(76-130)	(80-120)	(80-120)
310-314564-14	Trip Blank 1	111	100	103
310-314564-15	Trip Blank 2	113	100	100
310-314564-16	Trip Blank 3	117	102	96
310-314564-17	Trip Blank 4	99	97	101
310-314564-17	Trip Blank 4	103	103	104
310-314564-19	MW-78	101	99	101
310-314564-20	MW-80	99	98	99
LCS 310-465324/7	Lab Control Sample	95	103	95
LCS 310-465324/8	Lab Control Sample	108	100	97
LCS 310-465326/7	Lab Control Sample	105	98	95
LCS 310-465326/8	Lab Control Sample	121	93	104
LCS 310-465661/6	Lab Control Sample	96	99	97
LCS 310-465661/7	Lab Control Sample	99	98	102
LCS 310-465784/6	Lab Control Sample	88	102	102
LCS 310-465784/7	Lab Control Sample	105	99	108

Surrogate Summary

Client: SCS Engineers
Job ID: 310-314564-1
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing
SDG: Ottumwa-Wapello County Landfill

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Matrix: Water
Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(76-130)	(80-120)	(80-120)
LCS 310-465969/6	Lab Control Sample	102	102	97
LCS 310-465969/7	Lab Control Sample	103	100	99
MB 310-465324/6	Method Blank	109	99	98
MB 310-465326/6	Method Blank	119	93	103
MB 310-465661/5	Method Blank	98	99	101
MB 310-465784/5	Method Blank	104	97	101
MB 310-465969/5	Method Blank	99	102	99

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene (Surr)

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 310-465324/6
Matrix: Water
Analysis Batch: 465324

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 10:52	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 10:52	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 10:52	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 10:52	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/02/25 10:52	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 10:52	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 10:52	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 10:52	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 10:52	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 10:52	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 10:52	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 10:52	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 10:52	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 10:52	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 10:52	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 10:52	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 10:52	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 10:52	1
Benzene	<0.500		0.500	0.220	ug/L			09/02/25 10:52	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 10:52	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 10:52	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 10:52	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 10:52	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 10:52	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 10:52	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 10:52	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 10:52	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 10:52	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 10:52	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 10:52	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			09/02/25 10:52	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 10:52	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 10:52	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 10:52	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 10:52	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 10:52	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 10:52	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 10:52	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 10:52	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 10:52	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 10:52	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 10:52	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 10:52	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 10:52	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 10:52	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/02/25 10:52	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 10:52	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-465324/6
Matrix: Water
Analysis Batch: 465324

Client Sample ID: Method Blank
Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	*109*		*76 - 130*		*09/02/25 10:52*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*09/02/25 10:52*	*1*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*		*09/02/25 10:52*	*1*

Lab Sample ID: LCS 310-465324/7
Matrix: Water
Analysis Batch: 465324

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.30		ug/L		96	70 - 121
1,1,1-Trichloroethane	20.0	18.14		ug/L		91	69 - 130
1,1,2,2-Tetrachloroethane	20.0	19.66		ug/L		98	70 - 122
1,1,2-Trichloroethane	20.0	19.88		ug/L		99	75 - 121
1,1-Dichloroethane	20.0	16.89		ug/L		84	69 - 127
1,1-Dichloroethene	20.0	18.43		ug/L		92	64 - 134
1,2,3-Trichloropropane	20.0	18.63		ug/L		93	70 - 122
1,2-Dibromo-3-chloropropane	20.0	20.44		ug/L		102	62 - 132
1,2-Dibromoethane (EDB)	20.0	18.71		ug/L		94	74 - 122
1,2-Dichlorobenzene	20.0	19.98		ug/L		100	74 - 120
1,2-Dichloroethane	20.0	17.25		ug/L		86	68 - 125
1,2-Dichloropropane	20.0	18.22		ug/L		91	72 - 128
1,4-Dichlorobenzene	20.0	19.80		ug/L		99	72 - 120
2-Butanone (MEK)	40.0	35.70		ug/L		89	60 - 134
2-Hexanone	40.0	33.73		ug/L		84	62 - 139
4-Methyl-2-pentanone (MIBK)	40.0	36.09		ug/L		90	62 - 136
Acetone	40.0	32.93		ug/L		82	59 - 136
Acrylonitrile	200	186.8		ug/L		93	50 - 150
Benzene	20.0	18.93		ug/L		95	71 - 125
Bromochloromethane	20.0	18.20		ug/L		91	69 - 131
Bromodichloromethane	20.0	17.01		ug/L		85	70 - 122
Bromoform	20.0	18.27		ug/L		91	62 - 122
Carbon disulfide	20.0	18.53		ug/L		93	58 - 137
Carbon tetrachloride	20.0	17.09		ug/L		85	63 - 136
Chlorobenzene	20.0	20.00		ug/L		100	74 - 120
Chlorodibromomethane	20.0	17.89		ug/L		89	69 - 121
Chloroform	20.0	18.02		ug/L		90	72 - 122
cis-1,2-Dichloroethene	20.0	17.50		ug/L		88	72 - 123
cis-1,3-Dichloropropene	20.0	17.60		ug/L		88	72 - 123
Dibromomethane	20.0	18.45		ug/L		92	72 - 122
Ethylbenzene	20.0	18.23		ug/L		91	75 - 120
Iodomethane	20.0	10.86		ug/L		54	18 - 150
Methylene chloride	20.0	18.51		ug/L		93	72 - 128
Styrene	20.0	19.05		ug/L		95	74 - 122
Tetrachloroethene	20.0	18.33		ug/L		92	70 - 128
Toluene	20.0	17.66		ug/L		88	74 - 120
trans-1,2-Dichloroethene	20.0	18.71		ug/L		94	67 - 127
trans-1,3-Dichloropropene	20.0	18.16		ug/L		91	67 - 123
trans-1,4-Dichloro-2-butene	20.0	18.09		ug/L		90	50 - 150

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-465324/7
Matrix: Water
Analysis Batch: 465324

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Trichloroethene			20.0	15.99		ug/L		80	70 - 128		
Vinyl acetate			40.0	35.53		ug/L		89	50 - 150		
Xylenes, Total			40.0	35.73		ug/L		89	74 - 121		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*95*		*76 - 130*
Toluene-d8 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*

Lab Sample ID: LCS 310-465324/8
Matrix: Water
Analysis Batch: 465324

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bromomethane			20.0	17.81		ug/L		89	33 - 138		
Chloroethane			20.0	23.18		ug/L		116	59 - 139		
Chloromethane			20.0	20.27		ug/L		101	52 - 146		
Trichlorofluoromethane			20.0	21.92		ug/L		110	55 - 150		
Vinyl chloride			20.0	21.94		ug/L		110	60 - 142		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*108*		*76 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*

Lab Sample ID: 310-314564-12 MS
Matrix: Ground Water
Analysis Batch: 465324

Client Sample ID: MW-D1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane	<1.00		25.0	23.11		ug/L		92	55 - 121		
1,1,1-Trichloroethane	<1.00		25.0	22.10		ug/L		88	53 - 130		
1,1,2,2-Tetrachloroethane	<1.00		25.0	23.28		ug/L		93	55 - 123		
1,1,2-Trichloroethane	<1.00		25.0	24.52		ug/L		98	60 - 121		
1,1-Dichloroethane	0.676	J	25.0	22.21		ug/L		86	53 - 127		
1,1-Dichloroethene	<2.00		25.0	23.48		ug/L		94	51 - 134		
1,2,3-Trichloropropane	<1.00		25.0	22.76		ug/L		91	56 - 122		
1,2-Dibromo-3-chloropropane	<5.00		25.0	21.90		ug/L		88	44 - 138		
1,2-Dibromoethane (EDB)	<1.00		25.0	23.23		ug/L		93	60 - 122		
1,2-Dichlorobenzene	<1.00		25.0	24.54		ug/L		98	60 - 120		
1,2-Dichloroethane	<1.00		25.0	22.62		ug/L		90	48 - 128		
1,2-Dichloropropane	<1.00		25.0	22.75		ug/L		91	59 - 128		
1,4-Dichlorobenzene	<1.00		25.0	25.05		ug/L		100	58 - 120		
2-Butanone (MEK)	<10.0		50.0	44.00		ug/L		88	46 - 134		
2-Hexanone	<10.0		50.0	38.94		ug/L		78	46 - 141		
4-Methyl-2-pentanone (MIBK)	<10.0		50.0	42.75		ug/L		85	49 - 138		
Acetone	<10.0		50.0	44.90		ug/L		90	39 - 141		
Acrylonitrile	<5.00		250	225.9		ug/L		90	41 - 150		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-314564-12 MS
Matrix: Ground Water
Analysis Batch: 465324

Client Sample ID: MW-D1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	0.324	J	25.0	23.64		ug/L		93	48 - 125
Bromochloromethane	<5.00	F2	25.0	24.56		ug/L		98	55 - 131
Bromodichloromethane	<1.00		25.0	21.43		ug/L		86	53 - 122
Bromoform	<5.00		25.0	21.61		ug/L		86	47 - 122
Carbon disulfide	<1.00		25.0	25.10		ug/L		100	45 - 137
Carbon tetrachloride	<2.00		25.0	21.69		ug/L		87	45 - 136
Chlorobenzene	<1.00		25.0	23.58		ug/L		94	59 - 120
Chlorodibromomethane	<5.00		25.0	21.02		ug/L		84	53 - 121
Chloroform	<3.00		25.0	23.15		ug/L		93	52 - 122
cis-1,2-Dichloroethene	2.42		25.0	23.94		ug/L		86	51 - 123
cis-1,3-Dichloropropene	<5.00		25.0	20.44		ug/L		82	55 - 123
Dibromomethane	<1.00		25.0	22.86		ug/L		91	57 - 122
Ethylbenzene	<1.00		25.0	21.79		ug/L		87	53 - 120
Iodomethane	<10.0		25.0	13.43		ug/L		54	18 - 150
Methylene chloride	<5.00		25.0	23.96		ug/L		96	59 - 128
Styrene	<1.00		25.0	22.45		ug/L		90	50 - 125
Tetrachloroethene	<1.00		25.0	23.03		ug/L		92	51 - 128
Toluene	<1.00		25.0	20.91		ug/L		84	52 - 120
trans-1,2-Dichloroethene	<1.00		25.0	23.43		ug/L		94	53 - 127
trans-1,3-Dichloropropene	<5.00		25.0	21.27		ug/L		85	50 - 123
trans-1,4-Dichloro-2-butene	<10.0		25.0	19.36		ug/L		77	28 - 150
Trichloroethene	<1.00		25.0	20.77		ug/L		83	50 - 128
Vinyl acetate	<10.0		50.0	42.35		ug/L		85	31 - 150
Xylenes, Total	<3.00		50.0	42.55		ug/L		85	50 - 122

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*100*		*76 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*

Lab Sample ID: 310-314564-12 MSD
Matrix: Ground Water
Analysis Batch: 465324

Client Sample ID: MW-D1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<1.00		25.0	18.88		ug/L		76	55 - 121	20	20
1,1,1-Trichloroethane	<1.00		25.0	18.98		ug/L		76	53 - 130	15	20
1,1,2,2-Tetrachloroethane	<1.00		25.0	20.29		ug/L		81	55 - 123	14	20
1,1,2-Trichloroethane	<1.00		25.0	20.05		ug/L		80	60 - 121	20	20
1,1-Dichloroethane	0.676	J	25.0	18.85		ug/L		73	53 - 127	16	20
1,1-Dichloroethene	<2.00		25.0	19.31		ug/L		77	51 - 134	19	20
1,2,3-Trichloropropane	<1.00		25.0	19.27		ug/L		77	56 - 122	17	21
1,2-Dibromo-3-chloropropane	<5.00		25.0	19.76		ug/L		79	44 - 138	10	24
1,2-Dibromoethane (EDB)	<1.00		25.0	19.75		ug/L		79	60 - 122	16	20
1,2-Dichlorobenzene	<1.00		25.0	20.52		ug/L		82	60 - 120	18	20
1,2-Dichloroethane	<1.00		25.0	19.00		ug/L		76	48 - 128	17	20
1,2-Dichloropropane	<1.00		25.0	18.83		ug/L		75	59 - 128	19	20
1,4-Dichlorobenzene	<1.00		25.0	20.62		ug/L		82	58 - 120	19	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-314564-12 MSD
Matrix: Ground Water
Analysis Batch: 465324

Client Sample ID: MW-D1
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
2-Butanone (MEK)	<10.0		50.0	36.43		ug/L		73	46 - 134	19	23
2-Hexanone	<10.0		50.0	40.22		ug/L		80	46 - 141	3	20
4-Methyl-2-pentanone (MIBK)	<10.0		50.0	35.73		ug/L		71	49 - 138	18	20
Acetone	<10.0		50.0	41.32		ug/L		83	39 - 141	8	23
Acrylonitrile	<5.00		250	196.3		ug/L		79	41 - 150	14	20
Benzene	0.324	J	25.0	20.08		ug/L		79	48 - 125	16	20
Bromochloromethane	<5.00	F2	25.0	19.46	F2	ug/L		78	55 - 131	23	21
Bromodichloromethane	<1.00		25.0	18.26		ug/L		73	53 - 122	16	20
Bromoform	<5.00		25.0	18.92		ug/L		76	47 - 122	13	20
Carbon disulfide	<1.00		25.0	20.10		ug/L		80	45 - 137	22	24
Carbon tetrachloride	<2.00		25.0	17.99		ug/L		72	45 - 136	19	20
Chlorobenzene	<1.00		25.0	20.58		ug/L		82	59 - 120	14	20
Chlorodibromomethane	<5.00		25.0	17.48		ug/L		70	53 - 121	18	20
Chloroform	<3.00		25.0	19.18		ug/L		77	52 - 122	19	20
cis-1,2-Dichloroethene	2.42		25.0	19.55		ug/L		69	51 - 123	20	20
cis-1,3-Dichloropropene	<5.00		25.0	17.60		ug/L		70	55 - 123	15	20
Dibromomethane	<1.00		25.0	19.63		ug/L		79	57 - 122	15	20
Ethylbenzene	<1.00		25.0	18.88		ug/L		76	53 - 120	14	20
Iodomethane	<10.0		25.0	12.22		ug/L		49	18 - 150	9	32
Methylene chloride	<5.00		25.0	20.06		ug/L		80	59 - 128	18	20
Styrene	<1.00		25.0	19.38		ug/L		78	50 - 125	15	20
Tetrachloroethene	<1.00		25.0	19.77		ug/L		79	51 - 128	15	20
Toluene	<1.00		25.0	17.70		ug/L		71	52 - 120	17	20
trans-1,2-Dichloroethene	<1.00		25.0	19.37		ug/L		77	53 - 127	19	20
trans-1,3-Dichloropropene	<5.00		25.0	18.03		ug/L		72	50 - 123	17	20
trans-1,4-Dichloro-2-butene	<10.0		25.0	18.10		ug/L		72	28 - 150	7	24
Trichloroethene	<1.00		25.0	16.96		ug/L		68	50 - 128	20	20
Vinyl acetate	<10.0		50.0	35.89		ug/L		72	31 - 150	17	25
Xylenes, Total	<3.00		50.0	37.57		ug/L		75	50 - 122	12	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*103*		*76 - 130*
Toluene-d8 (Surr)	*104*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*

Lab Sample ID: MB 310-465326/6
Matrix: Water
Analysis Batch: 465326

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/02/25 10:56	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/02/25 10:56	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/02/25 10:56	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/02/25 10:56	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/02/25 10:56	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/02/25 10:56	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/02/25 10:56	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/02/25 10:56	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-465326/6
Matrix: Water
Analysis Batch: 465326

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/02/25 10:56	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/02/25 10:56	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/02/25 10:56	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/02/25 10:56	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/02/25 10:56	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/02/25 10:56	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/02/25 10:56	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/02/25 10:56	1
Acetone	<10.0		10.0	3.10	ug/L			09/02/25 10:56	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/02/25 10:56	1
Benzene	<0.500		0.500	0.220	ug/L			09/02/25 10:56	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/02/25 10:56	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/02/25 10:56	1
Bromoform	<5.00		5.00	0.780	ug/L			09/02/25 10:56	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/02/25 10:56	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/02/25 10:56	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/02/25 10:56	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/02/25 10:56	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/02/25 10:56	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/02/25 10:56	1
Chloroform	<3.00		3.00	1.30	ug/L			09/02/25 10:56	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/02/25 10:56	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			09/02/25 10:56	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/02/25 10:56	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/02/25 10:56	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/02/25 10:56	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/02/25 10:56	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/02/25 10:56	1
Styrene	<1.00		1.00	0.370	ug/L			09/02/25 10:56	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/02/25 10:56	1
Toluene	<1.00		1.00	0.430	ug/L			09/02/25 10:56	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/02/25 10:56	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/02/25 10:56	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/02/25 10:56	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/02/25 10:56	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/02/25 10:56	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/02/25 10:56	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/02/25 10:56	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/02/25 10:56	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*119*		*76 - 130*		*09/02/25 10:56*	*1*
Toluene-d8 (Surr)	*93*		*80 - 120*		*09/02/25 10:56*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*09/02/25 10:56*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-465326/7
Matrix: Water
Analysis Batch: 465326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	10.0	10.65		ug/L		107	70 - 121
1,1,1-Trichloroethane	10.0	11.52		ug/L		115	69 - 130
1,1,2,2-Tetrachloroethane	10.0	8.999		ug/L		90	70 - 122
1,1,2-Trichloroethane	10.0	9.400		ug/L		94	75 - 121
1,1-Dichloroethane	10.0	12.29		ug/L		123	69 - 127
1,1-Dichloroethene	10.0	12.06		ug/L		121	64 - 134
1,2,3-Trichloropropane	10.0	8.756		ug/L		88	70 - 122
1,2-Dibromo-3-chloropropane	10.0	10.33		ug/L		103	62 - 132
1,2-Dibromoethane (EDB)	10.0	9.563		ug/L		96	74 - 122
1,2-Dichlorobenzene	10.0	9.615		ug/L		96	74 - 120
1,2-Dichloroethane	10.0	12.01		ug/L		120	68 - 125
1,2-Dichloropropane	10.0	9.671		ug/L		97	72 - 128
1,4-Dichlorobenzene	10.0	9.888		ug/L		99	72 - 120
2-Butanone (MEK)	20.0	17.42		ug/L		87	60 - 134
2-Hexanone	20.0	18.50		ug/L		92	62 - 139
4-Methyl-2-pentanone (MIBK)	20.0	17.93		ug/L		90	62 - 136
Acetone	20.0	21.20		ug/L		106	59 - 136
Acrylonitrile	100	109.3		ug/L		109	50 - 150
Benzene	10.0	10.62		ug/L		106	71 - 125
Bromochloromethane	10.0	11.36		ug/L		114	69 - 131
Bromodichloromethane	10.0	9.304		ug/L		93	70 - 122
Bromoform	10.0	9.735		ug/L		97	62 - 122
Carbon disulfide	10.0	12.82		ug/L		128	58 - 137
Carbon tetrachloride	10.0	10.98		ug/L		110	63 - 136
Chlorobenzene	10.0	9.798		ug/L		98	74 - 120
Chlorodibromomethane	10.0	10.07		ug/L		101	69 - 121
Chloroform	10.0	11.67		ug/L		117	72 - 122
cis-1,2-Dichloroethene	10.0	12.38	*+	ug/L		124	72 - 123
cis-1,3-Dichloropropene	10.0	10.46		ug/L		105	72 - 123
Dibromomethane	10.0	10.96		ug/L		110	72 - 122
Ethylbenzene	10.0	10.40		ug/L		104	75 - 120
Iodomethane	10.0	9.394	J	ug/L		94	18 - 150
Methylene chloride	10.0	12.65		ug/L		126	72 - 128
Styrene	10.0	11.02		ug/L		110	74 - 122
Tetrachloroethene	10.0	9.952		ug/L		100	70 - 128
Toluene	10.0	9.223		ug/L		92	74 - 120
trans-1,2-Dichloroethene	10.0	11.63		ug/L		116	67 - 127
trans-1,3-Dichloropropene	10.0	10.54		ug/L		105	67 - 123
trans-1,4-Dichloro-2-butene	10.0	9.712	J	ug/L		97	50 - 150
Trichloroethene	10.0	9.809		ug/L		98	70 - 128
Vinyl acetate	20.0	21.35		ug/L		107	50 - 150
Xylenes, Total	20.0	21.61		ug/L		108	74 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*105*		*76 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*95*		*80 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-465326/8
Matrix: Water
Analysis Batch: 465326

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Bromomethane			20.0	18.57		ug/L		93	33 - 138		
Chloroethane			20.0	23.86		ug/L		119	59 - 139		
Chloromethane			20.0	21.83		ug/L		109	52 - 146		
Trichlorofluoromethane			20.0	23.14		ug/L		116	55 - 150		
Vinyl chloride			20.0	22.99		ug/L		115	60 - 142		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*121*		*76 - 130*
Toluene-d8 (Surr)	*93*		*80 - 120*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*

Lab Sample ID: 310-314564-1 MS
Matrix: Ground Water
Analysis Batch: 465326

Client Sample ID: MW-81
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
1,1,1,2-Tetrachloroethane	<1.00		25.0	26.60	E	ug/L		106	55 - 121		
1,1,1-Trichloroethane	<1.00		25.0	24.38		ug/L		98	53 - 130		
1,1,2,2-Tetrachloroethane	<1.00		25.0	22.33		ug/L		89	55 - 123		
1,1,2-Trichloroethane	<1.00		25.0	24.91		ug/L		100	60 - 121		
1,1-Dichloroethane	<1.00		25.0	25.06		ug/L		100	53 - 127		
1,1-Dichloroethene	<2.00		25.0	24.61		ug/L		98	51 - 134		
1,2,3-Trichloropropane	<1.00		25.0	21.14		ug/L		85	56 - 122		
1,2-Dibromo-3-chloropropane	<5.00		25.0	19.60		ug/L		78	44 - 138		
1,2-Dibromoethane (EDB)	<1.00		25.0	23.67		ug/L		95	60 - 122		
1,2-Dichlorobenzene	<1.00		25.0	21.96		ug/L		88	60 - 120		
1,2-Dichloroethane	<1.00		25.0	24.91		ug/L		100	48 - 128		
1,2-Dichloropropane	<1.00		25.0	20.96		ug/L		84	59 - 128		
1,4-Dichlorobenzene	<1.00		25.0	22.50		ug/L		90	58 - 120		
2-Butanone (MEK)	<10.0		50.0	39.26		ug/L		79	46 - 134		
2-Hexanone	<10.0		50.0	42.70		ug/L		85	46 - 141		
4-Methyl-2-pentanone (MIBK)	<10.0		50.0	46.09		ug/L		92	49 - 138		
Acetone	<10.0		50.0	48.67		ug/L		97	39 - 141		
Acrylonitrile	<5.00		250	231.0		ug/L		92	41 - 150		
Benzene	<0.500		25.0	22.79		ug/L		91	48 - 125		
Bromochloromethane	<5.00		25.0	24.57		ug/L		98	55 - 131		
Bromodichloromethane	<1.00		25.0	20.85		ug/L		83	53 - 122		
Bromoform	<5.00		25.0	18.82		ug/L		75	47 - 122		
Carbon disulfide	<1.00		25.0	29.89		ug/L		120	45 - 137		
Carbon tetrachloride	<2.00		25.0	24.87		ug/L		99	45 - 136		
Chlorobenzene	<1.00		25.0	21.57		ug/L		86	59 - 120		
Chlorodibromomethane	<5.00		25.0	19.30		ug/L		77	53 - 121		
Chloroform	<3.00		25.0	23.82		ug/L		95	52 - 122		
cis-1,2-Dichloroethene	0.262	J *+	25.0	26.20		ug/L		104	51 - 123		
cis-1,3-Dichloropropene	<5.00		25.0	20.02		ug/L		80	55 - 123		
Dibromomethane	<1.00		25.0	23.75		ug/L		95	57 - 122		
Ethylbenzene	<1.00		25.0	22.84		ug/L		91	53 - 120		
Iodomethane	<10.0		25.0	23.72		ug/L		95	18 - 150		

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-314564-1 MS
Matrix: Ground Water
Analysis Batch: 465326

Client Sample ID: MW-81
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Methylene chloride	<5.00		25.0	26.28		ug/L		105	59 - 128
Styrene	<1.00		25.0	23.70		ug/L		95	50 - 125
Tetrachloroethene	<1.00		25.0	24.92		ug/L		100	51 - 128
Toluene	<1.00		25.0	20.80		ug/L		83	52 - 120
trans-1,2-Dichloroethene	<1.00		25.0	24.57		ug/L		98	53 - 127
trans-1,3-Dichloropropene	<5.00		25.0	20.43		ug/L		82	50 - 123
trans-1,4-Dichloro-2-butene	<10.0		25.0	22.09		ug/L		88	28 - 150
Trichloroethene	<1.00		25.0	21.26		ug/L		85	50 - 128
Vinyl acetate	<10.0		50.0	39.13		ug/L		78	31 - 150
Xylenes, Total	<3.00		50.0	46.36		ug/L		93	50 - 122

Surrogate	*MS %Recovery*	*MS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*98*		*76 - 130*
Toluene-d8 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*

Lab Sample ID: 310-314564-1 MSD
Matrix: Ground Water
Analysis Batch: 465326

Client Sample ID: MW-81
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<1.00		25.0	25.67	E	ug/L		103	55 - 121	4	20
1,1,1-Trichloroethane	<1.00		25.0	23.12		ug/L		92	53 - 130	5	20
1,1,2,2-Tetrachloroethane	<1.00		25.0	21.27		ug/L		85	55 - 123	5	20
1,1,2-Trichloroethane	<1.00		25.0	23.88		ug/L		96	60 - 121	4	20
1,1-Dichloroethane	<1.00		25.0	24.04		ug/L		96	53 - 127	4	20
1,1-Dichloroethene	<2.00		25.0	23.11		ug/L		92	51 - 134	6	20
1,2,3-Trichloropropane	<1.00		25.0	20.53		ug/L		82	56 - 122	3	21
1,2-Dibromo-3-chloropropane	<5.00		25.0	20.23		ug/L		81	44 - 138	3	24
1,2-Dibromoethane (EDB)	<1.00		25.0	22.40		ug/L		90	60 - 122	6	20
1,2-Dichlorobenzene	<1.00		25.0	21.43		ug/L		86	60 - 120	2	20
1,2-Dichloroethane	<1.00		25.0	23.67		ug/L		95	48 - 128	5	20
1,2-Dichloropropane	<1.00		25.0	20.46		ug/L		82	59 - 128	2	20
1,4-Dichlorobenzene	<1.00		25.0	21.49		ug/L		86	58 - 120	5	20
2-Butanone (MEK)	<10.0		50.0	38.18		ug/L		76	46 - 134	3	23
2-Hexanone	<10.0		50.0	41.81		ug/L		84	46 - 141	2	20
4-Methyl-2-pentanone (MIBK)	<10.0		50.0	44.79		ug/L		90	49 - 138	3	20
Acetone	<10.0		50.0	49.16		ug/L		98	39 - 141	1	23
Acrylonitrile	<5.00		250	226.4		ug/L		91	41 - 150	2	20
Benzene	<0.500		25.0	21.78		ug/L		87	48 - 125	5	20
Bromochloromethane	<5.00		25.0	23.66		ug/L		95	55 - 131	4	21
Bromodichloromethane	<1.00		25.0	20.38		ug/L		82	53 - 122	2	20
Bromoform	<5.00		25.0	18.73		ug/L		75	47 - 122	0	20
Carbon disulfide	<1.00		25.0	25.20		ug/L		101	45 - 137	17	24
Carbon tetrachloride	<2.00		25.0	23.93		ug/L		96	45 - 136	4	20
Chlorobenzene	<1.00		25.0	20.47		ug/L		82	59 - 120	5	20
Chlorodibromomethane	<5.00		25.0	19.09		ug/L		76	53 - 121	1	20
Chloroform	<3.00		25.0	23.01		ug/L		92	52 - 122	3	20

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 310-314564-1 MSD
Matrix: Ground Water
Analysis Batch: 465326

Client Sample ID: MW-81
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
cis-1,2-Dichloroethene	0.262	J *+	25.0	24.72		ug/L		98	51 - 123	6	20
cis-1,3-Dichloropropene	<5.00		25.0	19.50		ug/L		78	55 - 123	3	20
Dibromomethane	<1.00		25.0	22.59		ug/L		90	57 - 122	5	20
Ethylbenzene	<1.00		25.0	21.71		ug/L		87	53 - 120	5	20
Iodomethane	<10.0		25.0	23.72		ug/L		95	18 - 150	0	32
Methylene chloride	<5.00		25.0	25.33		ug/L		101	59 - 128	4	20
Styrene	<1.00		25.0	22.86		ug/L		91	50 - 125	4	20
Tetrachloroethene	<1.00		25.0	23.47		ug/L		94	51 - 128	6	20
Toluene	<1.00		25.0	19.62		ug/L		78	52 - 120	6	20
trans-1,2-Dichloroethene	<1.00		25.0	22.68		ug/L		91	53 - 127	8	20
trans-1,3-Dichloropropene	<5.00		25.0	20.21		ug/L		81	50 - 123	1	20
trans-1,4-Dichloro-2-butene	<10.0		25.0	20.44		ug/L		82	28 - 150	8	24
Trichloroethene	<1.00		25.0	19.91		ug/L		80	50 - 128	7	20
Vinyl acetate	<10.0		50.0	39.62		ug/L		79	31 - 150	1	25
Xylenes, Total	<3.00		50.0	44.61		ug/L		89	50 - 122	4	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*76 - 130*
Toluene-d8 (Surr)	*101*		*80 - 120*
4-Bromofluorobenzene (Surr)	*92*		*80 - 120*

Lab Sample ID: MB 310-465661/5
Matrix: Water
Analysis Batch: 465661

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/05/25 01:11	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/05/25 01:11	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/05/25 01:11	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/05/25 01:11	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/05/25 01:11	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/05/25 01:11	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/05/25 01:11	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/05/25 01:11	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/05/25 01:11	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/05/25 01:11	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/05/25 01:11	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/05/25 01:11	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/05/25 01:11	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/05/25 01:11	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/05/25 01:11	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/05/25 01:11	1
Acetone	<10.0		10.0	3.10	ug/L			09/05/25 01:11	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/05/25 01:11	1
Benzene	<0.500		0.500	0.220	ug/L			09/05/25 01:11	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/05/25 01:11	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/05/25 01:11	1
Bromoform	<5.00		5.00	0.780	ug/L			09/05/25 01:11	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-465661/5
Matrix: Water
Analysis Batch: 465661

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromomethane	<4.00		4.00	1.10	ug/L			09/05/25 01:11	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/05/25 01:11	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/05/25 01:11	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/05/25 01:11	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/05/25 01:11	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/05/25 01:11	1
Chloroform	<3.00		3.00	1.30	ug/L			09/05/25 01:11	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/05/25 01:11	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			09/05/25 01:11	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/05/25 01:11	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/05/25 01:11	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/05/25 01:11	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/05/25 01:11	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/05/25 01:11	1
Styrene	<1.00		1.00	0.370	ug/L			09/05/25 01:11	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/05/25 01:11	1
Toluene	<1.00		1.00	0.430	ug/L			09/05/25 01:11	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/05/25 01:11	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/05/25 01:11	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/05/25 01:11	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/05/25 01:11	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/05/25 01:11	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/05/25 01:11	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/05/25 01:11	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/05/25 01:11	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*98*		*76 - 130*		*09/05/25 01:11*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*09/05/25 01:11*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*09/05/25 01:11*	*1*

Lab Sample ID: LCS 310-465661/6
Matrix: Water
Analysis Batch: 465661

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	20.22		ug/L		101	70 - 121
1,1,1-Trichloroethane	20.0	20.29		ug/L		101	69 - 130
1,1,2,2-Tetrachloroethane	20.0	20.94		ug/L		105	70 - 122
1,1,2-Trichloroethane	20.0	20.66		ug/L		103	75 - 121
1,1-Dichloroethane	20.0	20.56		ug/L		103	69 - 127
1,1-Dichloroethene	20.0	21.01		ug/L		105	64 - 134
1,2,3-Trichloropropane	20.0	20.30		ug/L		102	70 - 122
1,2-Dibromo-3-chloropropane	20.0	20.64		ug/L		103	62 - 132
1,2-Dibromoethane (EDB)	20.0	20.08		ug/L		100	74 - 122
1,2-Dichlorobenzene	20.0	19.64		ug/L		98	74 - 120
1,2-Dichloroethane	20.0	20.50		ug/L		103	68 - 125
1,2-Dichloropropane	20.0	20.51		ug/L		103	72 - 128

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-465661/6
Matrix: Water
Analysis Batch: 465661

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	20.0	19.09		ug/L		95	72 - 120
2-Butanone (MEK)	40.0	38.68		ug/L		97	60 - 134
2-Hexanone	40.0	44.23		ug/L		111	62 - 139
4-Methyl-2-pentanone (MIBK)	40.0	43.14		ug/L		108	62 - 136
Acetone	40.0	36.54		ug/L		91	59 - 136
Acrylonitrile	200	200.7		ug/L		100	50 - 150
Benzene	20.0	20.08		ug/L		100	71 - 125
Bromochloromethane	20.0	20.57		ug/L		103	69 - 131
Bromodichloromethane	20.0	19.61		ug/L		98	70 - 122
Bromoform	20.0	20.10		ug/L		101	62 - 122
Carbon disulfide	20.0	19.63		ug/L		98	58 - 137
Carbon tetrachloride	20.0	20.46		ug/L		102	63 - 136
Chlorobenzene	20.0	19.81		ug/L		99	74 - 120
Chlorodibromomethane	20.0	20.13		ug/L		101	69 - 121
Chloroform	20.0	19.22		ug/L		96	72 - 122
cis-1,2-Dichloroethene	20.0	20.33		ug/L		102	72 - 123
cis-1,3-Dichloropropene	20.0	19.81		ug/L		99	72 - 123
Dibromomethane	20.0	20.65		ug/L		103	72 - 122
Ethylbenzene	20.0	19.29		ug/L		96	75 - 120
Iodomethane	20.0	<10.0		ug/L		24	18 - 150
Methylene chloride	20.0	19.13		ug/L		96	72 - 128
Styrene	20.0	18.46		ug/L		92	74 - 122
Tetrachloroethene	20.0	20.77		ug/L		104	70 - 128
Toluene	20.0	19.49		ug/L		97	74 - 120
trans-1,2-Dichloroethene	20.0	19.75		ug/L		99	67 - 127
trans-1,3-Dichloropropene	20.0	20.74		ug/L		104	67 - 123
trans-1,4-Dichloro-2-butene	20.0	18.17		ug/L		91	50 - 150
Trichloroethene	20.0	19.86		ug/L		99	70 - 128
Vinyl acetate	40.0	38.85		ug/L		97	50 - 150
Xylenes, Total	40.0	37.42		ug/L		94	74 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*96*		*76 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*

Lab Sample ID: LCS 310-465661/7
Matrix: Water
Analysis Batch: 465661

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	12.48		ug/L		62	33 - 138
Chloroethane	20.0	20.73		ug/L		104	59 - 139
Chloromethane	20.0	14.77		ug/L		74	52 - 146
Trichlorofluoromethane	20.0	24.35		ug/L		122	55 - 150
Vinyl chloride	20.0	23.43		ug/L		117	60 - 142

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-465661/7
Matrix: Water
Analysis Batch: 465661

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	*99*		*76 - 130*
Toluene-d8 (Surr)	*98*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: MB 310-465784/5
Matrix: Water
Analysis Batch: 465784

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/05/25 11:09	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/05/25 11:09	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/05/25 11:09	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/05/25 11:09	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/05/25 11:09	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/05/25 11:09	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/05/25 11:09	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/05/25 11:09	1
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/05/25 11:09	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/05/25 11:09	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/05/25 11:09	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/05/25 11:09	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/05/25 11:09	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/05/25 11:09	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/05/25 11:09	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/05/25 11:09	1
Acetone	<10.0		10.0	3.10	ug/L			09/05/25 11:09	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/05/25 11:09	1
Benzene	<0.500		0.500	0.220	ug/L			09/05/25 11:09	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/05/25 11:09	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/05/25 11:09	1
Bromoform	<5.00		5.00	0.780	ug/L			09/05/25 11:09	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/05/25 11:09	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/05/25 11:09	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/05/25 11:09	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/05/25 11:09	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/05/25 11:09	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/05/25 11:09	1
Chloroform	<3.00		3.00	1.30	ug/L			09/05/25 11:09	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/05/25 11:09	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			09/05/25 11:09	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/05/25 11:09	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/05/25 11:09	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/05/25 11:09	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/05/25 11:09	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/05/25 11:09	1
Styrene	<1.00		1.00	0.370	ug/L			09/05/25 11:09	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/05/25 11:09	1
Toluene	<1.00		1.00	0.430	ug/L			09/05/25 11:09	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-465784/5
Matrix: Water
Analysis Batch: 465784

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/05/25 11:09	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/05/25 11:09	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/05/25 11:09	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/05/25 11:09	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/05/25 11:09	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/05/25 11:09	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/05/25 11:09	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/05/25 11:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*104*		*76 - 130*		*09/05/25 11:09*	*1*
Toluene-d8 (Surr)	*97*		*80 - 120*		*09/05/25 11:09*	*1*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*		*09/05/25 11:09*	*1*

Lab Sample ID: LCS 310-465784/6
Matrix: Water
Analysis Batch: 465784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.19		ug/L		96	70 - 121
1,1,1-Trichloroethane	20.0	19.62		ug/L		98	69 - 130
1,1,2,2-Tetrachloroethane	20.0	19.60		ug/L		98	70 - 122
1,1,2-Trichloroethane	20.0	18.88		ug/L		94	75 - 121
1,1-Dichloroethane	20.0	18.54		ug/L		93	69 - 127
1,1-Dichloroethene	20.0	19.39		ug/L		97	64 - 134
1,2,3-Trichloropropane	20.0	19.34		ug/L		97	70 - 122
1,2-Dibromo-3-chloropropane	20.0	18.89		ug/L		94	62 - 132
1,2-Dibromoethane (EDB)	20.0	19.77		ug/L		99	74 - 122
1,2-Dichlorobenzene	20.0	19.99		ug/L		100	74 - 120
1,2-Dichloroethane	20.0	20.05		ug/L		100	68 - 125
1,2-Dichloropropane	20.0	18.50		ug/L		93	72 - 128
1,4-Dichlorobenzene	20.0	19.70		ug/L		99	72 - 120
2-Butanone (MEK)	40.0	42.64		ug/L		107	60 - 134
2-Hexanone	40.0	44.50		ug/L		111	62 - 139
4-Methyl-2-pentanone (MIBK)	40.0	42.02		ug/L		105	62 - 136
Acetone	40.0	40.39		ug/L		101	59 - 136
Acrylonitrile	200	185.0		ug/L		92	50 - 150
Benzene	20.0	19.38		ug/L		97	71 - 125
Bromochloromethane	20.0	20.00		ug/L		100	69 - 131
Bromodichloromethane	20.0	17.57		ug/L		88	70 - 122
Bromoform	20.0	19.30		ug/L		97	62 - 122
Carbon disulfide	20.0	20.19		ug/L		101	58 - 137
Carbon tetrachloride	20.0	19.23		ug/L		96	63 - 136
Chlorobenzene	20.0	20.54		ug/L		103	74 - 120
Chlorodibromomethane	20.0	18.59		ug/L		93	69 - 121
Chloroform	20.0	19.47		ug/L		97	72 - 122
cis-1,2-Dichloroethene	20.0	19.35		ug/L		97	72 - 123
cis-1,3-Dichloropropene	20.0	20.21		ug/L		101	72 - 123

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-465784/6
Matrix: Water
Analysis Batch: 465784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dibromomethane	20.0	18.72		ug/L		94	72 - 122
Ethylbenzene	20.0	22.64		ug/L		113	75 - 120
Iodomethane	20.0	14.31		ug/L		72	18 - 150
Methylene chloride	20.0	19.22		ug/L		96	72 - 128
Styrene	20.0	19.74		ug/L		99	74 - 122
Tetrachloroethene	20.0	20.15		ug/L		101	70 - 128
Toluene	20.0	21.29		ug/L		106	74 - 120
trans-1,2-Dichloroethene	20.0	19.26		ug/L		96	67 - 127
trans-1,3-Dichloropropene	20.0	19.79		ug/L		99	67 - 123
trans-1,4-Dichloro-2-butene	20.0	21.86		ug/L		109	50 - 150
Trichloroethene	20.0	19.35		ug/L		97	70 - 128
Vinyl acetate	40.0	43.44		ug/L		109	50 - 150
Xylenes, Total	40.0	43.29		ug/L		108	74 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*88*		*76 - 130*
Toluene-d8 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*102*		*80 - 120*

Lab Sample ID: LCS 310-465784/7
Matrix: Water
Analysis Batch: 465784

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	15.41		ug/L		77	33 - 138
Chloroethane	20.0	17.53		ug/L		88	59 - 139
Chloromethane	20.0	17.93		ug/L		90	52 - 146
Trichlorofluoromethane	20.0	17.92		ug/L		90	55 - 150
Vinyl chloride	20.0	18.10		ug/L		90	60 - 142

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*105*		*76 - 130*
Toluene-d8 (Surr)	*99*		*80 - 120*
4-Bromofluorobenzene (Surr)	*108*		*80 - 120*

Lab Sample ID: MB 310-465969/5
Matrix: Water
Analysis Batch: 465969

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			09/08/25 12:31	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			09/08/25 12:31	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			09/08/25 12:31	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			09/08/25 12:31	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			09/08/25 12:31	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			09/08/25 12:31	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			09/08/25 12:31	1
1,2-Dibromo-3-chloropropane	<5.00		5.00	1.20	ug/L			09/08/25 12:31	1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 310-465969/5
Matrix: Water
Analysis Batch: 465969

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane (EDB)	<1.00		1.00	0.340	ug/L			09/08/25 12:31	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			09/08/25 12:31	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			09/08/25 12:31	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			09/08/25 12:31	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			09/08/25 12:31	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			09/08/25 12:31	1
2-Hexanone	<10.0		10.0	2.00	ug/L			09/08/25 12:31	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			09/08/25 12:31	1
Acetone	<10.0		10.0	3.10	ug/L			09/08/25 12:31	1
Acrylonitrile	<5.00		5.00	2.20	ug/L			09/08/25 12:31	1
Benzene	<0.500		0.500	0.220	ug/L			09/08/25 12:31	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			09/08/25 12:31	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			09/08/25 12:31	1
Bromoform	<5.00		5.00	0.780	ug/L			09/08/25 12:31	1
Bromomethane	<4.00		4.00	1.10	ug/L			09/08/25 12:31	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			09/08/25 12:31	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			09/08/25 12:31	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			09/08/25 12:31	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			09/08/25 12:31	1
Chloroethane	<4.00		4.00	0.790	ug/L			09/08/25 12:31	1
Chloroform	<3.00		3.00	1.30	ug/L			09/08/25 12:31	1
Chloromethane	<3.00		3.00	0.610	ug/L			09/08/25 12:31	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			09/08/25 12:31	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			09/08/25 12:31	1
Dibromomethane	<1.00		1.00	0.330	ug/L			09/08/25 12:31	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			09/08/25 12:31	1
Iodomethane	<10.0		10.0	7.00	ug/L			09/08/25 12:31	1
Methylene chloride	<5.00		5.00	1.70	ug/L			09/08/25 12:31	1
Styrene	<1.00		1.00	0.370	ug/L			09/08/25 12:31	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			09/08/25 12:31	1
Toluene	<1.00		1.00	0.430	ug/L			09/08/25 12:31	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			09/08/25 12:31	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			09/08/25 12:31	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			09/08/25 12:31	1
Trichloroethene	<1.00		1.00	0.430	ug/L			09/08/25 12:31	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			09/08/25 12:31	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			09/08/25 12:31	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			09/08/25 12:31	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			09/08/25 12:31	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*99*		*76 - 130*		*09/08/25 12:31*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*09/08/25 12:31*	*1*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*		*09/08/25 12:31*	*1*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-465969/6
Matrix: Water
Analysis Batch: 465969

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	19.62		ug/L		98	70 - 121
1,1,1-Trichloroethane	20.0	21.64		ug/L		108	69 - 130
1,1,2,2-Tetrachloroethane	20.0	21.22		ug/L		106	70 - 122
1,1,2-Trichloroethane	20.0	18.72		ug/L		94	75 - 121
1,1-Dichloroethane	20.0	22.13		ug/L		111	69 - 127
1,1-Dichloroethene	20.0	20.72		ug/L		104	64 - 134
1,2,3-Trichloropropane	20.0	21.04		ug/L		105	70 - 122
1,2-Dibromo-3-chloropropane	20.0	17.29		ug/L		86	62 - 132
1,2-Dibromoethane (EDB)	20.0	19.84		ug/L		99	74 - 122
1,2-Dichlorobenzene	20.0	19.56		ug/L		98	74 - 120
1,2-Dichloroethane	20.0	22.85		ug/L		114	68 - 125
1,2-Dichloropropane	20.0	20.26		ug/L		101	72 - 128
1,4-Dichlorobenzene	20.0	19.45		ug/L		97	72 - 120
2-Butanone (MEK)	40.0	41.16		ug/L		103	60 - 134
2-Hexanone	40.0	43.64		ug/L		109	62 - 139
4-Methyl-2-pentanone (MIBK)	40.0	42.64		ug/L		107	62 - 136
Acetone	40.0	42.49		ug/L		106	59 - 136
Acrylonitrile	200	211.0		ug/L		105	50 - 150
Benzene	20.0	20.94		ug/L		105	71 - 125
Bromochloromethane	20.0	21.15		ug/L		106	69 - 131
Bromodichloromethane	20.0	20.15		ug/L		101	70 - 122
Bromoform	20.0	18.70		ug/L		93	62 - 122
Carbon disulfide	20.0	20.85		ug/L		104	58 - 137
Carbon tetrachloride	20.0	20.58		ug/L		103	63 - 136
Chlorobenzene	20.0	20.41		ug/L		102	74 - 120
Chlorodibromomethane	20.0	18.17		ug/L		91	69 - 121
Chloroform	20.0	20.83		ug/L		104	72 - 122
cis-1,2-Dichloroethene	20.0	20.25		ug/L		101	72 - 123
cis-1,3-Dichloropropene	20.0	18.54		ug/L		93	72 - 123
Dibromomethane	20.0	20.85		ug/L		104	72 - 122
Ethylbenzene	20.0	21.70		ug/L		108	75 - 120
Iodomethane	20.0	15.97		ug/L		80	18 - 150
Methylene chloride	20.0	21.61		ug/L		108	72 - 128
Styrene	20.0	20.63		ug/L		103	74 - 122
Tetrachloroethene	20.0	19.49		ug/L		97	70 - 128
Toluene	20.0	20.85		ug/L		104	74 - 120
trans-1,2-Dichloroethene	20.0	20.66		ug/L		103	67 - 127
trans-1,3-Dichloropropene	20.0	19.22		ug/L		96	67 - 123
trans-1,4-Dichloro-2-butene	20.0	21.36		ug/L		107	50 - 150
Trichloroethene	20.0	19.62		ug/L		98	70 - 128
Vinyl acetate	40.0	32.85		ug/L		82	50 - 150
Xylenes, Total	40.0	40.11		ug/L		100	74 - 121

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*102*		*76 - 130*
Toluene-d8 (Surr)	*102*		*80 - 120*
4-Bromofluorobenzene (Surr)	*97*		*80 - 120*

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 310-465969/7
Matrix: Water
Analysis Batch: 465969

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	23.34		ug/L		117	33 - 138
Chloroethane	20.0	26.11		ug/L		131	59 - 139
Chloromethane	20.0	27.13		ug/L		136	52 - 146
Trichlorofluoromethane	20.0	23.27		ug/L		116	55 - 150
Vinyl chloride	20.0	25.32		ug/L		127	60 - 142

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*103*		*76 - 130*
Toluene-d8 (Surr)	*100*		*80 - 120*
4-Bromofluorobenzene (Surr)	*99*		*80 - 120*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-465852/1-A
Matrix: Water
Analysis Batch: 466340

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 465852

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		09/08/25 10:00	09/10/25 15:35	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		09/08/25 10:00	09/10/25 15:35	1
Barium	<0.00200		0.00200	0.000660	mg/L		09/08/25 10:00	09/10/25 15:35	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		09/08/25 10:00	09/10/25 15:35	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		09/08/25 10:00	09/10/25 15:35	1
Chromium	<0.00500		0.00500	0.00180	mg/L		09/08/25 10:00	09/10/25 15:35	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		09/08/25 10:00	09/10/25 15:35	1
Copper	<0.00500		0.00500	0.00320	mg/L		09/08/25 10:00	09/10/25 15:35	1
Lead	<0.000500		0.000500	0.000330	mg/L		09/08/25 10:00	09/10/25 15:35	1
Nickel	<0.00500		0.00500	0.00230	mg/L		09/08/25 10:00	09/10/25 15:35	1
Selenium	<0.00500		0.00500	0.00140	mg/L		09/08/25 10:00	09/10/25 15:35	1
Silver	<0.00100		0.00100	0.000500	mg/L		09/08/25 10:00	09/10/25 15:35	1
Thallium	<0.00100		0.00100	0.000570	mg/L		09/08/25 10:00	09/10/25 15:35	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		09/08/25 10:00	09/10/25 15:35	1
Zinc	<0.0200		0.0200	0.0130	mg/L		09/08/25 10:00	09/10/25 15:35	1

Lab Sample ID: LCS 310-465852/2-A
Matrix: Water
Analysis Batch: 466340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 465852

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2133		mg/L		107	80 - 120
Arsenic	0.200	0.2026		mg/L		101	80 - 120
Barium	0.100	0.09827		mg/L		98	80 - 120
Beryllium	0.100	0.09706		mg/L		97	80 - 120
Cadmium	0.100	0.09789		mg/L		98	80 - 120
Chromium	0.100	0.09945		mg/L		99	80 - 120
Cobalt	0.100	0.1055		mg/L		105	80 - 120
Copper	0.200	0.2091		mg/L		105	80 - 120
Lead	0.200	0.2073		mg/L		104	80 - 120
Nickel	0.200	0.2044		mg/L		102	80 - 120

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCS 310-465852/2-A
Matrix: Water
Analysis Batch: 466340

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 465852

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Selenium			0.400	0.3828		mg/L		96	80 - 120		
Silver			0.100	0.1068		mg/L		107	80 - 120		
Thallium			0.100	0.09807		mg/L		98	80 - 120		
Vanadium			0.100	0.09750		mg/L		98	80 - 120		
Zinc			0.200	0.1848		mg/L		92	80 - 120		

Lab Sample ID: 310-314564-8 DU
Matrix: Ground Water
Analysis Batch: 466340

Client Sample ID: 93-MW-31R
Prep Type: Total/NA
Prep Batch: 465852

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Antimony	0.00118	J		<0.00200		mg/L				NC	20
Arsenic	0.00407			0.004258		mg/L				5	20
Barium	0.0482			0.04996		mg/L				4	20
Beryllium	<0.00100			<0.00100		mg/L				NC	20
Cadmium	0.000190	J		0.0001640	J	mg/L				15	20
Chromium	<0.00500			<0.00500		mg/L				NC	20
Cobalt	0.00100			0.001039		mg/L				4	20
Copper	<0.00500			<0.00500		mg/L				NC	20
Lead	0.00110			0.001146		mg/L				4	20
Nickel	<0.00500			<0.00500		mg/L				NC	20
Selenium	0.00336	J		0.003089	J	mg/L				8	20
Silver	<0.00100			<0.00100		mg/L				NC	20
Thallium	<0.00100			<0.00100		mg/L				NC	20
Vanadium	0.00219	J		0.002245	J	mg/L				2	20
Zinc	<0.0200			<0.0200		mg/L				NC	20

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 500-832469/1-A
Matrix: Water
Analysis Batch: 832470

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 832469

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<1.00		1.00	0.231	mg/L		09/03/25 18:00	09/03/25 22:38	1

Lab Sample ID: LCS 500-832469/2-A
Matrix: Water
Analysis Batch: 832470

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 832469

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Sulfide			3.51	3.553		mg/L		101	80 - 120		

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-465343/1
Matrix: Water
Analysis Batch: 465343

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			09/02/25 11:23	1

Lab Sample ID: LCS 310-465343/2
Matrix: Water
Analysis Batch: 465343

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	101.0		mg/L		101	82 - 117

Lab Sample ID: 310-314564-7 DU
Matrix: Ground Water
Analysis Batch: 465343

Client Sample ID: MW-65
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	77.0		76.00		mg/L		1	35

Lab Sample ID: MB 310-465418/1
Matrix: Water
Analysis Batch: 465418

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			09/03/25 07:21	1

Lab Sample ID: LCS 310-465418/2
Matrix: Water
Analysis Batch: 465418

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	98.00		mg/L		98	82 - 117

GC/MS VOA

Analysis Batch: 465324

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-314564-12	MW-D1	Total/NA	Ground Water	8260D	
310-314564-13	MW-D2	Total/NA	Ground Water	8260D	
310-314564-14	Trip Blank 1	Total/NA	Water	8260D	
310-314564-15	Trip Blank 2	Total/NA	Water	8260D	
310-314564-16	Trip Blank 3	Total/NA	Water	8260D	
MB 310-465324/6	Method Blank	Total/NA	Water	8260D	
LCS 310-465324/7	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-465324/8	Lab Control Sample	Total/NA	Water	8260D	
310-314564-12 MS	MW-D1	Total/NA	Ground Water	8260D	
310-314564-12 MSD	MW-D1	Total/NA	Ground Water	8260D	

Analysis Batch: 465326

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-314564-1	MW-81	Total/NA	Ground Water	8260D	
310-314564-2	MW-39R	Total/NA	Ground Water	8260D	
310-314564-3	MW-40	Total/NA	Ground Water	8260D	
310-314564-4	04-MW-56	Total/NA	Ground Water	8260D	
310-314564-5	MW-58	Total/NA	Ground Water	8260D	
310-314564-6	MW-63R	Total/NA	Ground Water	8260D	
310-314564-7	MW-65	Total/NA	Ground Water	8260D	
310-314564-8	93-MW-31R	Total/NA	Ground Water	8260D	
310-314564-9	MW-61R	Total/NA	Ground Water	8260D	
310-314564-10	MW-73	Total/NA	Ground Water	8260D	
310-314564-11	MW-79	Total/NA	Ground Water	8260D	
MB 310-465326/6	Method Blank	Total/NA	Water	8260D	
LCS 310-465326/7	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-465326/8	Lab Control Sample	Total/NA	Water	8260D	
310-314564-1 MS	MW-81	Total/NA	Ground Water	8260D	
310-314564-1 MSD	MW-81	Total/NA	Ground Water	8260D	

Analysis Batch: 465661

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-314564-17	Trip Blank 4	Total/NA	Water	8260D	
310-314564-19	MW-78	Total/NA	Water	8260D	
310-314564-20	MW-80	Total/NA	Water	8260D	
MB 310-465661/5	Method Blank	Total/NA	Water	8260D	
LCS 310-465661/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-465661/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 465784

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-314564-1	MW-81	Total/NA	Ground Water	8260D	
310-314564-3	MW-40	Total/NA	Ground Water	8260D	
310-314564-7	MW-65	Total/NA	Ground Water	8260D	
310-314564-9	MW-61R	Total/NA	Ground Water	8260D	
310-314564-10	MW-73	Total/NA	Ground Water	8260D	
310-314564-11	MW-79	Total/NA	Ground Water	8260D	
MB 310-465784/5	Method Blank	Total/NA	Water	8260D	
LCS 310-465784/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-465784/7	Lab Control Sample	Total/NA	Water	8260D	

GC/MS VOA

Analysis Batch: 465969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-314564-17	Trip Blank 4	Total/NA	Water	8260D	
MB 310-465969/5	Method Blank	Total/NA	Water	8260D	
LCS 310-465969/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-465969/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 465852

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-314564-1	MW-81	Total/NA	Ground Water	3005A	
310-314564-2	MW-39R	Total/NA	Ground Water	3005A	
310-314564-3	MW-40	Total/NA	Ground Water	3005A	
310-314564-4	04-MW-56	Total/NA	Ground Water	3005A	
310-314564-5	MW-58	Total/NA	Ground Water	3005A	
310-314564-6	MW-63R	Total/NA	Ground Water	3005A	
310-314564-7	MW-65	Total/NA	Ground Water	3005A	
310-314564-8	93-MW-31R	Total/NA	Ground Water	3005A	
310-314564-9	MW-61R	Total/NA	Ground Water	3005A	
310-314564-10	MW-73	Total/NA	Ground Water	3005A	
310-314564-11	MW-79	Total/NA	Ground Water	3005A	
310-314564-12	MW-D1	Total/NA	Ground Water	3005A	
310-314564-13	MW-D2	Total/NA	Ground Water	3005A	
310-314564-18	MW-66	Total/NA	Water	3005A	
310-314564-19	MW-78	Total/NA	Water	3005A	
MB 310-465852/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-465852/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-314564-8 DU	93-MW-31R	Total/NA	Ground Water	3005A	

Analysis Batch: 466340

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-314564-1	MW-81	Total/NA	Ground Water	6020B	465852
310-314564-2	MW-39R	Total/NA	Ground Water	6020B	465852
310-314564-3	MW-40	Total/NA	Ground Water	6020B	465852
310-314564-4	04-MW-56	Total/NA	Ground Water	6020B	465852
310-314564-5	MW-58	Total/NA	Ground Water	6020B	465852
310-314564-6	MW-63R	Total/NA	Ground Water	6020B	465852
310-314564-7	MW-65	Total/NA	Ground Water	6020B	465852
310-314564-8	93-MW-31R	Total/NA	Ground Water	6020B	465852
310-314564-9	MW-61R	Total/NA	Ground Water	6020B	465852
310-314564-10	MW-73	Total/NA	Ground Water	6020B	465852
310-314564-11	MW-79	Total/NA	Ground Water	6020B	465852
310-314564-12	MW-D1	Total/NA	Ground Water	6020B	465852
310-314564-13	MW-D2	Total/NA	Ground Water	6020B	465852
310-314564-18	MW-66	Total/NA	Water	6020B	465852
310-314564-19	MW-78	Total/NA	Water	6020B	465852
MB 310-465852/1-A	Method Blank	Total/NA	Water	6020B	465852
LCS 310-465852/2-A	Lab Control Sample	Total/NA	Water	6020B	465852
310-314564-8 DU	93-MW-31R	Total/NA	Ground Water	6020B	465852

General Chemistry

Analysis Batch: 465343

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-314564-1	MW-81	Total/NA	Ground Water	I-3765-85	
310-314564-2	MW-39R	Total/NA	Ground Water	I-3765-85	
310-314564-3	MW-40	Total/NA	Ground Water	I-3765-85	
310-314564-4	04-MW-56	Total/NA	Ground Water	I-3765-85	
310-314564-5	MW-58	Total/NA	Ground Water	I-3765-85	
310-314564-7	MW-65	Total/NA	Ground Water	I-3765-85	
310-314564-8	93-MW-31R	Total/NA	Ground Water	I-3765-85	
310-314564-9	MW-61R	Total/NA	Ground Water	I-3765-85	
310-314564-10	MW-73	Total/NA	Ground Water	I-3765-85	
310-314564-11	MW-79	Total/NA	Ground Water	I-3765-85	
310-314564-12	MW-D1	Total/NA	Ground Water	I-3765-85	
310-314564-13	MW-D2	Total/NA	Ground Water	I-3765-85	
310-314564-18	MW-66	Total/NA	Water	I-3765-85	
310-314564-19	MW-78	Total/NA	Water	I-3765-85	
MB 310-465343/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-465343/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-314564-7 DU	MW-65	Total/NA	Ground Water	I-3765-85	

Analysis Batch: 465418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-314564-6	MW-63R	Total/NA	Ground Water	I-3765-85	
MB 310-465418/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-465418/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Prep Batch: 832469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-314564-2	MW-39R	Total/NA	Ground Water	9030B	
310-314564-6	MW-63R	Total/NA	Ground Water	9030B	
310-314564-7	MW-65	Total/NA	Ground Water	9030B	
310-314564-13	MW-D2	Total/NA	Ground Water	9030B	
MB 500-832469/1-A	Method Blank	Total/NA	Water	9030B	
LCS 500-832469/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 832470

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-314564-2	MW-39R	Total/NA	Ground Water	9034	832469
310-314564-6	MW-63R	Total/NA	Ground Water	9034	832469
310-314564-7	MW-65	Total/NA	Ground Water	9034	832469
310-314564-13	MW-D2	Total/NA	Ground Water	9034	832469
MB 500-832469/1-A	Method Blank	Total/NA	Water	9034	832469
LCS 500-832469/2-A	Lab Control Sample	Total/NA	Water	9034	832469

Lab Chronicle

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-81

Lab Sample ID: 310-314564-1

Date Collected: 08/26/25 14:48
Matrix: Ground Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465784	WSE8	EET CF	09/05/25 15:34
Total/NA	Analysis	8260D		1	465326	WSE8	EET CF	09/02/25 12:50
Total/NA	Prep	3005A			465852	QTZ5	EET CF	09/08/25 10:00
Total/NA	Analysis	6020B		1	466340	NFT2	EET CF	09/10/25 16:01
Total/NA	Analysis	I-3765-85		1	465343	DGU1	EET CF	09/02/25 11:23

Client Sample ID: MW-39R

Lab Sample ID: 310-314564-2

Date Collected: 08/26/25 15:43
Matrix: Ground Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465326	WSE8	EET CF	09/02/25 13:12
Total/NA	Prep	3005A			465852	QTZ5	EET CF	09/08/25 10:00
Total/NA	Analysis	6020B		1	466340	NFT2	EET CF	09/10/25 16:04
Total/NA	Prep	9030B			832469	CLB	EET CHI	09/03/25 18:10 - 09/03/25 18:15 [1]
Total/NA	Analysis	9034		1	832470	CLB	EET CHI	09/03/25 22:52 - 09/03/25 23:00 [1]
Total/NA	Analysis	I-3765-85		1	465343	DGU1	EET CF	09/02/25 11:23

Client Sample ID: MW-40

Lab Sample ID: 310-314564-3

Date Collected: 08/26/25 16:28
Matrix: Ground Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465784	WSE8	EET CF	09/05/25 15:56
Total/NA	Analysis	8260D		1	465326	WSE8	EET CF	09/02/25 13:34
Total/NA	Prep	3005A			465852	QTZ5	EET CF	09/08/25 10:00
Total/NA	Analysis	6020B		1	466340	NFT2	EET CF	09/10/25 16:06
Total/NA	Analysis	I-3765-85		1	465343	DGU1	EET CF	09/02/25 11:23

Client Sample ID: 04-MW-56

Lab Sample ID: 310-314564-4

Date Collected: 08/27/25 16:25
Matrix: Ground Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465326	WSE8	EET CF	09/02/25 13:57
Total/NA	Prep	3005A			465852	QTZ5	EET CF	09/08/25 10:00
Total/NA	Analysis	6020B		1	466340	NFT2	EET CF	09/10/25 16:09
Total/NA	Analysis	I-3765-85		1	465343	DGU1	EET CF	09/02/25 11:23

Client Sample ID: MW-58

Lab Sample ID: 310-314564-5

Date Collected: 08/27/25 17:02
Matrix: Ground Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465326	WSE8	EET CF	09/02/25 14:19

Lab Chronicle

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-58
Date Collected: 08/27/25 17:02
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-5
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			465852	QTZ5	EET CF	09/08/25 10:00
Total/NA	Analysis	6020B		1	466340	NFT2	EET CF	09/10/25 16:11
Total/NA	Analysis	I-3765-85		1	465343	DGU1	EET CF	09/02/25 11:23

Client Sample ID: MW-63R
Date Collected: 08/28/25 10:56
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-6
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465326	WSE8	EET CF	09/02/25 14:42
Total/NA	Prep	3005A			465852	QTZ5	EET CF	09/08/25 10:00
Total/NA	Analysis	6020B		1	466340	NFT2	EET CF	09/10/25 16:14
Total/NA	Prep	9030B			832469	CLB	EET CHI	09/03/25 18:25 - 09/03/25 18:30 [1]
Total/NA	Analysis	9034		1	832470	CLB	EET CHI	09/03/25 23:14 - 09/03/25 23:22 [1]
Total/NA	Analysis	I-3765-85		1	465418	DGU1	EET CF	09/03/25 07:21

Client Sample ID: MW-65
Date Collected: 08/27/25 06:02
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-7
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465784	WSE8	EET CF	09/05/25 16:18
Total/NA	Analysis	8260D		1	465326	WSE8	EET CF	09/02/25 15:04
Total/NA	Prep	3005A			465852	QTZ5	EET CF	09/08/25 10:00
Total/NA	Analysis	6020B		1	466340	NFT2	EET CF	09/10/25 16:16
Total/NA	Prep	9030B			832469	CLB	EET CHI	09/03/25 18:15 - 09/03/25 18:20 [1]
Total/NA	Analysis	9034		1	832470	CLB	EET CHI	09/03/25 23:00 - 09/03/25 23:07 [1]
Total/NA	Analysis	I-3765-85		1	465343	DGU1	EET CF	09/02/25 11:23

Client Sample ID: 93-MW-31R
Date Collected: 08/27/25 18:40
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-8
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465326	WSE8	EET CF	09/02/25 15:27
Total/NA	Prep	3005A			465852	QTZ5	EET CF	09/08/25 10:00
Total/NA	Analysis	6020B		1	466340	NFT2	EET CF	09/10/25 16:24
Total/NA	Analysis	I-3765-85		1	465343	DGU1	EET CF	09/02/25 11:23

Client Sample ID: MW-61R
Date Collected: 08/27/25 09:48
Date Received: 08/29/25 16:30

Lab Sample ID: 310-314564-9
Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465784	WSE8	EET CF	09/05/25 16:40

Lab Chronicle

Client: SCS Engineers
Job ID: 310-314564-1
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-61R
Lab Sample ID: 310-314564-9
Date Collected: 08/27/25 09:48
Matrix: Ground Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465326	WSE8	EET CF	09/02/25 15:49
Total/NA	Prep	3005A			465852	QTZ5	EET CF	09/08/25 10:00
Total/NA	Analysis	6020B		1	466340	NFT2	EET CF	09/10/25 16:29
Total/NA	Analysis	I-3765-85		1	465343	DGU1	EET CF	09/02/25 11:23

Client Sample ID: MW-73
Lab Sample ID: 310-314564-10
Date Collected: 08/27/25 11:08
Matrix: Ground Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465784	WSE8	EET CF	09/05/25 17:02
Total/NA	Analysis	8260D		1	465326	WSE8	EET CF	09/02/25 16:12
Total/NA	Prep	3005A			465852	QTZ5	EET CF	09/08/25 10:00
Total/NA	Analysis	6020B		1	466340	NFT2	EET CF	09/10/25 16:32
Total/NA	Analysis	I-3765-85		1	465343	DGU1	EET CF	09/02/25 11:23

Client Sample ID: MW-79
Lab Sample ID: 310-314564-11
Date Collected: 08/27/25 11:54
Matrix: Ground Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465784	WSE8	EET CF	09/05/25 17:25
Total/NA	Analysis	8260D		1	465326	WSE8	EET CF	09/02/25 16:35
Total/NA	Prep	3005A			465852	QTZ5	EET CF	09/08/25 10:00
Total/NA	Analysis	6020B		1	466340	NFT2	EET CF	09/10/25 16:34
Total/NA	Analysis	I-3765-85		1	465343	DGU1	EET CF	09/02/25 11:23

Client Sample ID: MW-D1
Lab Sample ID: 310-314564-12
Date Collected: 08/26/25 16:28
Matrix: Ground Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465324	WSE8	EET CF	09/02/25 16:11
Total/NA	Prep	3005A			465852	QTZ5	EET CF	09/08/25 10:00
Total/NA	Analysis	6020B		1	466340	NFT2	EET CF	09/10/25 16:37
Total/NA	Analysis	I-3765-85		1	465343	DGU1	EET CF	09/02/25 11:23

Client Sample ID: MW-D2
Lab Sample ID: 310-314564-13
Date Collected: 08/27/25 06:02
Matrix: Ground Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465324	WSE8	EET CF	09/02/25 16:33
Total/NA	Prep	3005A			465852	QTZ5	EET CF	09/08/25 10:00
Total/NA	Analysis	6020B		1	466340	NFT2	EET CF	09/10/25 16:39

Lab Chronicle

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-D2

Lab Sample ID: 310-314564-13
Date Collected: 08/27/25 06:02
Matrix: Ground Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	9030B			832469	CLB	EET CHI	09/03/25 18:20 - 09/03/25 18:25 [1]
Total/NA	Analysis	9034		1	832470	CLB	EET CHI	09/03/25 23:07 - 09/03/25 23:14 [1]
Total/NA	Analysis	I-3765-85		1	465343	DGU1	EET CF	09/02/25 11:23

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-314564-14
Date Collected: 08/28/25 00:00
Matrix: Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465324	WSE8	EET CF	09/02/25 12:25

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-314564-15
Date Collected: 08/28/25 00:00
Matrix: Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465324	WSE8	EET CF	09/02/25 12:53

Client Sample ID: Trip Blank 3

Lab Sample ID: 310-314564-16
Date Collected: 08/28/25 00:00
Matrix: Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465324	WSE8	EET CF	09/02/25 13:15

Client Sample ID: Trip Blank 4

Lab Sample ID: 310-314564-17
Date Collected: 08/28/25 00:00
Matrix: Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465661	FE5V	EET CF	09/05/25 02:20
Total/NA	Analysis	8260D		1	465969	FE5V	EET CF	09/08/25 13:59

Client Sample ID: MW-66

Lab Sample ID: 310-314564-18
Date Collected: 08/27/25 12:42
Matrix: Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			465852	QTZ5	EET CF	09/08/25 10:00
Total/NA	Analysis	6020B		1	466340	NFT2	EET CF	09/10/25 16:42
Total/NA	Analysis	I-3765-85		1	465343	DGU1	EET CF	09/02/25 11:23

Lab Chronicle

Client: SCS Engineers
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing

Job ID: 310-314564-1
SDG: Ottumwa-Wapello County Landfill

Client Sample ID: MW-78

Lab Sample ID: 310-314564-19

Date Collected: 08/27/25 14:37
Matrix: Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465661	FE5V	EET CF	09/05/25 03:51
Total/NA	Prep	3005A			465852	QTZ5	EET CF	09/08/25 10:00
Total/NA	Analysis	6020B		1	466340	NFT2	EET CF	09/10/25 16:45
Total/NA	Analysis	I-3765-85		1	465343	DGU1	EET CF	09/02/25 11:23

Client Sample ID: MW-80

Lab Sample ID: 310-314564-20

Date Collected: 08/27/25 15:27
Matrix: Water
Date Received: 08/29/25 16:30

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	465661	FE5V	EET CF	09/05/25 04:14

[1] This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

Accreditation/Certification Summary

Client: SCS Engineers
Job ID: 310-314564-1
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing
SDG: Ottumwa-Wapello County Landfill

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

Laboratory: Eurofins Chicago

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	082	05-01-26

Method Summary

Client: SCS Engineers
Job ID: 310-314564-1
Project/Site: Ottumwa 2nd 2025 HMSP and Bracketing
SDG: Ottumwa-Wapello County Landfill

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CHI
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CHI

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CHI = Eurofins Chicago, 18410 Crossing Drive, Suite E, Tinley Park, IL 60487, TEL (708)534-5200

eurofins | Environment Testing America

310-314564 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY West Des Moines STATE IA | Project:

Receipt Information

Date/Time Received: DATE 8/29/25 TIME 1630 | Received By: BP

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other _____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes* Cooler # 1 of 4

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☑ Yes ☐ No *If yes* Which VOA samples are in cooler? ↓

~~GW-6, GW-7~~, MW-40, MW-39R, MW-81

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other _____ ☐ NONE

Thermometer ID. BB | Correction Factor (°C). ±0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C) 1.2 | Corrected Temp (°C) 1.2

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used		
Uncorrected Temp (°C).		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY West Des Moines STATE IA | Project:

Receipt Information

Date/Time Received: DATE 8/29/25 TIME 1630 | Received By: BP

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other _____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes* Cooler ID

Multiple Coolers? ☒ Yes ☐ No *If yes* Cooler # 2 of 4

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☐ No *If yes* Which VOA samples are in cooler? ↓

04-MW-56, MW-58, MW-63R, MW-65, 93-MW-31R
MW-80

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other _____ ☐ NONE

Thermometer ID. BB | Correction Factor (°C). ±0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C) 8.2 | Corrected Temp (°C) 8.2

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used	1L plastic HP	500 ml plastic NaOH + Zn Acetate
Uncorrected Temp (°C):	7.1	7.1
Corrected Temp (°C):	7.1	7.1

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☒ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY West Des Moines STATE IA

Project:

Receipt Information

Date/Time Received: DATE 8/29/25 TIME 1630

Received By: BP

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other _____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes* Cooler ID:

Multiple Coolers? ☒ Yes ☐ No *If yes* Cooler # 3 of 4

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☐ No *If yes* Which VOA samples are in cooler? ↓

MW-01R, MW-73, MW-79, MW-D1, MW-D2

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other _____ ☐ NONE

Thermometer ID: BB

Correction Factor (°C): ±0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): -1.1

Corrected Temp (°C): -1.1

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used.		
Uncorrected Temp (°C).		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☒ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY West Des Moines STATE IA | Project:

Receipt Information

Date/Time Received: DATE 8/29/25 TIME 1630 | Received By: BP

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other _____

Condition of Cooler/Containers

Sample(s) received in Cooler? ☒ Yes ☐ No *If yes* Cooler ID

Multiple Coolers? ☒ Yes ☐ No *If yes* Cooler # 4 of 4

Cooler Custody Seals Present? ☐ Yes ☒ No *If yes* Cooler custody seals intact? ☐ Yes ☐ No

Sample Custody Seals Present? ☐ Yes ☒ No *If yes* Sample custody seals intact? ☐ Yes ☐ No

Trip Blank Present? ☒ Yes ☐ No *If yes* Which VOA samples are in cooler? ↓

MW-78, MW-60

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE

Thermometer ID. BB | Correction Factor (°C). ±0

• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C). -1.2 | Corrected Temp (°C): -1.2

• Sample Container Temperature

	CONTAINER 1	CONTAINER 2
Container(s) used.		
Uncorrected Temp (°C)		
Corrected Temp (°C):		

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☒ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613-6907
phone 319.277.2401 fax 319.277.2425

Chain of Custody Record

eurofins

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact	Project Manager: Nathan Ohrt	Site Contact: Lori Creech	Date:	COC No
Nathan Ohrt	Email: nohrt@scsengineers.com	Lab Contact: Sam Miller	Carrier:	1 of 2 COCs
SCS Engineers	Cell 319-331-9613			Sampler:
1690 All State Court, Suite 100	Analysis Turnaround Time: ☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only. Walk-in Client: Lab Sampling
West Des Moines, Iowa 50265	Other: ☐ 2 weeks ☐ 1 week ☐ 2 days ☐ 1 day			Job / SDG No
Project Name Ottumwa 2nd 2025 HMSP				
Site Ottumwa-Wapello County Landfill				
P O # 27225312.26				

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Appendix I	Appendix I metals list	Total Suspended Solids	AMD	Sulfide	Appendix I VOCs	Trip Blank	Sample Specific Notes
GU-6			G	GW		N	N	X		X					
GU-7			G	GW		N	N	X		X					
MW-81	8-26-25	1448	G	GW		N	N	X		X					
MW-39R	8-26-25	1543	G	GW		N	N	X		X		X			
MW-40	8-26-25	1628	G	GW		N	N	X		X					
04-MW-56	8-27-25	1625	G	GW		N	N		X	X			X		
MW-58	8-27-25	1702	G	GW		N	N	X		X					
MW-63R	8-28-25	1056	G	GW		N	N	X		X		X			
MW-65	8-27-25	6:02	G	GW		N	N		X	X		X	X		
93-MW-31R	8-27-25	1840	G	GW		N	N	X		X					
MW-61R	8-27-25	9:48	G	GW		N	N	X		X					
MW-73	8-27-25	1108	G	GW		N	N	X		X					
MW-79	8-27-25	11:54	G	GW		N	N	X		X					
MW-D1	8-26-25	1628	G	GW		N	N	X		X					
MW-D2	8-27-25	6:02	G	GW		N	N		X	X		X	X		
Trip Blank														X	

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for ____ Months

Special Instructions/QC Requirements & Comments:
"Appendix I metals list" includes arsenic, barium, cadmium, copper, cobalt, lead, nickel, and zinc.
"AMD" includes total alkalinity, total iron, total manganese, total aluminum, and sulfate.
"Natural Attenuation" includes total organic carbon, nitrate, total iron, total manganese, and sulfate.

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd ____ Corr'd. ____ Therm ID No. ____

Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Thomas Roth	SCS	8-29-25/1400			
Relinquished by	Company	Date/Time	Received by	Company	Date/Time
Relinquished by	Company	Date/Time	Received in Laboratory by BP	Company: EFCF	Date/Time: 8/29/25 1630

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

EUROFINS
DES MOINES SERVICE CENTER
214

Chain of Custody Record

eurofins

Eurofins TestAmerica, Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613-6907
phone 319.277 2401 fax 319.277 2425

Regulatory Program: ☐ DW ☐ NPDES ☑ RCRA ☐ Other

TestAmerica Laboratories, Inc. d/b/a Eurof

Client Contact	Project Manager: Nathan Ohrt	Site Contact: Lori Creech	Date:	COC No
Nathan Ohrt	Email nohrt@scsengineers.com	Lab Contact: Sam Miller	Carrier:	2 of 2 CO
SCS Engineers	Cell 319-331-9613			Sampler
1690 All State Court, Suite 100	Analysis Turnaround Time			For Lab Use Only:
West Des Moines, Iowa 50265	☐ CALENDAR DAYS ☐ WORKING DAYS			Walk-in Client:
	Other:			Lab Sampling
Project Name: Ottumwa 2nd 2025 Bracketing	☐ 2 weeks			
Site: Ottumwa-Wapello County Landfill	☐ 1 week			Job / SDG No.
P O # 27225312.26	☐ 2 days			
	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Arsenic	Cobalt	Total Suspended Solids	Trichloroethene	Tetrachloroethene	cis-1,2-Dichloroethene	Vinyl Chloride	Benzene		Trip Blank								Sample Specific
MW-66	8-27-25	12:42	G	GW		N	N	X	X	X														
MW-67			G	GW		N	N	X	X	X		X												
MW-71			G	GW		N	N	X	X	X	X		X											
MW-74			G	GW		N	N	X	X	X	X	X	X	X	X									
MW-78	8-27-25	14:37	G	GW		N	N		X	X	X	X	X	X										
MW-80	8-27-25	15:27	G	GW		N	N						X	X										
Trip Blank																	X							

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☑ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp. (°C) Obs'd _____ Corr'd _____	Therm ID No _____		
Relinquished by: Thomas Roth	Company: SCS	Date/Time: 8-29-25/1400	Received by: [illegible]	Company: Euro	Date/Time: 8/29/25 1430
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:

Form No. CA-C-WI-002, Rev. 4.23, c

9/11/2025

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone 319-277-2401 Fax 319-277-2425

Chain of Custody Record

eurofins

Client Information (Sub Contract Lab)	Sampler: N/A	Lab PM: Miller, Samuel	Carrier Tracking No(s): N/A	COC No: 310-86441 1
Client Contact: Shipping/Receiving	Phone: N/A	E-Mail: Samuel Miller@et eurofinsus com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing North Centr		Accreditations Required (See note): State Program - Iowa		Job #: 310-314564-1
Address: 18410 Crossing Drive, Suite E,	Due Date Requested: 9/15/2025			
City: Tinley Park	TAT Requested (days): N/A			
State, Zip: IL, 60487				
Phone: 708-534-5200(Tel) 708-534-5211(Fax)	PO #: N/A			
Email: N/A	WO #: N/A			
Project Name: Ottumwa 2nd 2025 HMSP and Bracketing	Project #: 31002405			
Site: 310-SCS Ottumwa-Wapello Co Landfill	SSOW#: N/A			

310-314564 COC

Analysis Requested

Preservation Codes

Other: N/A

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9034_Calc/9030B	Total Number of containers	Special Instructions/Note
			Preservation Code						
MW-39R (310-314564-2)	8/26/25	15 43 Central	G	Water			X	1	
MW-63R (310-314564-6)	8/28/25	10 56 Central	G	Water			X	1	
MW-65 (310-314564-7)	8/27/25	06 02 Central	G	Water			X	1	
MW-D2 (310-314564-13)	8/27/25	06 02 Central	G	Water			X	1	

Note: Since laboratory accreditations are subject to change Eurofins Environment Testing North Central LLC places the ownership of method analyte & accreditation compliance upon our subcontract laboratories This sample shipment is forwarded under chain-of-custody If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed the samples must be shipped back to the Eurofins Environment Testing North Central LLC laboratory or other instructions will be provided Any changes to accreditation status should be brought to Eurofins Environment Testing North Central LLC attention immediately If all requested accreditations are current to date return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central LLC

Possible Hazard Identification	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
Unconfirmed	☐ Return To Client ☐ Disposal By Lab ☐ Archive For _____ Months
Deliverable Requested I, II, III IV, Other (specify) Primary Deliverable Rank 2	Special Instructions/QC Requirements

Empty Kit Relinquished by	Date	Time	Method of Shipment

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	9225 1210		[signature]	9/3/25 0900	EAA
Relinquished by	Date/Time	Company	Received by	Date/Time	Company
Relinquished by	Date/Time	Company	Received by	Date/Time	Company

Custody Seals Intact: Δ Yes Δ No	Custody Seal No	Cooler Temperature(s) °C and Other Remarks: -0.5 -0.7

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-314564-1
SDG Number: Ottumwa-Wapello County Landfill

Login Number: 314564
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-314564-1
SDG Number: Ottumwa-Wapello County Landfill

Login Number: 314564
List Number: 2
Creator: Scott, Sherri L

List Source: Eurofins Chicago
List Creation: 09/03/25 11:14 AM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	-0.7 samples not frozen
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	True	

Appendix B-2

Data Validation Documentation

Completed by: Nathan Ohrt
Date of Sampling: 4/22-24/2025
Lab Report Date: 5/16/2025
Site Name: Ottumwa-Wapello County Landfill - West MSWLF unit
Project Type: 1st 2025 HMSP
Lab Report Number: 310-305118

	OK	NO	N/A	NOTES
Sample Collection and Sample Handling				
Chain of Custody	X			
Temperature	X			
Preservation	X			
Condition	X			
Case Narrative	X			The report was revised by adding total organic carbon to the sample results.
Holding Times		X		MW-73 was received outside of holding time. 93-MW-31R was analyzed outside of holding time.
Analytical Sensitivity and Blanks				
Method Blank Detections	X			No detections.
Trip Blank Detections	X			No detections.
Accuracy				
ICV/CCV		X		The initial calibration verification (ICV) or continuing calibration verification (CCV) recovered outside the upper control limits for 1,1,1,2-Tetrachloroethane and Trichlorofluoromethane; the samples were non-detect for the affected analytes so the data was reported.
LCS/LCSD	X			
MS/MSD	X			
Surrogates (organics only)	X			
Precision				
QA/QC Sample RPDs	X			
Field Duplicates			X	

Completed by: Nathan Ohrt
Date of Sampling: 4/22-23/2025
Lab Report Date: 5/8/2025
Site Name: Ottumwa-Wapello County Landfill - West MSWLF unit
Project Type: 1st 2025 Bracketing
Lab Report Number: 310-305160

	OK	NO	N/A	NOTES
Sample Collection and Sample Handling				
Chain of Custody	X			
Temperature	X			
Preservation	X			
Condition	X			
Case Narrative	X			
Holding Times	X			
Analytical Sensitivity and Blanks				
Method Blank Detections	X			No detections.
Trip Blank Detections	X			No detections.
Accuracy				
ICV/CCV		X		The continuing calibration verification (CCV) recovered above the upper control limits for vinyl chloride; the samples were non-detect for the affected analyte so the data was reported.
LCS/LCSD	X			
MS/MSD	X			
Surrogates (organics only)	X			
Precision				
QA/QC Sample RPDs	X			
Field Duplicates			X	

Completed by: Nathan Ohrt
Date of Sampling: 8/26-28/2025
Lab Report Date: 9/11/2025
Site Name: Ottumwa-Wapello County Landfill - West MSWLF unit
Project Type: 2nd 2025 HMSP and Bracketing
Lab Report Number: 310-314564

	OK	NO	N/A	NOTES
Sample Collection and Sample Handling				
Chain of Custody	X			
Temperature	X			
Preservation		X		Trip Blank 4 was preserved with a preservative not compatible for acrylonitrile.
Condition	X			
Case Narrative		X		The method requirement for no headspace was not met for Trip Blank 1.
Holding Times		X		Sample MW-39R was received outside of holding time.
Analytical Sensitivity and Blanks				
Method Blank Detections	X			No detections.
Trip Blank Detections	X			No detections.
Accuracy				
ICV/CCV		X		The initial calibration verification (ICV) and/or continuing calibration verification (CCV) recovered above the upper control limits for multiple analytes; the samples were non-detect for the affected analytes or the associated laboratory control sample (LCS) passed using CCV criteria so the data was reported.
LCS/LCSD		X		A laboratory control sample (LCS) recovered outside control limits for cis-1,2-Dichloroethene; the analyte was biased high in the LCS and was not detected in the associated samples so the data was reported.
MS/MSD	X			
Surrogates (organics only)	X			
Precision				
QA/QC Sample RPDs	X			
Field Duplicates	X			Sample MW-40 and duplicate sample MW-D1 had >50% RPD for analyzed parameters except for arsenic (-112.2%) and zinc (62.6%). Sample MW-65 and duplicate sample MW-D2 had <50% RPD for the analyzed parameters except for benzene (110.7%).

Appendix C

Reporting Period Summary of Groundwater Chemistry

SCS ENGINEERS

Summary of Groundwater Chemistry

Ottumwa-Wapello County Landfill - 90-SDP-01-75P

Total Metals Constituents	Sample Date	MW-53 UPG	04-MW-56 DNG	91-MW-14 DNG	93-MW-31R DNG	93-MW-32 DNG	MW-39R DNG	MW-40 DNG	MW-58 DNG	MW-59 DNG	MW-61R DNG	MW-62 DNG	MW-63R DNG	MW-64 DNG	MW-65 DNG	MW-66 DNG	MW-68 DNG	MW-73 DNG	MW-75 DNG	MW-78 DNG	MW-79 DNG	MW-80 DNG	MW-81 DNG	GU-6 DNG
Antimony, mg/L (CAS NO - 7440-36-0)	4/22/2025	< 0.002	N/A	N/A	< 0.002	N/A	< 0.002	< 0.002	< 0.002	N/A	0.00144*	N/A	< 0.002	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	< 0.002	N/A	< 0.002	< 0.002
	8/26/2025	N/A	N/A	N/A	0.00118*	N/A	< 0.002	< 0.002	< 0.002	N/A	< 0.002	N/A	< 0.002	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	< 0.002	N/A	< 0.002	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic, mg/L (CAS NO - 7440-38-2)	4/22/2025	< 0.002	**0.0049**	< 0.002	**0.0134**	**0.00308**	**0.00251**	**0.00614**	< 0.002	**0.00494**	**0.0327**	< 0.002	< 0.002	0.000652*	**0.031**	N/A	0.000929*	**0.031**	N/A	N/A	0.000928*	N/A	< 0.002	0.000567*
	8/26/2025	N/A	**0.00588**	N/A	**0.00407**	N/A	**0.00461**	**0.00201**	0.00121*	N/A	0.0141	N/A	0.000944*	N/A	**0.0221**	< 0.002	N/A	0.015	N/A	N/A	0.000635*	N/A	< 0.002	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	**0.00715**	N/A	N/A	N/A	N/A	N/A	N/A	**0.0265**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Barium, mg/L (CAS NO - 7440-39-3)	4/22/2025	**0.0229**	**0.0242**	**0.0174**	**0.101**	**0.0677**	**0.00904**	**0.0161**	**0.0149**	**0.0324**	**0.363**	**0.0273**	**0.0142**	**0.169**	**0.322**	N/A	N/A	**0.232**	N/A	N/A	**0.109**	N/A	**0.0707**	**0.0345**
	8/26/2025	N/A	**0.0262**	N/A	**0.0482**	N/A	**0.00968**	**0.0115**	**0.016**	N/A	0.0206	N/A	**0.0138**	N/A	**0.291**	N/A	N/A	0.158	N/A	N/A	**0.0946**	N/A	**0.0639**	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	**0.0122**	N/A	N/A	N/A	N/A	N/A	N/A	**0.355**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Beryllium, mg/L (CAS NO - 7440-41-7)	4/22/2025	< 0.001	N/A	N/A	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A	**0.00186**	N/A	< 0.001	N/A	N/A	N/A	N/A	0.000693*	N/A	N/A	< 0.001	N/A	< 0.001	< 0.001
	8/26/2025	N/A	N/A	N/A	< 0.001	N/A	< 0.001	0.000484*	< 0.001	N/A	0.00276	N/A	< 0.001	N/A	N/A	N/A	N/A	0.000737*	N/A	N/A	**0.0017**	N/A	< 0.001	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	**0.00101**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cadmium, mg/L (CAS NO - 7440-43-9)	4/22/2025	**0.000226**	< 0.0002	< 0.0002	**0.000384**	**0.000937**	< 0.0002	< 0.0002	0.000144*	< 0.0002	**0.0013**	< 0.0002	**0.00189**	< 0.0002	< 0.0002	N/A	N/A	**0.046**	N/A	N/A	**0.0177**	N/A	**0.000273**	< 0.0002
	8/26/2025	N/A	< 0.0002	N/A	0.00019*	N/A	< 0.0002	< 0.0002	**0.000629**	N/A	0.00274	N/A	**0.00919**	N/A	< 0.0002	N/A	N/A	0.0839	N/A	N/A	**0.013**	N/A	0.000106*	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0002	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chromium, mg/L (CAS NO - 7440-47-3)	4/22/2025	< 0.005	N/A	N/A	**0.00795**	N/A	< 0.005	< 0.005	< 0.005	N/A	**0.0621**	N/A	< 0.005	N/A	N/A	N/A	N/A	**0.0533**	N/A	N/A	0.00245*	N/A	< 0.005	< 0.005
	8/26/2025	N/A	N/A	N/A	< 0.005	N/A	< 0.005	< 0.005	< 0.005	N/A	0.0123	N/A	< 0.005	N/A	N/A	N/A	N/A	0.00331*	N/A	N/A	< 0.005	N/A	< 0.005	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Cobalt, mg/L (CAS NO - 7440-48-4)	4/22/2025	< 0.0005	**0.0197**	0.000178*	**0.00445**	**0.00898**	**0.0358**	**0.122**	**0.000626**	**0.0181**	**0.0275**	**0.000521**	**0.00319**	0.000275*	**0.00228**	N/A	**0.00363**	**0.0612**	N/A	**0.00247**	**0.0045**	N/A	**0.000821**	**0.00818**
	8/26/2025	N/A	**0.0228**	N/A	**0.001**	N/A	**0.0174**	**0.11**	**0.0423**	N/A	0.0308	N/A	**0.0217**	N/A	**0.0017**	**0.000986**	N/A	0.0603	N/A	**0.00451**	**0.00407**	N/A	0.00037*	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	**0.109**	N/A	N/A	N/A	N/A	N/A	N/A	**0.00161**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Copper, mg/L (CAS NO - 7440-50-8)	4/22/2025	< 0.005	< 0.005	< 0.005	0.00454*	< 0.005	< 0.005	0.00358*	< 0.005	< 0.005	**0.0371**	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	**0.0219**	N/A	N/A	**0.0131**	N/A	< 0.005	< 0.005
	8/26/2025	N/A	< 0.005	N/A	< 0.005	N/A	< 0.005	< 0.005	< 0.005	N/A	0.0419	N/A	0.00339*	N/A	< 0.005	N/A	N/A	0.0299	N/A	N/A	0.00331*	N/A	< 0.005	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Lead, mg/L (CAS NO - 7439-92-1)	4/22/2025	< 0.0005	< 0.0005	< 0.0005	**0.00281**	**0.000852**	< 0.0005	0.000384*	< 0.0005	< 0.0005	**0.0241**	< 0.0005	< 0.0005	< 0.0005	< 0.0005	N/A	N/A	**0.00644**	N/A	N/A	**0.0011**	N/A	< 0.0005	< 0.0005
	8/26/2025	N/A	< 0.0005	N/A	**0.0011**	N/A	< 0.0005	< 0.0005	< 0.0005	N/A	0.0195	N/A	< 0.0005	N/A	< 0.0005	N/A	N/A	0.00792	N/A	N/A	**0.00123**	N/A	< 0.0005	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Nickel, mg/L (CAS NO - 7440-02-0)	4/22/2025	< 0.005	**0.0395**	< 0.005	**0.00988**	**0.0651**	**0.0202**	**0.0674**	0.0048*	**0.0197**	**0.0805**	**0.00749**	**0.0165**	**0.0214**	< 0.005	N/A	N/A	**0.0527**	N/A	N/A	**0.0351**	N/A	**0.0063**	**0.0332**
	8/26/2025	N/A	**0.0407**	N/A	< 0.005	N/A	0.00488*	**0.118**	**0.0718**	N/A	0.0969	N/A	**0.0769**	N/A	0.00388*	N/A	N/A	0.033	N/A	N/A	**0.0338**	N/A	0.00424*	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	**0.149**	N/A	N/A	N/A	N/A	N/A	N/A	0.00292*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Selenium, mg/L (CAS NO - 7782-49-2)	4/22/2025	< 0.005	N/A	N/A	0.00474*	N/A	< 0.005	< 0.005	< 0.005	N/A	**0.00626**	N/A	< 0.005	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	< 0.005	N/A	< 0.005	< 0.005
	8/26/2025	N/A	N/A	N/A	0.00336*	N/A	< 0.005	< 0.005	< 0.005	N/A	0.0063	N/A	< 0.005	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	< 0.005	N/A	< 0.005	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Silver, mg/L (CAS NO - 7440-22-4)	4/22/2025	< 0.001	N/A	N/A	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A	< 0.001	N/A	< 0.001	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	< 0.001	N/A	< 0.001	< 0.001
	8/26/2025	N/A	N/A	N/A	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A	< 0.001	N/A	< 0.001	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	< 0.001	N/A	< 0.001	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Thallium, mg/L (CAS NO - 7440-28-0)	4/22/2025	< 0.001	N/A	N/A	< 0.001	N/A	< 0.001	< 0.001	**0.00109**	N/A	< 0.001	N/A	< 0.001	N/A	N/A	N/A	N/A	**0.00143**	N/A	N/A	**0.00121**	N/A	< 0.001	< 0.001
	8/26/2025	N/A	N/A	N/A	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A	< 0.001	N/A	< 0.001	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	< 0.001	N/A	< 0.001	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vanadium, mg/L (CAS NO - 7440-62-2)	4/22/2025	< 0.005	N/A	N/A	**0.00905**	N/A	< 0.005	< 0.005	< 0.005	N/A	**0.0845**	N/A	< 0.005	N/A	N/A	N/A	N/A	**0.00806**	N/A	N/A	0.00495*	N/A	< 0.005	< 0.005
	8/26/2025	N/A	N/A	N/A	0.00219*	N/A	< 0.005	< 0.005	< 0.005	N/A	0.0355	N/A	< 0.005	N/A	N/A	N/A	N/A	0.00384*	N/A	N/A	0.0039*	N/A	< 0.005	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Zinc, mg/L (CAS NO - 7440-66-6)	4/22/2025	< 0.02	0.0136*	< 0.02	**0.0329**	**0.0313**	< 0.02	< 0.02	0.0166*	< 0.02	**0.15**	< 0.02	**0.109**	< 0.02	< 0.02	N/A	N/A	**0.362**	N/A	N/A	**0.122**	N/A	< 0.02	**0.0231**
	8/26/2025	N/A	0.0176*	N/A	< 0.02	N/A	< 0.02	**0.166**	**0.0953**	N/A	0.172	N/A	**0.194**	N/A	< 0.02	N/A	N/A	0.492	N/A	N/A	**0.108**	N/A	< 0.02	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	**0.0869**	N/A	N/A	N/A	N/A	N/A	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Suspended Solids, mg/L (CAS NO - TSS)	4/22/2025	1.63*	**49**	< 1.88	**66**	**37**	**75**	**23**	**5.33**	**69**	**764**	< 1.88	**2**	**3.13**	**118**	N/A	**123**	**356**	N/A	**3.87**	**31**	N/A	< 1.88	**89.3**
	8/26/2025	N/A	**29**	N/A	**54**	N/A	**100**	**14.3**	**10.3**	N/A	3170	N/A	**10**	N/A	**104**	**9**	N/A	657	N/A	**35**	**61.5**	N/A	**3.75**	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	**54**	N/A	N/A	N/A	N/A	N/A	N/A	**77**	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.

Denotes Confirmed Outlier. Statistically Excluded.

Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.

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Summary of Groundwater Chemistry

Ottumwa-Wapello County Landfill - 90-SDP-01-75P

Appendix I VOC Constituents	Sample Date	MW-53 UPG	04-MW-56 DNG	91-MW-14 DNG	93-MW-31R DNG	93-MW-32 DNG	MW-39R DNG	MW-40 DNG	MW-58 DNG	MW-59 DNG	MW-61R DNG	MW-62 DNG	MW-63R DNG	MW-64 DNG	MW-65 DNG	MW-66 DNG	MW-68 DNG	MW-73 DNG	MW-75 DNG	MW-78 DNG	MW-79 DNG	MW-80 DNG	MW-81 DNG	GU-6 DNG
1,1,1,2-Tetrachloroethane, ug/L (CAS NO - 630-20-6)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1,1-Trichloroethane, ug/L (CAS NO - 71-55-6)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1,2,2-Tetrachloroethane, ug/L (CAS NO - 79-34-5)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1,2-Trichloroethane, ug/L (CAS NO - 79-00-5)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethane, ug/L (CAS NO - 75-34-3)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	0.521*	< 1	< 1	0.576*	N/A	< 1	< 1	0.555*	N/A	N/A	3.39	N/A	N/A	3.61	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	0.676*	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	3.49	N/A	N/A	3.41	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	0.815*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethene, ug/L (CAS NO - 75-35-4)	4/22/2025	< 2	< 2	N/A	< 2	N/A	< 2	< 2	< 2	< 2	< 2	N/A	< 2	< 2	< 2	N/A	N/A	< 2	N/A	N/A	< 2	N/A	< 2	< 2
	8/26/2025	N/A	< 2	N/A	< 2	N/A	< 2	< 2	< 2	N/A	< 2	N/A	< 2	N/A	< 2	N/A	N/A	< 2	N/A	N/A	< 2	N/A	< 2	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2,3-Trichloropropane, ug/L (CAS NO - 96-18-4)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dibromo-3-Chloropropane, ug/L (CAS NO - 96-12-8)	4/22/2025	< 5	< 5	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	< 5	< 5	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	< 5
	8/26/2025	N/A	< 5	N/A	< 5	N/A	< 5	< 5	< 5	N/A	< 5	N/A	< 5	< 5	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dibromoethane [EDB], ug/L (CAS NO - 106-93-4)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichlorobenzene, ug/L (CAS NO - 95-50-1)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloroethane, ug/L (CAS NO - 107-06-2)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloropropane, ug/L (CAS NO - 78-87-5)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	0.784*	N/A	N/A	0.408*	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	0.686*	N/A	N/A	0.413*	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene, ug/L (CAS NO - 106-46-7)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	1.1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	1.02	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Butanone, ug/L (CAS NO - 78-93-3)	4/22/2025	< 10	< 10	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A	< 10	N/A	N/A	< 10	N/A	< 10	< 10
	8/26/2025	N/A	< 10	N/A	< 10	N/A	< 10	< 10	< 10	N/A	< 10	N/A	< 10	N/A	< 10	N/A	N/A	< 10	N/A	N/A	< 10	N/A	< 10	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2-Hexanone, ug/L (CAS NO - 591-78-6)	4/22/2025	< 10	< 10	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A	< 10	N/A	N/A	< 10	N/A	< 10	< 10
	8/26/2025	N/A	< 10	N/A	< 10	N/A	< 10	< 10	< 10	N/A	< 10	N/A	< 10	N/A	< 10	N/A	N/A	< 10	N/A	N/A	< 10	N/A	< 10	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4-Methyl-2-Pentanone, ug/L (CAS NO - 108-10-1)	4/22/2025	< 10	< 10	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A	< 10	N/A	N/A	< 10	N/A	< 10	< 10
	8/26/2025	N/A	< 10	N/A	< 10	N/A	< 10	< 10	< 10	N/A	< 10	N/A	< 10	N/A	< 10	N/A	N/A	< 10	N/A	N/A	< 10	N/A	< 10	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acetone, ug/L (CAS NO - 67-64-1)	4/22/2025	< 10	4.65*	N/A	< 10	N/A	< 10	< 10	< 10	6.31*	< 10	N/A	< 10	< 10	< 10	N/A	N/A	< 10	N/A	N/A	< 10	N/A	< 10	< 10
	8/26/2025	N/A	3.98*	N/A	< 10	N/A	< 10	< 10	< 10	N/A	< 10	N/A	< 10	N/A	3.28*	N/A	N/A	< 10	N/A	N/A	< 10	N/A	< 10	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acrylonitrile, ug/L (CAS NO - 107-13-1)	4/22/2025	< 5	< 5	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	< 5	< 5	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	< 5
	8/26/2025	N/A	< 5	N/A	< 5	N/A	< 5	< 5	< 5	N/A	< 5	N/A	< 5	N/A	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzene, ug/L (CAS NO - 71-43-2)	4/22/2025	< 0.5	< 0.5	N/A	< 0.5	N/A	< 0.5	0.955	< 0.5	0.284*	< 0.5	N/A	< 0.5	< 0.5	< 0.5	N/A	N/A	0.353*	< 0.5	N/A	0.285*	N/A	< 0.5	< 0.5
	8/26/2025	N/A	< 0.5	N/A	< 0.5	N/A	< 0.5	0.665	< 0.5	N/A	< 0.5	N/A	< 0.5	N/A	0.523	N/A	N/A	< 0.5	N/A	N/A	< 0.5	N/A	< 0.5	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	0.324*	N/A	N/A	N/A	N/A	N/A	N/A	1.82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bromochloromethane, ug/L (CAS NO - 74-97-5)	4/22/2025	< 5	< 5	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	< 5	< 5	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	< 5
	8/26/2025	N/A	< 5	N/A	< 5	N/A	< 5	< 5	< 5	N/A	< 5	N/A	< 5	N/A	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bromodichloromethane, ug/L (CAS NO - 75-27-4)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bromoform, ug/L (CAS NO - 75-25-2)	4/22/2025	< 5	< 5	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	< 5	< 5	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	< 5
	8/26/2025	N/A	< 5	N/A	< 5	N/A	< 5	< 5	< 5	N/A	< 5	N/A	< 5	N/A	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bromomethane, ug/L (CAS NO - 74-83-9)	4/22/2025	< 4	< 4	N/A	< 4	N/A	< 4	< 4	< 4	< 4	< 4	N/A	< 4	< 4	< 4	N/A	N/A	< 4	N/A	N/A	< 4	N/A	< 4	< 4
	8/26/2025	N/A	< 4	N/A	< 4	N/A	< 4	< 4	< 4	N/A	< 4	N/A	< 4	N/A	< 4	N/A	N/A	< 4	N/A	N/A	< 4	N/A	< 4	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbon Disulfide, ug/L (CAS NO - 75-15-0)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride, ug/L (CAS NO - 56-23-5)	4/22/2025	< 2	< 2	N/A	< 2	N/A	< 2	< 2	< 2	< 2	< 2	N/A	< 2	< 2	< 2	N/A	N/A	< 2	N/A	N/A	< 2	N/A	< 2	< 2
	8/26/2025	N/A	< 2	N/A	< 2	N/A	< 2	< 2	< 2	N/A	< 2	N/A	< 2	N/A	< 2	N/A	N/A	< 2	N/A	N/A	< 2	N/A	< 2	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobenzene, ug/L (CAS NO - 108-90-7)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chlorodibromomethane, ug/L (CAS NO - 124-48-1)	4/22/2025	< 5	< 5	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	< 5	< 5	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	< 5
	8/26/2025	N/A	< 5	N/A	< 5	N/A	< 5	< 5	< 5	N/A	< 5	N/A	< 5	N/A	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chloroethane, ug/L (CAS NO - 75-00-3)	4/22/2025	< 4	< 4	N/A	< 4	N/A	< 4	0.841*	< 4	< 4	< 4	N/A	< 4	< 4	1.82*	N/A	N/A	< 4	N/A	N/A	< 4	N/A	< 4	< 4
	8/26/2025	N/A	< 4	N/A	< 4	N/A	< 4	< 4	< 4	N/A	< 4	N/A	< 4	N/A	2.38*	N/A	N/A	< 4	N/A	N/A	< 4	N/A	< 4	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A	N/A	N/A	N/A	N/A	N/A	2.58*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chloroform, ug/L (CAS NO - 67-66-3)	4/22/2025	< 3	< 3	N/A	< 3	N/A	< 3	< 3	< 3	< 3	< 3	N/A	< 3	< 3	< 3	N/A	N/A	< 3	N/A	N/A	< 3	N/A	< 3	< 3
	8/26/2025	N/A	< 3	N/A	< 3	N/A	< 3	< 3	< 3	N/A	< 3	N/A	< 3	N/A	< 3	N/A	N/A	< 3	N/A	N/A	< 3	N/A	< 3	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Chloromethane, ug/L (CAS NO - 74-87-3)	4/22/2025	< 3	< 3	N/A	< 3	N/A	< 3	< 3	< 3	< 3	< 3	N/A	< 3	< 3	< 3	N/A	N/A	< 3	N/A	N/A	< 3	N/A	< 3	< 3
	8/26/2025	N/A	< 3	N/A	< 3	N/A	< 3	< 3	< 3	N/A	< 3	N/A	< 3	N/A	< 3	N/A	N/A	< 3	N/A	N/A	< 3	N/A	< 3	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

SCS ENGINEERS

Summary of Groundwater Chemistry

Ottumwa-Wapello County Landfill - 90-SDP-01-75P

Appendix I VOC Constituents	Sample Date	MW-53 UPG	04-MW-56 DNG	91-MW-14 DNG	93-MW-31R DNG	93-MW-32 DNG	MW-39R DNG	MW-40 DNG	MW-58 DNG	MW-59 DNG	MW-61R DNG	MW-62 DNG	MW-63R DNG	MW-64 DNG	MW-65 DNG	MW-66 DNG	MW-68 DNG	MW-73 DNG	MW-75 DNG	MW-78 DNG	MW-79 DNG	MW-80 DNG	MW-81 DNG	GU-6 DNG
cis-1,2-Dichloroethene, ug/L (CAS NO - 156-59-2)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	**8.51**	< 1	< 1	**17.9**	N/A	< 1	< 1	< 1	N/A	N/A	**45.3**	< 1	**1.05**	**55**	**23.2**	0.832*	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	**2.42**	< 1	N/A	**15.6**	N/A	< 1	N/A	0.973*	N/A	N/A	**37.9**	N/A	**1.05**	**45.9**	**23**	0.668*	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	**3.97**	N/A	N/A	N/A	N/A	N/A	N/A	0.745*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
cis-1,3-Dichloropropene, ug/L (CAS NO - 10061-01-5)	4/22/2025	< 5	< 5	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	< 5	< 5	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	< 5
	8/26/2025	N/A	< 5	N/A	< 5	N/A	< 5	< 5	< 5	N/A	< 5	N/A	< 5	N/A	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ethylbenzene, ug/L (CAS NO - 100-41-4)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iodomethane, ug/L (CAS NO - 74-88-4)	4/22/2025	< 10	< 10	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A	< 10	N/A	N/A	< 10	N/A	< 10	< 10
	8/26/2025	N/A	< 10	N/A	< 10	N/A	< 10	< 10	< 10	N/A	< 10	N/A	< 10	N/A	< 10	N/A	N/A	< 10	N/A	N/A	< 10	N/A	< 10	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methylene Bromide, ug/L (CAS NO - 74-95-3)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Methylene Chloride, ug/L (CAS NO - 75-09-2)	4/22/2025	< 5	< 5	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	< 5	< 5	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	< 5
	8/26/2025	N/A	< 5	N/A	< 5	N/A	< 5	< 5	< 5	N/A	< 5	N/A	< 5	N/A	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Styrene, ug/L (CAS NO - 100-42-5)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Tetrachloroethene, ug/L (CAS NO - 127-18-4)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	**2.11**	< 1	0.712*	< 1	N/A	0.548*	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	**1.21**	N/A	**1.05**	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Toluene, ug/L (CAS NO - 108-88-3)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
trans-1,2-Dichloroethene, ug/L (CAS NO - 156-60-5)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	< 1	N/A	N/A	0.696*	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	0.403*	N/A	N/A	0.602*	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
trans-1,3-Dichloropropene, ug/L (CAS NO - 10061-02-6)	4/22/2025	< 5	< 5	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	< 5	< 5	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	< 5
	8/26/2025	N/A	< 5	N/A	< 5	N/A	< 5	< 5	< 5	N/A	< 5	N/A	< 5	N/A	< 5	N/A	N/A	< 5	N/A	N/A	< 5	N/A	< 5	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
trans-1,4-Dichloro-2-Butene, ug/L (CAS NO - 110-57-6)	4/22/2025	< 10	< 10	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A	< 10	N/A	N/A	< 10	N/A	< 10	< 10
	8/26/2025	N/A	< 10	N/A	< 10	N/A	< 10	< 10	< 10	N/A	< 10	N/A	< 10	N/A	< 10	N/A	N/A	< 10	N/A	N/A	< 10	N/A	< 10	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trichloroethene, ug/L (CAS NO - 79-01-6)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	**3.64**	< 1	< 1	< 1	N/A	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	< 1	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	**3.4**	N/A	0.517*	< 1	N/A	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Trichlorofluoromethane, ug/L (CAS NO - 75-69-4)	4/22/2025	< 4	< 4	N/A	< 4	N/A	< 4	< 4	< 4	< 4	< 4	N/A	< 4	< 4	< 4	N/A	N/A	< 4	N/A	N/A	< 4	N/A	< 4	< 4
	8/26/2025	N/A	< 4	N/A	< 4	N/A	< 4	< 4	< 4	N/A	< 4	N/A	< 4	N/A	< 4	N/A	N/A	< 4	N/A	N/A	< 4	N/A	< 4	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vinyl Acetate, ug/L (CAS NO - 108-05-4)	4/22/2025	< 10	< 10	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A	< 10	N/A	N/A	< 10	N/A	< 10	< 10
	8/26/2025	N/A	< 10	N/A	< 10	N/A	< 10	< 10	< 10	N/A	< 10	N/A	< 10	N/A	< 10	N/A	N/A	< 10	N/A	N/A	< 10	N/A	< 10	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride, ug/L (CAS NO - 75-01-4)	4/22/2025	< 1	< 1	N/A	< 1	N/A	< 1	0.738*	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	0.923*	< 1	< 1	**7.08**	**6.63**	< 1	< 1
	8/26/2025	N/A	< 1	N/A	< 1	N/A	< 1	0.41*	< 1	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	**2.25**	N/A	< 1	**4.68**	**6.54**	< 1	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	0.63*	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Xylenes, total, ug/L (CAS NO - 1330-20-7)	4/22/2025	< 3	< 3	N/A	< 3	N/A	< 3	< 3	< 3	< 3	< 3	N/A	< 3	< 3	< 3	N/A	N/A	< 3	N/A	N/A	< 3	N/A	< 3	< 3
	8/26/2025	N/A	< 3	N/A	< 3	N/A	< 3	< 3	< 3	N/A	< 3	N/A	< 3	N/A	< 3	N/A	N/A	< 3	N/A	N/A	< 3	N/A	< 3	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.

Denotes Confirmed Outlier. Statistically Excluded.

Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.

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Summary of Groundwater Chemistry

Ottumwa-Wapello County Landfill - 90-SDP-01-75P

Other Constituents	Sample Date	MW-53 UPG	04-MW-56 DNG	91-MW-14 DNG	93-MW-31R DNG	93-MW-32 DNG	MW-39R DNG	MW-40 DNG	MW-58 DNG	MW-59 DNG	MW-61R DNG	MW-62 DNG	MW-63R DNG	MW-64 DNG	MW-65 DNG	MW-66 DNG	MW-68 DNG	MW-73 DNG	MW-75 DNG	MW-78 DNG	MW-79 DNG	MW-80 DNG	MW-81 DNG	GU-6 DNG
Alkalinity, Total [CaCO3], mg/L (CAS NO - TALK)	4/22/2025	N/A	565	N/A	N/A	N/A	786	414	164	371	N/A	N/A	476	604	767	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Aluminum, mg/L (CAS NO - 7429-90-5)	4/22/2025	N/A	< 0.1	N/A	N/A	N/A	< 0.1	0.0998*	0.258	< 0.1	N/A	N/A	0.0956*	< 0.1	< 0.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Bicarbonate, mg/L (CAS NO - BICARB)	4/22/2025	N/A	565	N/A	N/A	N/A	786	414	164	371	N/A	N/A	476	604	767	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Carbonate, mg/L (CAS NO - CARB)	4/22/2025	N/A	< 5	N/A	N/A	N/A	< 5	< 5	< 5	< 5	N/A	N/A	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Iron, Total, mg/L (CAS NO - 7439-89-6)	4/22/2025	N/A	45	N/A	19.5	N/A	67.8	68	0.799	43.6	44.2	N/A	< 0.5	1.34	69.4	N/A	N/A	36.4	N/A	N/A	1.06	N/A	N/A	N/A
Manganese, mg/L (CAS NO - 7439-96-5)	4/22/2025	N/A	11.9	N/A	0.666	N/A	37.9	49	0.0828	12	8.33	N/A	0.578	0.159	3.86	N/A	N/A	5.83	N/A	N/A	18	N/A	N/A	N/A
Nitrate (NO3), mg/L (CAS NO - 14797-55-8)	4/22/2025	N/A	N/A	N/A	2.34	N/A	N/A	N/A	N/A	N/A	< 0.2	N/A	N/A	N/A	N/A	N/A	N/A	< 0.2	N/A	N/A	< 0.2	N/A	N/A	N/A
Sulfate, mg/L (CAS NO - 14808-79-8)	4/22/2025	N/A	507	N/A	159	N/A	1840	394	703	944	1570	N/A	1960	87.9	264	N/A	N/A	57.5	N/A	N/A	133	N/A	N/A	N/A
Sulfide, mg/L (CAS NO - 18496-25-8)	4/22/2025	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	< 1	N/A	N/A	< 1	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	< 1	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	8/26/2025	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Total Organic Carbon, mg/L (CAS NO - TOC)	4/22/2025	N/A	N/A	N/A	0.941*	N/A	N/A	N/A	N/A	N/A	3.215	N/A	N/A	N/A	N/A	N/A	N/A	1.202	N/A	N/A	2.04	N/A	N/A	N/A

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.

Denotes Confirmed Outlier. Statistically Excluded.

Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.

Appendix D

Statistical Method and Output

Statistical Method and Output

The purpose of this document is to describe the statistical methods used in the evaluation of groundwater analytical data collected from the groundwater monitoring network of the West municipal solid waste landfill unit (West MSWLF unit) at the Ottumwa-Wapello County Landfill.

Diagnostic and Exploratory Evaluations and Tests of Assumptions

The detection and assessment/corrective action monitoring statistical programs include diagnostic and exploratory evaluations and statistical tests of assumptions, as appropriate, including the following:

- Time Series Plots
- Shapiro-Wilk test for normality
- Ohio Environmental Protection Agency (EPA) Method for outliers
- Mann-Kendall/Sen's Slope trend test

Management of Non-Detect Data

Non-detect values in the dataset are managed using simple substitution or the Kaplan-Meier estimator. If less than 15% of the data are non-detects, simple substitution is used, where non-detect values are assigned a concentration of one-half (½) of the practical quantification limit (PQL). If greater than 15% but less than 50% of the data are non-detects, the Kaplan-Meier estimator is used to define the distribution for the dataset. If non-detects comprise greater than 50% of the available data, non-parametric statistical methods are used.

Management of Outliers

Background datasets are evaluated for outliers using the Ohio EPA Method as included in the Sanitas™ statistical software program and described below, which includes the use of Dixon's, Rosner's, and Tukey's outlier tests, as appropriate based on the diagnostic tests, for the datasets that contain less than 75% of the measured concentrations below the PQL. Outliers are not confirmed unless a physical cause or explanation for the outlier is determined.

Management of Data (ND data < 75%)

If less than 75% of the background dataset is below the PQL, outliers are statistically evaluated using the following guidelines.

- A parametric dataset with $n < 20$ is evaluated with the Dixon's outlier test.
- A parametric dataset with $n \geq 20$ is evaluated with the Rosner's outlier test.
- A non-parametric dataset is evaluated with the Tukey's outlier test.

In accordance with the Ohio EPA Method, if a statistically significant outlier is not found using the above tests, but the highest value data point exceeds the second highest data point by an order of magnitude, the highest point is considered an outlier.

Management of Data (ND data ≥ 75%)

If greater than or equal to 75% of the background dataset is less than the PQL, outliers are statistically evaluated using the following guidelines.

- Single detection ≥ the PQL:
  - If ≥ 50% of the background dataset has detections ≥ the method detection limit (MDL), any value ≥ two times the PQL of background is considered an outlier.
  - If < 50% of the background dataset has detections ≥ the MDL, any value ≥ the PQL of background is considered an outlier.
- Two or more detections ≥ the PQL:
  - If ≥ 50% of the background dataset has detections ≥ the MDL, any value ≥ three times the PQL of background is considered an outlier.
  - If < 50% of the background dataset has detections ≥ the MDL, any value ≥ two times the PQL of background is considered an outlier.

Confirmed outliers, if any, are shown in the Summary of Groundwater Chemistry included in the Annual Water Quality Report. Analytical data prior to 2025 is available in the 2024 Annual Water Quality Report, dated March 3, 2025 (Doc #112389).

Detection Monitoring Statistical Program/Inorganic Acid Mine Drainage Statistical Evaluation

Groundwater monitoring data associated with the West MSWLF unit for the detection monitoring program and inorganic data from acid mine drainage (AMD) impacted monitoring wells is statistically analyzed by the diagnostic evaluations listed above and by interwell prediction limits, intrawell prediction limits, and the double quantification method. The procedures for these evaluations are described below.

For acid mine drainage wells, both interwell and intrawell prediction limits were selected for the determination of statistically significant increases (SSIs) over background for inorganic constituents with historical detections in background. An SSI must be indicated in both the interwell and intrawell statistical evaluation for the SSI to be considered. Data from the most recent sampling event is compared to the prediction limits for the determination of SSIs.

Interwell Prediction Limits with Retesting

- If the dataset has a normal distribution (or can be transformed to a normal distribution using Ladder of Powers), parametric interwell prediction limits are calculated if at least five datasets have been collected from the background monitoring point(s).
- If the dataset does not have a normal distribution (and cannot be transformed to a normal distribution using Ladder of Powers) or has greater than 50% non-detects, nonparametric interwell prediction limits are calculated if at least five datasets have been collected from the background monitoring point(s).
- If an SSI above the prediction limit is indicated, retesting samples using the 1-of-2 retesting scheme should be collected prior to the next regularly scheduled sampling event with temporal sample spacing consideration to provide samples with greater independence. If the retesting result is above the prediction limit, the SSI is confirmed, and the monitoring point should be placed into the assessment monitoring program for the monitoring wells or treated with the leachate for the groundwater underdrains. If the retesting sample concentration is below the prediction limit, the SSI is not confirmed, and the monitoring point continues in the detection monitoring program.
- If an SSI above the prediction limit is indicated for AMD wells using both interwell and intrawell statistical methods, further evaluation will be performed regarding the impact of AMD on affected parameters.

Intrawell Prediction Limits

- If the dataset has a normal distribution (or can be transformed to a normal distribution using Ladder of Powers), parametric intrawell prediction limits are calculated if at least six samples have been collected.
- If the dataset does not have a normal distribution (and cannot be transformed to a normal distribution using Ladder of Powers) or has greater than 50% non-detects, non-parametric intrawell prediction limits are calculated if at least six samples have been collected.
- If an SSI above the prediction limit is indicated for AMD wells using both interwell and intrawell statistical methods, further evaluation will be performed regarding the impact of AMD on affected parameters.
- If an SSI above the prediction limit is indicated for the groundwater underdrains, retesting samples using the 1-of-2 retesting scheme should be collected prior to the next regularly scheduled sampling event with temporal sample spacing consideration to provide samples with greater independence. If the retesting result is above the prediction limit, the SSI is confirmed, and the discharge will be treated with the leachate. If the retesting sample concentration is below the prediction limit, the SSI is not confirmed, and the monitoring point continues in the detection monitoring program.

Updating the Background Dataset for Intrawell Prediction Limits

If no SSI is confirmed for any two-year period, the intrawell background datasets are updated using the following procedure:

- Test the new dataset for normal distribution either outright or through a transformation using Ladder of Powers using the Shapiro-Wilk test.
- Test the new dataset for statistically significant outliers using the Ohio EPA Method and remove the confirmed outliers (see the "Management of Outliers" section).
- Test the new dataset for statistically significant trends using the Mann-Kendall/Sen's Slope trend test. If a statistically significantly increasing trend is detected, the monitoring point will be placed into the assessment monitoring program or treated with the leachate, whichever is appropriate.
- If the dataset has a normal distribution and no statistically significant increasing trend is present, a two-sample Welch's t-test at a 0.01 significance level is performed to compare the current background to the most recent two years of detection monitoring data. If the Welch's t-test is significant and shows that the most recent two years of concentration data appear to be increasing, the background will not be updated.
- If the dataset does not have a normal distribution and no statistically significant increasing trend is present, a two-sample non-parametric Wilcoxon rank-sum test (also known as the Mann-Whitney test) at a 0.01 significance level is performed to compare current background to the most recent two years of detection monitoring data. If the Wilcoxon rank-sum test is significant and shows that the most recent two years of concentration data appear to be increasing, the background will not be updated.
- If the Welch's t-test or the Wilcoxon rank-sum tests are not significant, the most recent two years of detection monitoring data will be added to the intrawell background dataset. The process will repeat every two years in which an SSI is not confirmed.

Double Quantification Method

The quasi-statistical "double quantification" method is used for constituents not detected in the background dataset. If a constituent is detected in the compliance dataset that has not been historically detected in the background dataset, that constituent must be retested before the next

regularly scheduled sampling event. If the retesting results confirm the original detection with a quantifiable detection, the SSI is confirmed, and the monitoring point must be placed into the assessment monitoring program or treated with the leachate for the groundwater underdrain discharges.

Assessment Monitoring Program/Organic Acid Mine Drainage Statistical Evaluation

The assessment monitoring statistical evaluations are performed using the most recent eight samples or all samples if less than eight samples are available. Transformation of the distribution is not considered. The analysis is performed for detected Appendix II parameters for the assessment monitoring program and for organic parameters and sulfide for the AMD-impacted monitoring wells.

Confidence Intervals or Confidence Bands

- A parametric confidence interval around a normal mean is calculated if the dataset has a normal distribution and no statistically significant trend is present.
- A non-parametric confidence interval around a median is calculated if the dataset does not have a normal distribution and no statistically significant trend is present.
- Non-parametric confidence bands around a Theil-Sen trend line are calculated if the dataset has a statistically significant trend.

In the event that the lower confidence limit or any part of the lower confidence band, as appropriate, exceeds the GWPS, then the monitoring point is declared out of compliance, and an assessment of corrective measures (ACM) is required. An ACM report for the West MSWLF unit was submitted September 23, 2019 (Doc #95983) and approved in correspondence dated July 29, 2020 (Doc #98166).

Statistical Software Output

Sanitas™ statistical software is used to perform the statistical evaluations. The statistical output for the 1st and 2nd 2025 statistical evaluations are included in Attachments A and B of this appendix, respectively.

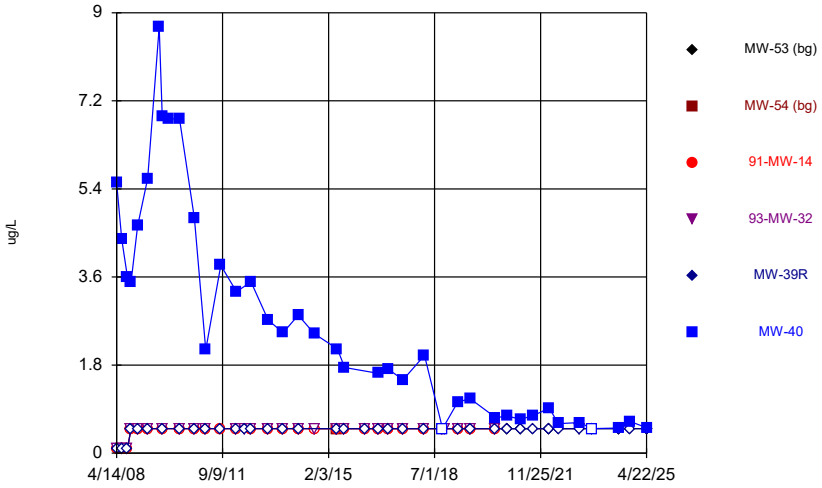
Attachment A

1st 2025 Statistical Evaluation Output

Time Series Plots

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

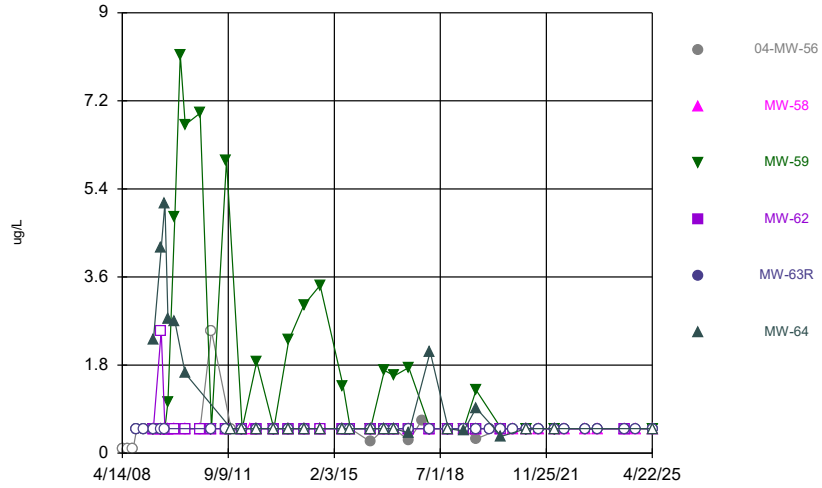
Time Series



Constituent: 1,1-Dichloroethane Analysis Run 5/27/2025 2:02 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

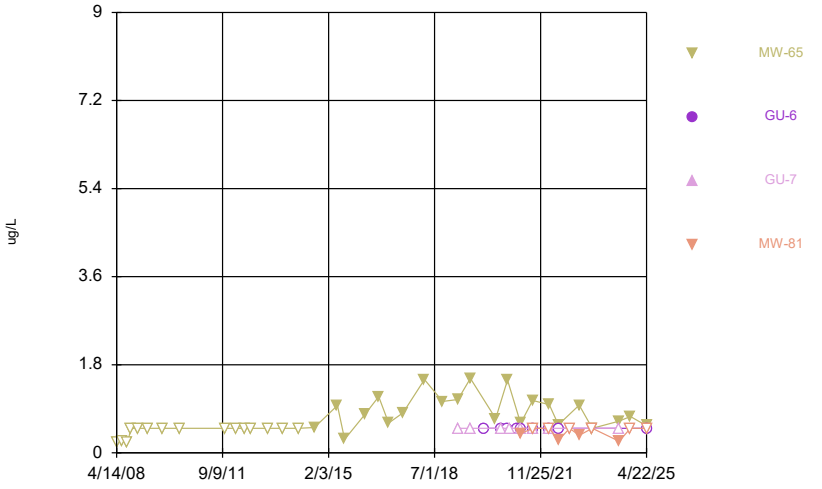
Time Series



Constituent: 1,1-Dichloroethane Analysis Run 5/27/2025 2:02 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

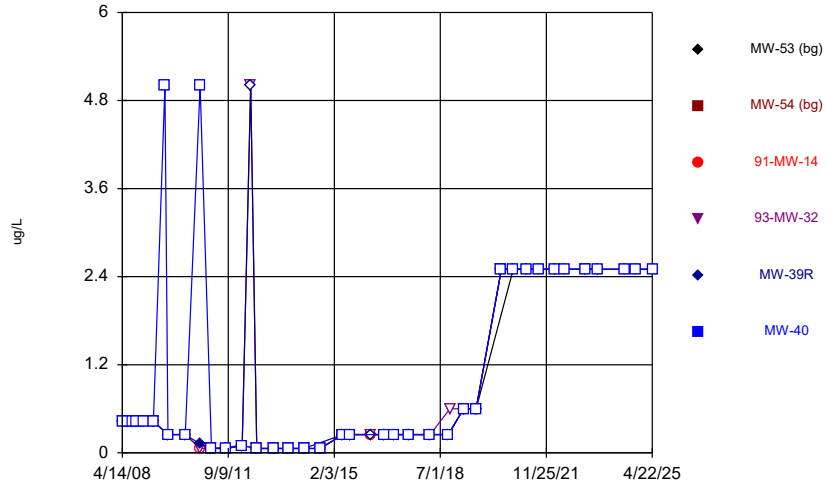
Time Series



Constituent: 1,1-Dichloroethane Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

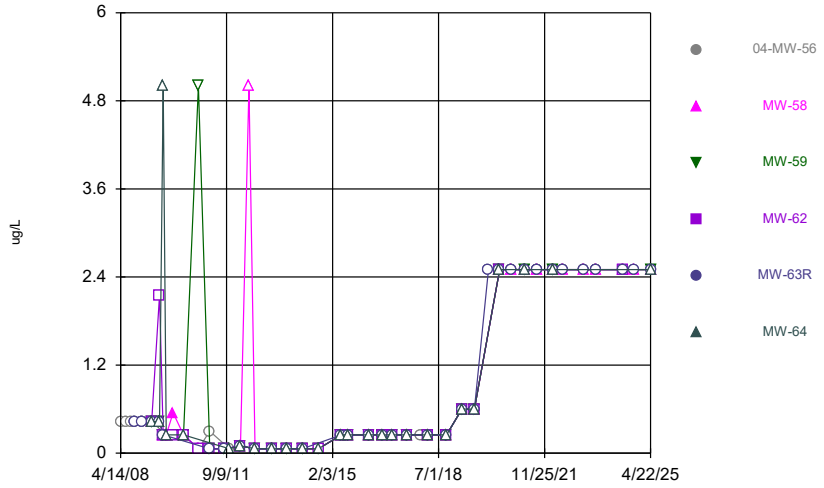
Time Series



Constituent: 1,2-Dibromo-3-chloropropane Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Serie
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

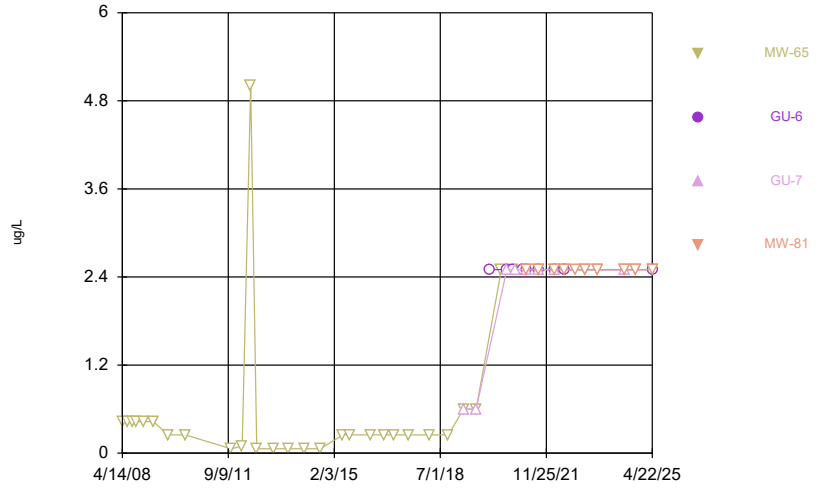
Time Series



Constituent: 1,2-Dibromo-3-chloropropane Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Serie
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

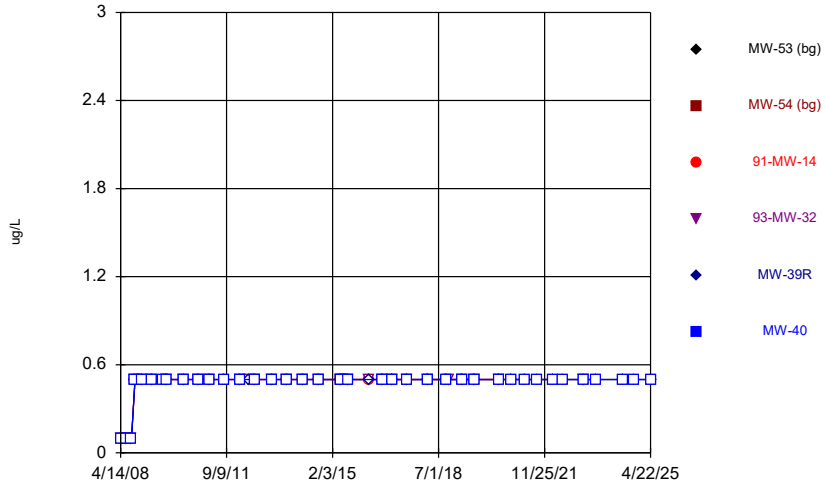
Time Series



Constituent: 1,2-Dibromo-3-chloropropane Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Serie
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

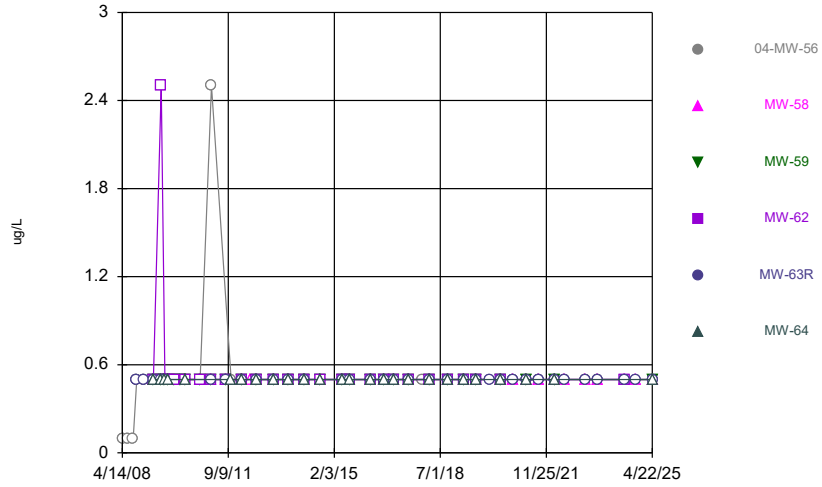
Time Series



Constituent: 1,2-Dichloroethane Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

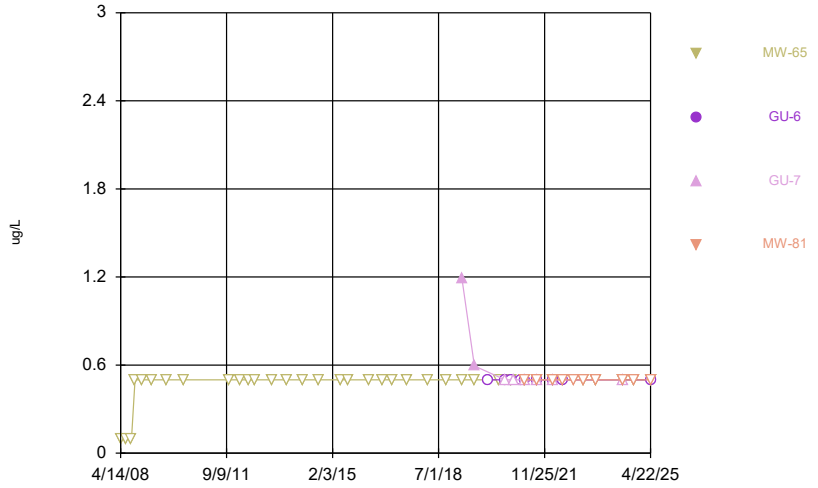
Time Series



Constituent: 1,2-Dichloroethane Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

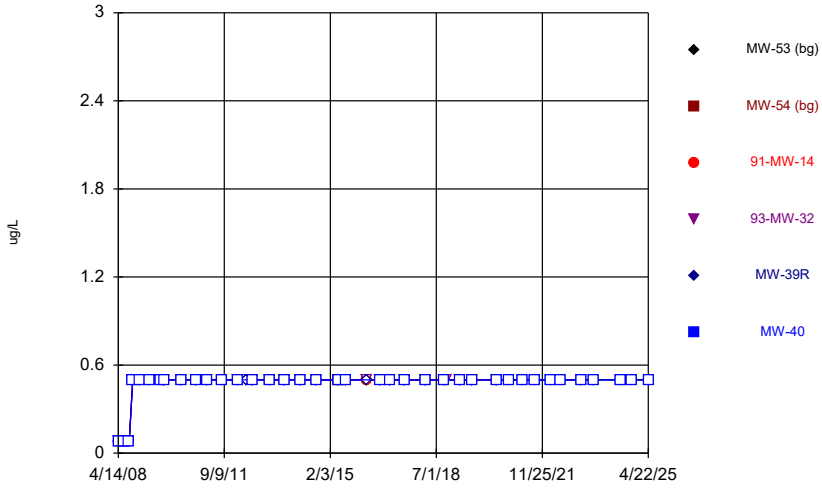
Time Series



Constituent: 1,2-Dichloroethane Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

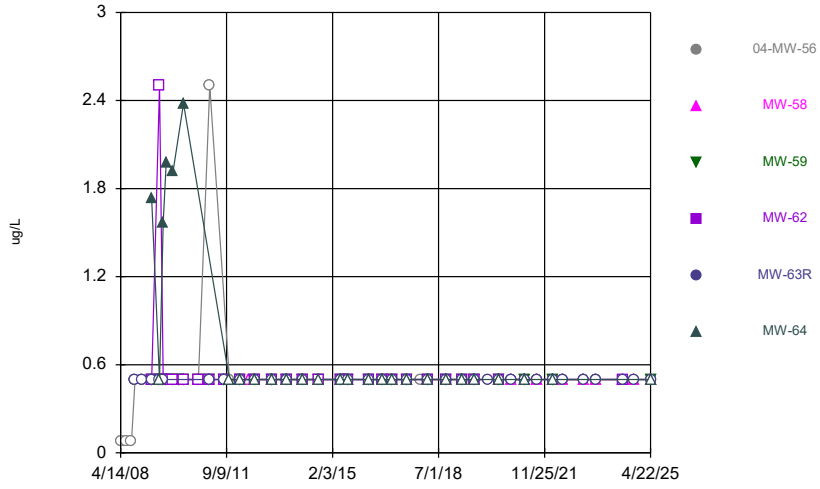
Time Series



Constituent: 1,4-Dichlorobenzene Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

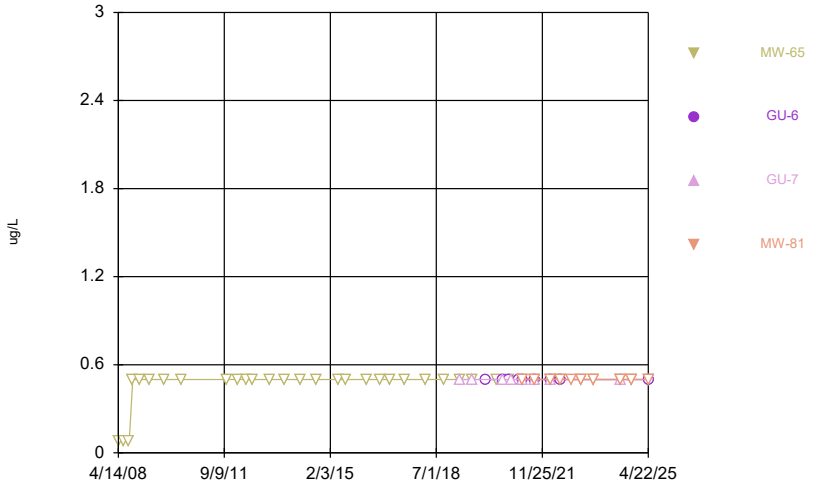
Time Series



Constituent: 1,4-Dichlorobenzene Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

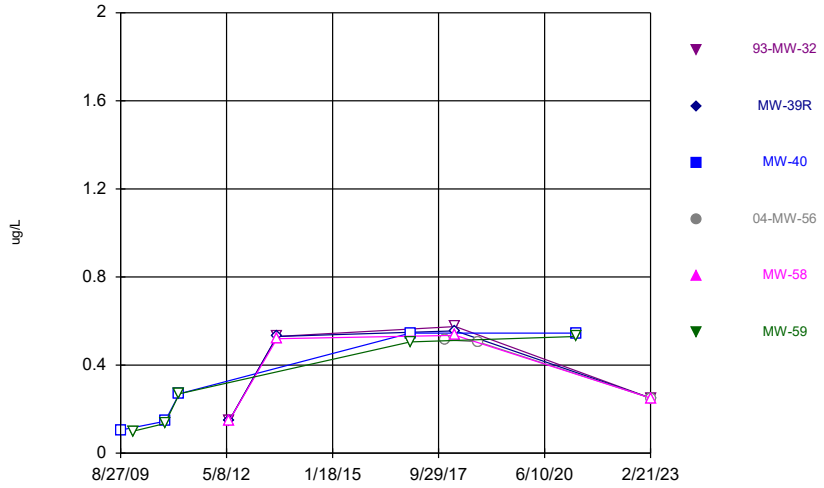
Time Series



Constituent: 1,4-Dichlorobenzene Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

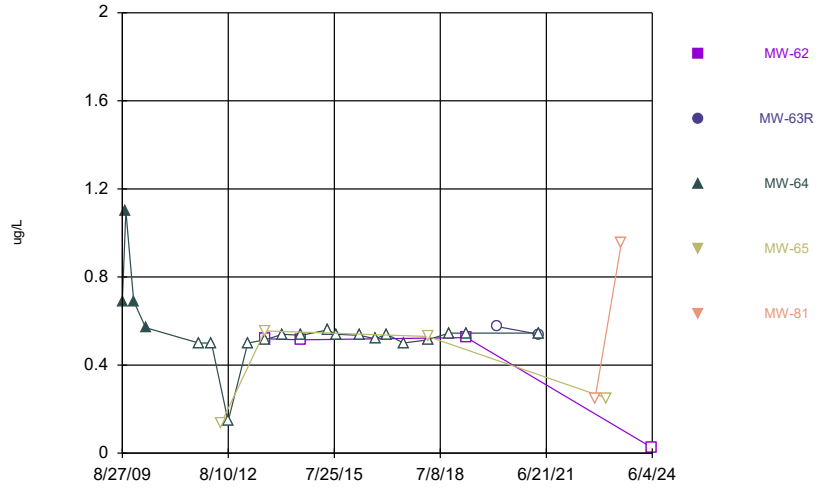
Time Series



Constituent: 2,4,5-TP [Silvex] [2C] Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

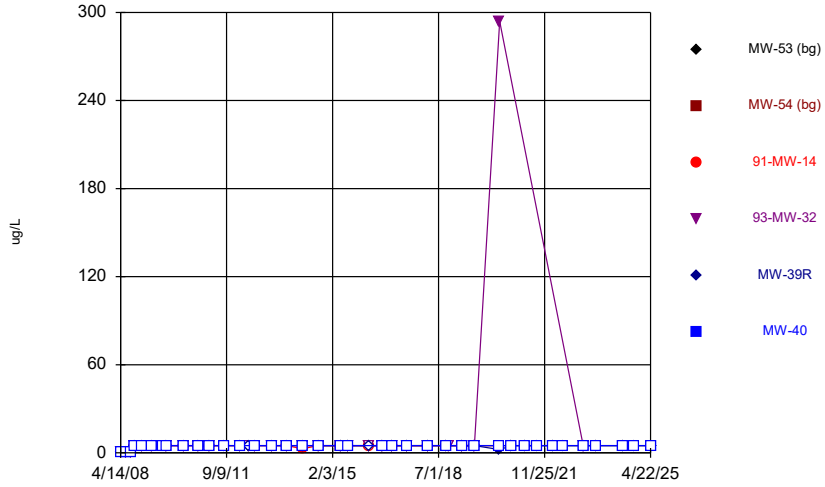
Time Series



Constituent: 2,4,5-TP [Silvex] [2C] Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

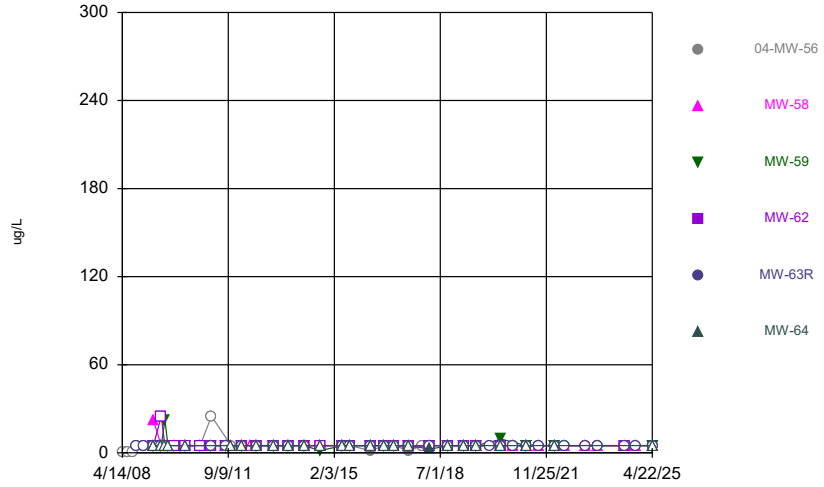
Time Series



Constituent: 2-Butanone Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

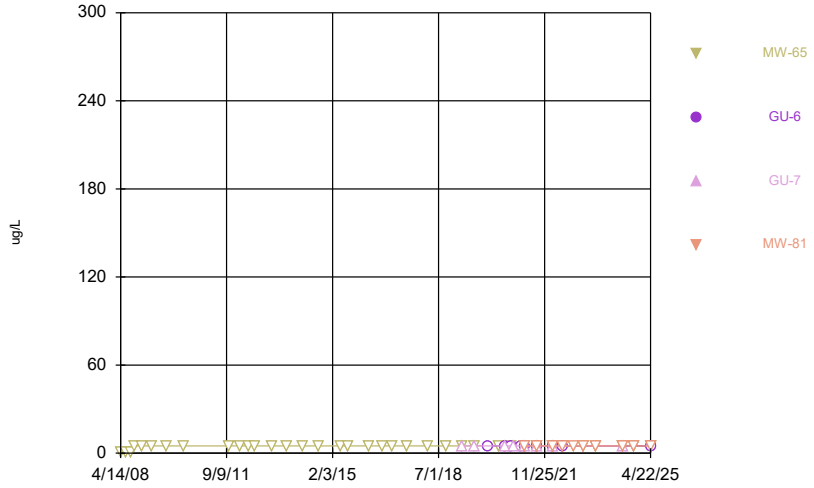
Time Series



Constituent: 2-Butanone Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

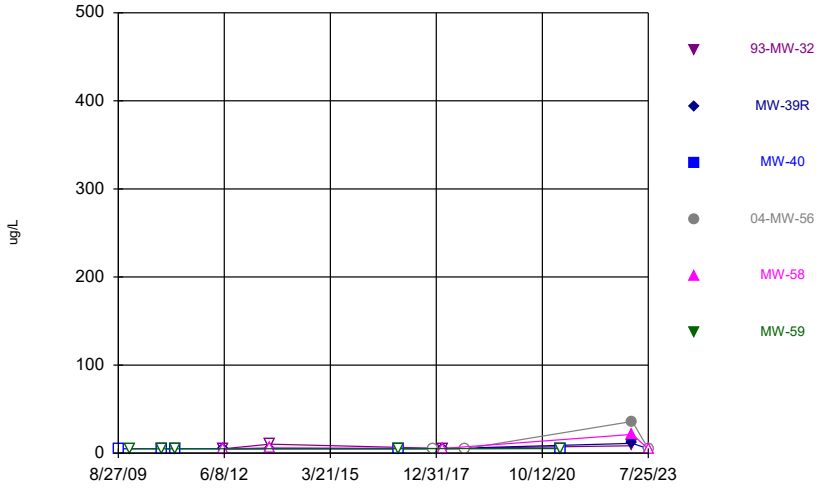
Time Series



Constituent: 2-Butanone Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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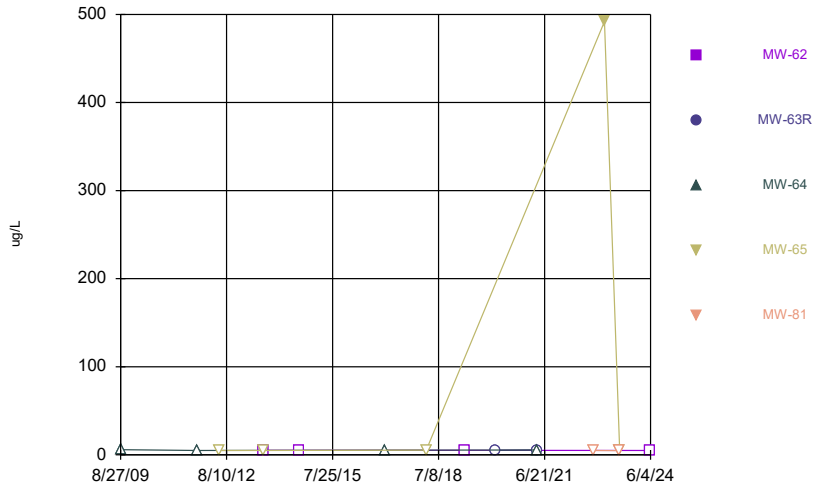
Time Series



Constituent: 2-Methylnaphthalene Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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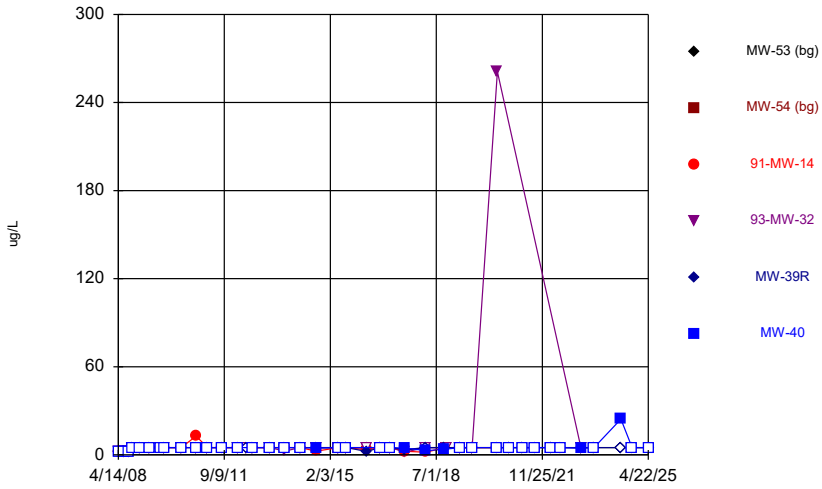
Time Series



Constituent: 2-Methylnaphthalene Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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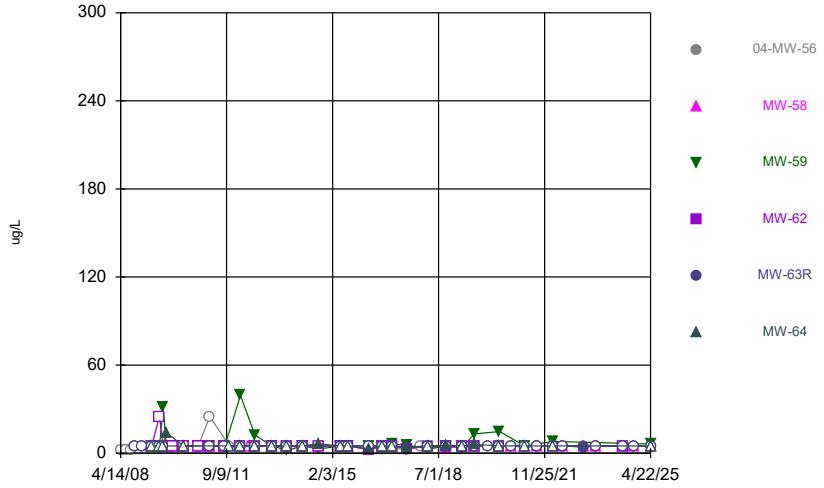
Time Series



Constituent: Acetone Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

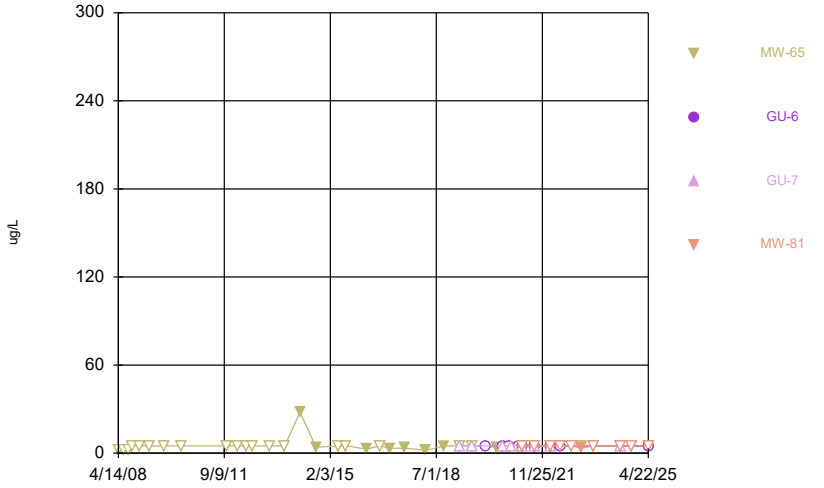
Time Series



Constituent: Acetone Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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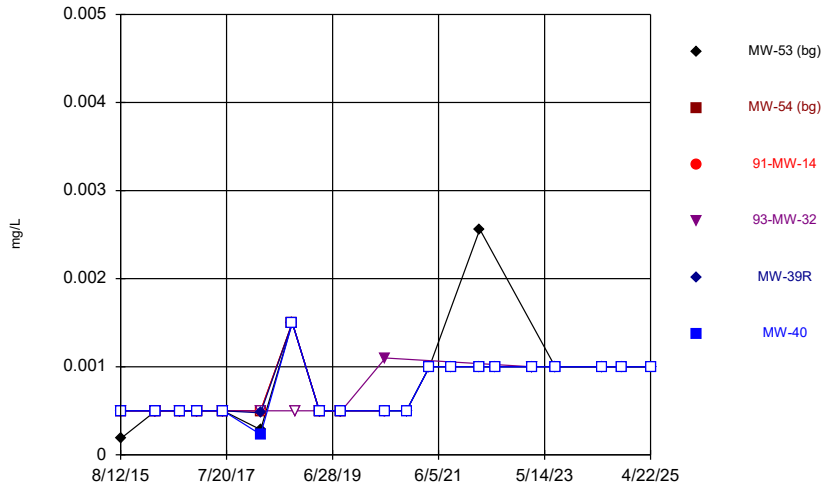
Time Series



Constituent: Acetone Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

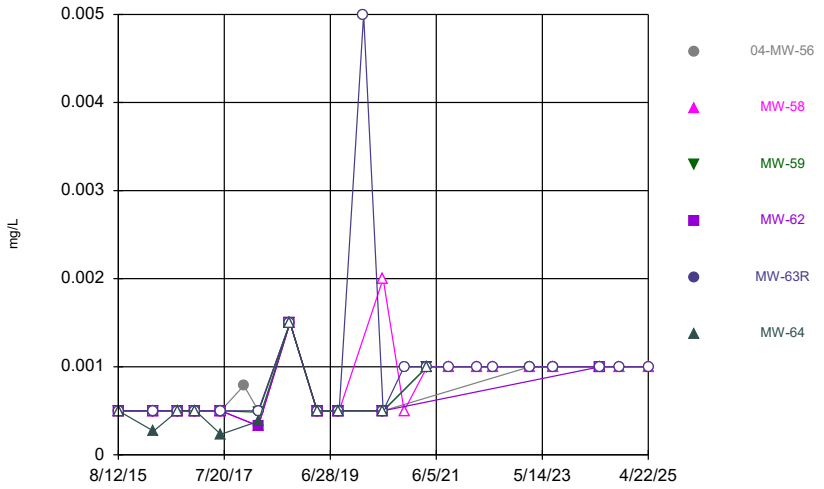
Time Series



Constituent: Antimony Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

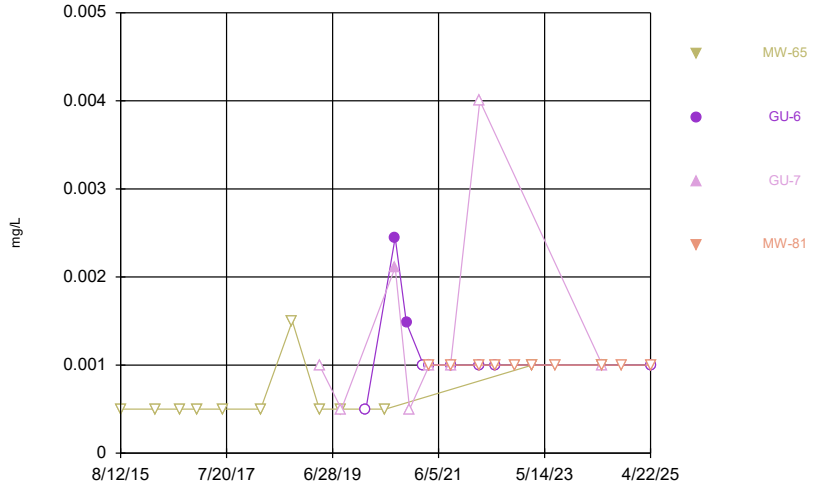
Time Series



Constituent: Antimony Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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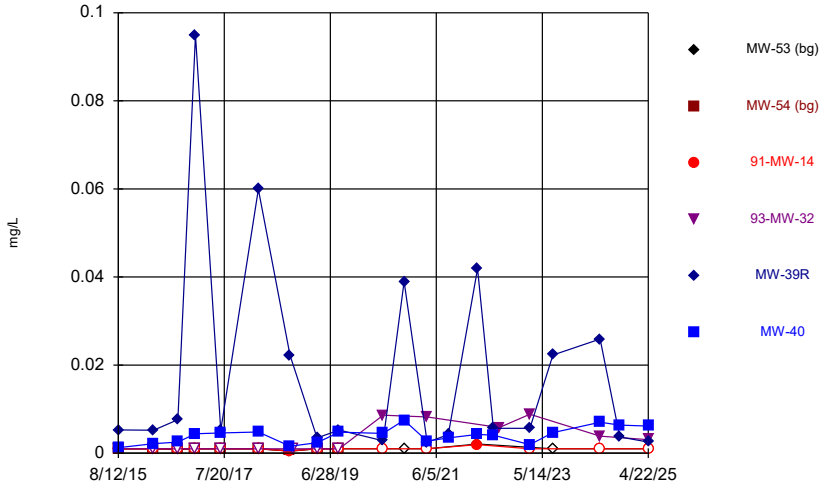
Time Series



Constituent: Antimony Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
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Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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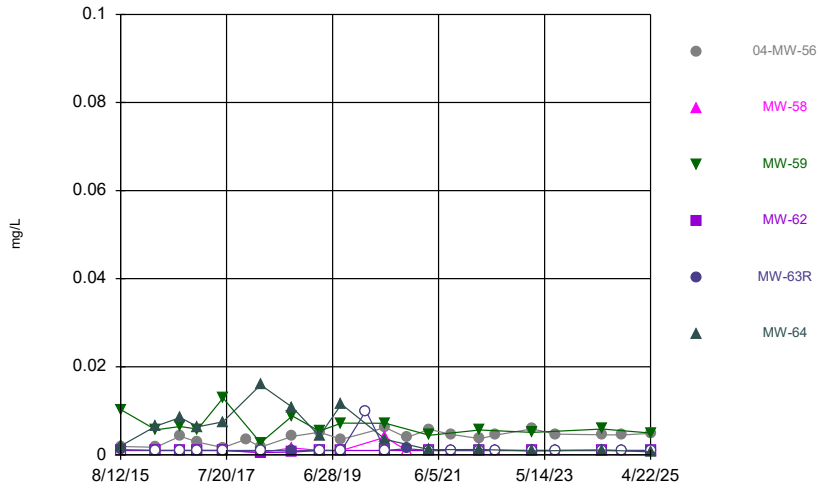
Time Series



Constituent: Arsenic Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

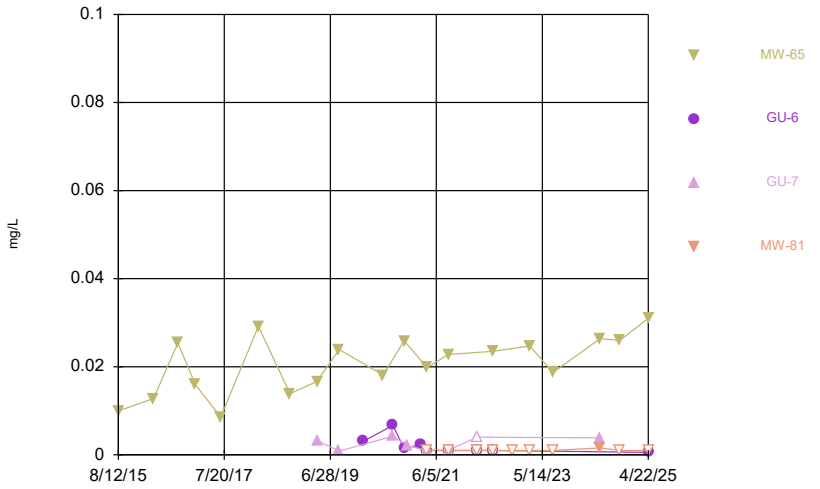
Time Series



Constituent: Arsenic Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

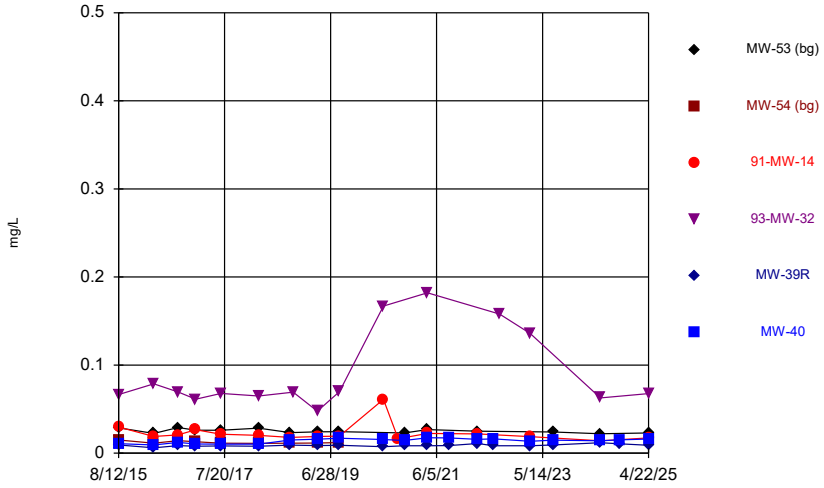
Time Series



Constituent: Arsenic Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
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Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

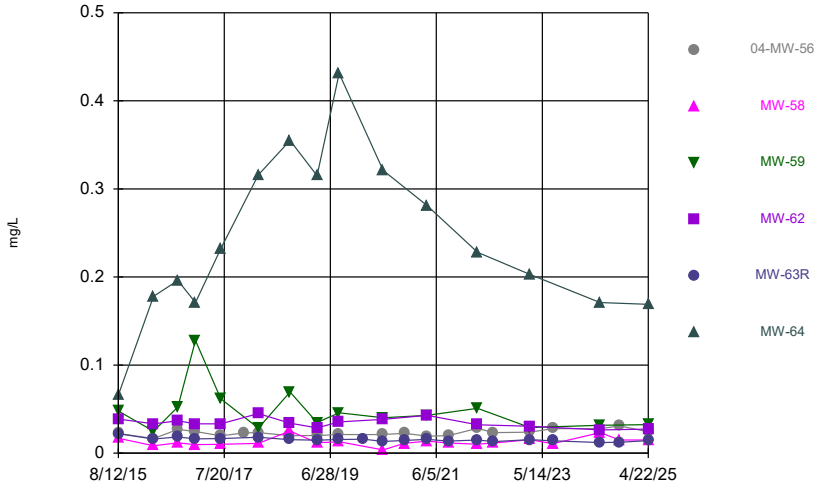
Time Series



Constituent: Barium Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

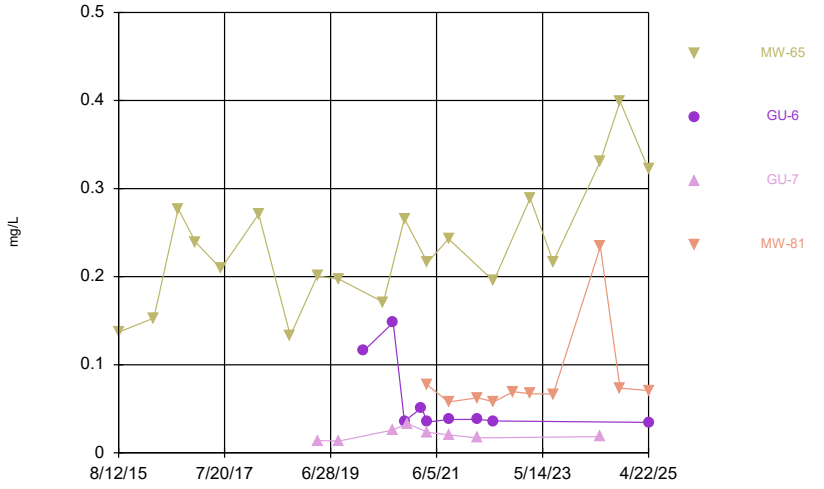
Time Series



Constituent: Barium Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

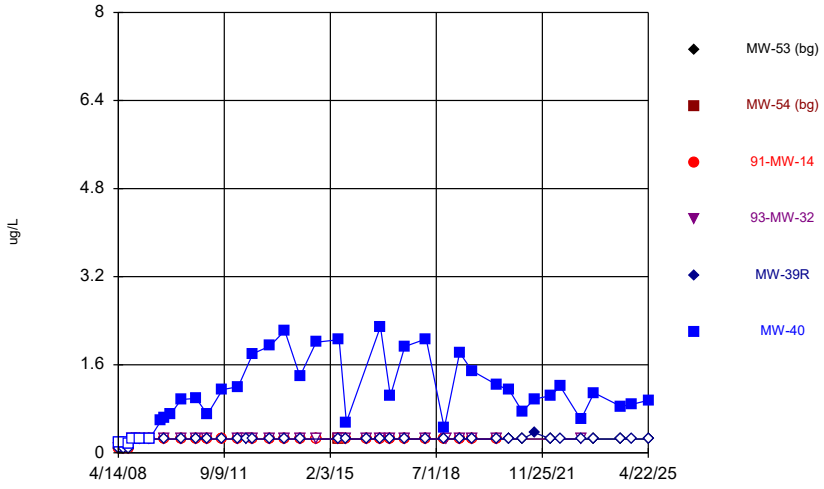
Time Series



Constituent: Barium Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
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Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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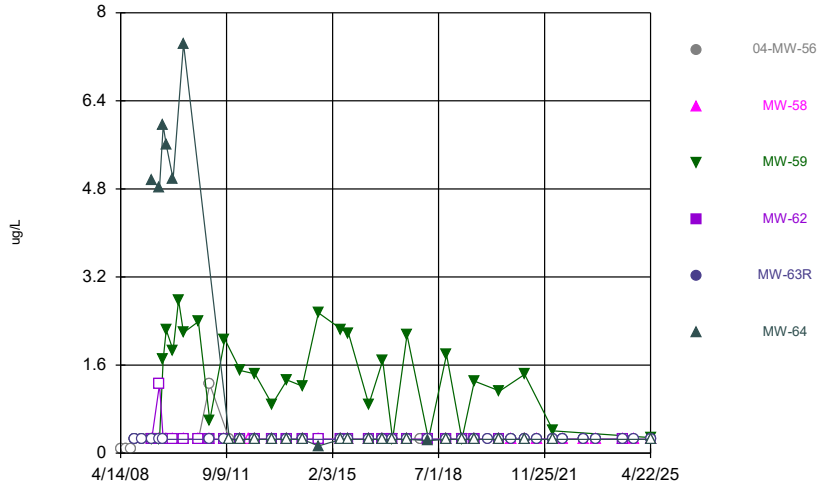
Time Series



Constituent: Benzene Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

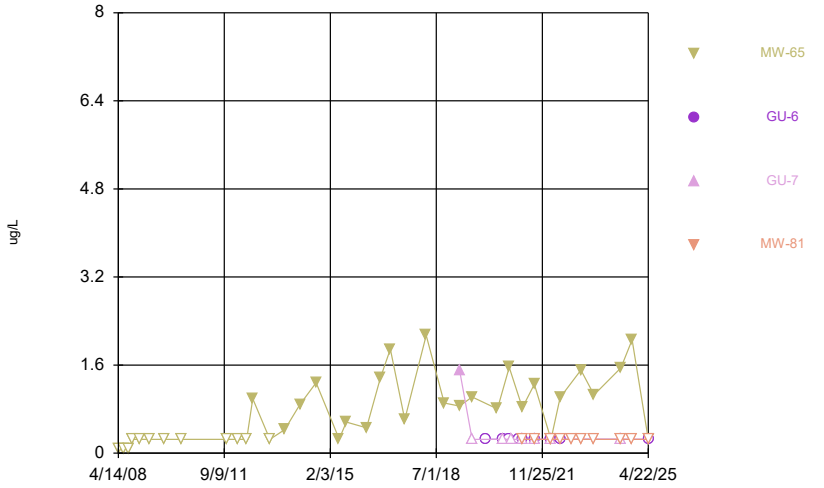
Time Series



Constituent: Benzene Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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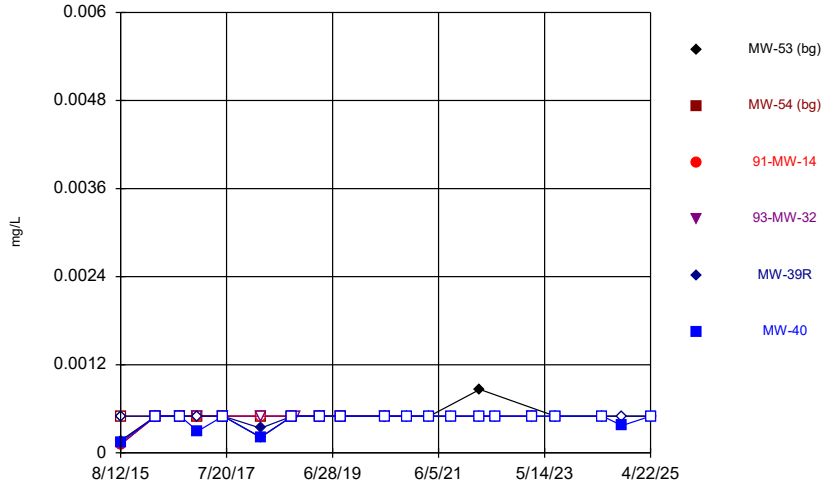
Time Series



Constituent: Benzene Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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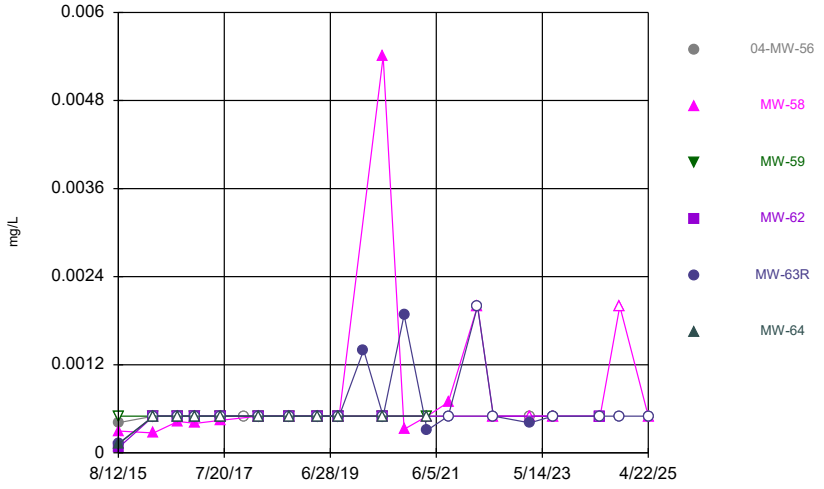
Time Series



Constituent: Beryllium Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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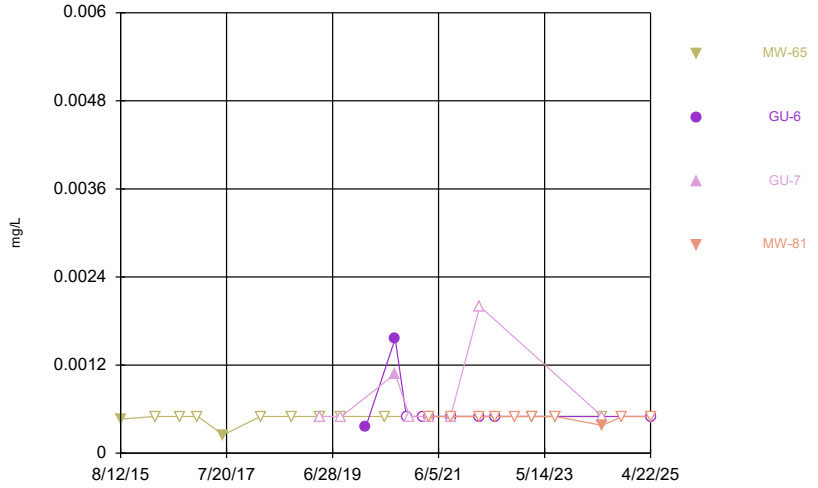
Time Series



Constituent: Beryllium Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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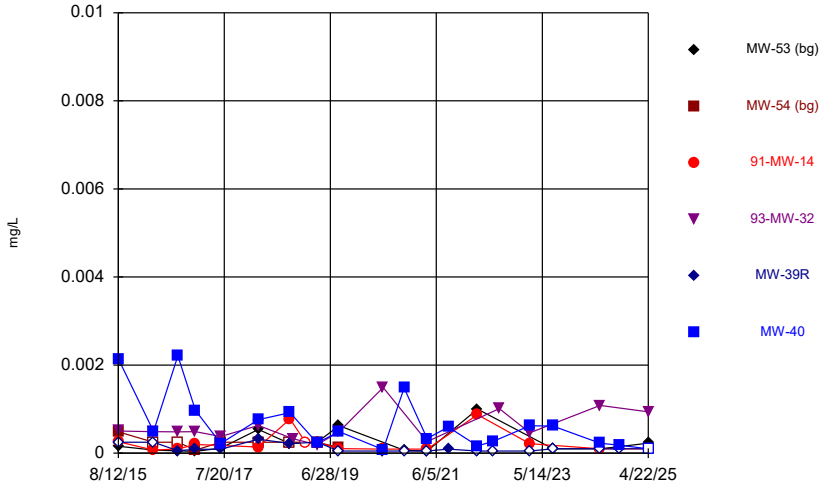
Time Series



Constituent: Beryllium Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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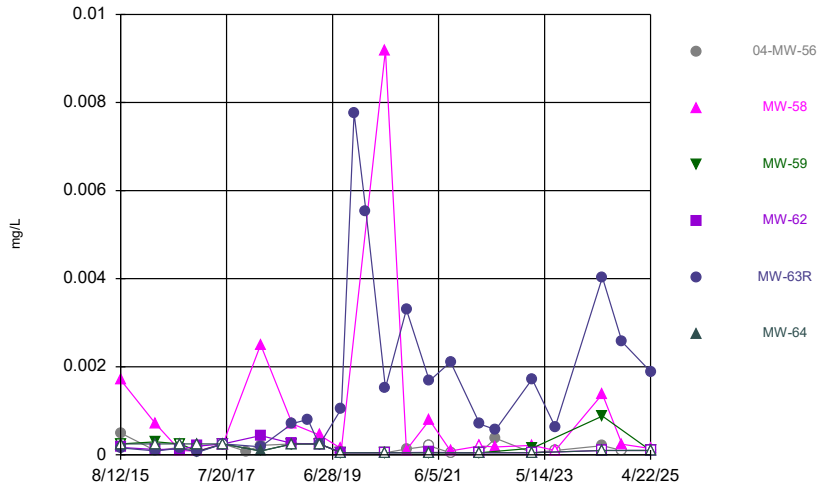
Time Series



Constituent: Cadmium Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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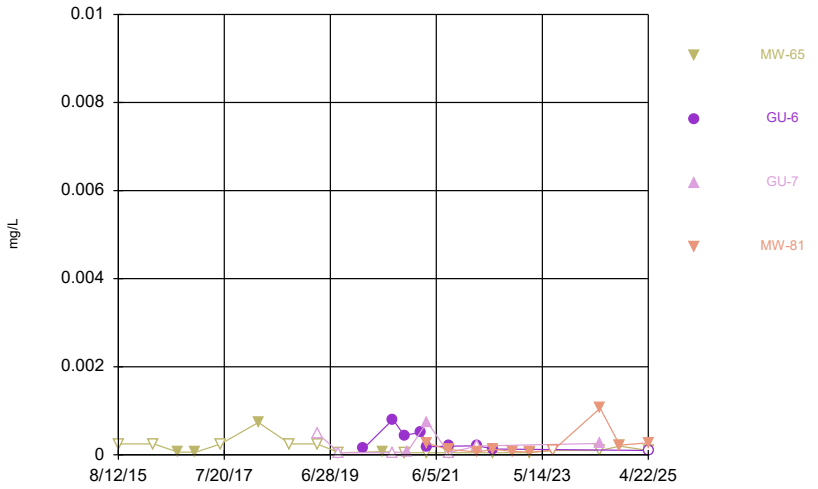
Time Series



Constituent: Cadmium Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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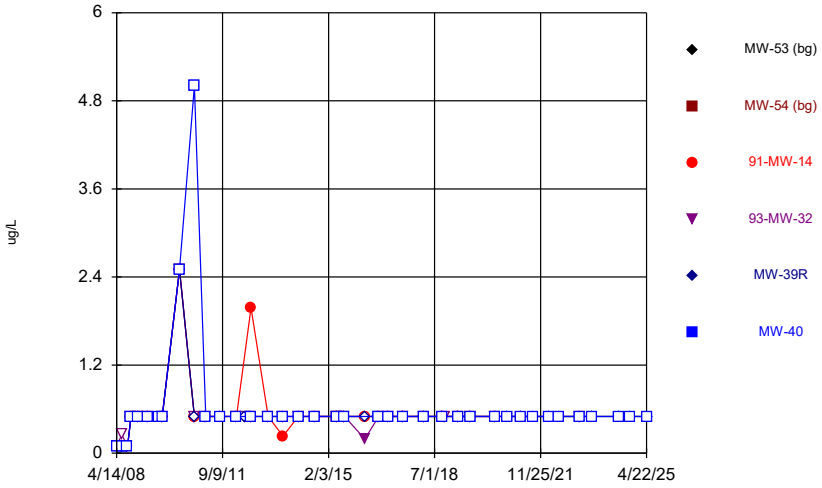
Time Series



Constituent: Cadmium Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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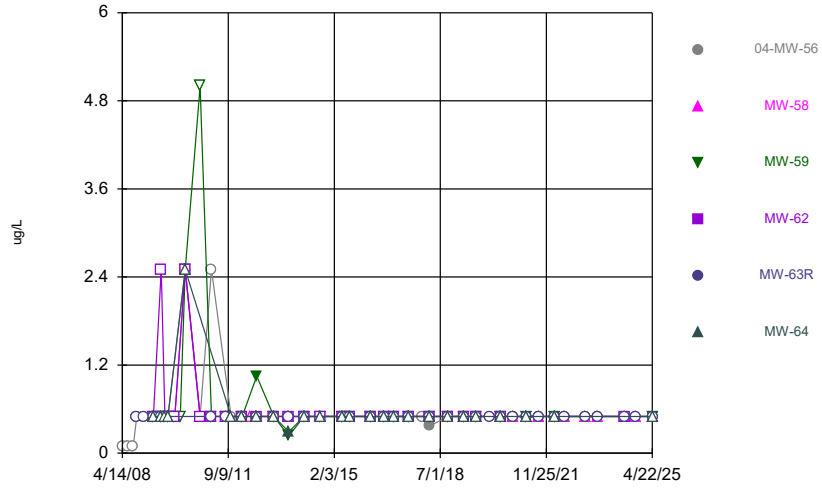
Time Series



Constituent: Carbon disulfide Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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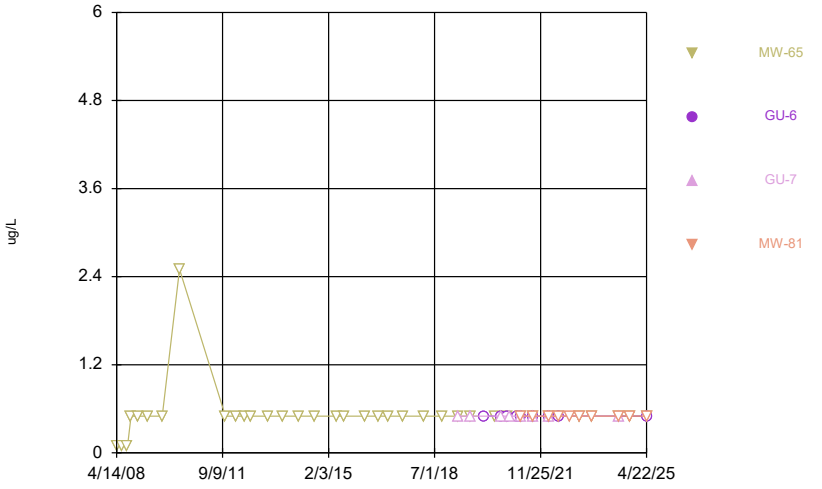
Time Series



Constituent: Carbon disulfide Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

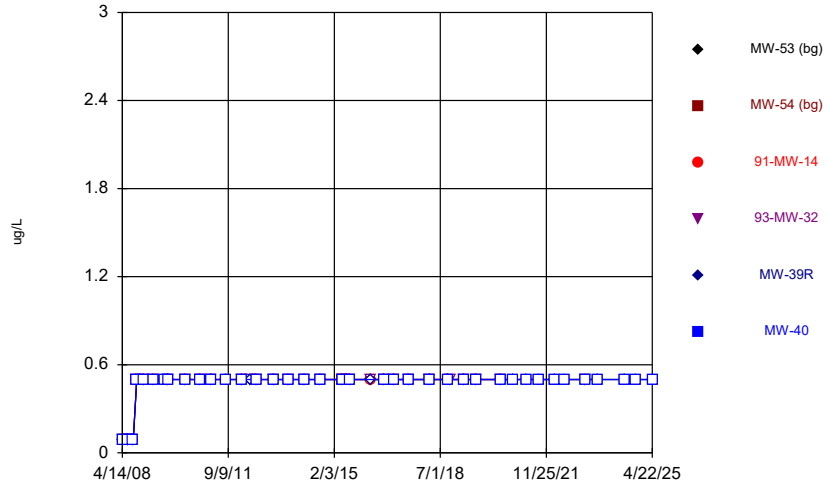
Time Series



Constituent: Carbon disulfide Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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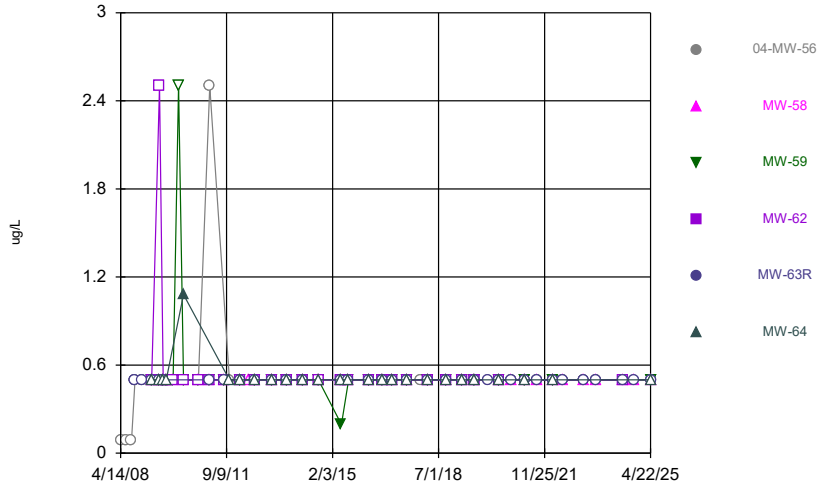
Time Series



Constituent: Chlorobenzene Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

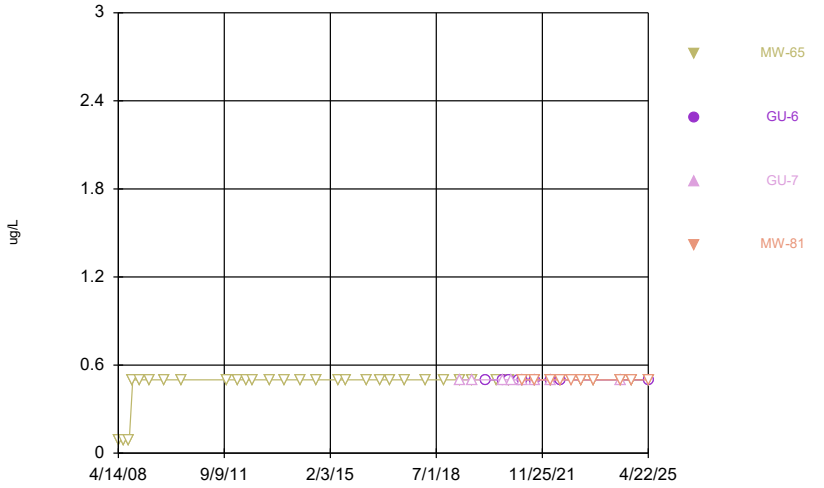
Time Series



Constituent: Chlorobenzene Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

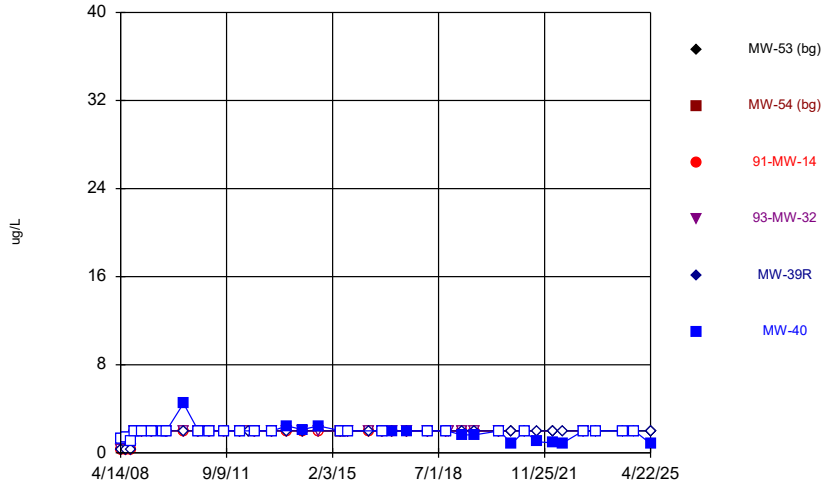
Time Series



Constituent: Chlorobenzene Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

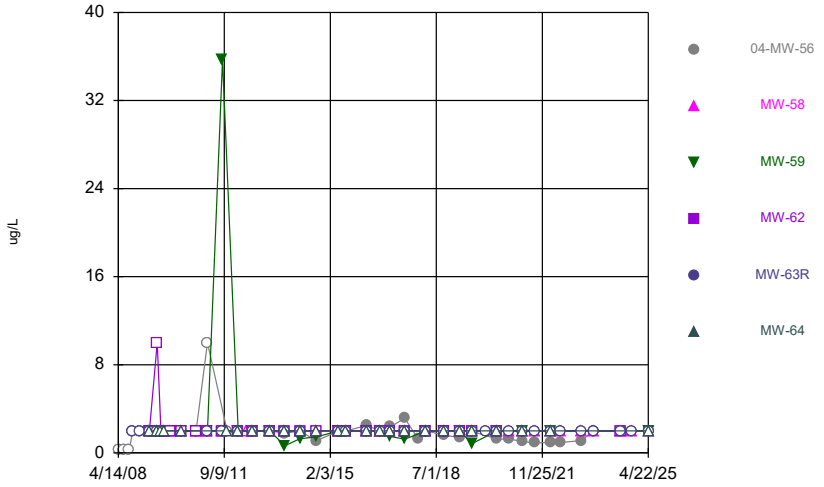
Time Series



Constituent: Chloroethane Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

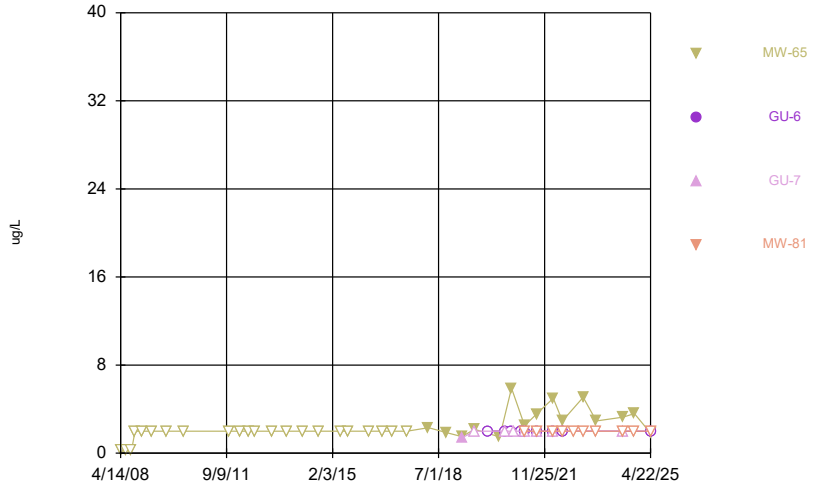
Time Series



Constituent: Chloroethane Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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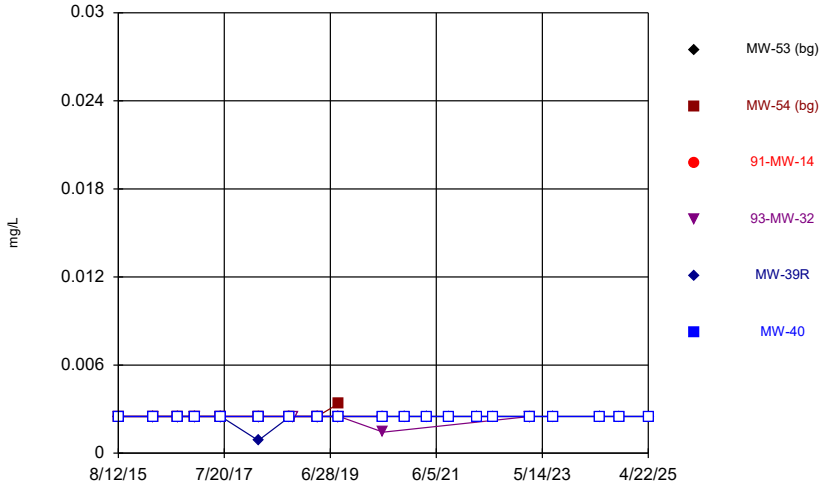
Time Series



Constituent: Chloroethane Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

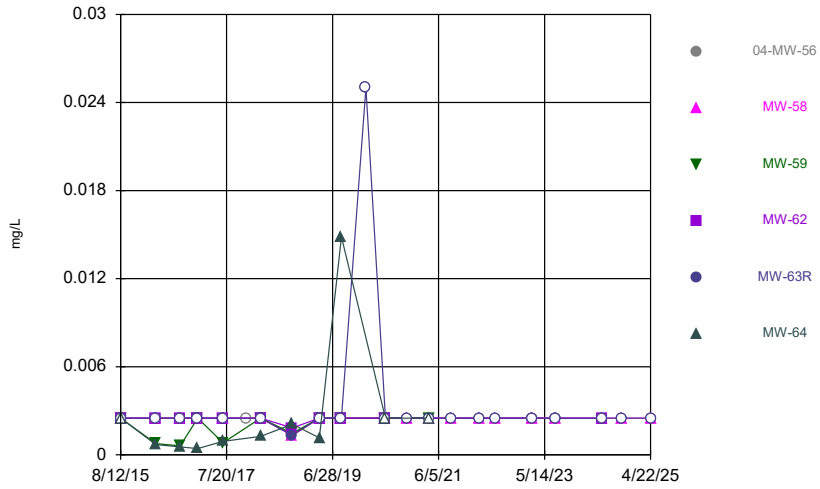
Time Series



Constituent: Chromium Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

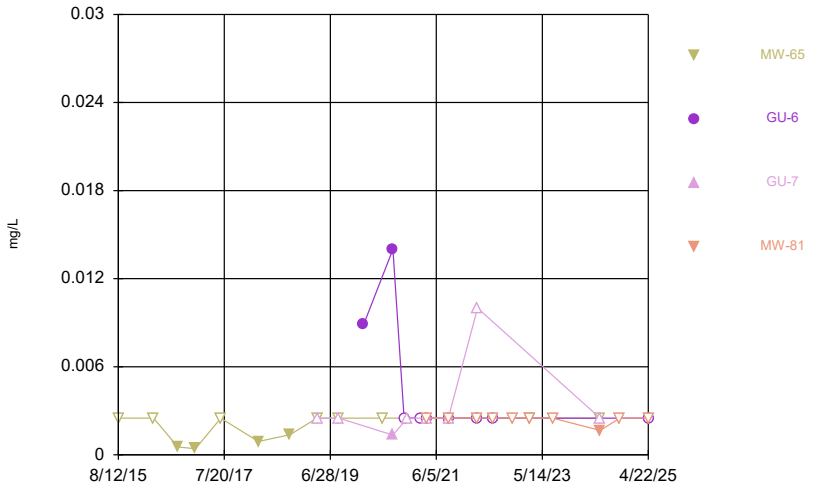
Time Series



Constituent: Chromium Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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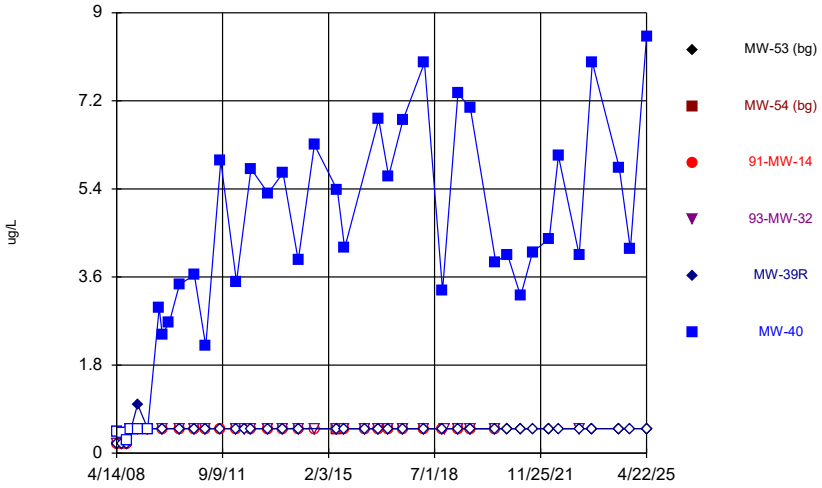
Time Series



Constituent: Chromium Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

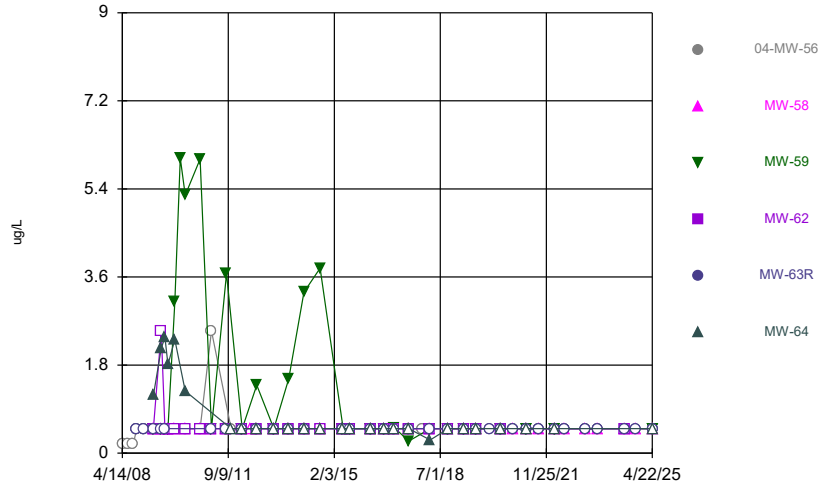
Time Series



Constituent: cis-1,2-Dichloroethene Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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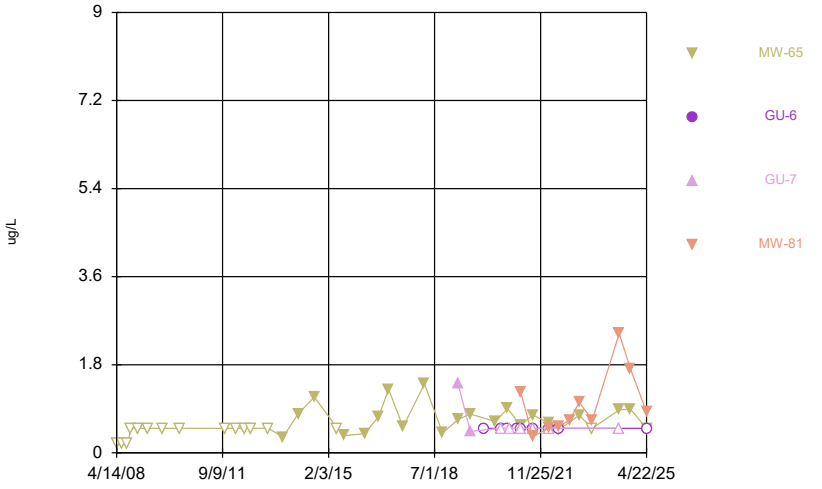
Time Series



Constituent: cis-1,2-Dichloroethene Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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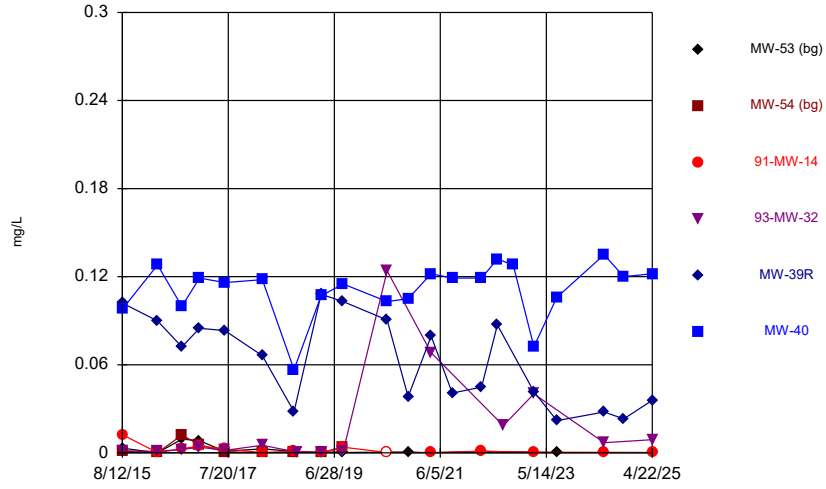
Time Series



Constituent: cis-1,2-Dichloroethene Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

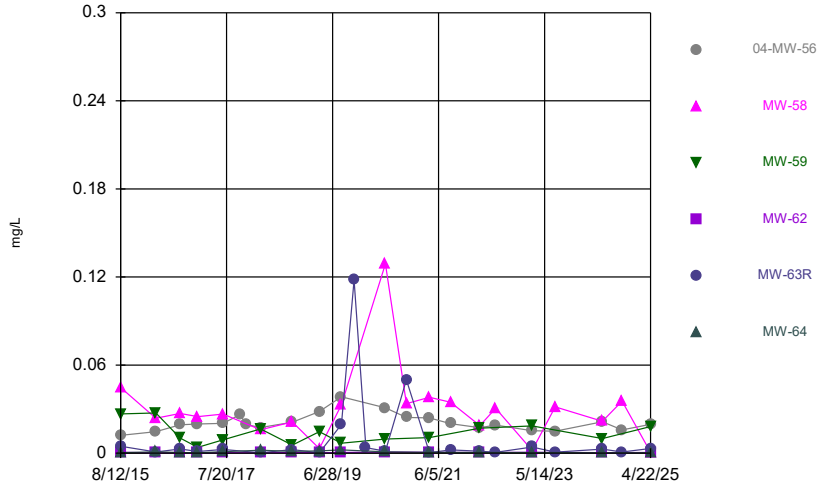
Time Series



Constituent: Cobalt Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

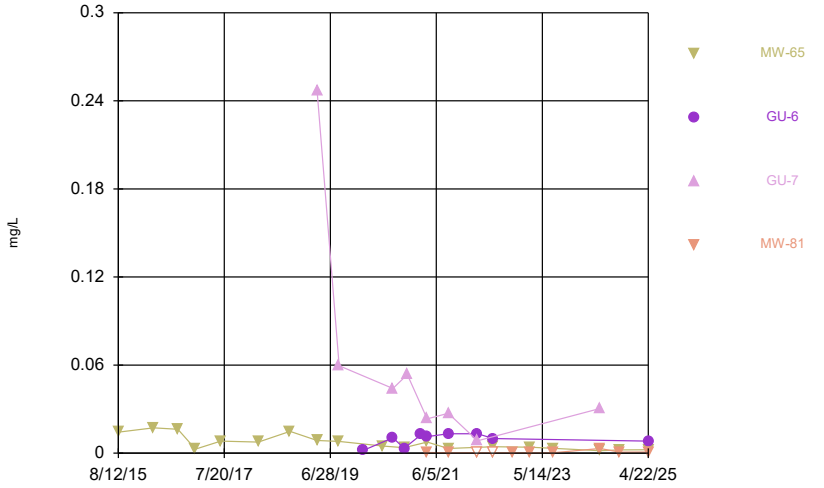
Time Series



Constituent: Cobalt Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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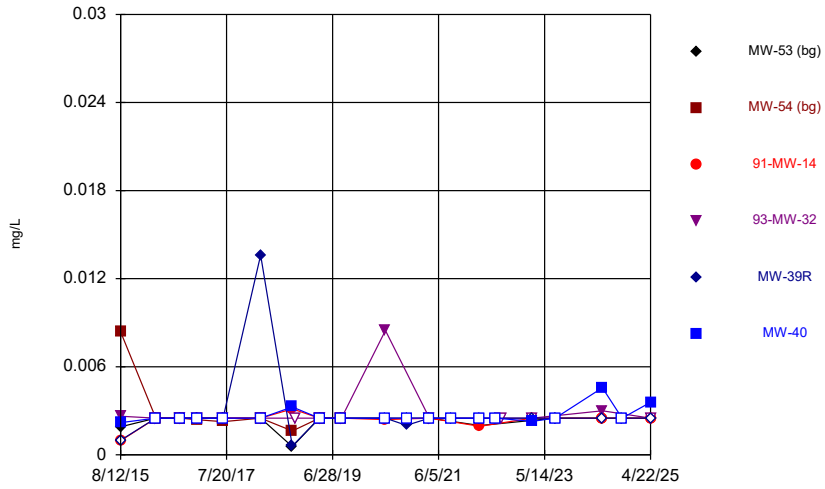
Time Series



Constituent: Cobalt Analysis Run 5/27/2025 2:03 PM View: 2025_SSN-Time_Series
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Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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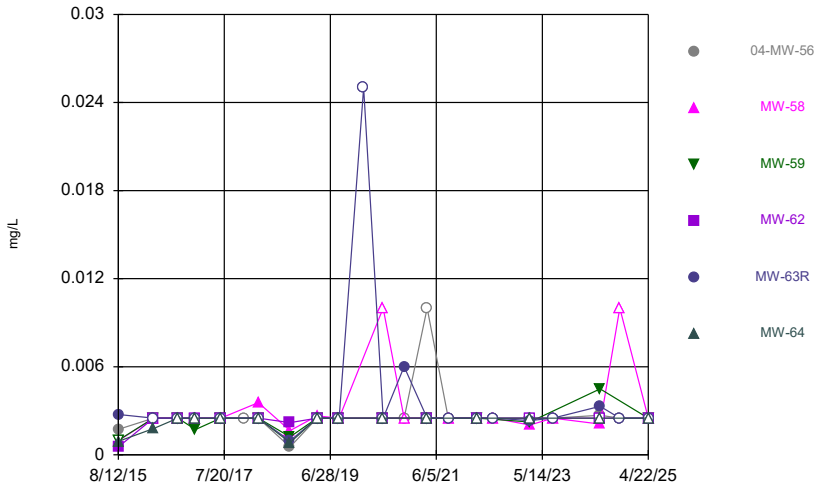
Time Series



Constituent: Copper Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

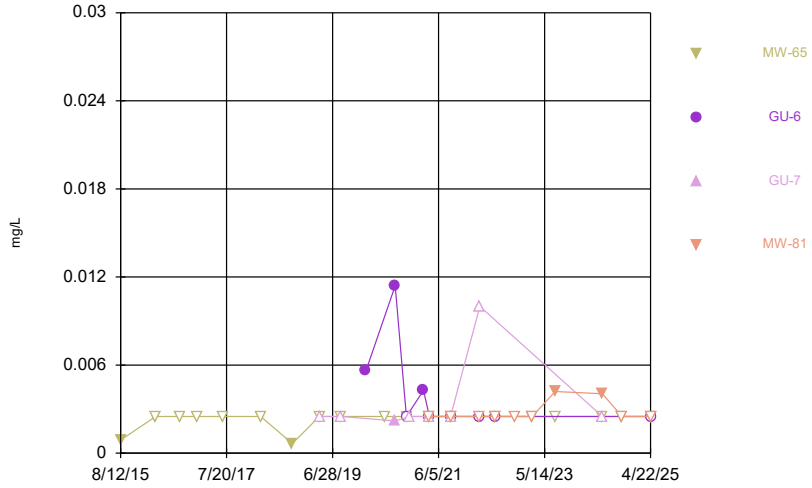
Time Series



Constituent: Copper Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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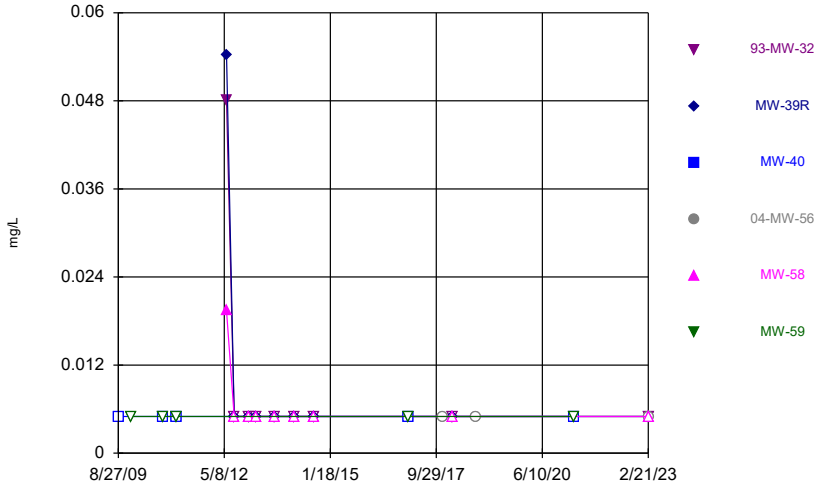
Time Series



Constituent: Copper Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
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Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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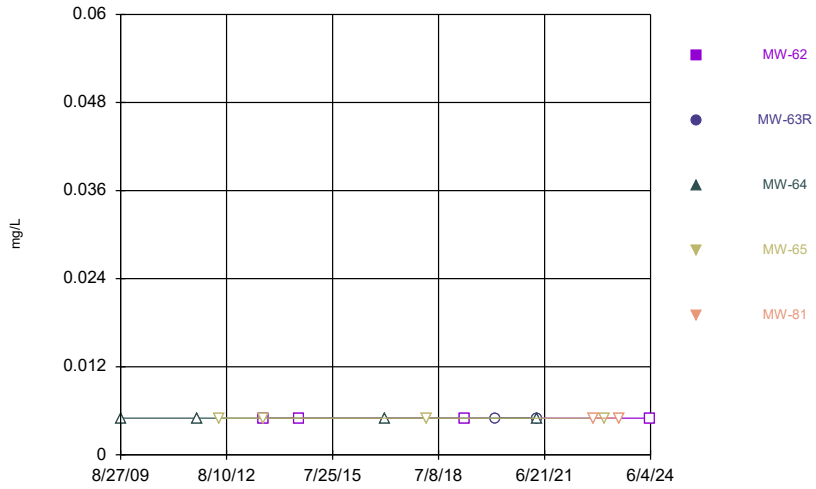
Time Series



Constituent: Cyanide Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

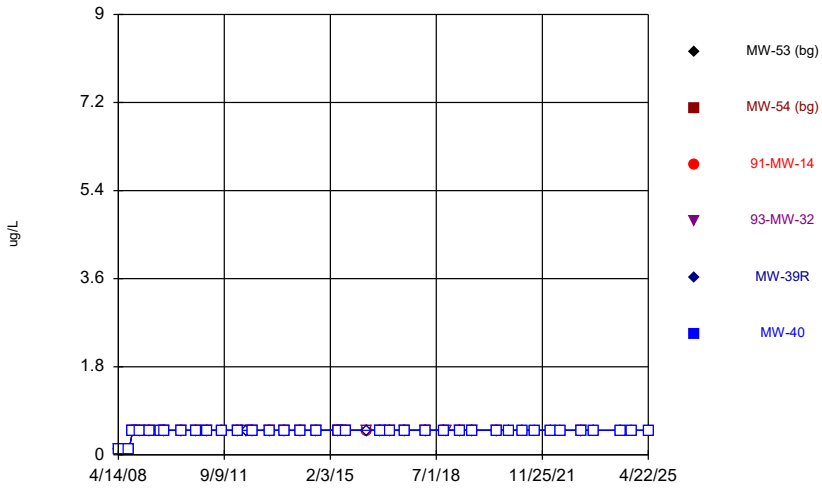
Time Series



Constituent: Cyanide Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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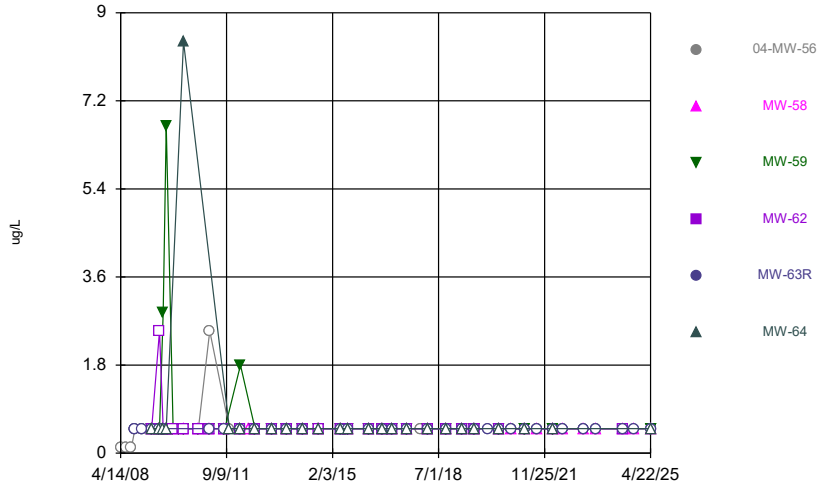
Time Series



Constituent: Ethylbenzene Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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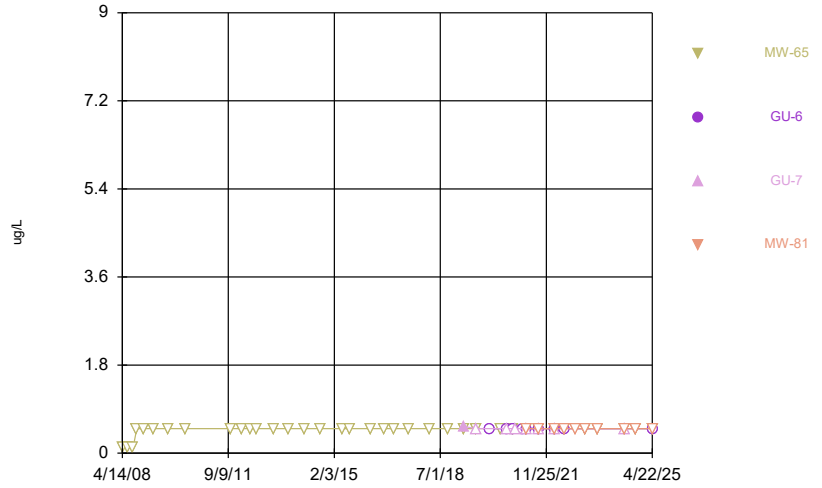
Time Series



Constituent: Ethylbenzene Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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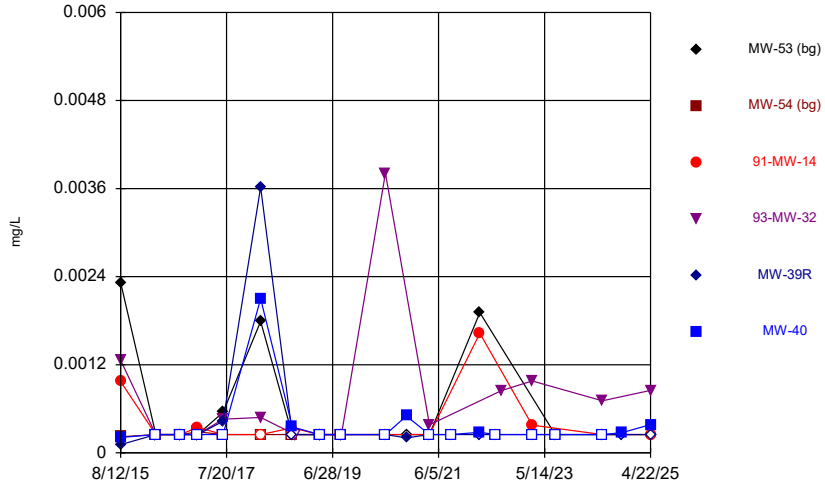
Time Series



Constituent: Ethylbenzene Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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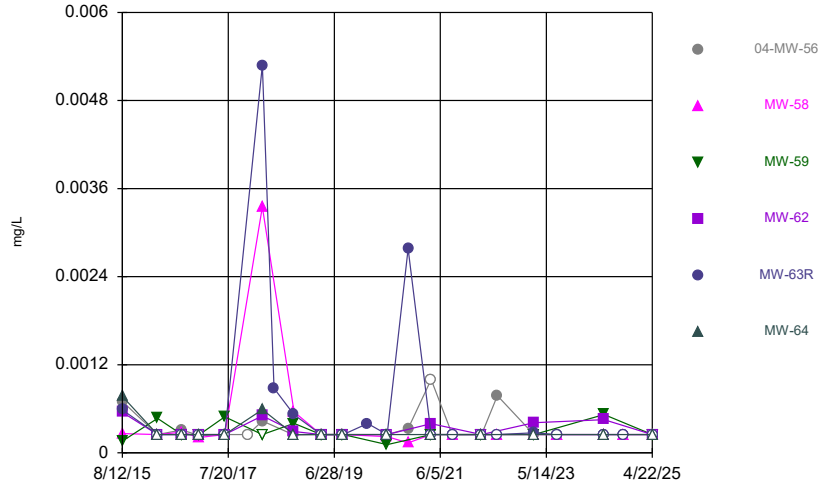
Time Series



Constituent: Lead Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

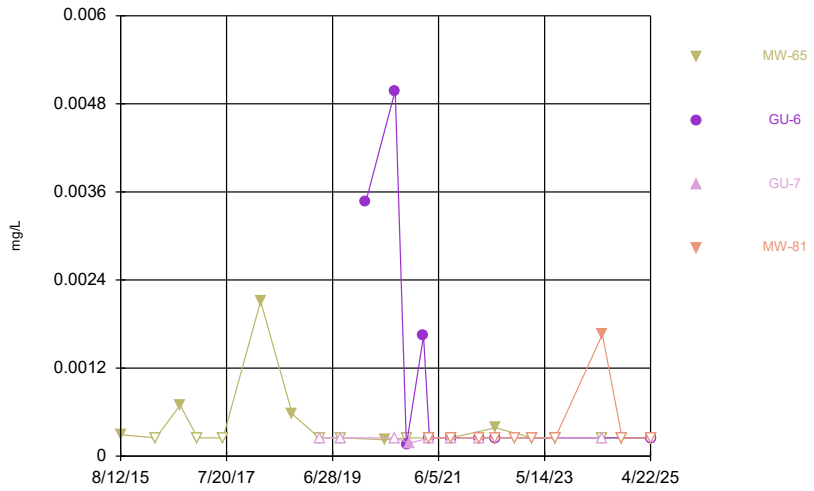
Time Series



Constituent: Lead Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
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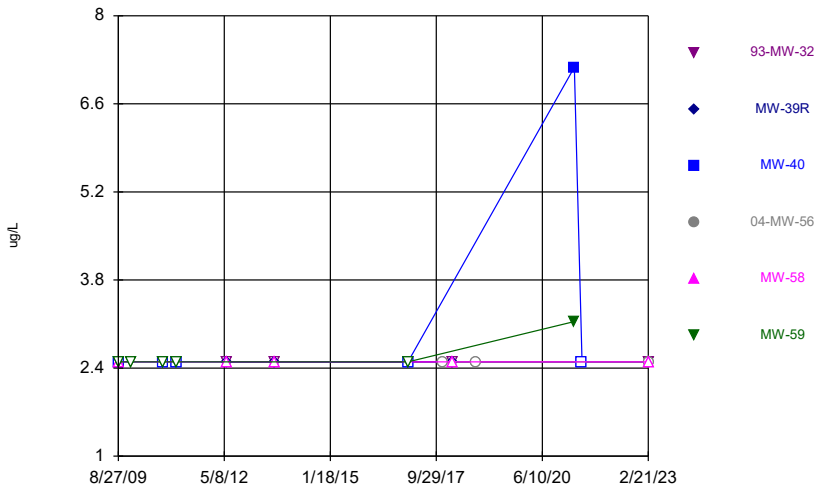
Time Series



Constituent: Lead Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
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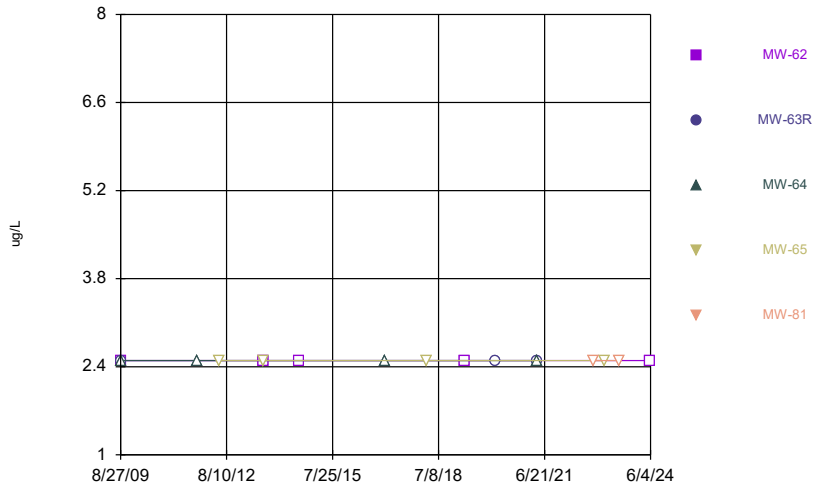
Time Series



Constituent: Naphthalene Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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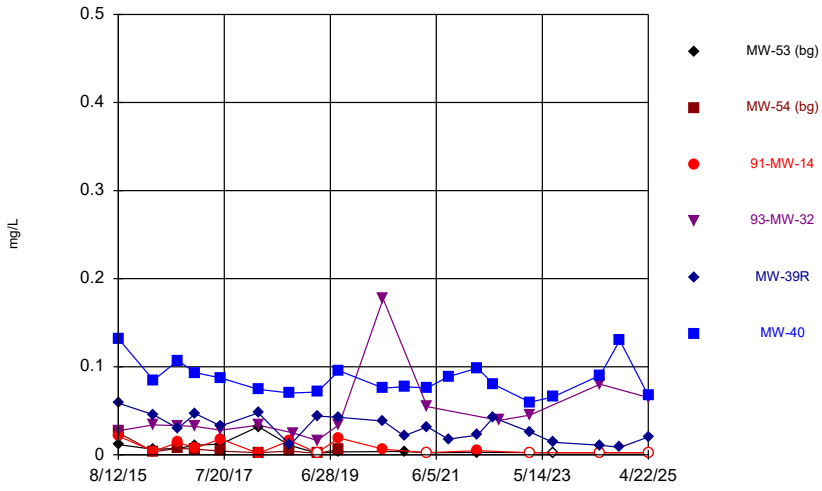
Time Series



Constituent: Naphthalene Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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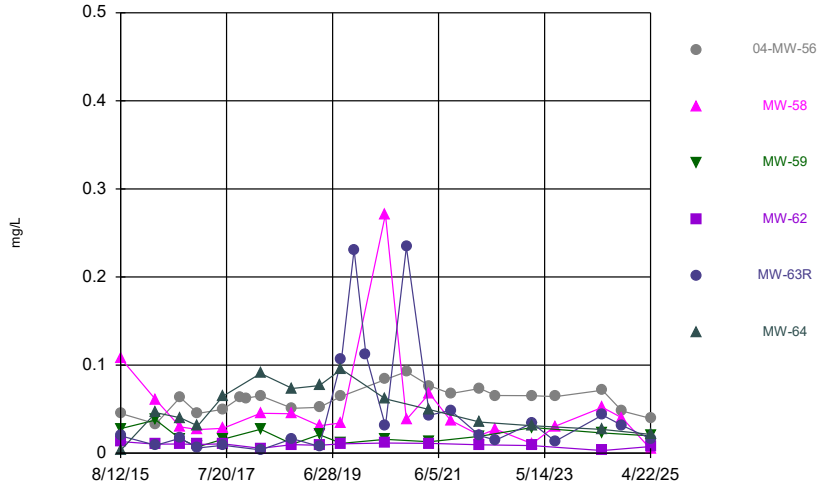
Time Series



Constituent: Nickel Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

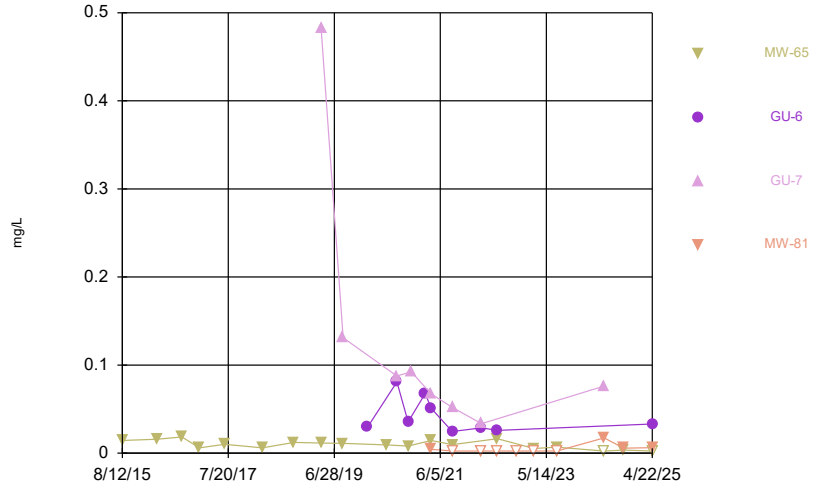
Time Series



Constituent: Nickel Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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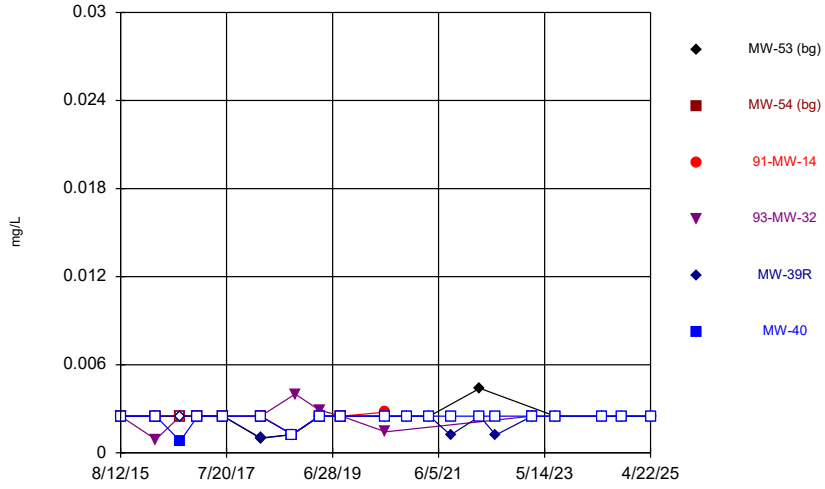
Time Series



Constituent: Nickel Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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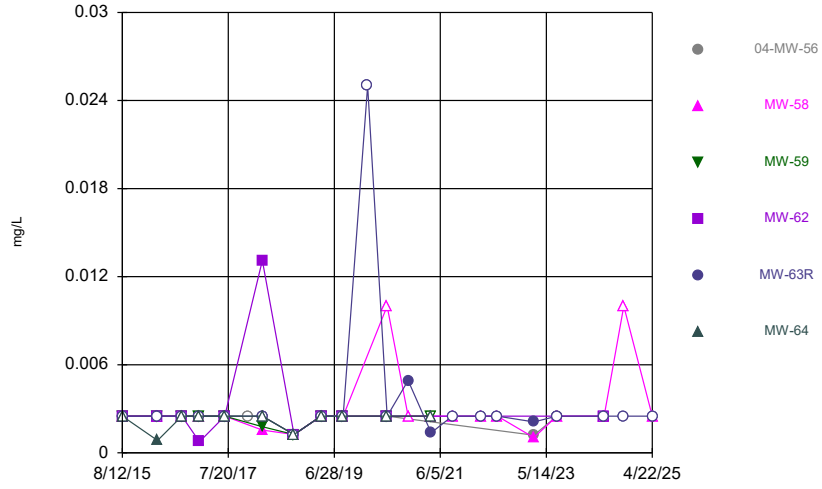
Time Series



Constituent: Selenium Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
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Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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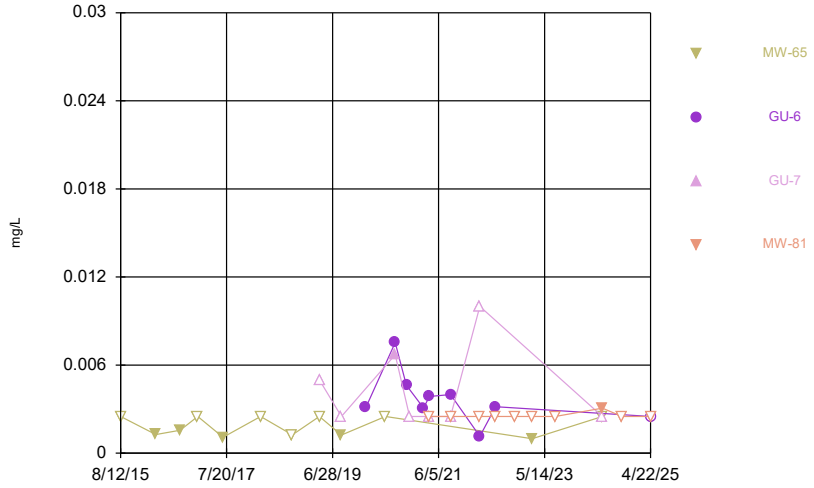
Time Series



Constituent: Selenium Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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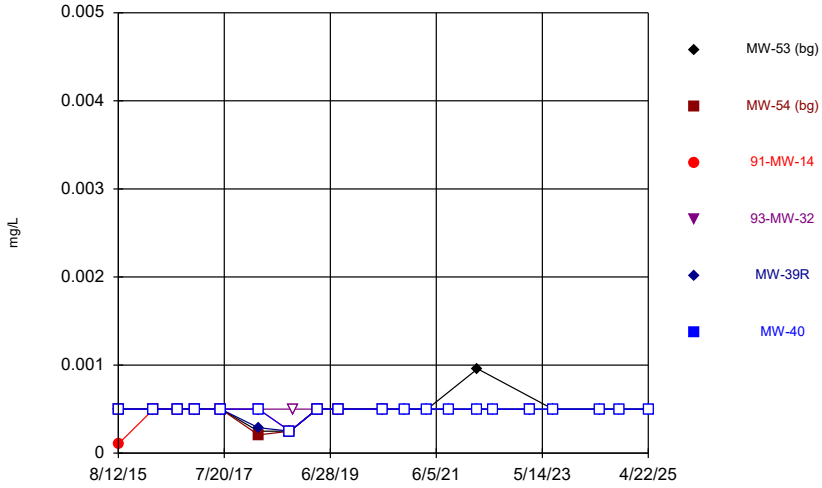
Time Series



Constituent: Selenium Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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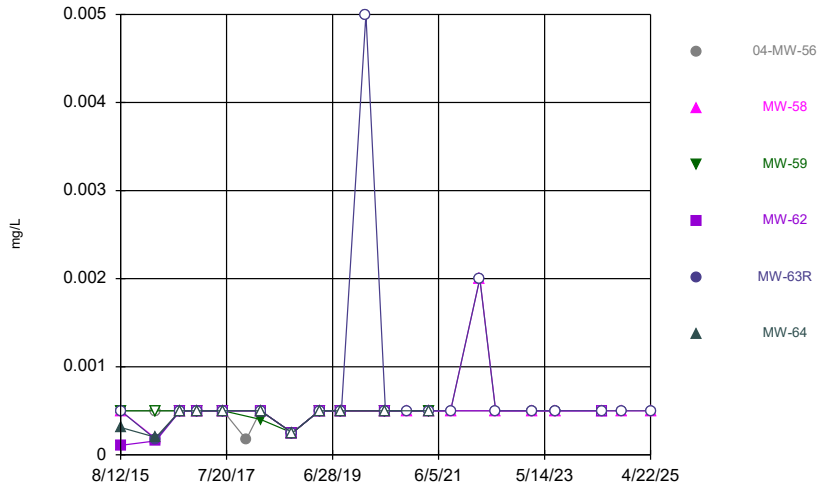
Time Series



Constituent: Silver Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

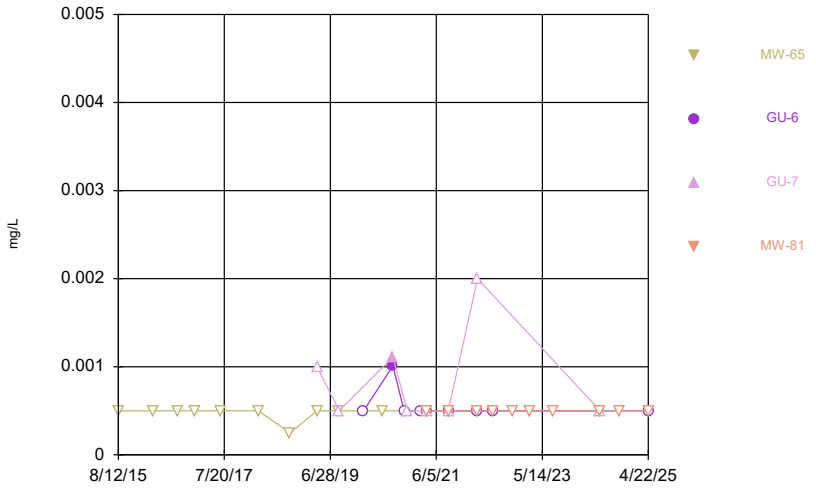
Time Series



Constituent: Silver Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
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Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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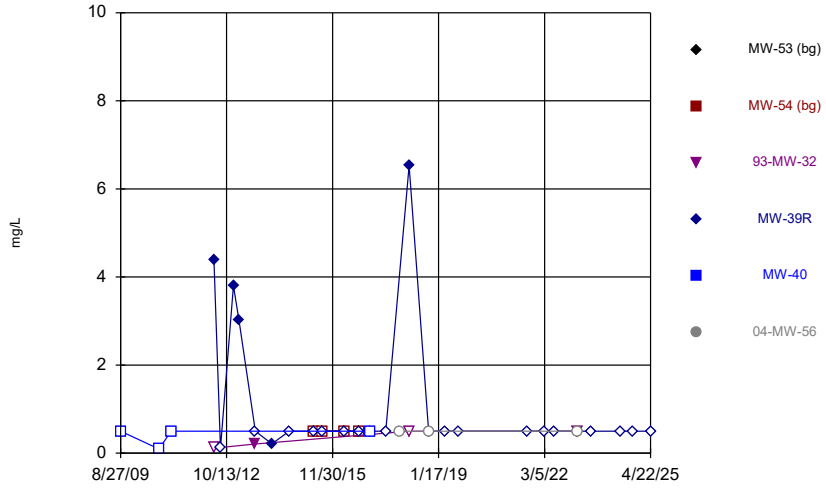
Time Series



Constituent: Silver Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

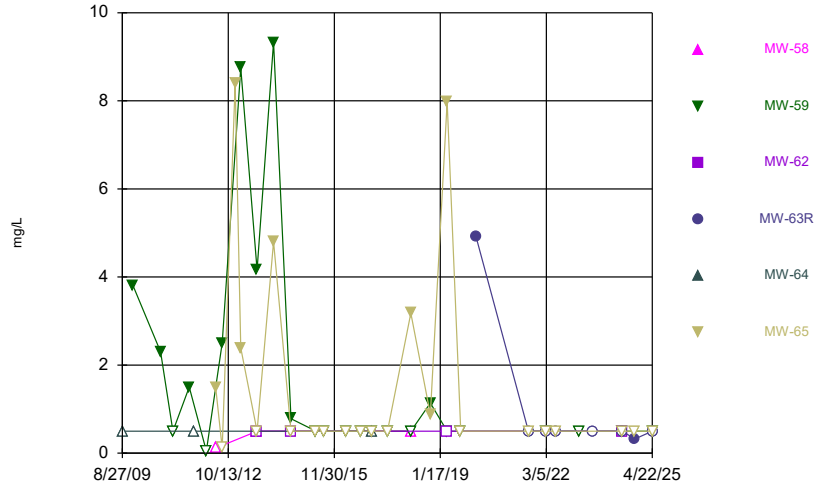
Time Series



Constituent: Sulfide Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

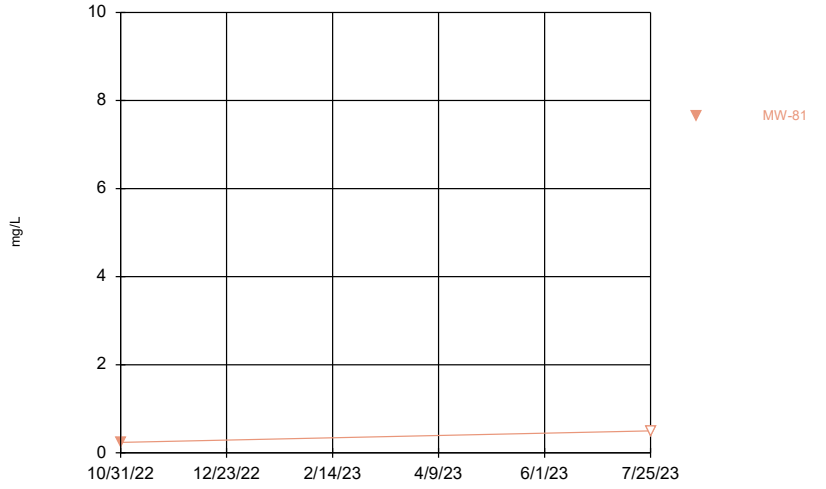
Time Series



Constituent: Sulfide Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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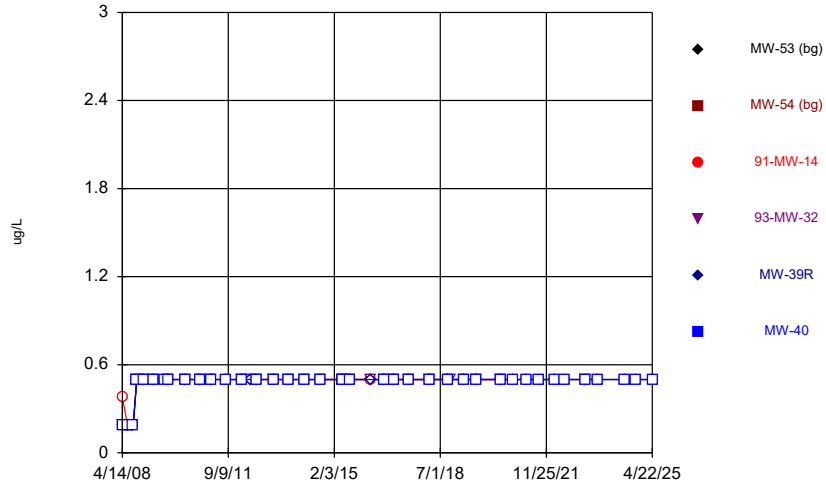
Time Series



Constituent: Sulfide Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

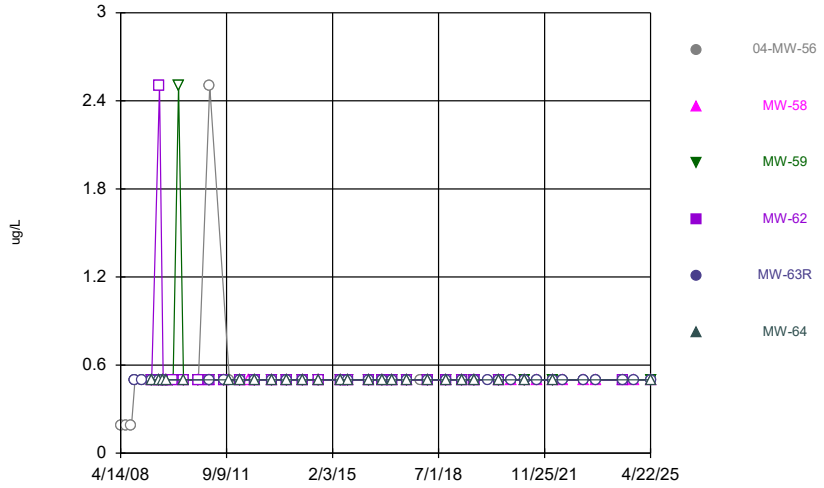
Time Series



Constituent: Tetrachloroethene Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

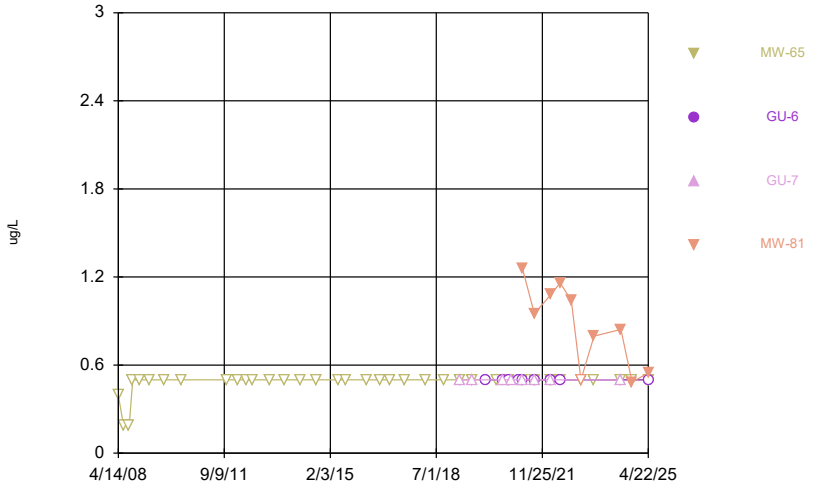
Time Series



Constituent: Tetrachloroethene Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

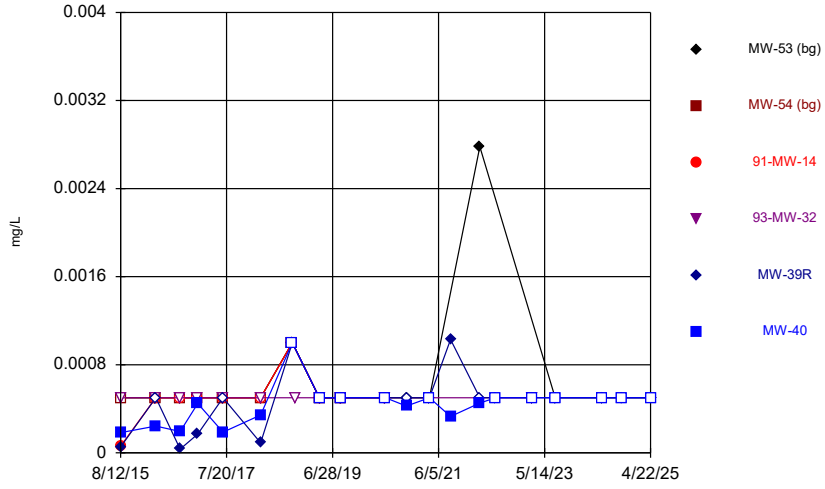
Time Series



Constituent: Tetrachloroethene Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

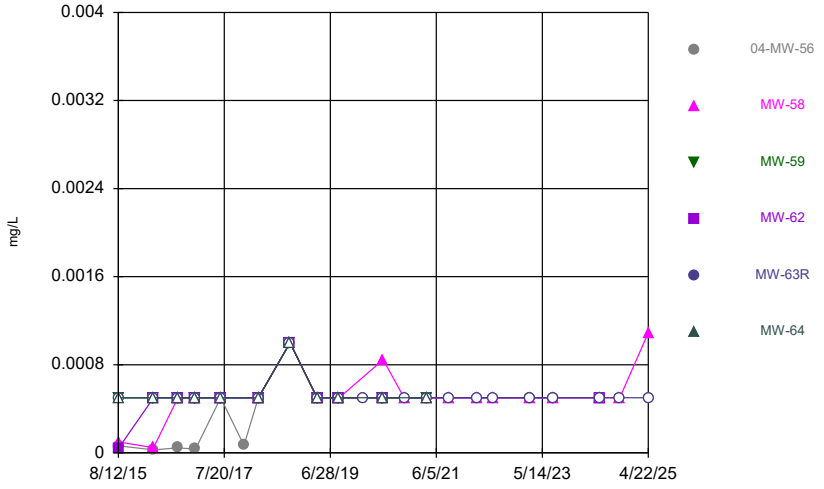
Time Series



Constituent: Thallium Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

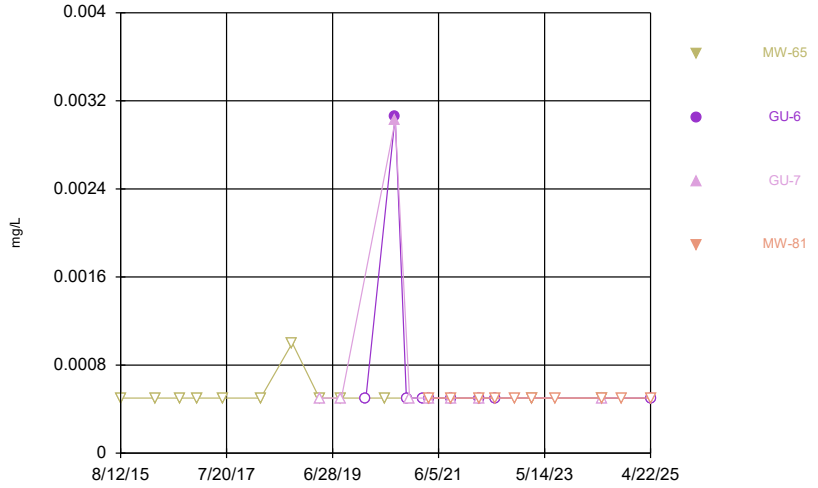
Time Series



Constituent: Thallium Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

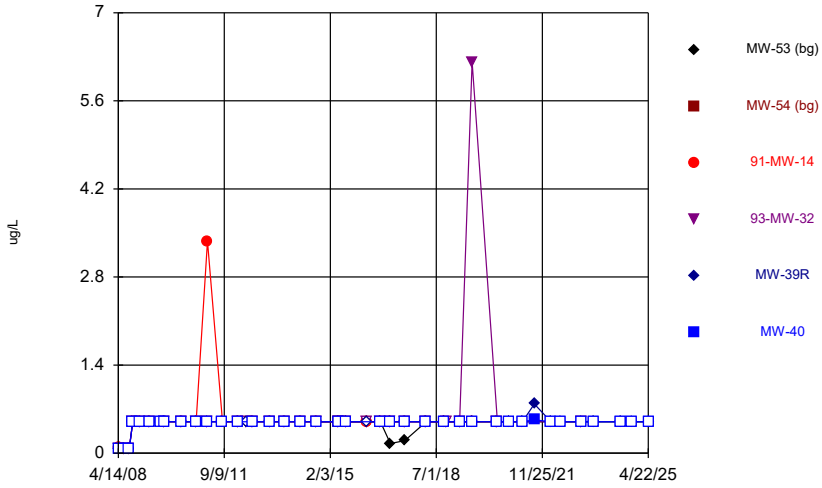
Time Series



Constituent: Thallium Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

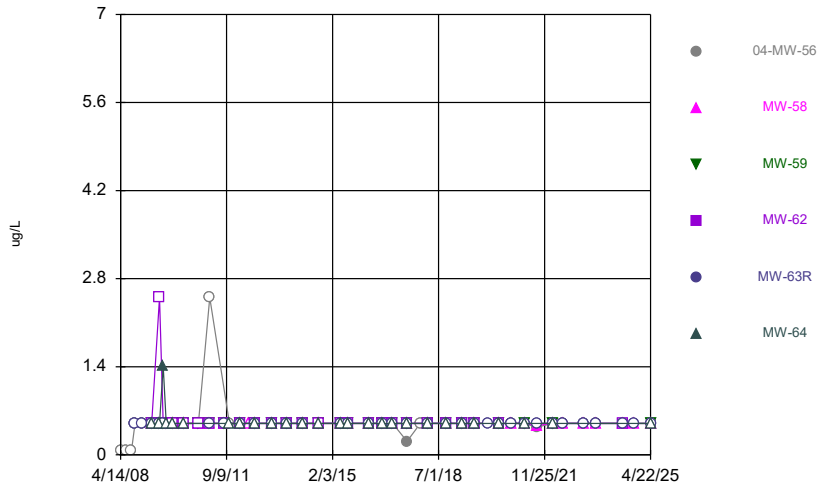
Time Series



Constituent: Toluene Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

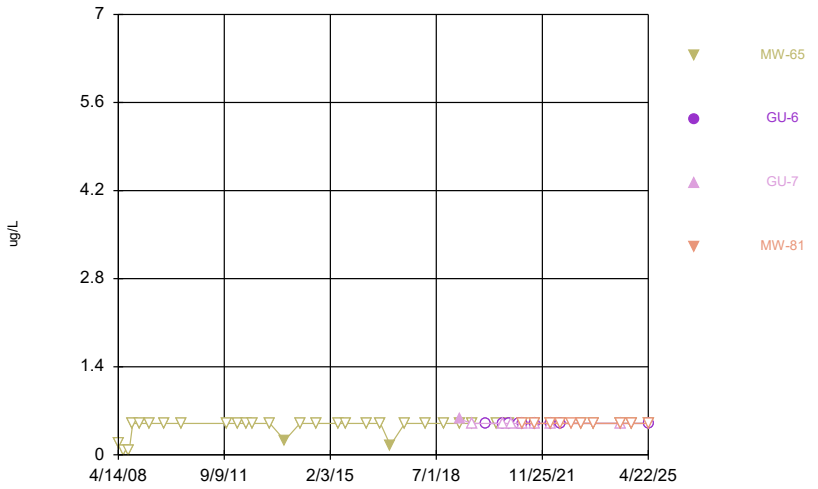
Time Series



Constituent: Toluene Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

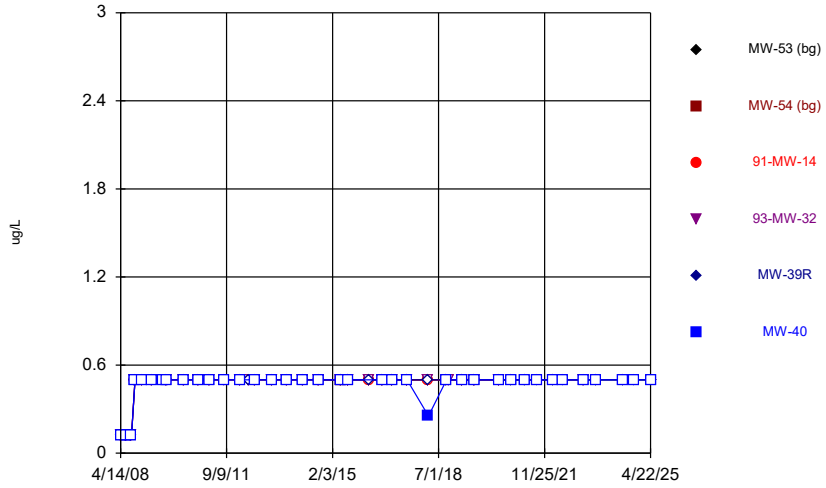
Time Series



Constituent: Toluene Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

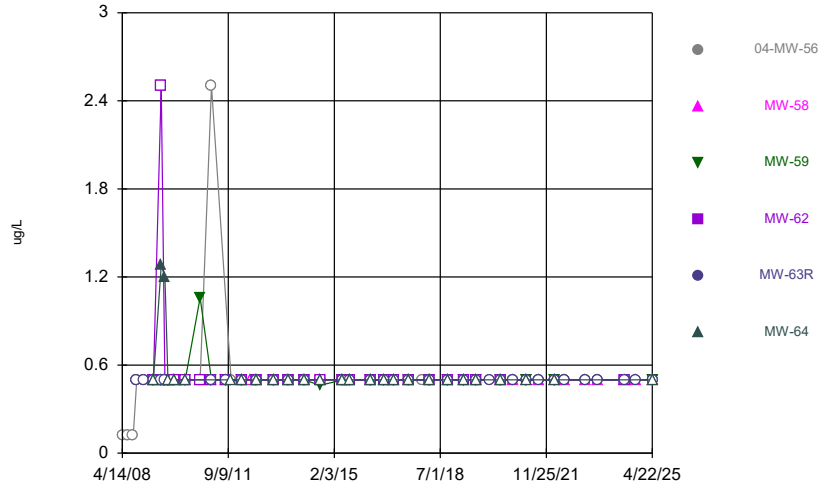
Time Series



Constituent: Trichloroethene Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

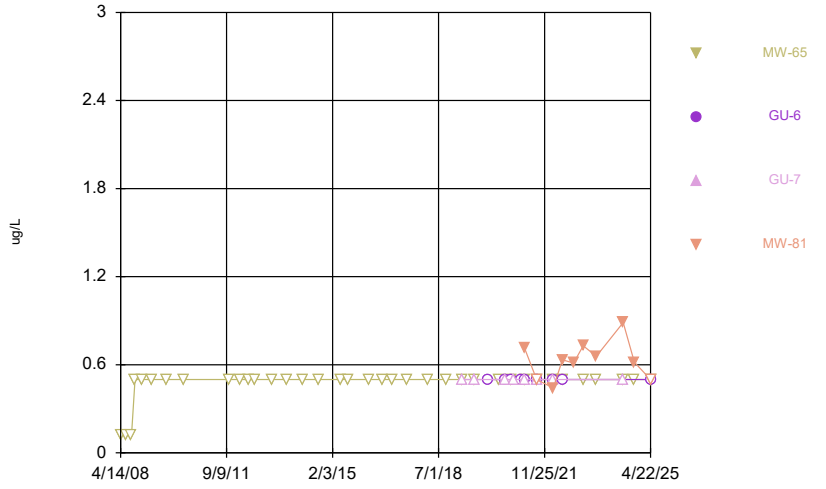
Time Series



Constituent: Trichloroethene Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

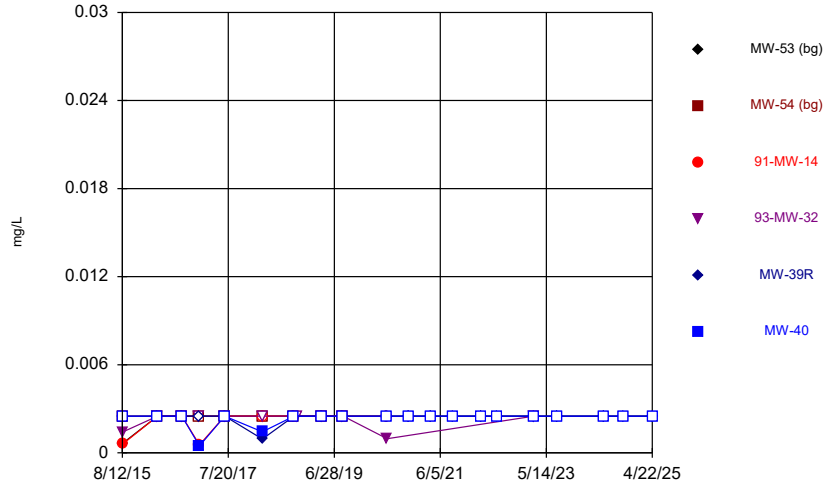
Time Series



Constituent: Trichloroethene Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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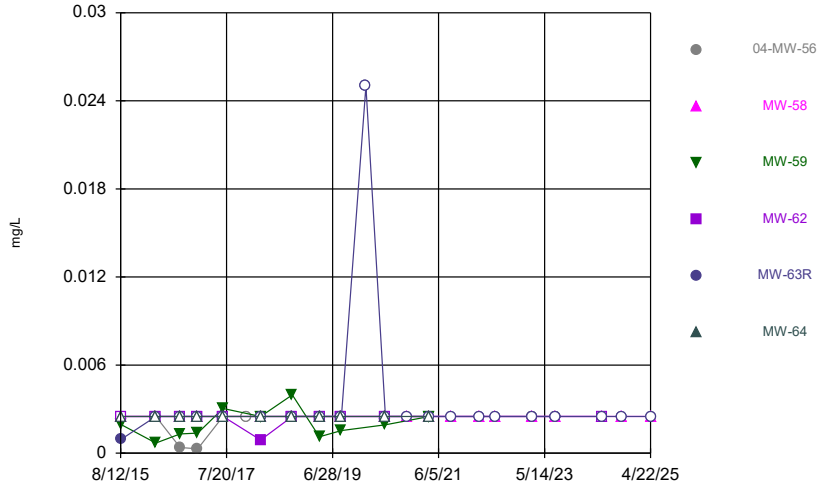
Time Series



Constituent: Vanadium Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

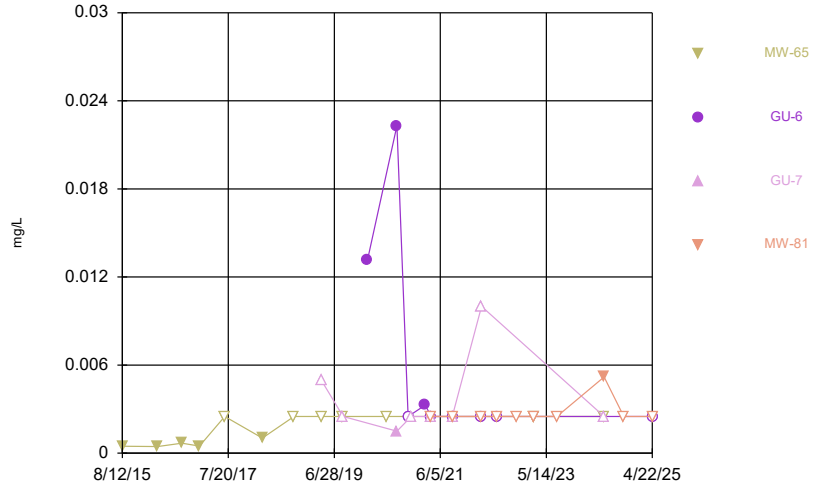
Time Series



Constituent: Vanadium Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

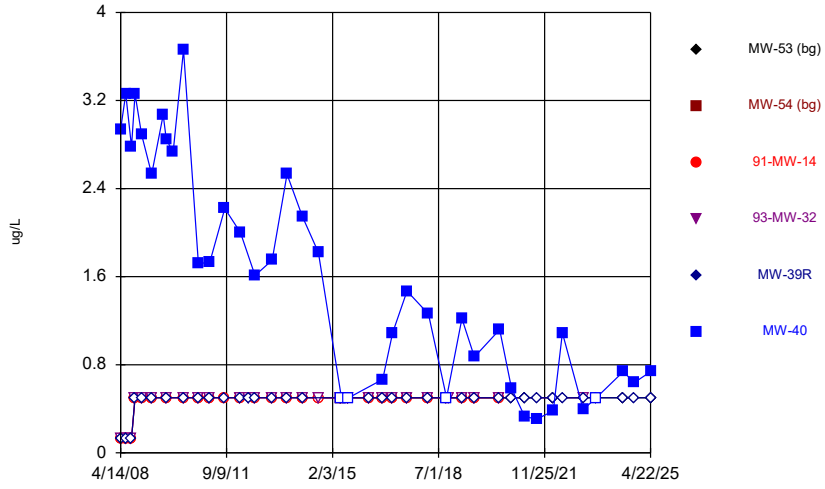
Time Series



Constituent: Vanadium Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

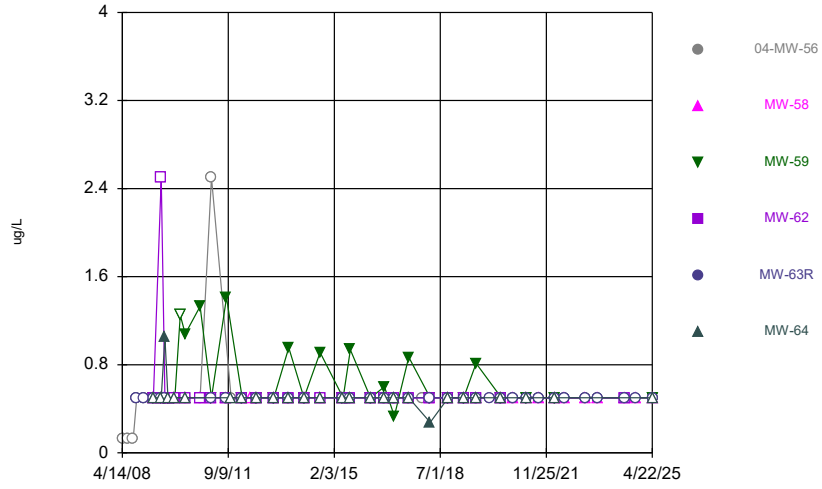
Time Series



Constituent: Vinyl chloride Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

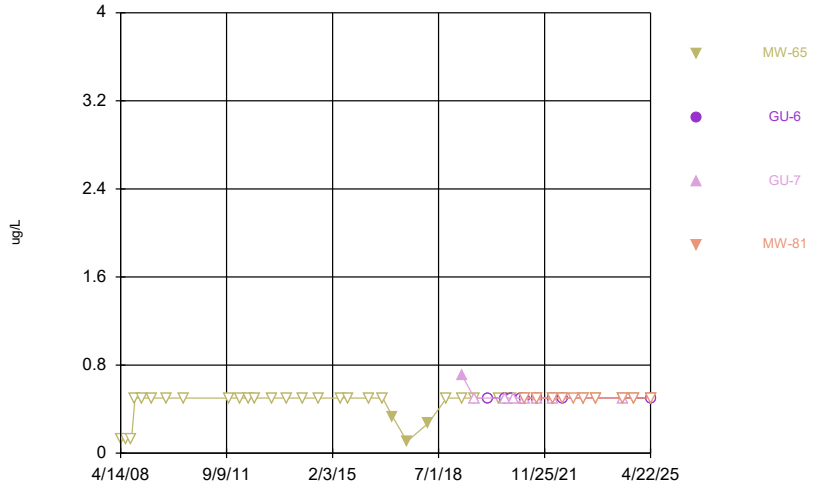
Time Series



Constituent: Vinyl chloride Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

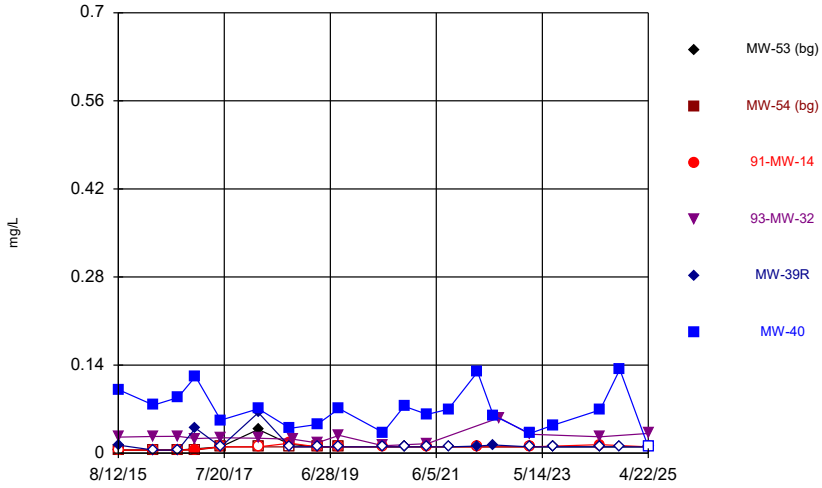
Time Series



Constituent: Vinyl chloride Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
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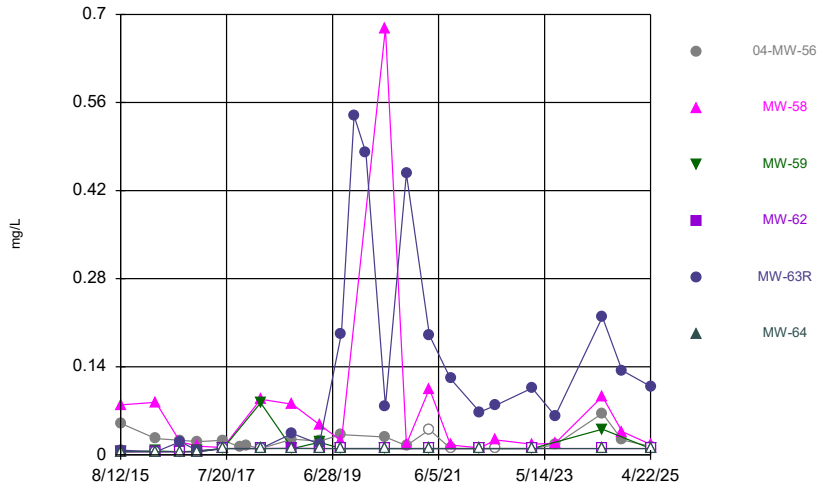
Time Series



Constituent: Zinc Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

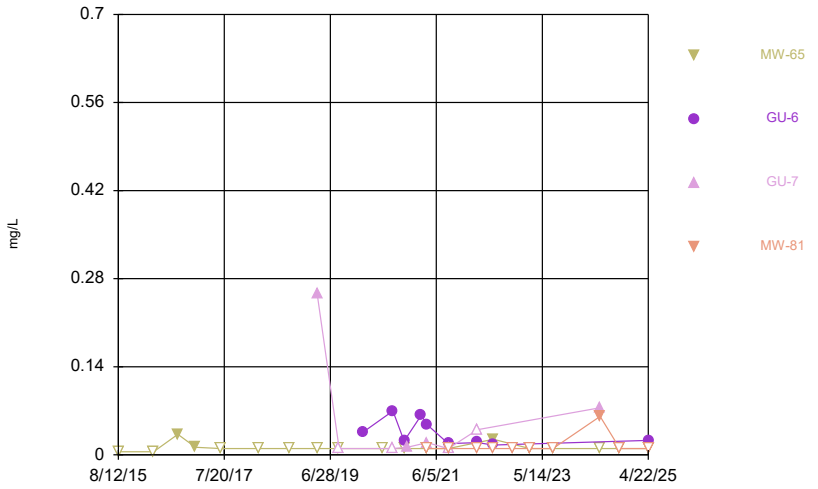
Time Series



Constituent: Zinc Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Zinc Analysis Run 5/27/2025 2:04 PM View: 2025_SSN-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Outlier Tests Summary Table and Graphs

BG Outlier Analysis

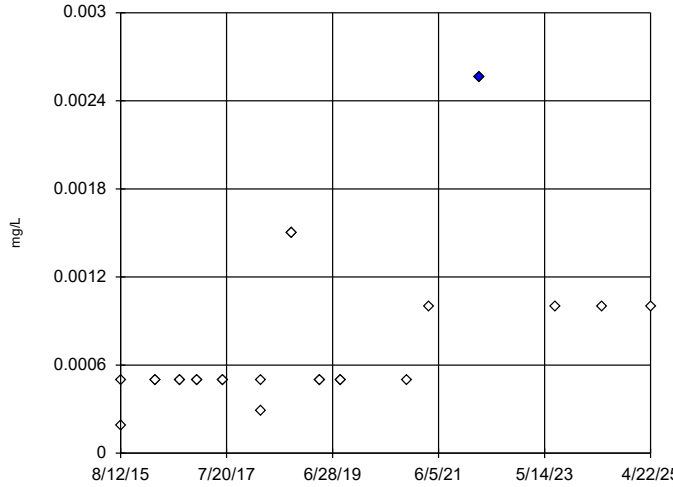
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master Printed 6/13/2025, 9:47 AM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Antimony (mg/L)	**MW-53,MW-54**	**Yes**	**0.00256**	**n/a w/combined bg**	**OH**	**NaN**	**24**	**0.0007304**	**0.0005157**	**n/a**	**n/a**
Arsenic (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	OH	NaN	24	0.0009988	0.0002682	n/a	n/a
Barium (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	NP (nrm)/OH	NaN	24	0.0203	0.006637	unknown	ShapiroWilk
Beryllium (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	OH	NaN	24	0.0004892	0.0001188	n/a	n/a
Cadmium (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	EPA/OH	0.05	24	0.0002412	0.0002234	ln(x)	ShapiroWilk
Chromium (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	OH	NaN	24	0.002537	0.0001817	n/a	n/a
Cobalt (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	EPA/OH	0.05	24	0.002201	0.003324	ln(x)	ShapiroWilk
Copper (mg/L)	**MW-53,MW-54**	**Yes**	**0.00191,0.000562,0.00...**	**n/a w/combined bg**	**NP (nrm)/OH**	**NaN**	**24**	**0.002568**	**0.001311**	**unknown**	**ShapiroWilk**
Lead (mg/L)	**MW-53,MW-54**	**Yes**	**0.00232,0.00191,0.00179**	**n/a w/combined bg**	**OH**	**NaN**	**24**	**0.0004824**	**0.0005975**	**n/a**	**n/a**
Nickel (mg/L)	MW-54,MW-53	No	n/a	n/a w/combined bg	EPA/OH	0.05	24	0.007267	0.007379	ln(x)	ShapiroWilk
Selenium (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	OH	NaN	24	0.002412	0.0006201	n/a	n/a
Silver (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	OH	NaN	24	0.0004756	0.0001428	n/a	n/a
Thallium (mg/L)	**MW-53,MW-54**	**Yes**	**0.00278**	**n/a w/combined bg**	**OH**	**NaN**	**24**	**0.0006367**	**0.0004778**	**n/a**	**n/a**
Vanadium (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	OH	NaN	24	0.002422	0.0003803	n/a	n/a
Zinc (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	OH	NaN	24	0.009732	0.006482	n/a	n/a

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Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

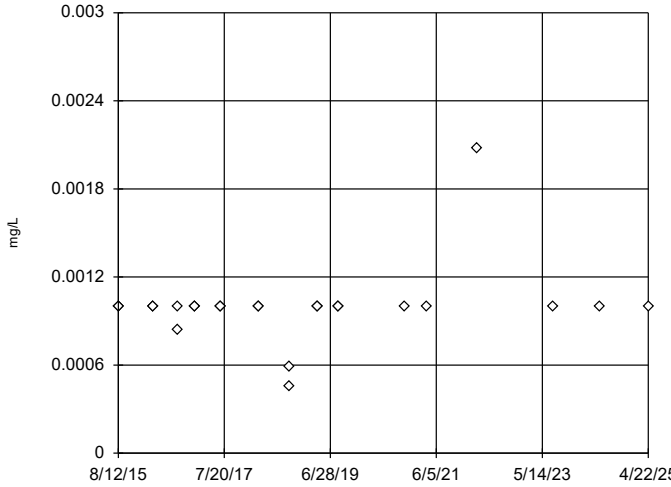
Statistical outlier is drawn as solid.
Outlier per Ohio method.

Constituent: Antimony Analysis Run 6/13/2025 9:40 AM View: 2025_SSN-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

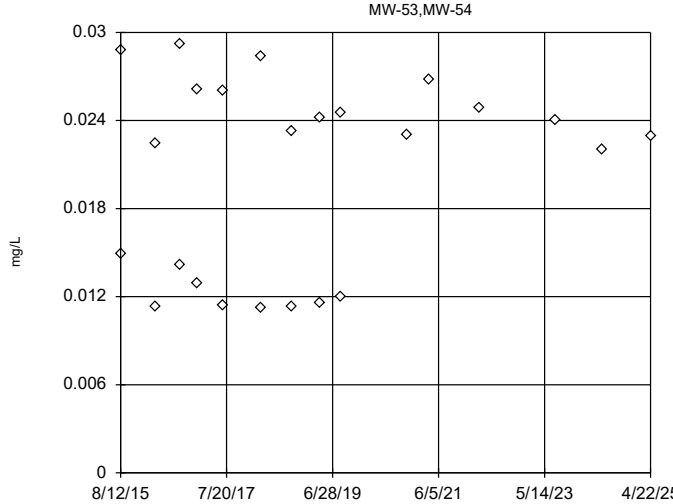
No statistical outliers.

Constituent: Arsenic Analysis Run 6/13/2025 9:40 AM View: 2025_SSN-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

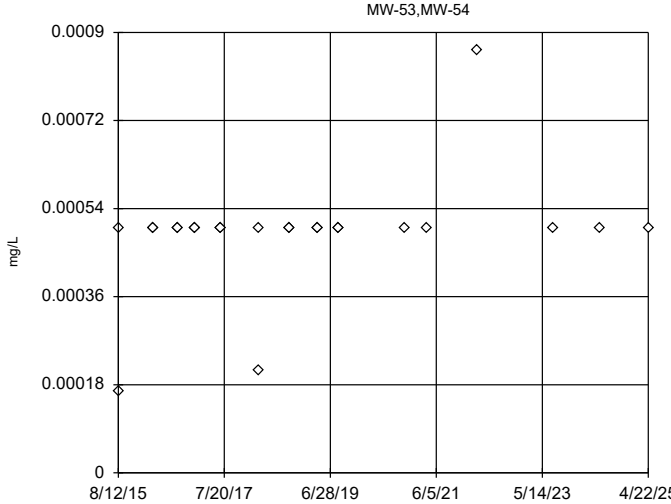
High cutoff = 0.06445, low cutoff = -0.02655, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 6/13/2025 9:40 AM View: 2025_SSN-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

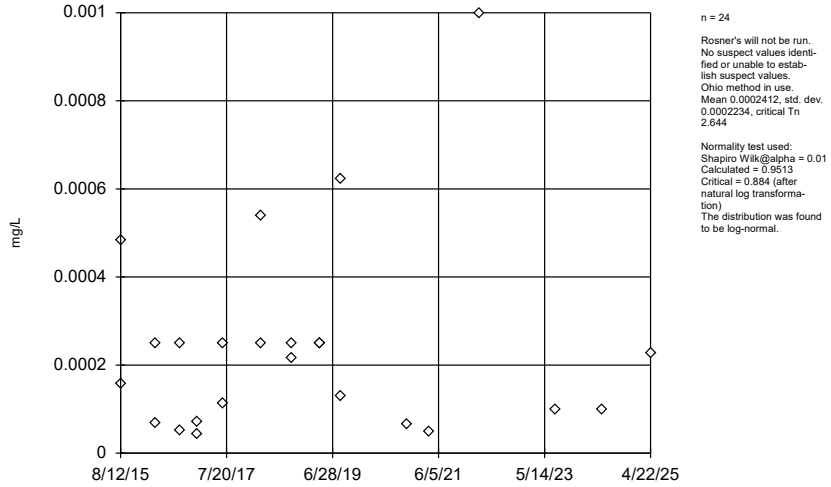
No statistical outliers.

Constituent: Beryllium Analysis Run 6/13/2025 9:40 AM View: 2025_SSN-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Rosner's Test)

MW-53,MW-54



n = 24

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.0002412, std. dev. 0.0002234, critical Tn 2.644

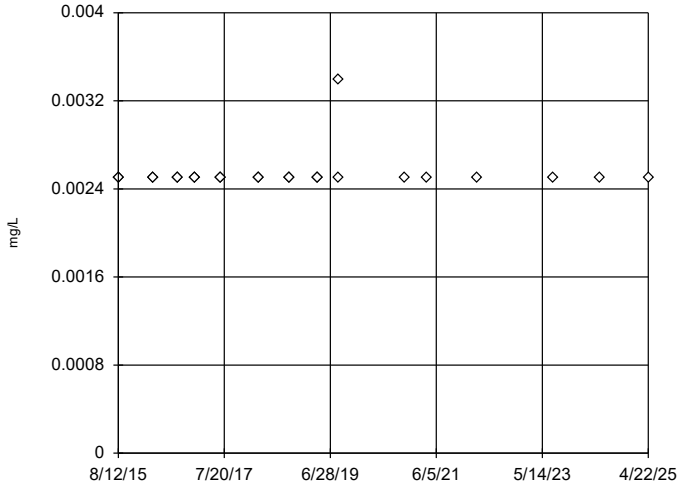
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.9513
Critical = 0.884 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Cadmium Analysis Run 6/13/2025 9:40 AM View: 2025_SSN-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

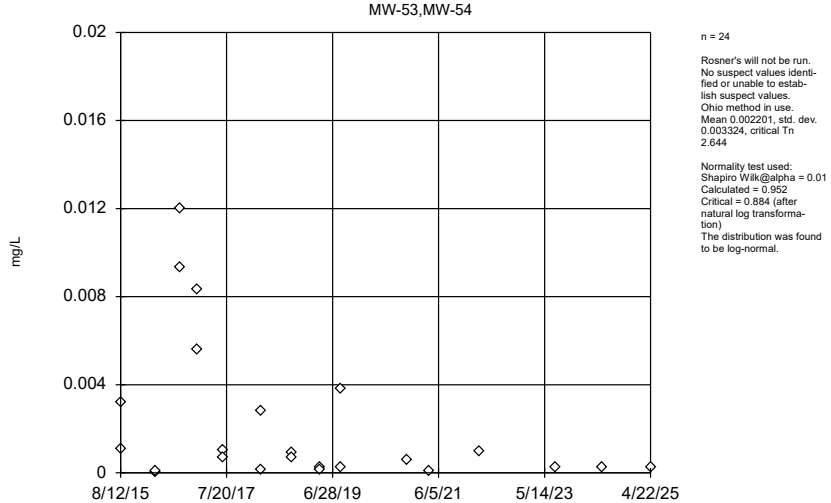
No statistical outliers.

Constituent: Chromium Analysis Run 6/13/2025 9:40 AM View: 2025_SSN-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Rosner's Test)

MW-53,MW-54



n = 24

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.002201, std. dev. 0.003324, critical Tn 2.644

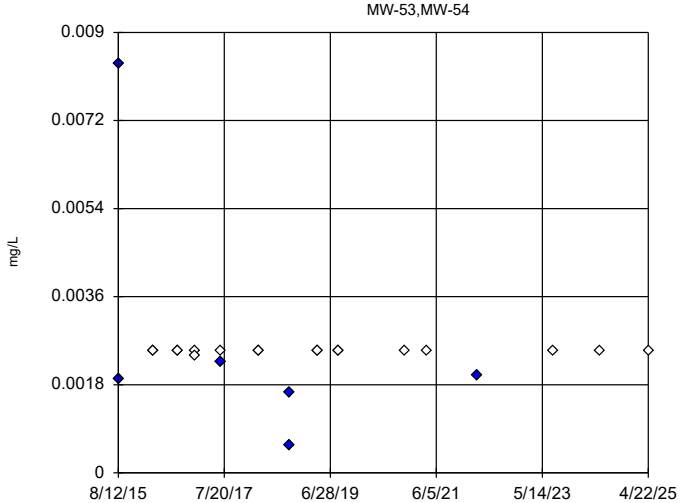
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.952
Critical = 0.884 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Cobalt Analysis Run 6/13/2025 9:40 AM View: 2025_SSN-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

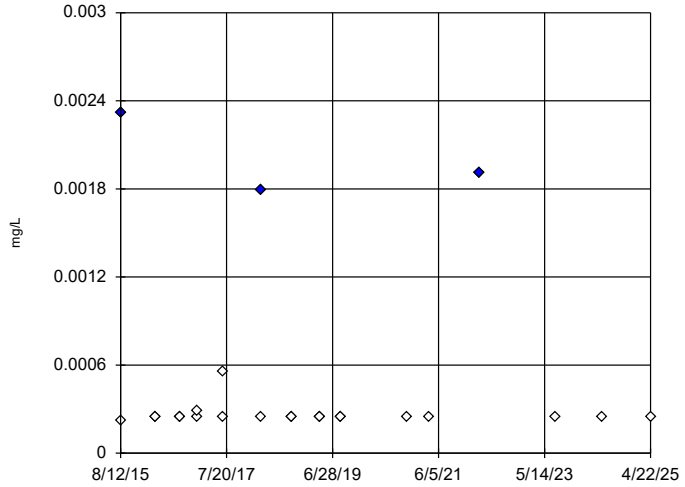
High cutoff = 0.002665, low cutoff = 0.00228, based on IQR multiplier of 3.

Constituent: Copper Analysis Run 6/13/2025 9:40 AM View: 2025_SSN-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

Statistical outliers are drawn as solid.
Outliers per Ohio method.

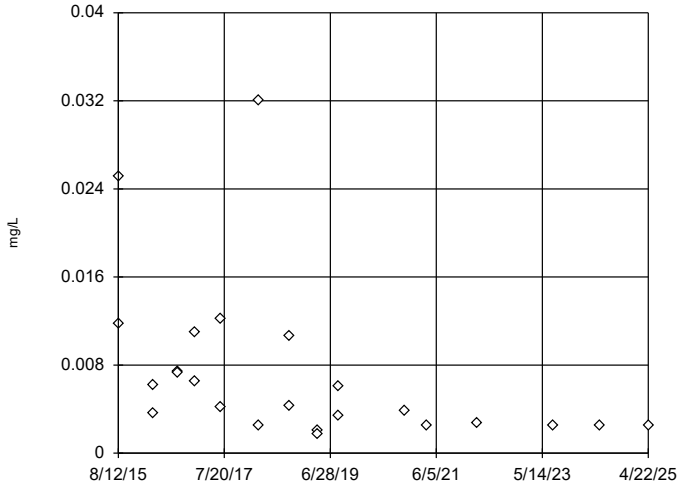
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.5633
Critical = 0.884
The distribution, after removal of suspect values, was found to be normally distributed.

Constituent: Lead Analysis Run 6/13/2025 9:40 AM View: 2025_SSN-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Rosner's Test)

MW-54,MW-53



n = 24

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.007267, std. dev. 0.007379, critical Tn 2.644

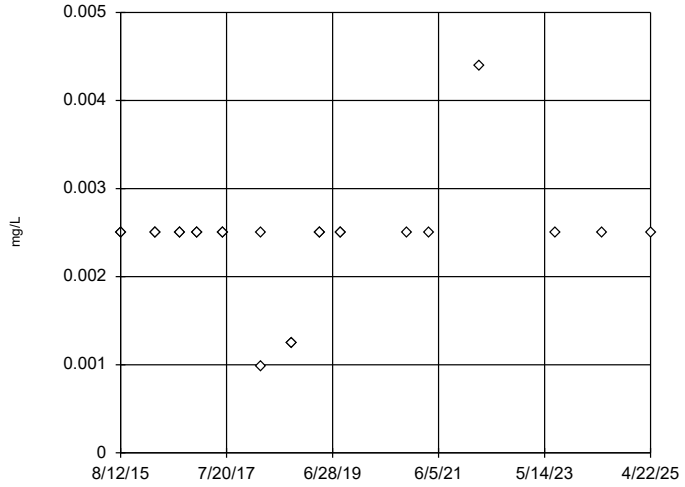
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.9262
Critical = 0.884 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Nickel Analysis Run 6/13/2025 9:40 AM View: 2025_SSN-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

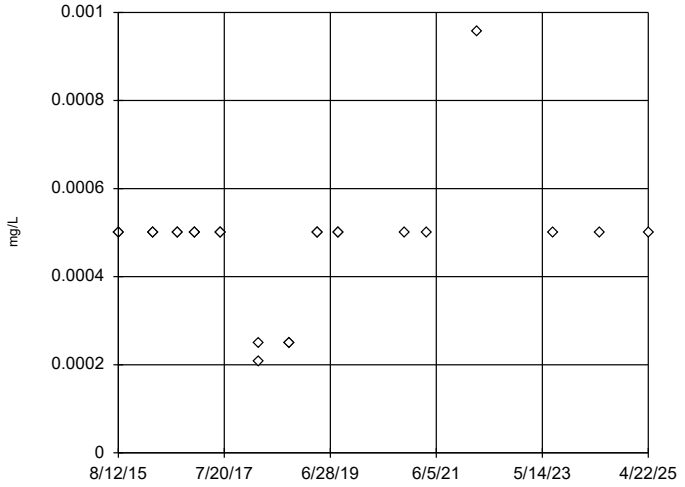
No statistical outliers.

Constituent: Selenium Analysis Run 6/13/2025 9:40 AM View: 2025_SSN-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

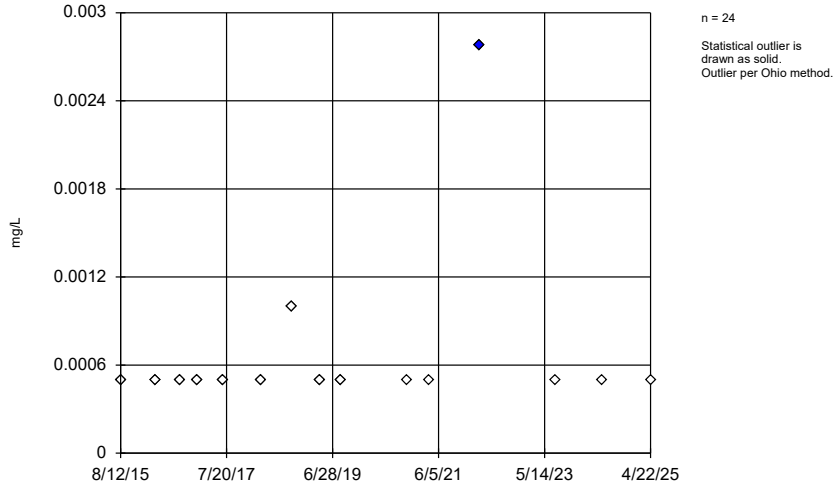
No statistical outliers.

Constituent: Silver Analysis Run 6/13/2025 9:40 AM View: 2025_SSN-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

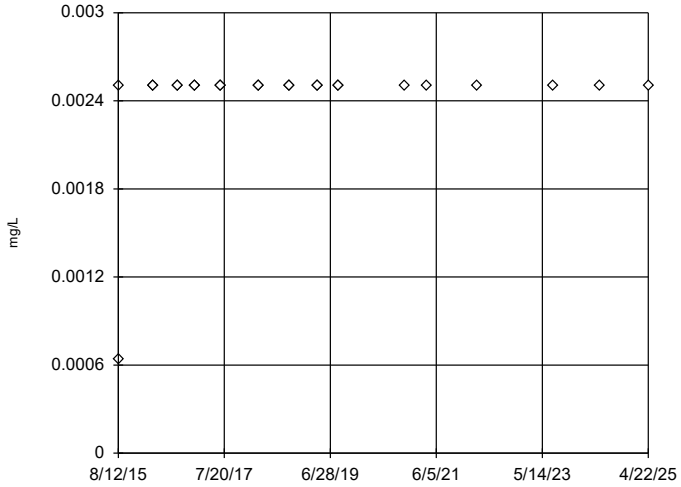
Statistical outlier is drawn as solid.
Outlier per Ohio method.

Constituent: Thallium Analysis Run 6/13/2025 9:40 AM View: 2025_SSN-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

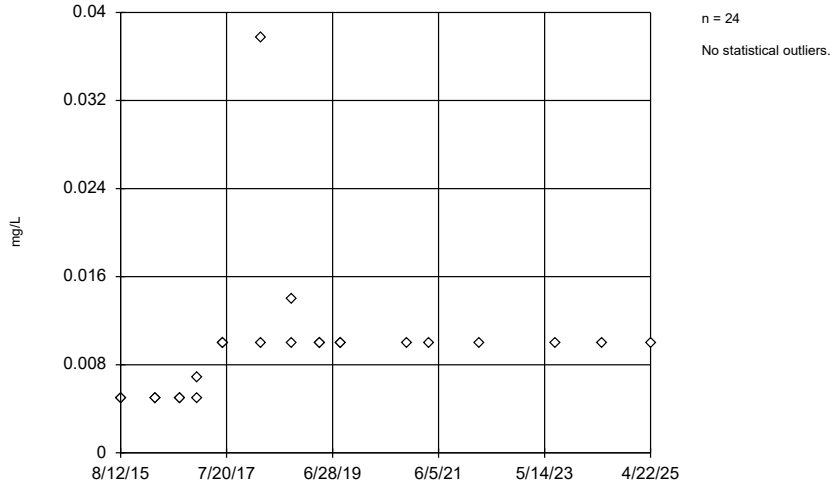
No statistical outliers.

Constituent: Vanadium Analysis Run 6/13/2025 9:40 AM View: 2025_SSN-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

No statistical outliers.

Constituent: Zinc Analysis Run 6/13/2025 9:40 AM View: 2025_SSN-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

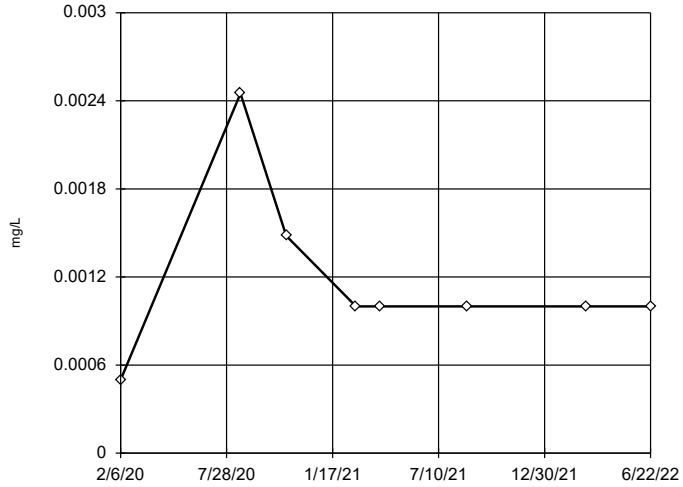
BG GU-6 Outlier Analysis

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master Printed 6/13/2025, 11:55 AM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Antimony (mg/L)	GU-6	No	n/a	n/a	OH	NaN	8	0.001179	0.0005766	n/a	n/a
Arsenic (mg/L)	GU-6	No	n/a	n/a	EPA/OH	0.05	8	0.002201	0.001978	ln(x)	ShapiroWilk
Barium (mg/L)	GU-6	No	n/a	n/a	NP (nrm)/OH	NaN	8	0.06226	0.04418	unknown	ShapiroWilk
Beryllium (mg/L)	GU-6	No	n/a	n/a	OH	NaN	8	0.0006153	0.0003848	n/a	n/a
Cadmium (mg/L)	GU-6	No	n/a	n/a	EPA/OH	0.05	8	0.0003281	0.0002385	normal	ShapiroWilk
Chromium (mg/L)	**GU-6**	**Yes**	**0.014**	**8/20/2020**	**OH**	**NaN**	**8**	**0.004734**	**0.004357**	**n/a**	**n/a**
Cobalt (mg/L)	GU-6	No	n/a	n/a	EPA/OH	0.05	8	0.009525	0.004418	normal	ShapiroWilk
Copper (mg/L)	GU-6	No	n/a	n/a	NP (nrm)/OH	NaN	8	0.004224	0.003123	unknown	ShapiroWilk
Lead (mg/L)	GU-6	No	n/a	n/a	EPA/OH	0.05	8	0.001405	0.001852	ln(x)	ShapiroWilk
Nickel (mg/L)	GU-6	No	n/a	n/a	EPA/OH	0.05	8	0.043	0.02135	normal	ShapiroWilk
Selenium (mg/L)	GU-6	No	n/a	n/a	Dixon/OH	0.01	8	0.003815	0.001817	normal	ShapiroWilk
Silver (mg/L)	**GU-6**	**Yes**	**0.00101**	**8/20/2020**	**OH**	**NaN**	**8**	**0.0005638**	**0.0001803**	**n/a**	**n/a**
Thallium (mg/L)	**GU-6**	**Yes**	**0.00306**	**8/20/2020**	**OH**	**NaN**	**8**	**0.00082**	**0.0009051**	**n/a**	**n/a**
Vanadium (mg/L)	GU-6	No	n/a	n/a	NP (nrm)/OH	NaN	8	0.006409	0.007415	unknown	ShapiroWilk
Zinc (mg/L)	GU-6	No	n/a	n/a	EPA/OH	0.05	8	0.03654	0.0214	normal	ShapiroWilk

Ohio EPA 0715 Outlier Algorithm

GU-6



n = 8

No statistical outliers.

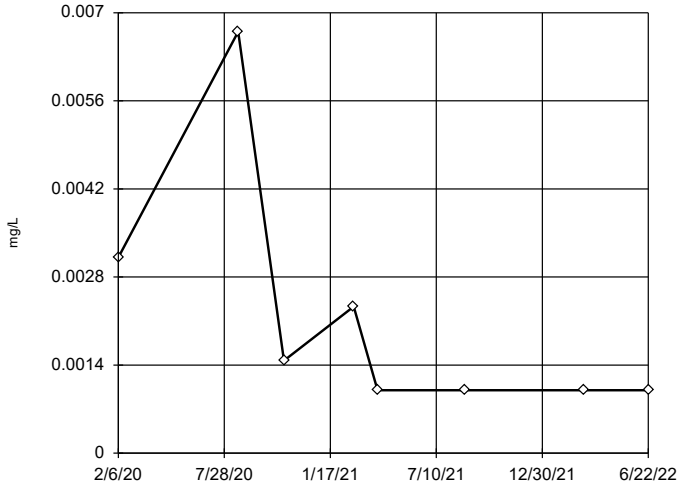
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.9262
Critical = 0.884 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Antimony Analysis Run 6/13/2025 11:53 AM View: 2025_SSN-GU-6_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Dixon's Test)

GU-6



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.002201, std. dev. 0.001978, critical Tn 2.032

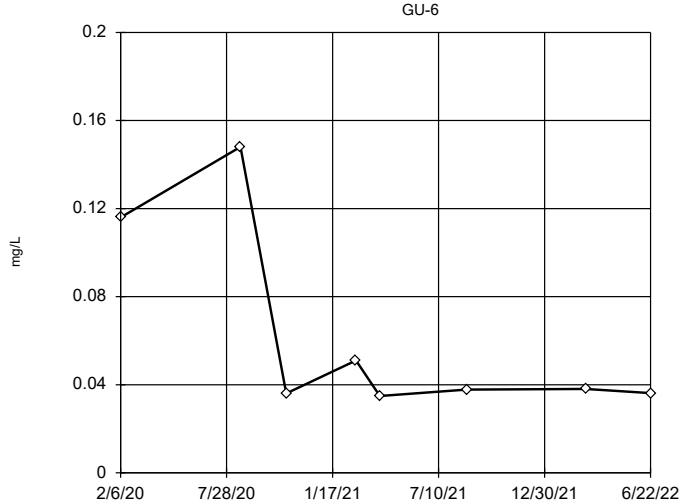
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.8074
Critical = 0.749 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Arsenic Analysis Run 6/13/2025 11:53 AM View: 2025_SSN-GU-6_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

GU-6



n = 8

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

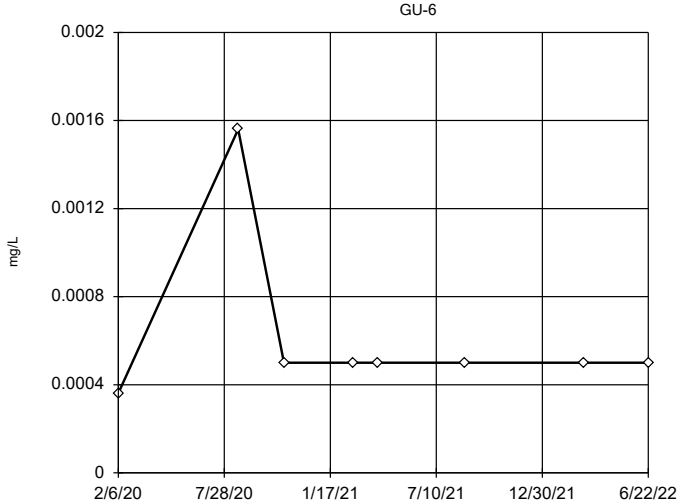
High cutoff = 0.2256, low cutoff = -0.1059, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 6/13/2025 11:53 AM View: 2025_SSN-GU-6_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm

GU-6



n = 8

No statistical outliers.

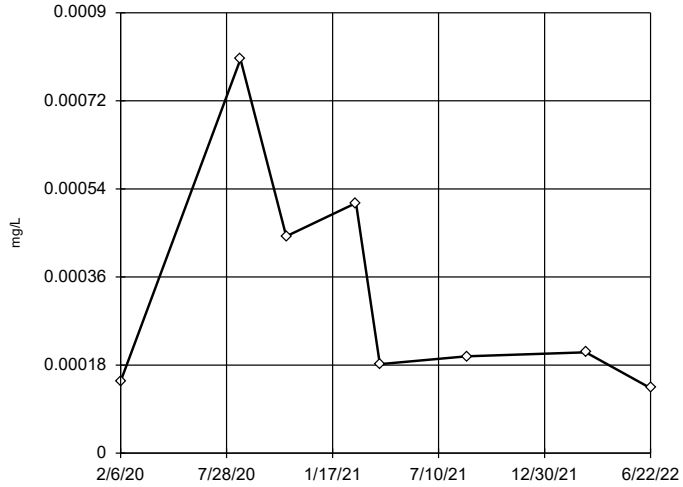
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.7206
Critical = 0.749
The distribution was found to be normally distributed.

Constituent: Beryllium Analysis Run 6/13/2025 11:53 AM View: 2025_SSN-GU-6_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Dixon's Test)

GU-6



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.0003281, std. dev. 0.0002385, critical Tn 2.032

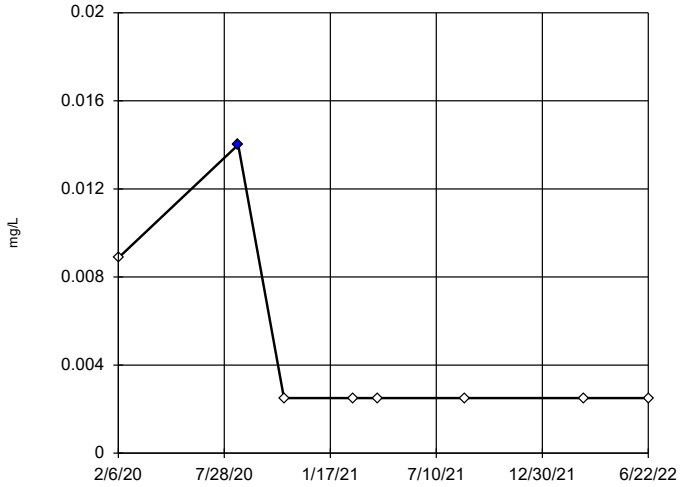
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.8098
Critical = 0.749
The distribution was found to be normally distributed.

Constituent: Cadmium Analysis Run 6/13/2025 11:53 AM View: 2025_SSN-GU-6_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Ohio EPA 0715 Outlier Algorithm

GU-6



n = 8

Statistical outlier is drawn as solid.
Outlier per Ohio method.

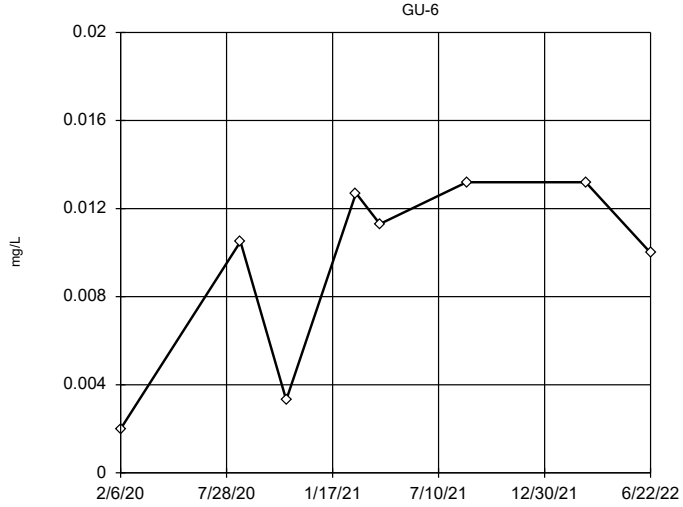
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.8098
Critical = 0.749
The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Chromium Analysis Run 6/13/2025 11:53 AM View: 2025_SSN-GU-6_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Dixon's Test)

GU-6



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.009525, std. dev. 0.004418, critical Tn 2.032

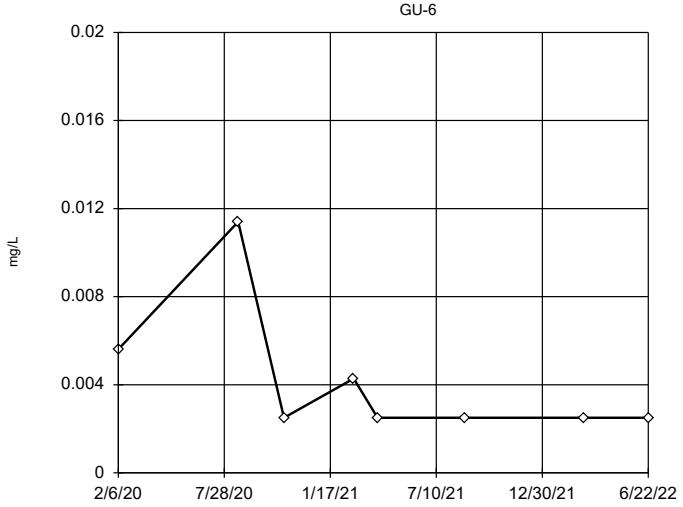
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.7952
Critical = 0.749
The distribution was found to be normally distributed.

Constituent: Cobalt Analysis Run 6/13/2025 11:53 AM View: 2025_SSN-GU-6_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

GU-6



n = 8

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

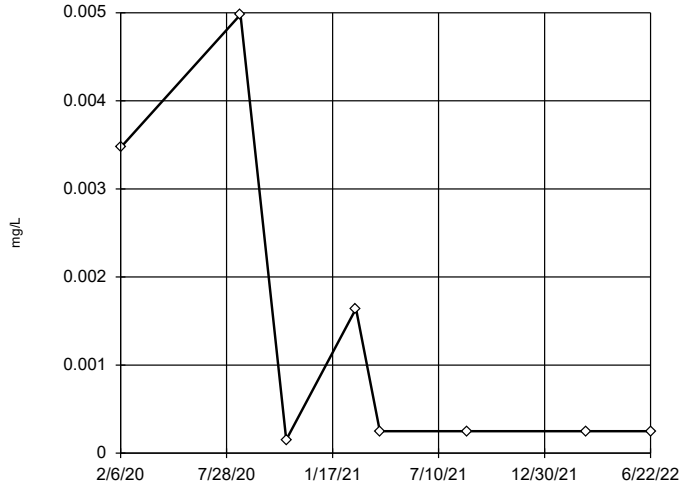
High cutoff = 0.01228, low cutoff = -0.004835, based on IQR multiplier of 3.

Constituent: Copper Analysis Run 6/13/2025 11:53 AM View: 2025_SSN-GU-6_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Dixon's Test)

GU-6



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.001405, std. dev. 0.001852, critical Tn 2.032

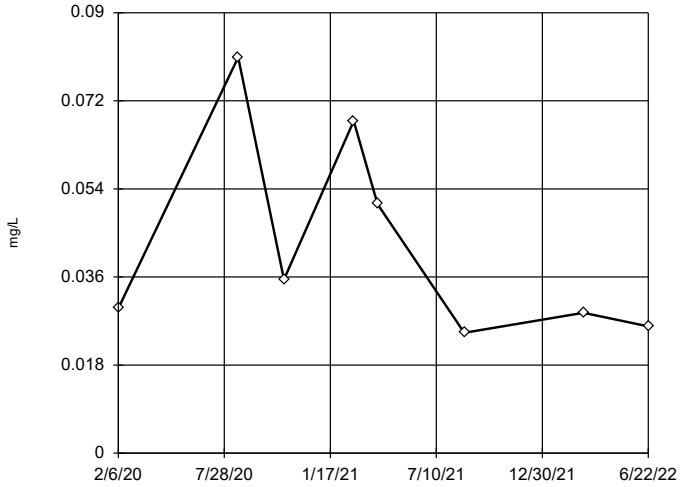
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.7918
Critical = 0.749 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Lead Analysis Run 6/13/2025 11:53 AM View: 2025_SSN-GU-6_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Dixon's Test)

GU-6



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.043, std. dev. 0.02135, critical Tn 2.032

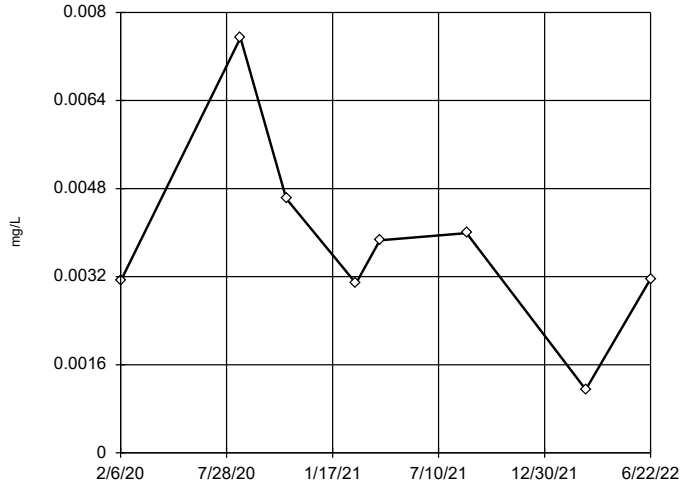
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.8334
Critical = 0.749
The distribution was found to be normally distributed.

Constituent: Nickel Analysis Run 6/13/2025 11:53 AM View: 2025_SSN-GU-6_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Dixon's Outlier Test / Ohio EPA 0715 Outlier Algorithm

GU-6



n = 8

No statistical outliers.
Testing for 1 high and 1 low outliers.
Mean = 0.003815.
Std. Dev. = 0.001817.
0.00754: c = 0.6547
tabl = 0.683.
0.00115 (J): c = 0.5562
tabl = 0.683.
Alpha = 0.01.

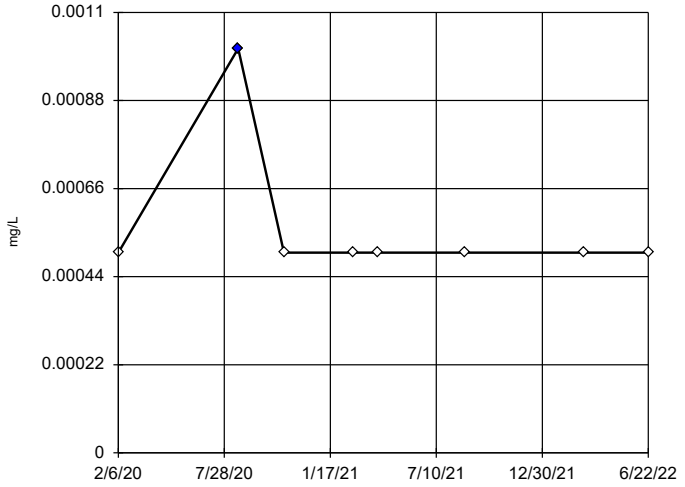
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.8629
Critical = 0.713
The distribution was found to be normally distributed.

Constituent: Selenium Analysis Run 6/13/2025 11:53 AM View: 2025_SSN-GU-6_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm

GU-6



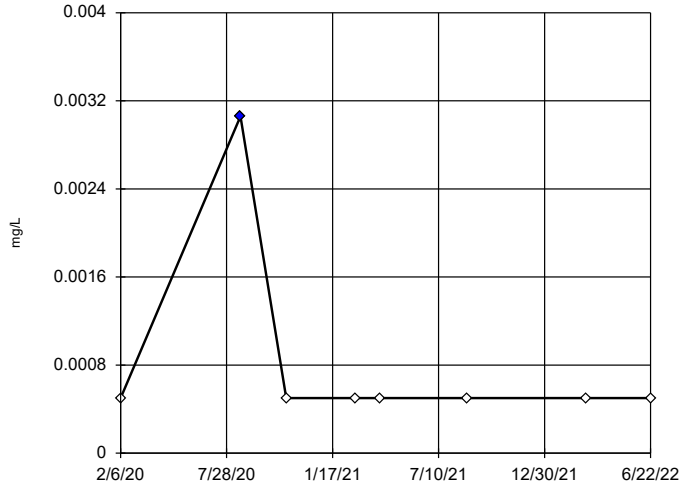
n = 8

Statistical outlier is drawn as solid.
Outlier per Ohio method.

Constituent: Silver Analysis Run 6/13/2025 11:53 AM View: 2025_SSN-GU-6_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Ohio EPA 0715 Outlier Algorithm

GU-6



n = 8

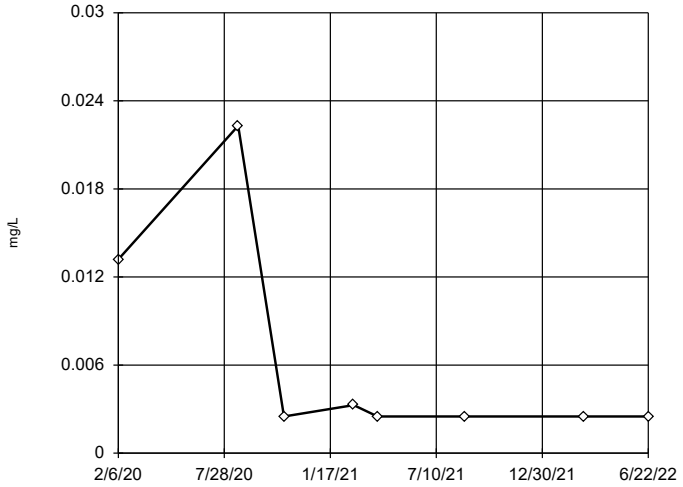
Statistical outlier is drawn as solid.
Outlier per Ohio method.

Constituent: Thallium Analysis Run 6/13/2025 11:53 AM View: 2025_SSN-GU-6_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

GU-6



n = 8

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

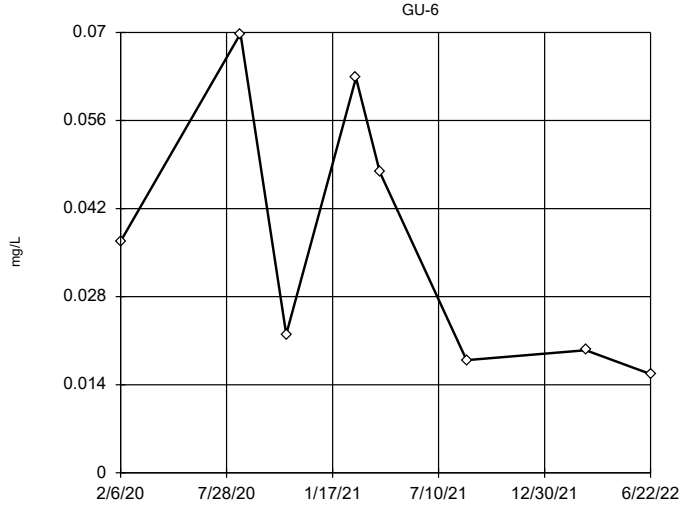
High cutoff = 0.02544, low cutoff = -0.01471, based on IQR multiplier of 3.

Constituent: Vanadium Analysis Run 6/13/2025 11:53 AM View: 2025_SSN-GU-6_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Dixon's Test)

GU-6



n = 8

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.03654, std. dev. 0.0214, critical Tn 2.032

Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.8666
Critical = 0.749
The distribution was found to be normally distributed.

Constituent: Zinc Analysis Run 6/13/2025 11:53 AM View: 2025_SSN-GU-6_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Interwell Prediction Limit Summary Table and Graphs – AMD Wells

AMD Inter Prediction Limit

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master Printed 6/13/2025, 3:20 PM

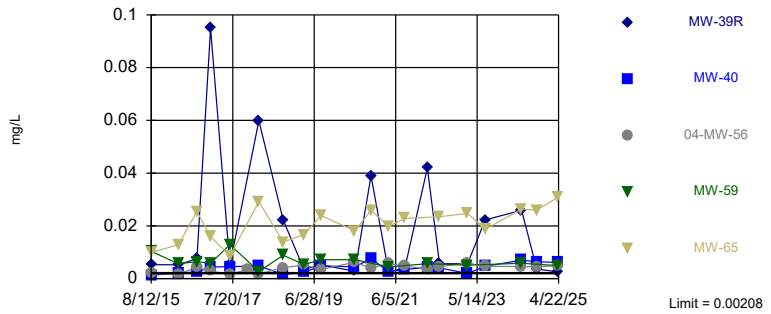
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	**MW-39R**	**0.00208**	**n/a**	**4/22/2025**	**0.00251**	**Yes**	**24**	**83.33**	**n/a**	**0.002696**	**NP Inter (NDs) 1 of 2**
Arsenic (mg/L)	**MW-40**	**0.00208**	**n/a**	**4/22/2025**	**0.00614**	**Yes**	**24**	**83.33**	**n/a**	**0.002696**	**NP Inter (NDs) 1 of 2**
Arsenic (mg/L)	**04-MW-56**	**0.00208**	**n/a**	**4/22/2025**	**0.0049**	**Yes**	**24**	**83.33**	**n/a**	**0.002696**	**NP Inter (NDs) 1 of 2**
Arsenic (mg/L)	**MW-59**	**0.00208**	**n/a**	**4/22/2025**	**0.00494**	**Yes**	**24**	**83.33**	**n/a**	**0.002696**	**NP Inter (NDs) 1 of 2**
Arsenic (mg/L)	**MW-65**	**0.00208**	**n/a**	**4/22/2025**	**0.031**	**Yes**	**24**	**83.33**	**n/a**	**0.002696**	**NP Inter (NDs) 1 of 2**
Barium (mg/L)	MW-39R	0.03139	n/a	4/22/2025	0.00904	No	24	0	x^3	0.000...	Param Inter 1 of 2
Barium (mg/L)	MW-40	0.03139	n/a	4/22/2025	0.0161	No	24	0	x^3	0.000...	Param Inter 1 of 2
Barium (mg/L)	04-MW-56	0.03139	n/a	4/22/2025	0.0242	No	24	0	x^3	0.000...	Param Inter 1 of 2
Barium (mg/L)	MW-58	0.03139	n/a	4/22/2025	0.0149	No	24	0	x^3	0.000...	Param Inter 1 of 2
Barium (mg/L)	**MW-59**	**0.03139**	**n/a**	**4/22/2025**	**0.0324**	**Yes**	**24**	**0**	**x^3**	**0.000...**	**Param Inter 1 of 2**
Barium (mg/L)	MW-63R	0.03139	n/a	4/22/2025	0.0142	No	24	0	x^3	0.000...	Param Inter 1 of 2
Barium (mg/L)	**MW-64**	**0.03139**	**n/a**	**4/22/2025**	**0.169**	**Yes**	**24**	**0**	**x^3**	**0.000...**	**Param Inter 1 of 2**
Barium (mg/L)	**MW-65**	**0.03139**	**n/a**	**4/22/2025**	**0.322**	**Yes**	**24**	**0**	**x^3**	**0.000...**	**Param Inter 1 of 2**
Cadmium (mg/L)	**MW-63R**	**0.0008668**	**n/a**	**4/22/2025**	**0.00189**	**Yes**	**24**	**41.67**	**sqrt(x)**	**0.000...**	**Param Inter 1 of 2**
Cobalt (mg/L)	MW-39R	0.04557	n/a	4/22/2025	0.0358	No	24	16.67	ln(x)	0.000...	Param Inter 1 of 2
Cobalt (mg/L)	**MW-40**	**0.04557**	**n/a**	**4/22/2025**	**0.122**	**Yes**	**24**	**16.67**	**ln(x)**	**0.000...**	**Param Inter 1 of 2**
Cobalt (mg/L)	04-MW-56	0.04557	n/a	4/22/2025	0.0197	No	24	16.67	ln(x)	0.000...	Param Inter 1 of 2
Cobalt (mg/L)	MW-58	0.04557	n/a	4/22/2025	0.000626	No	24	16.67	ln(x)	0.000...	Param Inter 1 of 2
Cobalt (mg/L)	MW-59	0.04557	n/a	4/22/2025	0.0181	No	24	16.67	ln(x)	0.000...	Param Inter 1 of 2
Cobalt (mg/L)	MW-63R	0.04557	n/a	4/22/2025	0.00319	No	24	16.67	ln(x)	0.000...	Param Inter 1 of 2
Cobalt (mg/L)	MW-65	0.04557	n/a	4/22/2025	0.00228	No	24	16.67	ln(x)	0.000...	Param Inter 1 of 2
Nickel (mg/L)	MW-39R	0.0356	n/a	4/22/2025	0.0202	No	24	16.67	ln(x)	0.000...	Param Inter 1 of 2
Nickel (mg/L)	**MW-40**	**0.0356**	**n/a**	**4/22/2025**	**0.0674**	**Yes**	**24**	**16.67**	**ln(x)**	**0.000...**	**Param Inter 1 of 2**
Nickel (mg/L)	**04-MW-56**	**0.0356**	**n/a**	**4/22/2025**	**0.0395**	**Yes**	**24**	**16.67**	**ln(x)**	**0.000...**	**Param Inter 1 of 2**
Nickel (mg/L)	MW-59	0.0356	n/a	4/22/2025	0.0197	No	24	16.67	ln(x)	0.000...	Param Inter 1 of 2
Nickel (mg/L)	MW-63R	0.0356	n/a	4/22/2025	0.0165	No	24	16.67	ln(x)	0.000...	Param Inter 1 of 2
Nickel (mg/L)	MW-64	0.0356	n/a	4/22/2025	0.0214	No	24	16.67	ln(x)	0.000...	Param Inter 1 of 2
Thallium (mg/L)	MW-58	0.00278	n/a	4/22/2025	0.00109	No	24	95.83	n/a	0.002696	NP Inter (NDs) 1 of 2
Zinc (mg/L)	**MW-63R**	**0.0377**	**n/a**	**4/22/2025**	**0.109**	**Yes**	**24**	**87.5**	**n/a**	**0.002696**	**NP Inter (NDs) 1 of 2**

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Exceeds Limit: MW-39R, MW-40, 04-MW-56, MW-59, MW-65

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 83.33% NDs. Annual per-constituent alpha = 0.07279. Individual comparison alpha = 0.002696 (1 of 2). Comparing 5 points to limit. Assumes 9 future values.

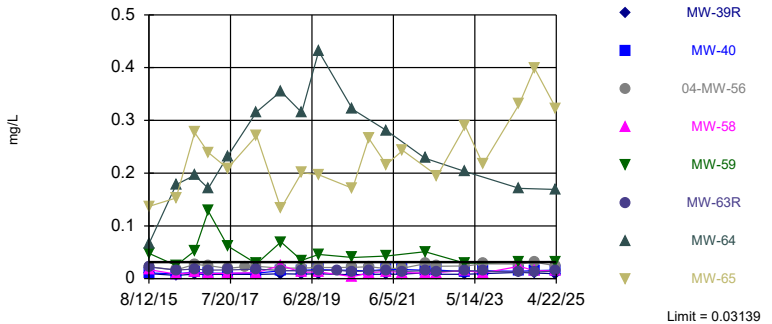
Constituent: Arsenic Analysis Run 6/13/2025 3:02 PM View: 2025_SSN-AMD_Wells_InterPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Exceeds Limit: MW-59, MW-64, MW-65

Prediction Limit

Interwell Parametric



Background Data Summary (based on cube transformation): Mean=0.00001086, Std. Dev.=0.000007964, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8891, critical = 0.884. Kappa = 2.521 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.003506. Individual comparison alpha = 0.0002508. Comparing 8 points to limit. Assumes 6 future values.

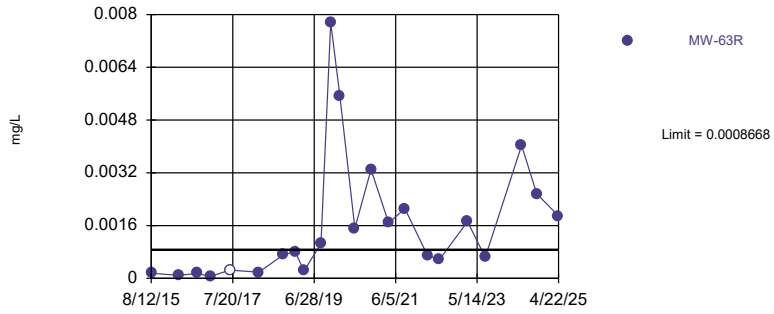
Constituent: Barium Analysis Run 6/13/2025 3:02 PM View: 2025_SSN-AMD_Wells_InterPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Exceeds Limit: MW-63R

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.01273, Std. Dev.=0.006627, n=24, 41.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8941, critical = 0.884. Kappa = 2.521 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.003506. Individual comparison alpha = 0.0002508. Assumes 13 future values.

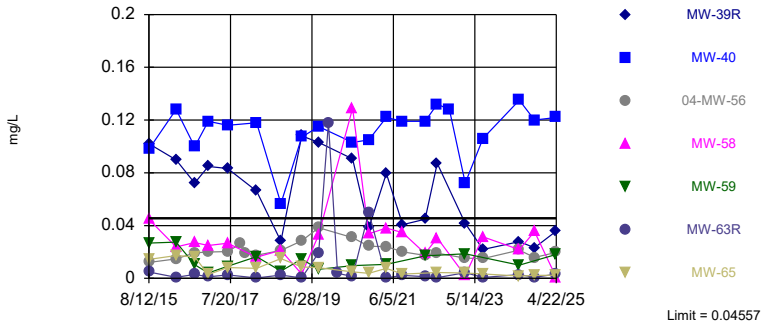
Constituent: Cadmium Analysis Run 6/13/2025 3:02 PM View: 2025_SSN-AMD_Wells_InterPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Exceeds Limit: MW-40

Prediction Limit

Interwell Parametric



Background Data Summary (based on natural log transformation) (after Kaplan-Meier Adjustment): Mean=-7.375, Std. Dev.=1.7, n=24, 16.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.952, critical = 0.884. Kappa = 2.521 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.003506. Individual comparison alpha = 0.0002508. Comparing 7 points to limit. Assumes 7 future values.

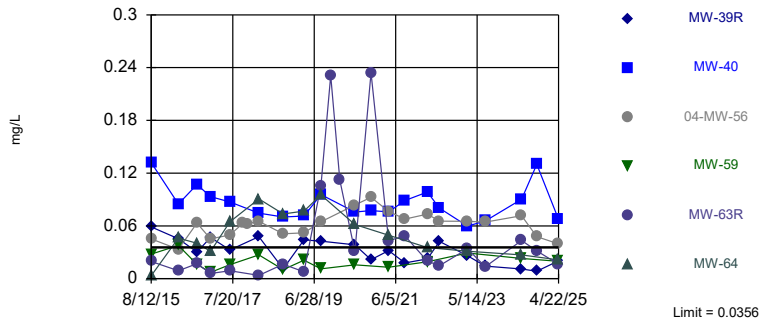
Constituent: Cobalt Analysis Run 6/13/2025 3:02 PM View: 2025_SSN-AMD_Wells_InterPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Exceeds Limit: MW-40, 04-MW-56

Prediction Limit

Interwell Parametric



Background Data Summary (based on natural log transformation) (after Kaplan-Meier Adjustment): Mean=-5.23, Std. Dev.=0.7517, n=24, 16.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9262, critical = 0.884. Kappa = 2.521 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.003506. Individual comparison alpha = 0.0002508. Comparing 6 points to limit. Assumes 8 future values.

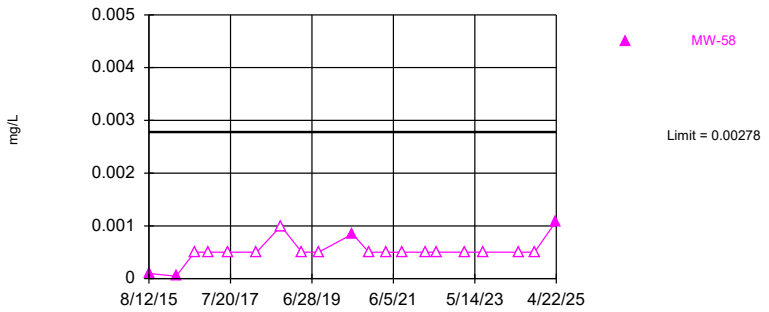
Constituent: Nickel Analysis Run 6/13/2025 3:02 PM View: 2025_SSN-AMD_Wells_InterPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 95.83% NDs. Annual per-constituent alpha = 0.07279. Individual comparison alpha = 0.002696 (1 of 2). Assumes 13 future values.

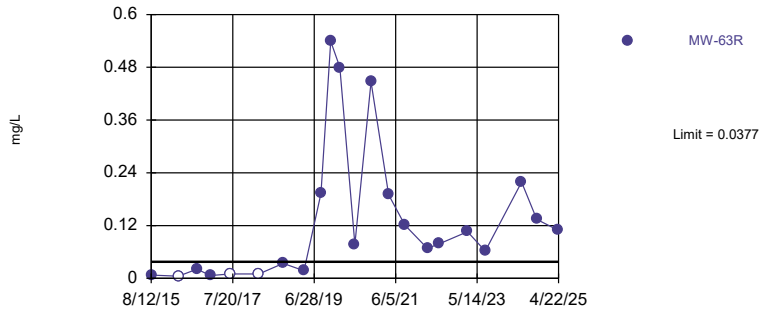
Constituent: Thallium Analysis Run 6/13/2025 3:02 PM View: 2025_SSN-AMD_Wells_InterPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Exceeds Limit: MW-63R

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 87.5% NDs. Annual per-constituent alpha = 0.07279. Individual comparison alpha = 0.002696 (1 of 2). Assumes 13 future values.

Constituent: Zinc Analysis Run 6/13/2025 3:02 PM View: 2025_SSN-AMD_Wells_InterPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Intrawell Prediction Limit Summary Table and Graphs – AMD Wells

AMD Intra Prediction Limit

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master Printed 6/13/2025, 4:46 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	MW-39R	0.0015	n/a	4/22/2025	0.001ND	No	12	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Antimony (mg/L)	MW-40	0.0015	n/a	4/22/2025	0.001ND	No	12	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Antimony (mg/L)	MW-58	0.002	n/a	4/22/2025	0.001ND	No	12	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	MW-39R	0.1791	n/a	4/22/2025	0.00251	No	12	0	x^(1/3)	0.000...	Param Intra 1 of 2
Arsenic (mg/L)	MW-40	0.00912	n/a	4/22/2025	0.00614	No	12	0	No	0.000...	Param Intra 1 of 2
Arsenic (mg/L)	04-MW-56	0.008195	n/a	4/22/2025	0.0049	No	13	0	No	0.000...	Param Intra 1 of 2
Arsenic (mg/L)	MW-58	0.004	n/a	4/22/2025	0.001ND	No	12	83.33	n/a	0.01077	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	MW-59	0.01606	n/a	4/22/2025	0.00494	No	11	0	No	0.000...	Param Intra 1 of 2
Arsenic (mg/L)	MW-63R	0.01	n/a	4/22/2025	0.001ND	No	13	76.92	n/a	0.009692	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	MW-64	0.02127	n/a	4/22/2025	0.000652J	No	11	0	No	0.000...	Param Intra 1 of 2
Arsenic (mg/L)	MW-65	0.03865	n/a	4/22/2025	0.031	No	12	0	No	0.000...	Param Intra 1 of 2
Barium (mg/L)	MW-39R	0.01096	n/a	4/22/2025	0.00904	No	12	0	No	0.000...	Param Intra 1 of 2
Barium (mg/L)	MW-40	0.02238	n/a	4/22/2025	0.0161	No	12	0	No	0.000...	Param Intra 1 of 2
Barium (mg/L)	04-MW-56	0.0295	n/a	4/22/2025	0.0242	No	13	0	No	0.000...	Param Intra 1 of 2
Barium (mg/L)	MW-58	0.02799	n/a	4/22/2025	0.0149	No	12	0	No	0.000...	Param Intra 1 of 2
Barium (mg/L)	MW-59	0.1586	n/a	4/22/2025	0.0324	No	11	0	sqrt(x)	0.000...	Param Intra 1 of 2
Barium (mg/L)	MW-63R	0.02289	n/a	4/22/2025	0.0142	No	13	0	No	0.000...	Param Intra 1 of 2
Barium (mg/L)	MW-64	0.5898	n/a	4/22/2025	0.169	No	11	0	No	0.000...	Param Intra 1 of 2
Barium (mg/L)	MW-65	0.3614	n/a	4/22/2025	0.322	No	12	0	No	0.000...	Param Intra 1 of 2
Beryllium (mg/L)	MW-39R	0.0005	n/a	4/22/2025	0.0005ND	No	12	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	MW-40	0.0005	n/a	4/22/2025	0.0005ND	No	12	75	n/a	0.01077	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	MW-58	0.0054	n/a	4/22/2025	0.0005ND	No	12	41.67	n/a	0.01077	NP Intra (normality) ...
Beryllium (mg/L)	MW-63R	0.00188	n/a	4/22/2025	0.0005ND	No	13	69.23	n/a	0.009692	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	MW-39R	0.000319	n/a	4/22/2025	0.0001ND	No	12	58.33	n/a	0.01077	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	MW-40	0.003094	n/a	4/22/2025	0.0001ND	No	12	0	No	0.000...	Param Intra 1 of 2
Cadmium (mg/L)	04-MW-56	0.0005274	n/a	4/22/2025	0.0001ND	No	13	38.46	No	0.000...	Param Intra 1 of 2
Cadmium (mg/L)	MW-58	0.01314	n/a	4/22/2025	0.000144J	No	12	8.333	x^(1/3)	0.000...	Param Intra 1 of 2
Cadmium (mg/L)	MW-59	0.000295	n/a	4/22/2025	0.0001ND	No	11	72.73	n/a	0.01276	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	MW-63R	0.01037	n/a	4/22/2025	0.00189	No	15	6.667	sqrt(x)	0.000...	Param Intra 1 of 2
Cadmium (mg/L)	MW-64	0.00025	n/a	4/22/2025	0.0001ND	No	11	90.91	n/a	0.01276	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	MW-65	0.000735	n/a	4/22/2025	0.0001ND	No	12	66.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Chromium (mg/L)	MW-39R	0.0025	n/a	4/22/2025	0.0025ND	No	12	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Chromium (mg/L)	MW-58	0.0025	n/a	4/22/2025	0.0025ND	No	12	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Chromium (mg/L)	MW-63R	0.025	n/a	4/22/2025	0.0025ND	No	13	92.31	n/a	0.009692	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	MW-39R	0.1546	n/a	4/22/2025	0.0358	No	12	0	No	0.000...	Param Intra 1 of 2
Cobalt (mg/L)	MW-40	0.164	n/a	4/22/2025	0.122	No	12	0	No	0.000...	Param Intra 1 of 2
Cobalt (mg/L)	04-MW-56	0.04254	n/a	4/22/2025	0.0197	No	14	0	No	0.000...	Param Intra 1 of 2
Cobalt (mg/L)	MW-58	0.1521	n/a	4/22/2025	0.000626	No	12	0	sqrt(x)	0.000...	Param Intra 1 of 2
Cobalt (mg/L)	MW-59	0.03815	n/a	4/22/2025	0.0181	No	11	0	No	0.000...	Param Intra 1 of 2
Cobalt (mg/L)	MW-63R	0.6753	n/a	4/22/2025	0.00319	No	14	0	ln(x)	0.000...	Param Intra 1 of 2
Cobalt (mg/L)	MW-64	0.003095	n/a	4/22/2025	0.000275J	No	11	0	No	0.000...	Param Intra 1 of 2
Cobalt (mg/L)	MW-65	0.02472	n/a	4/22/2025	0.00228	No	12	0	No	0.000...	Param Intra 1 of 2
Copper (mg/L)	MW-39R	0.0136	n/a	4/22/2025	0.0025ND	No	12	75	n/a	0.01077	NP Intra (NDs) 1 of 2
Copper (mg/L)	MW-40	0.00326	n/a	4/22/2025	0.00358J	No	12	83.33	n/a	0.01077	NP Intra (NDs) 1 of 2
Copper (mg/L)	04-MW-56	0.01	n/a	4/22/2025	0.0025ND	No	13	84.62	n/a	0.009692	NP Intra (NDs) 1 of 2
Copper (mg/L)	MW-58	0.01	n/a	4/22/2025	0.0025ND	No	12	66.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Copper (mg/L)	MW-59	0.0025	n/a	4/22/2025	0.0025ND	No	11	81.82	n/a	0.01276	NP Intra (NDs) 1 of 2
Copper (mg/L)	MW-63R	0.025	n/a	4/22/2025	0.0025ND	No	13	76.92	n/a	0.009692	NP Intra (NDs) 1 of 2
Copper (mg/L)	MW-64	0.0025	n/a	4/22/2025	0.0025ND	No	11	72.73	n/a	0.01276	NP Intra (NDs) 1 of 2
Copper (mg/L)	MW-65	0.0025	n/a	4/22/2025	0.0025ND	No	12	83.33	n/a	0.01077	NP Intra (NDs) 1 of 2

AMD Intra Prediction Limit

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master Printed 6/13/2025, 4:46 PM

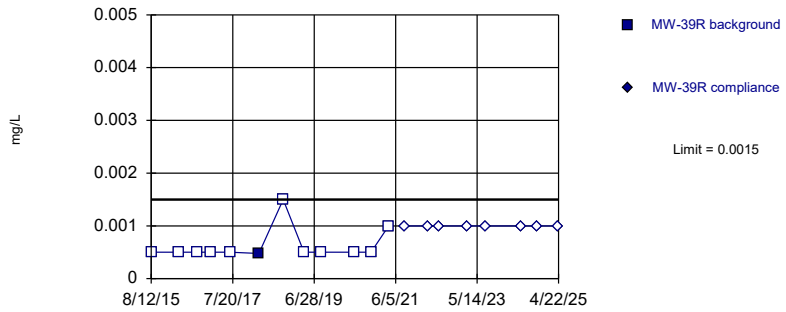
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Lead (mg/L)	MW-39R	0.00362	n/a	4/22/2025	0.00025ND	No	12	66.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Lead (mg/L)	MW-40	0.0021	n/a	4/22/2025	0.000384J	No	12	66.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Lead (mg/L)	04-MW-56	0.001	n/a	4/22/2025	0.00025ND	No	13	53.85	n/a	0.009692	NP Intra (NDs) 1 of 2
Lead (mg/L)	MW-58	0.00335	n/a	4/22/2025	0.00025ND	No	12	41.67	n/a	0.01077	NP Intra (normality) ...
Lead (mg/L)	MW-59	0.000491	n/a	4/22/2025	0.00025ND	No	11	54.55	n/a	0.01276	NP Intra (NDs) 1 of 2
Lead (mg/L)	MW-63R	0.00528	n/a	4/22/2025	0.00025ND	No	14	57.14	n/a	0.008612	NP Intra (NDs) 1 of 2
Lead (mg/L)	MW-64	0.000771	n/a	4/22/2025	0.00025ND	No	11	81.82	n/a	0.01276	NP Intra (NDs) 1 of 2
Lead (mg/L)	MW-65	0.00211	n/a	4/22/2025	0.00025ND	No	12	58.33	n/a	0.01077	NP Intra (NDs) 1 of 2
Nickel (mg/L)	MW-39R	0.07721	n/a	4/22/2025	0.0202	No	12	0	No	0.000...	Param Intra 1 of 2
Nickel (mg/L)	MW-40	0.1424	n/a	4/22/2025	0.0674	No	12	0	No	0.000...	Param Intra 1 of 2
Nickel (mg/L)	04-MW-56	0.1075	n/a	4/22/2025	0.0395	No	14	0	No	0.000...	Param Intra 1 of 2
Nickel (mg/L)	MW-58	0.3946	n/a	4/22/2025	0.0048J	No	12	0	ln(x)	0.000...	Param Intra 1 of 2
Nickel (mg/L)	MW-59	0.04773	n/a	4/22/2025	0.0197	No	11	0	No	0.000...	Param Intra 1 of 2
Nickel (mg/L)	MW-63R	0.4863	n/a	4/22/2025	0.0165	No	14	0	x^(1/3)	0.000...	Param Intra 1 of 2
Nickel (mg/L)	MW-64	0.1444	n/a	4/22/2025	0.0214	No	11	0	No	0.000...	Param Intra 1 of 2
Nickel (mg/L)	MW-65	0.02329	n/a	4/22/2025	0.0025ND	No	12	0	No	0.000...	Param Intra 1 of 2
Selenium (mg/L)	MW-39R	0.0025	n/a	4/22/2025	0.0025ND	No	12	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Selenium (mg/L)	MW-40	0.0025	n/a	4/22/2025	0.0025ND	No	12	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Selenium (mg/L)	MW-58	0.01	n/a	4/22/2025	0.0025ND	No	12	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Selenium (mg/L)	MW-63R	0.025	n/a	4/22/2025	0.0025ND	No	13	84.62	n/a	0.009692	NP Intra (NDs) 1 of 2
Silver (mg/L)	MW-39R	0.0005	n/a	4/22/2025	0.0005ND	No	12	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Silver (mg/L)	MW-58	0.0005	n/a	4/22/2025	0.0005ND	No	12	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Silver (mg/L)	MW-63R	0.005	n/a	4/22/2025	0.0005ND	No	13	92.31	n/a	0.009692	NP Intra (NDs) 1 of 2
Thallium (mg/L)	MW-39R	0.001	n/a	4/22/2025	0.0005ND	No	12	66.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Thallium (mg/L)	MW-40	0.0006159	n/a	4/22/2025	0.0005ND	No	12	41.67	No	0.000...	Param Intra 1 of 2
Thallium (mg/L)	**MW-58**	**0.001**	**n/a**	**4/22/2025**	**0.00109**	**Yes**	**12**	**75**	**n/a**	**0.01077**	**NP Intra (NDs) 1 of 2**
Vanadium (mg/L)	MW-39R	0.0025	n/a	4/22/2025	0.0025ND	No	12	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	MW-40	0.0025	n/a	4/22/2025	0.0025ND	No	12	83.33	n/a	0.01077	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	MW-63R	0.025	n/a	4/22/2025	0.0025ND	No	13	92.31	n/a	0.009692	NP Intra (NDs) 1 of 2
Zinc (mg/L)	MW-39R	0.0644	n/a	4/22/2025	0.01ND	No	12	75	n/a	0.01077	NP Intra (NDs) 1 of 2
Zinc (mg/L)	MW-40	0.1489	n/a	4/22/2025	0.01ND	No	12	0	No	0.000...	Param Intra 1 of 2
Zinc (mg/L)	04-MW-56	0.05628	n/a	4/22/2025	0.0136J	No	14	14.29	No	0.000...	Param Intra 1 of 2
Zinc (mg/L)	MW-58	1.716	n/a	4/22/2025	0.0166J	No	12	0	ln(x)	0.000...	Param Intra 1 of 2
Zinc (mg/L)	MW-59	0.0827	n/a	4/22/2025	0.01ND	No	11	63.64	n/a	0.01276	NP Intra (NDs) 1 of 2
Zinc (mg/L)	MW-63R	1.309	n/a	4/22/2025	0.109	No	14	21.43	x^(1/3)	0.000...	Param Intra 1 of 2
Zinc (mg/L)	MW-65	0.0327	n/a	4/22/2025	0.01ND	No	12	83.33	n/a	0.01077	NP Intra (NDs) 1 of 2

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

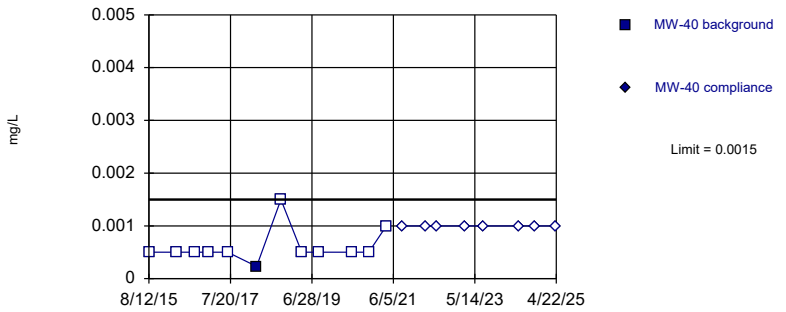
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

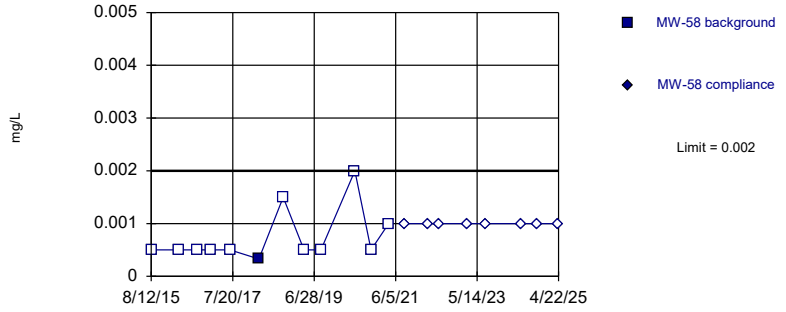
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

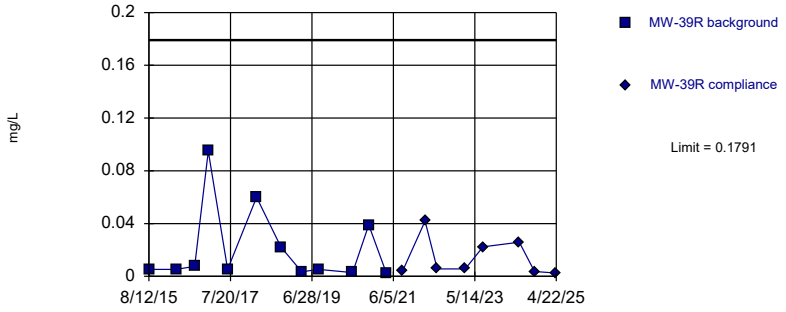
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube root transformation): Mean=0.2322, Std. Dev.=0.108, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8078, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Antimony Analysis Run 6/13/2025 4:43 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

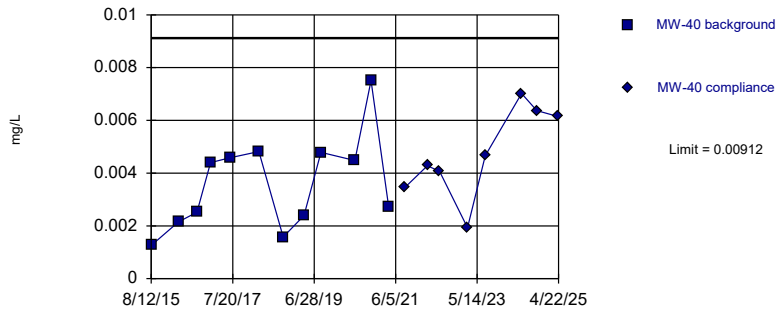
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.003601, Std. Dev.=0.001799, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9115, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

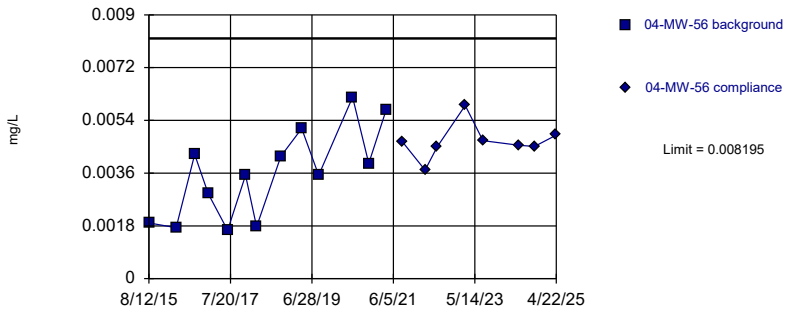
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.003573, Std. Dev.=0.001544, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9254, critical = 0.814. Kappa = 2.994 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

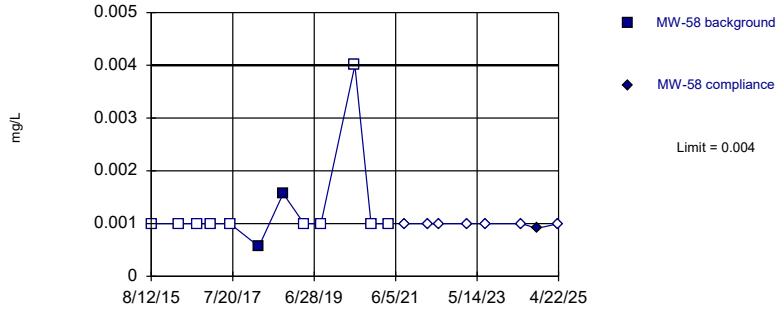
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

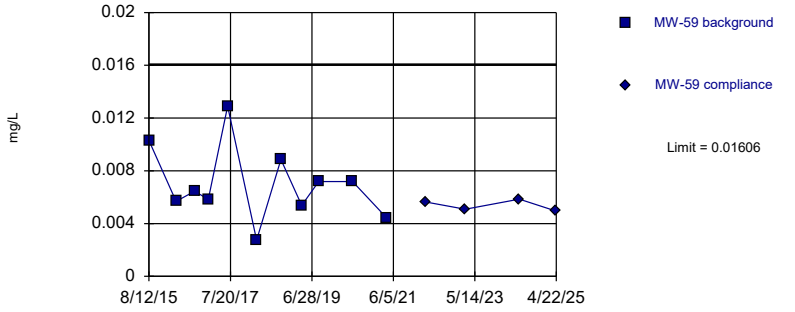
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.006998, Std. Dev.=0.002826, n=11. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9528, critical = 0.792. Kappa = 3.205 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

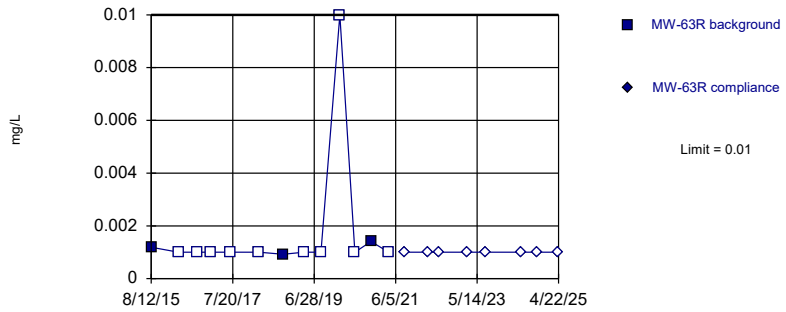
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 76.92% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

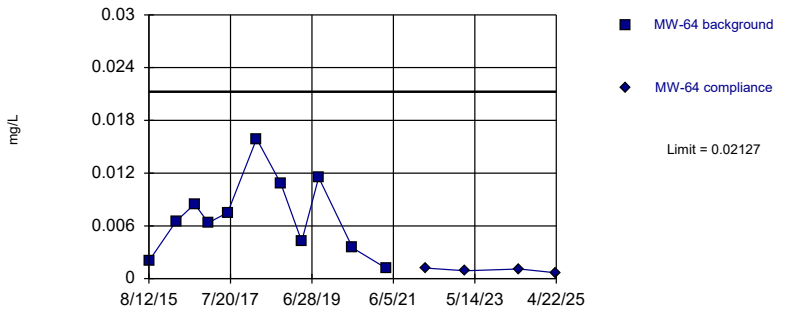
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.00709, Std. Dev.=0.004423, n=11. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9637, critical = 0.792. Kappa = 3.205 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

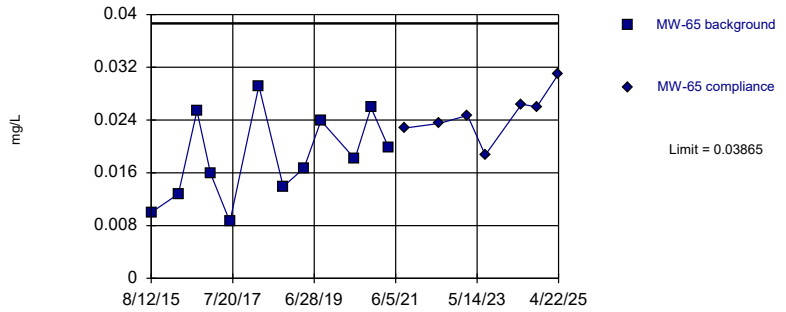
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.01835, Std. Dev.=0.00662, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9608, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

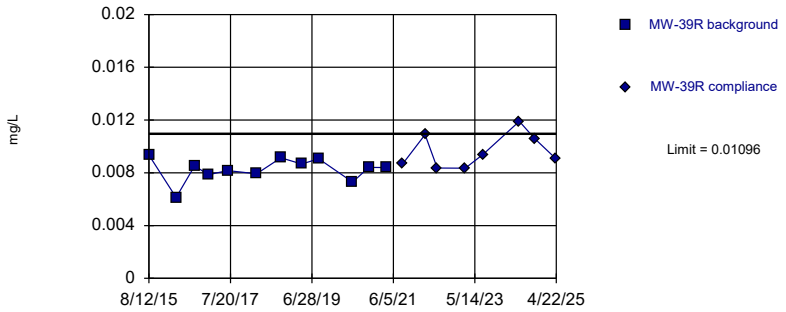
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.008242, Std. Dev.=0.0008849, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9139, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

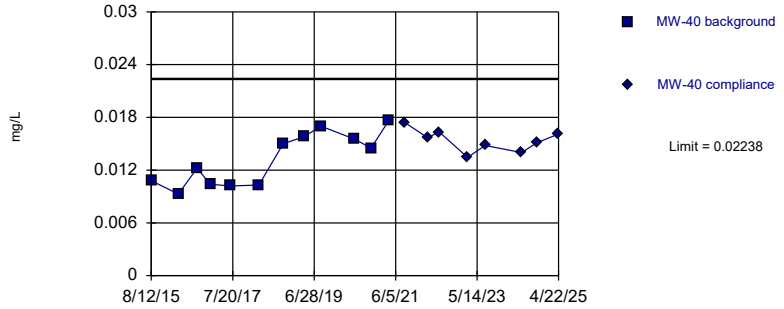
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.01322, Std. Dev.=0.002986, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8947, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Barium Analysis Run 6/13/2025 4:43 PM View: 2025_SSN-AMD_Wells_IntraPL

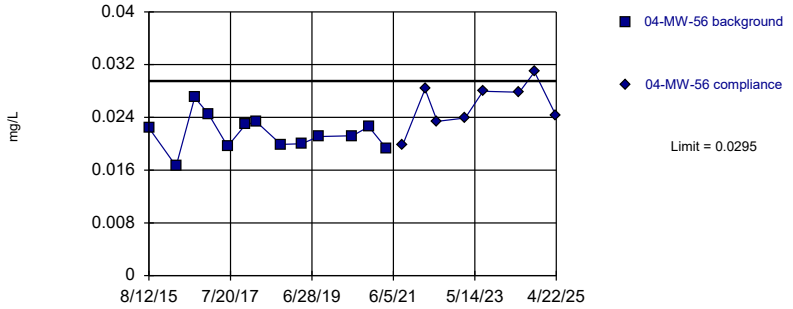
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.02157, Std. Dev.=0.002649, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9788, critical = 0.814. Kappa = 2.994 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Barium Analysis Run 6/13/2025 4:43 PM View: 2025_SSN-AMD_Wells_IntraPL

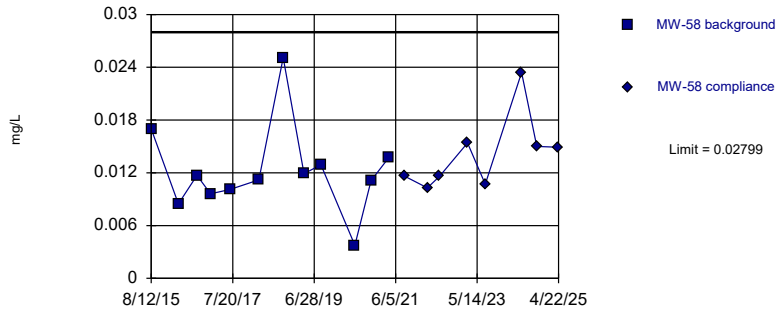
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.01221, Std. Dev.=0.005143, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.881, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Barium Analysis Run 6/13/2025 4:43 PM View: 2025_SSN-AMD_Wells_IntraPL

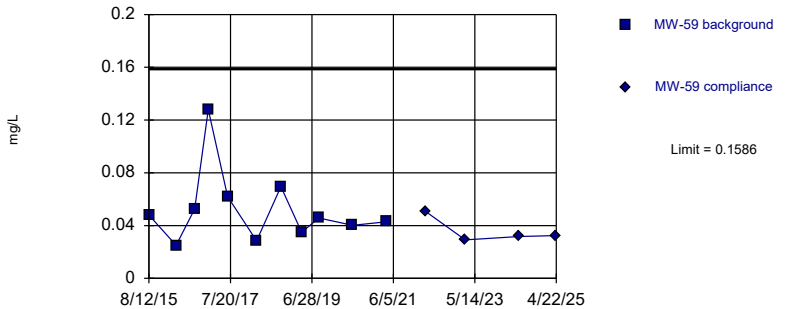
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=0.223, Std. Dev.=0.05466, n=11. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8819, critical = 0.792. Kappa = 3.205 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Barium Analysis Run 6/13/2025 4:43 PM View: 2025_SSN-AMD_Wells_IntraPL

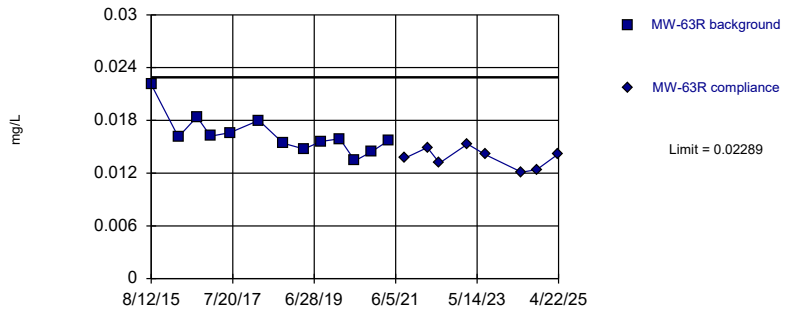
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.01635, Std. Dev.=0.002185, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8721, critical = 0.814. Kappa = 2.994 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

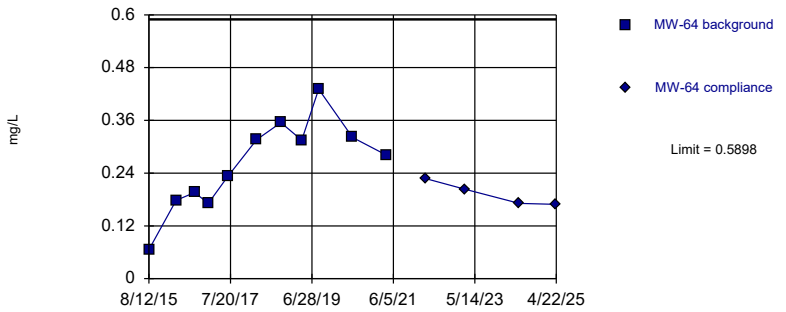
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2602, Std. Dev.=0.1028, n=11. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9724, critical = 0.792. Kappa = 3.205 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

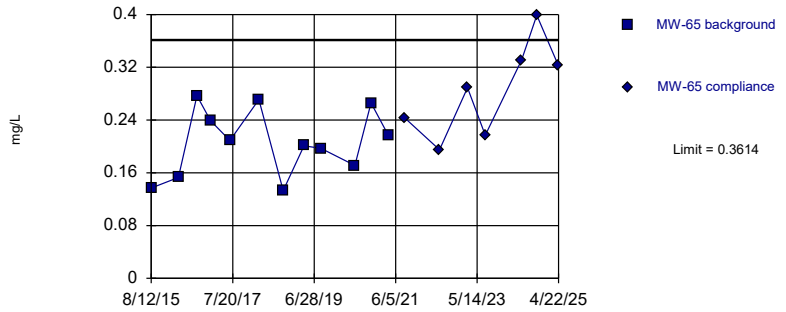
Constituent: Barium Analysis Run 6/13/2025 4:43 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2058, Std. Dev.=0.05072, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9355, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

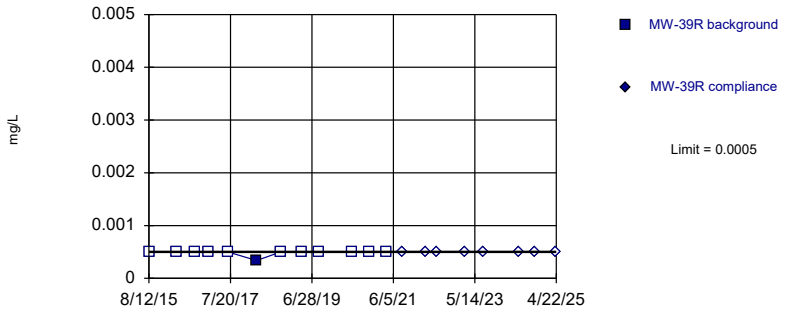
Constituent: Barium Analysis Run 6/13/2025 4:43 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

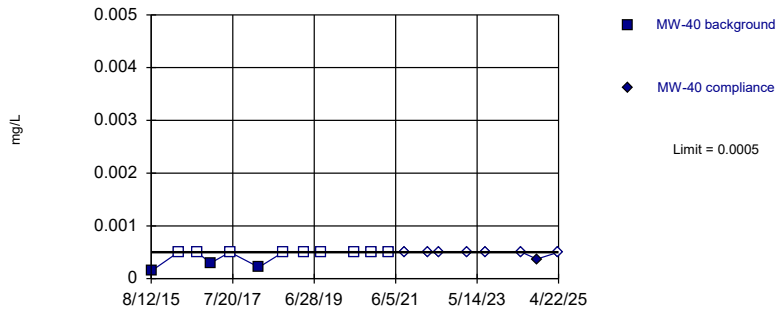
Constituent: Beryllium Analysis Run 6/13/2025 4:43 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 75% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

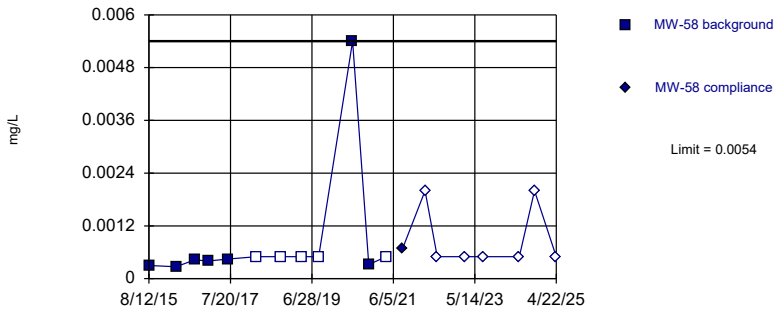
Constituent: Beryllium Analysis Run 6/13/2025 4:43 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. 41.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

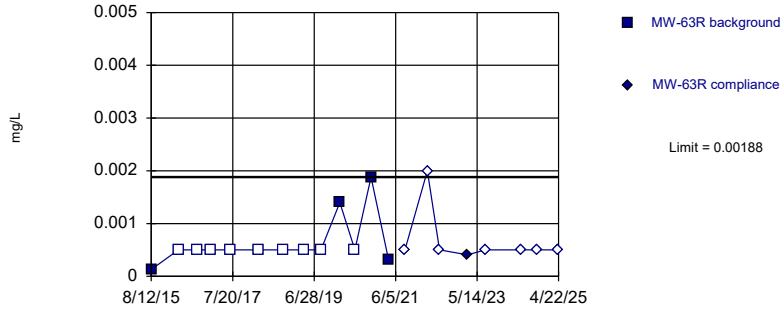
Constituent: Beryllium Analysis Run 6/13/2025 4:43 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 69.23% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

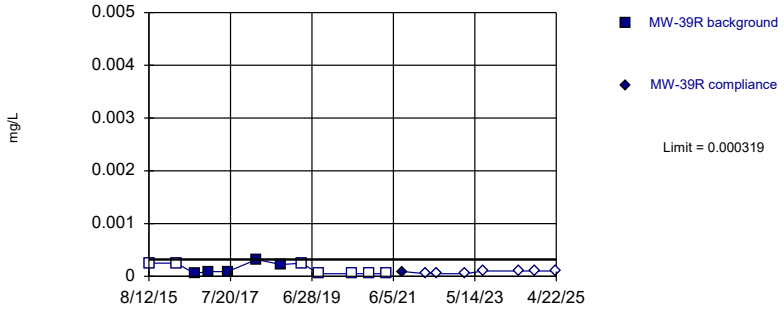
Constituent: Beryllium Analysis Run 6/13/2025 4:43 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 58.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

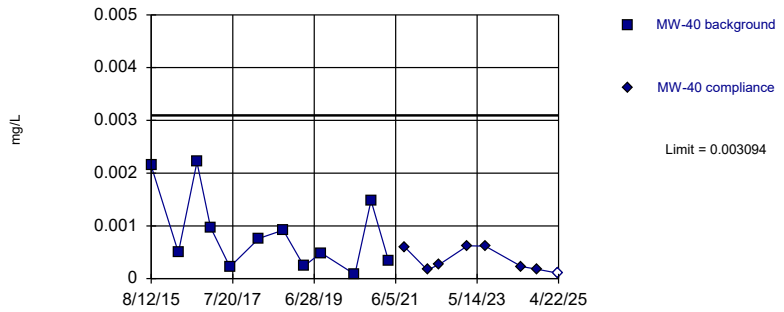
Constituent: Cadmium Analysis Run 6/13/2025 4:43 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.0008613, Std. Dev.=0.0007278, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8651, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

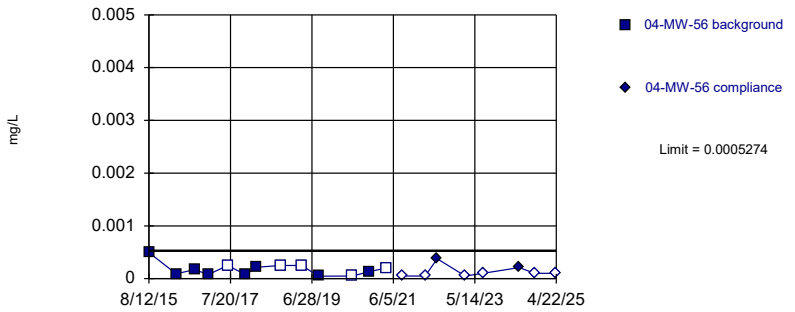
Constituent: Cadmium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.0001493, Std. Dev.=0.0001263, n=13, 38.46% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8604, critical = 0.814. Kappa = 2.994 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

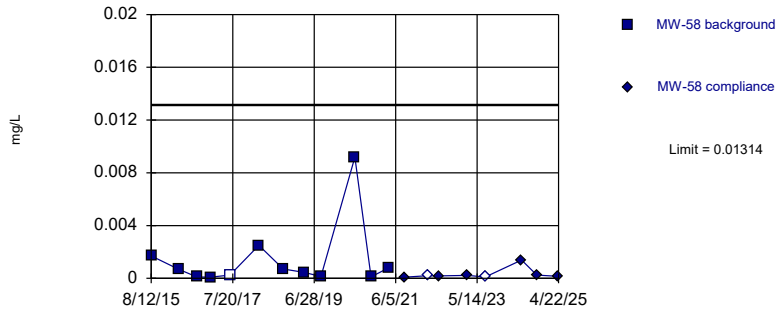
Constituent: Cadmium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube root transformation): Mean=0.08872, Std. Dev.=0.04801, n=12, 8.333% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8416, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

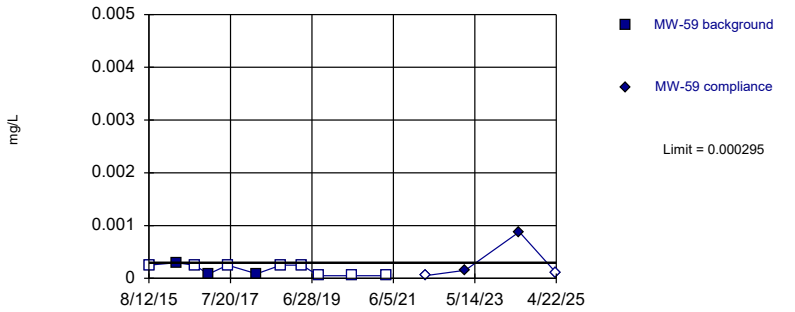
Constituent: Cadmium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 11 background values. 72.73% NDs. Well-constituent pair annual alpha = 0.02537. Individual comparison alpha = 0.01276 (1 of 2).

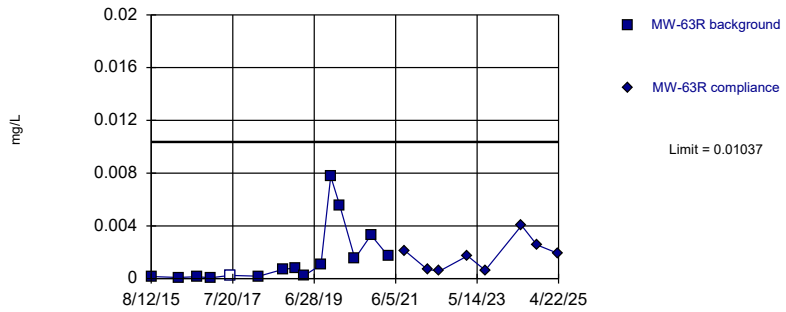
Constituent: Cadmium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=0.03157, Std. Dev.=0.02468, n=15, 6.667% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8489, critical = 0.835. Kappa = 2.846 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

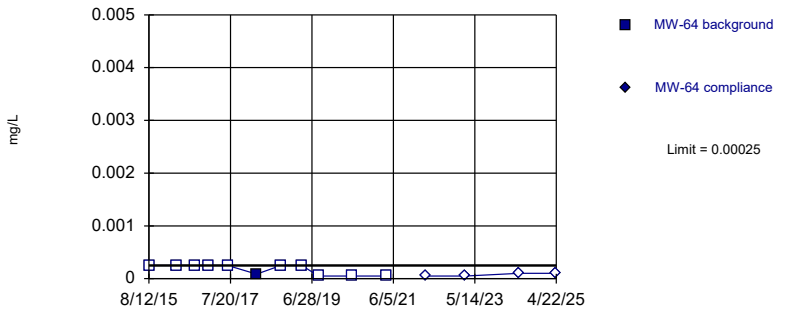
Constituent: Cadmium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 11 background values. 90.91% NDs. Well-constituent pair annual alpha = 0.02537. Individual comparison alpha = 0.01276 (1 of 2).

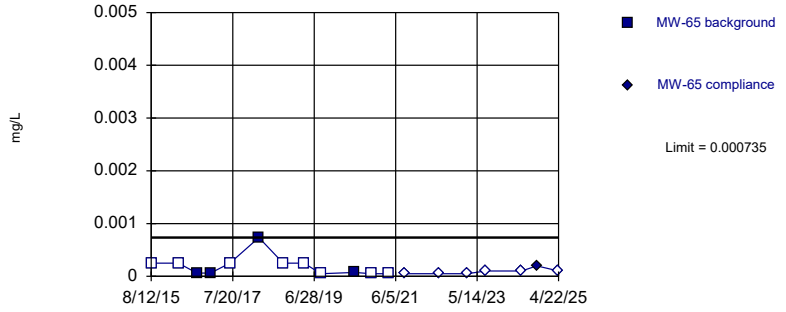
Constituent: Cadmium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 66.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

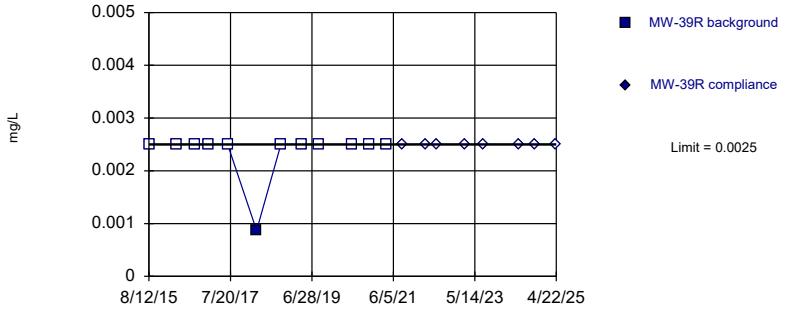
Constituent: Cadmium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

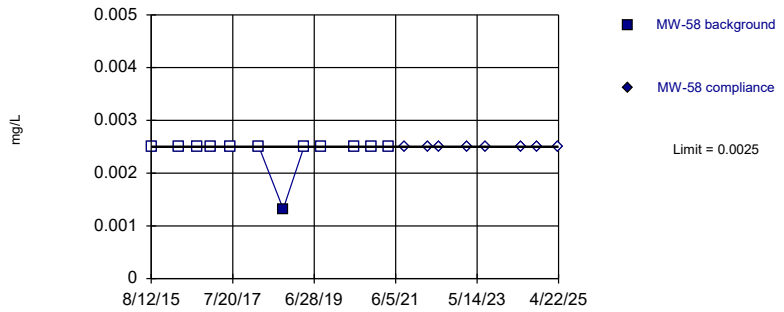
Constituent: Chromium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

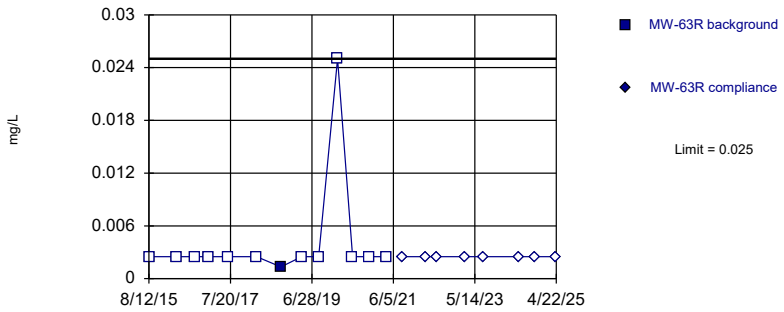
Constituent: Chromium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 92.31% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

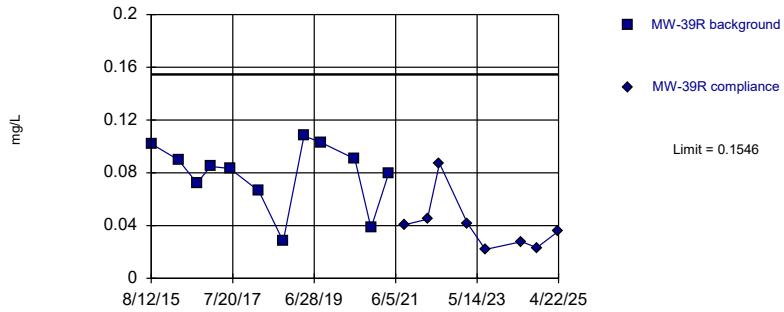
Constituent: Chromium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.0788, Std. Dev.=0.02471, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8968, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

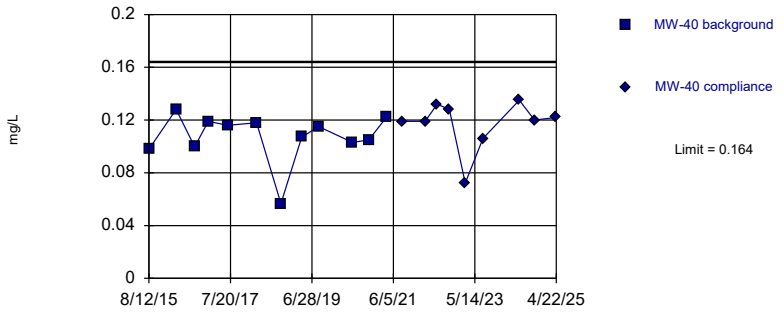
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.1073, Std. Dev.=0.01849, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8102, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

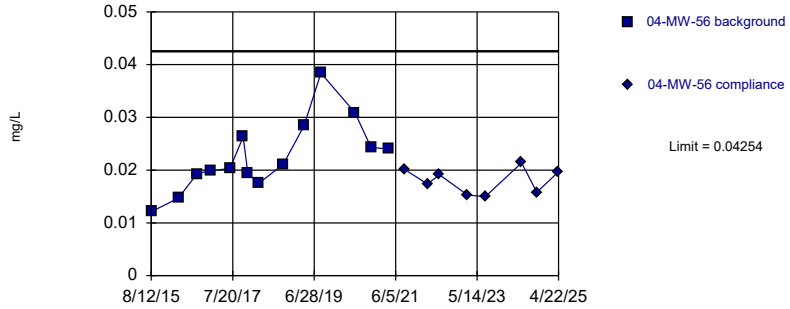
Constituent: Cobalt Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.02261, Std. Dev.=0.006824, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9557, critical = 0.825. Kappa = 2.92 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

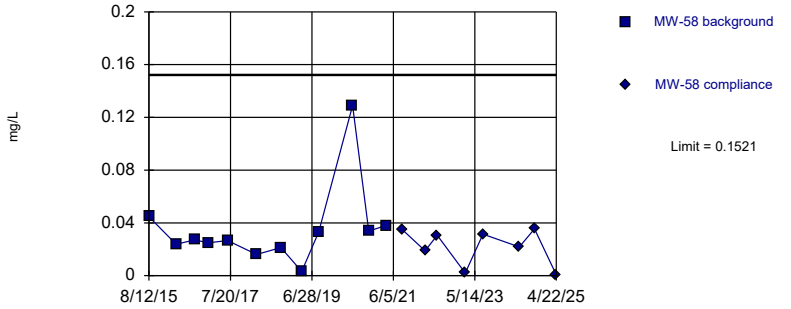
Constituent: Cobalt Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=0.1749, Std. Dev.=0.07013, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.836, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

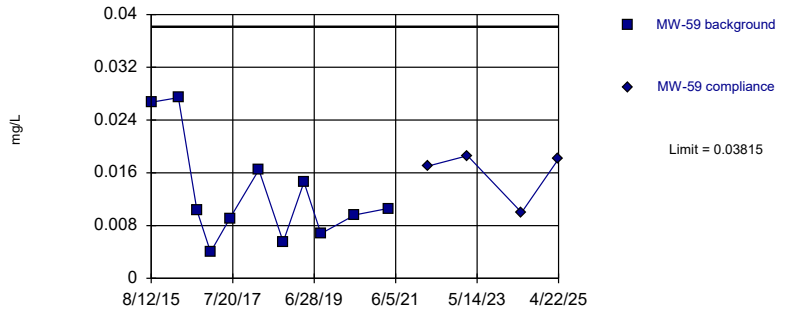
Constituent: Cobalt Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.01283, Std. Dev.=0.007901, n=11. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8595, critical = 0.792. Kappa = 3.205 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

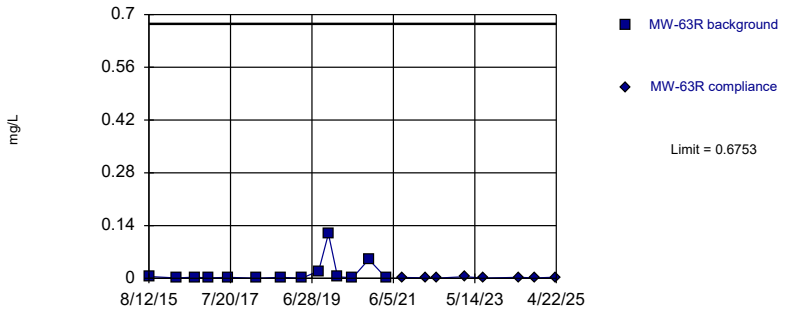
Constituent: Cobalt Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on natural log transformation): Mean=-5.947, Std. Dev.=1.902, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9406, critical = 0.825. Kappa = 2.92 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

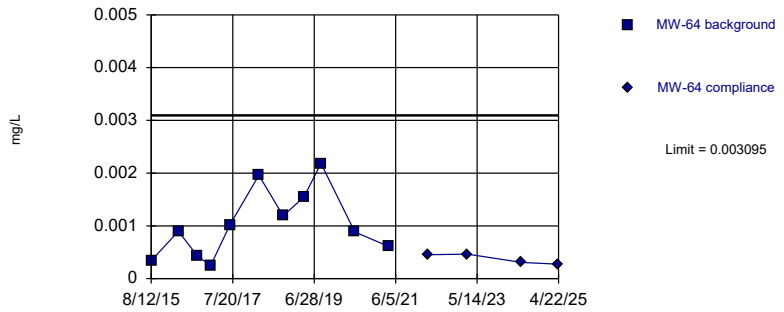
Constituent: Cobalt Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.001029, Std. Dev.=0.0006445, n=11. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9326, critical = 0.792. Kappa = 3.205 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Cobalt Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL

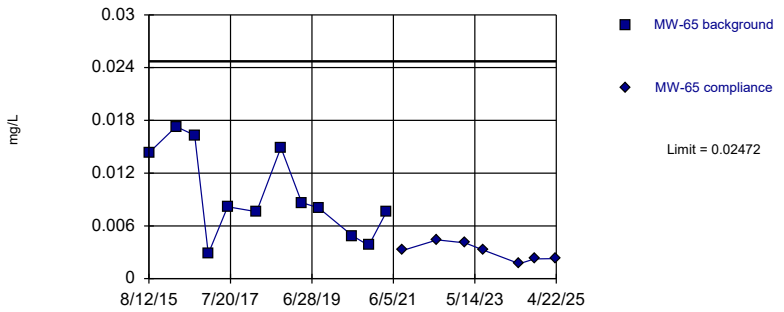
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.009528, Std. Dev.=0.004953, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9029, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Cobalt Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

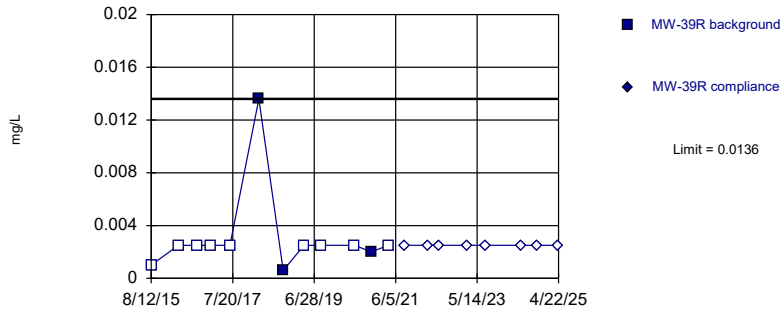
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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 75% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Copper Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

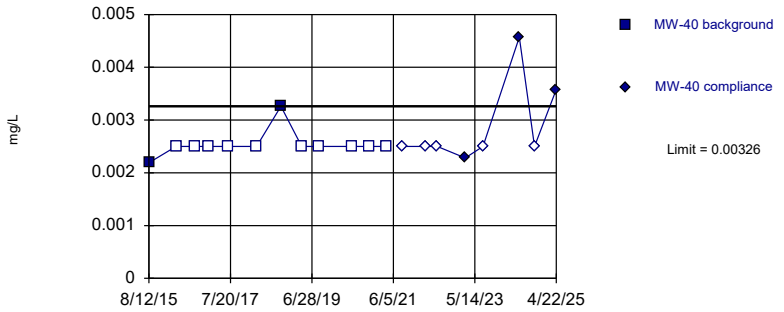
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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Copper Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL

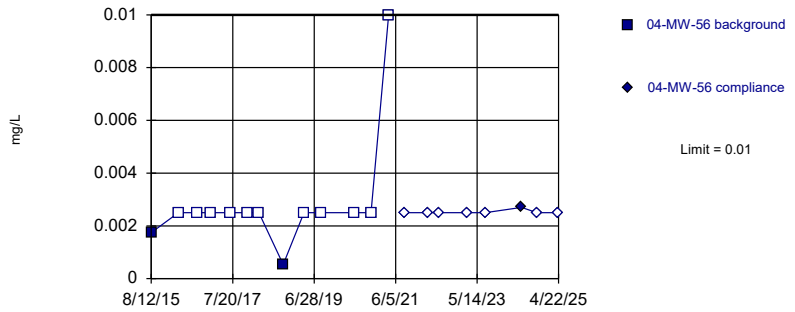
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 84.62% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

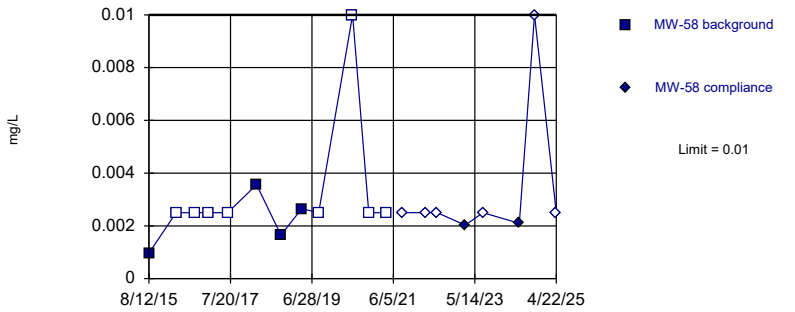
Constituent: Copper Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 66.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

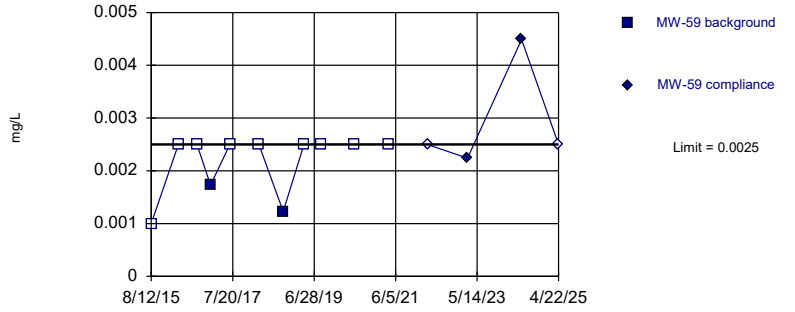
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 11 background values. 81.82% NDs. Well-constituent pair annual alpha = 0.02537. Individual comparison alpha = 0.01276 (1 of 2).

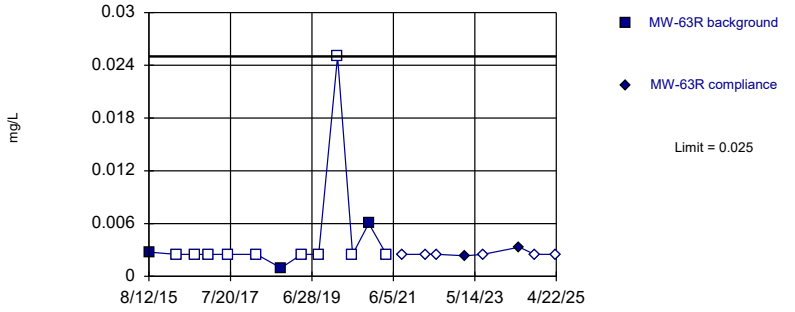
Constituent: Copper Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 76.92% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

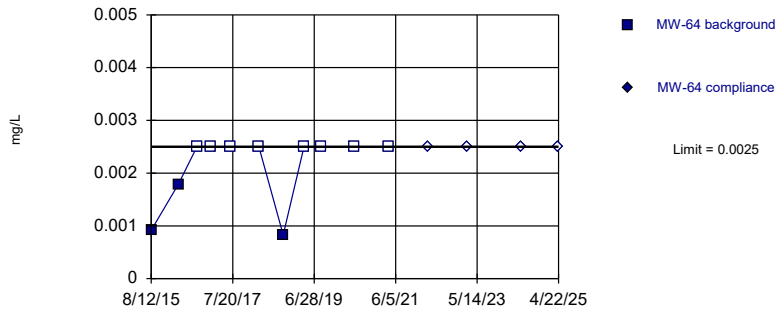
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 11 background values. 72.73% NDs. Well-constituent pair annual alpha = 0.02537. Individual comparison alpha = 0.01276 (1 of 2).

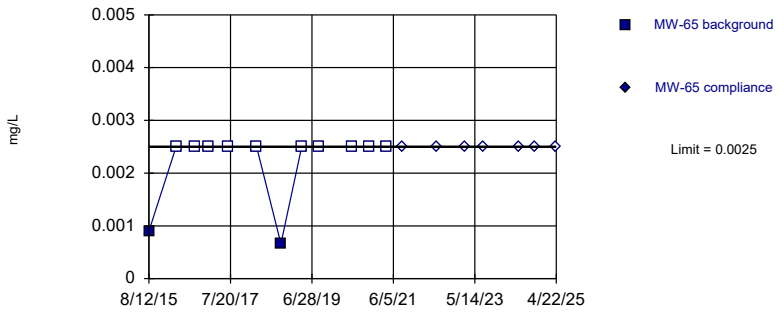
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

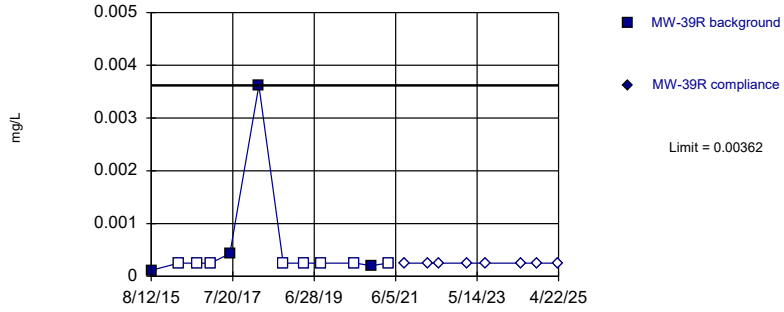
Constituent: Copper Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 66.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

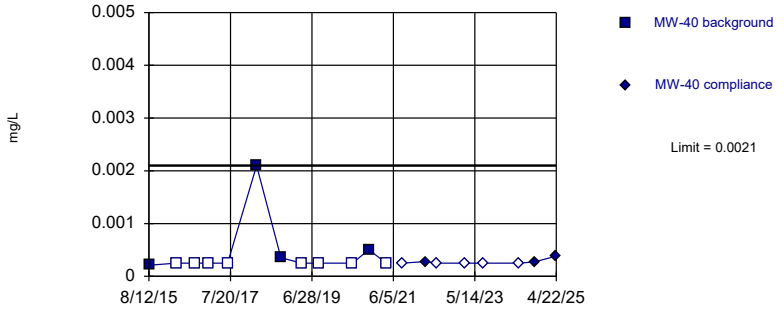
Constituent: Lead Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 66.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

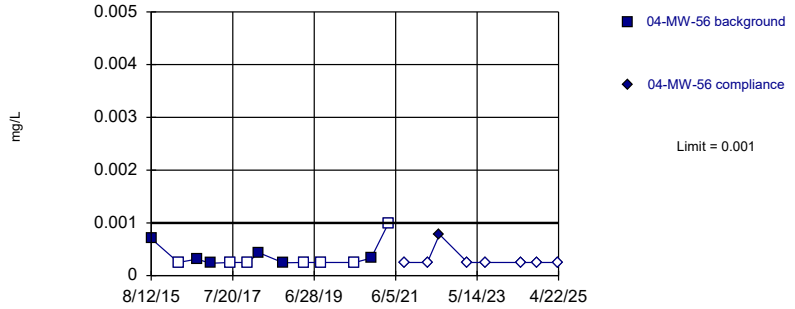
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 53.85% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

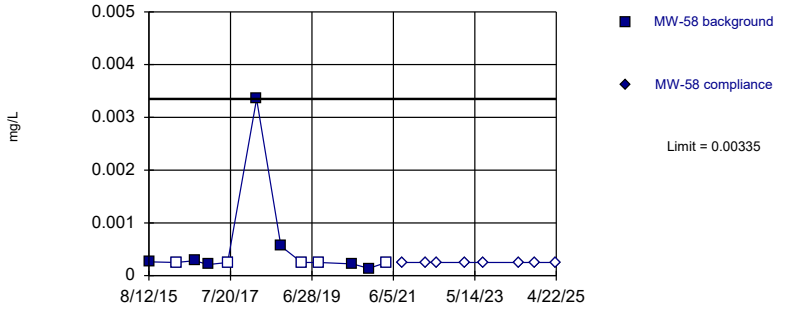
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. 41.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

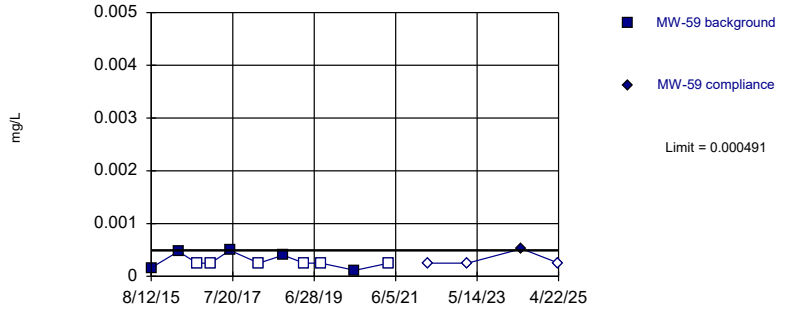
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 11 background values. 54.55% NDs. Well-constituent pair annual alpha = 0.02537. Individual comparison alpha = 0.01276 (1 of 2).

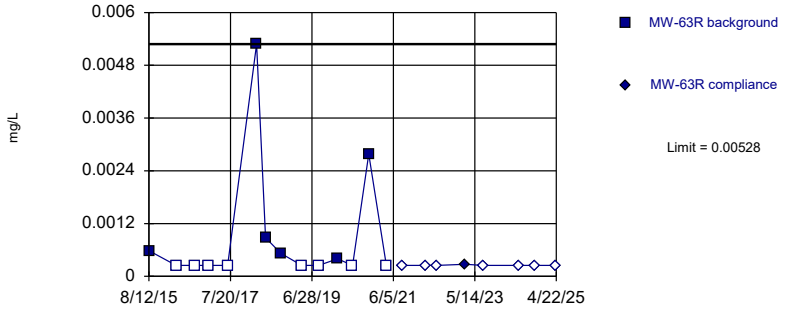
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 57.14% NDs. Well-constituent pair annual alpha = 0.01715. Individual comparison alpha = 0.008612 (1 of 2).

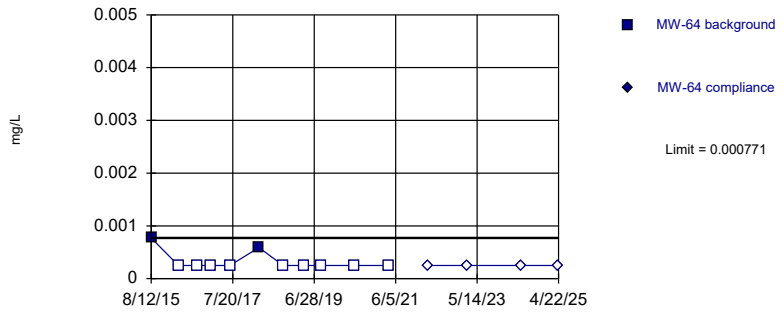
Constituent: Lead Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 11 background values. 81.82% NDs. Well-constituent pair annual alpha = 0.02537. Individual comparison alpha = 0.01276 (1 of 2).

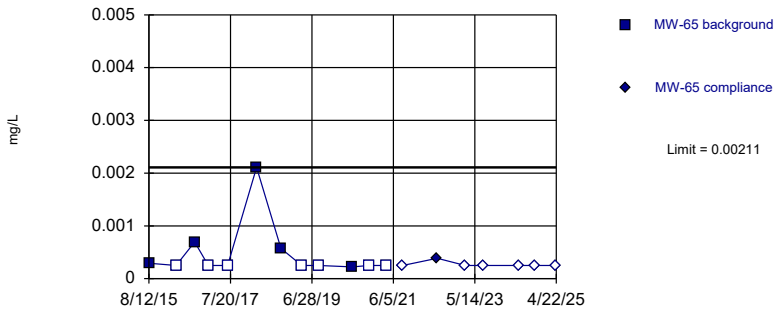
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 58.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

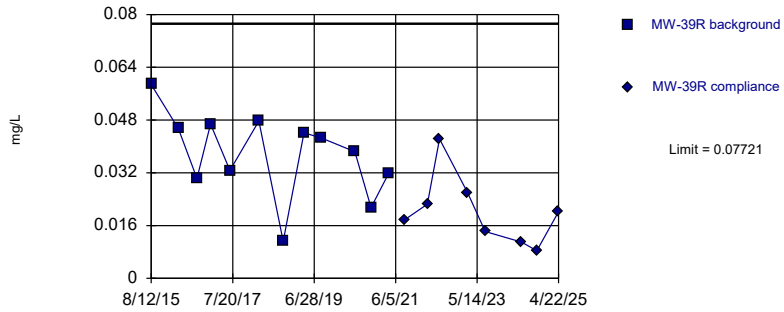
Constituent: Lead Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.0376, Std. Dev.=0.01291, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9619, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

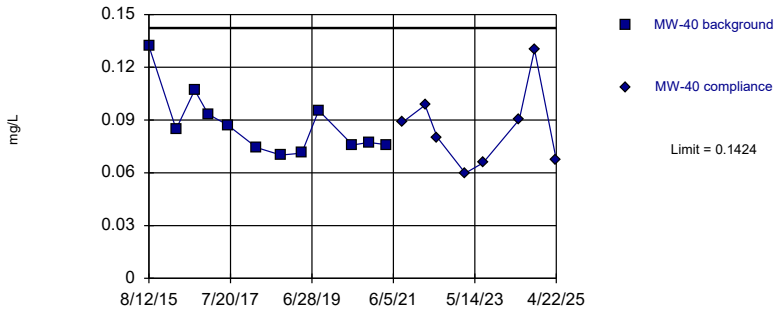
Constituent: Nickel Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.08705, Std. Dev.=0.01803, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8391, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

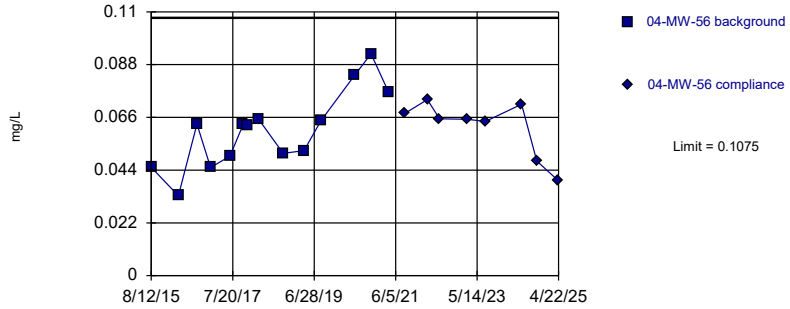
Constituent: Nickel Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.06055, Std. Dev.=0.01608, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.962, critical = 0.825. Kappa = 2.92 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Nickel Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL

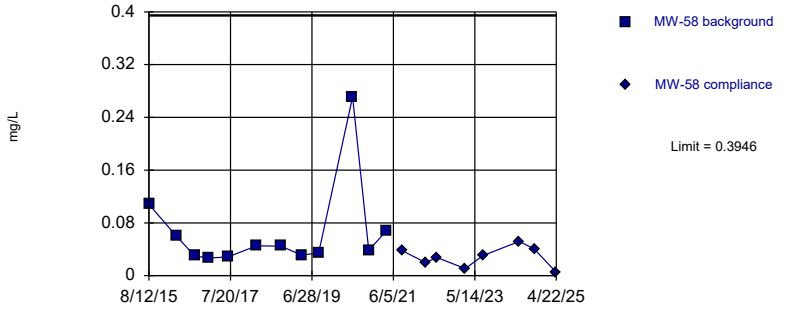
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on natural log transformation): Mean=-3.003, Std. Dev.=0.6758, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8309, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Nickel Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL

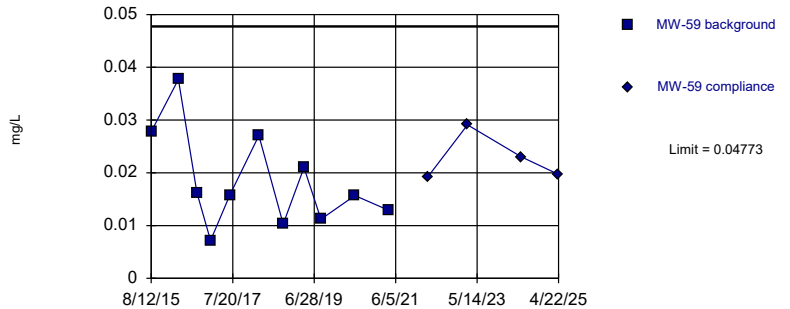
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.01844, Std. Dev.=0.00914, n=11. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9173, critical = 0.792. Kappa = 3.205 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Nickel Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL

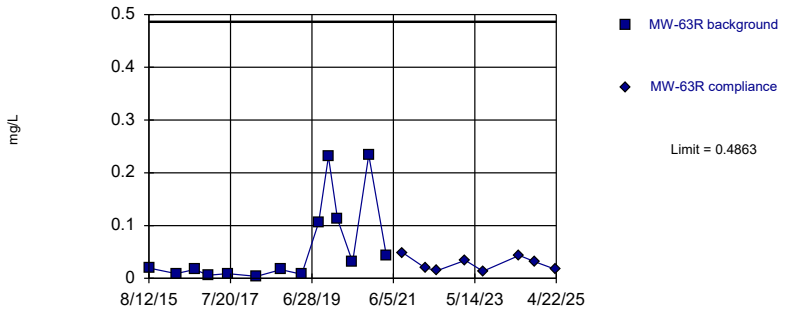
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube root transformation): Mean=0.327, Std. Dev.=0.1573, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8596, critical = 0.825. Kappa = 2.92 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Nickel Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL

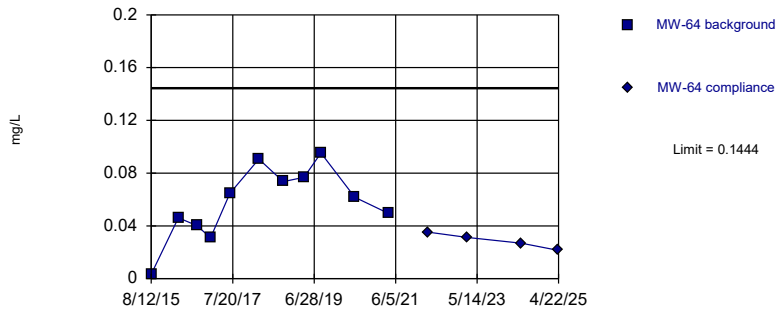
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.05749, Std. Dev.=0.02713, n=11. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9713, critical = 0.792. Kappa = 3.205 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Nickel Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

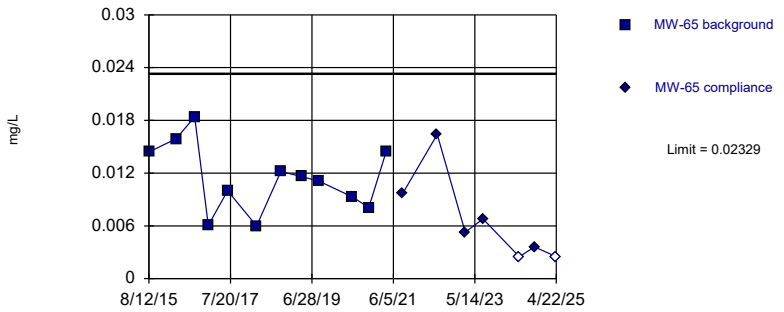
Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.01146, Std. Dev.=0.003858, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9696, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Nickel Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

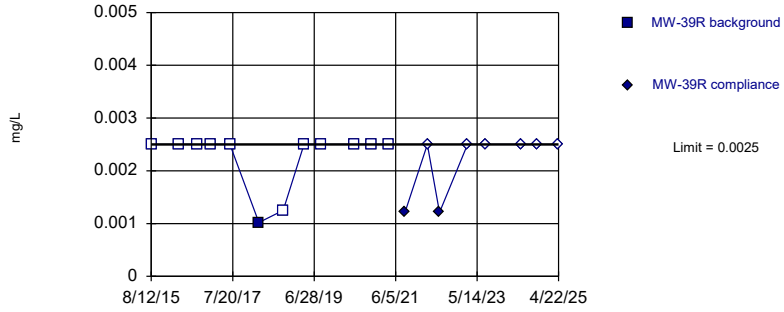
Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Selenium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

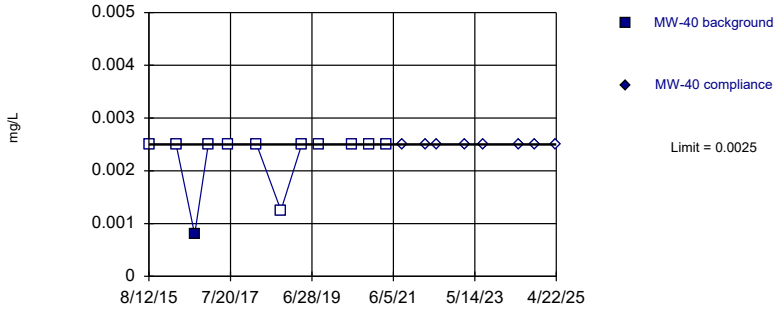
Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Selenium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL

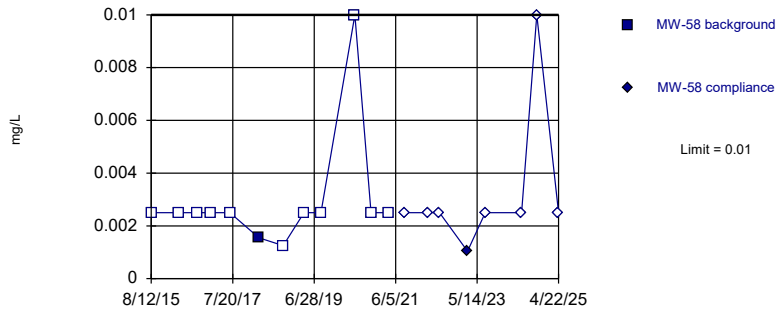
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

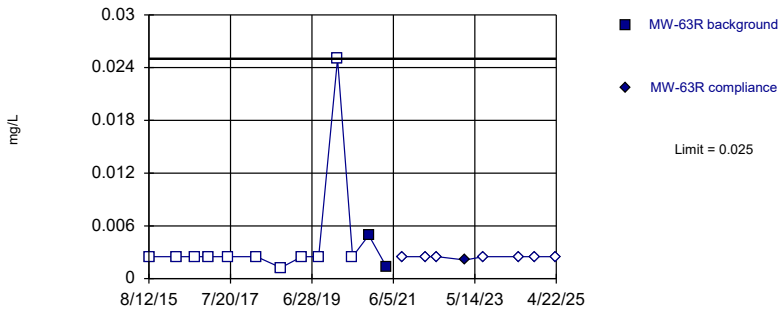
Constituent: Selenium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 84.62% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

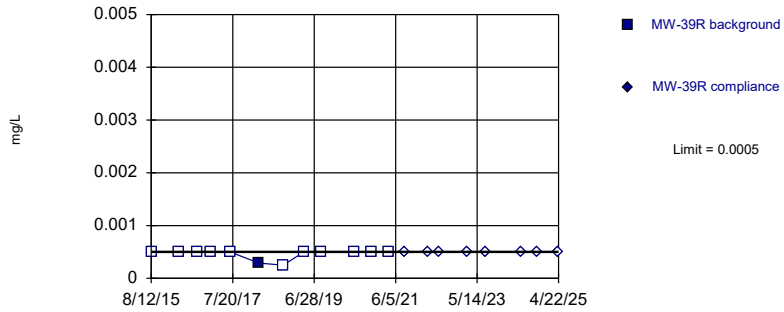
Constituent: Selenium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

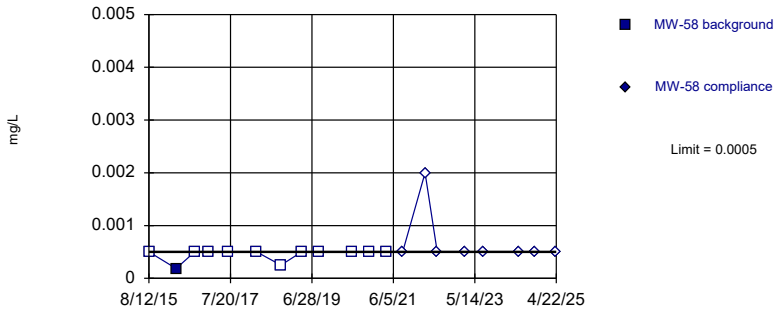
Constituent: Silver Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

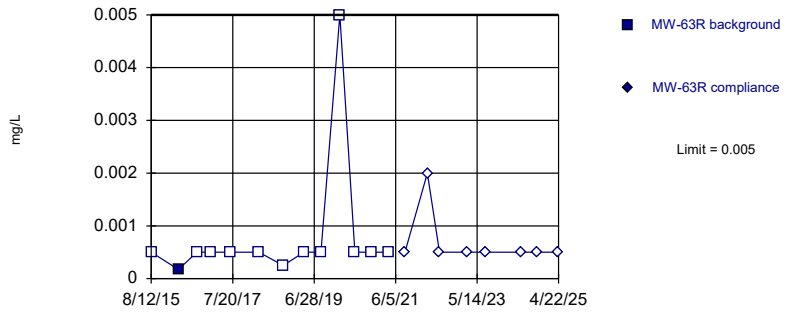
Constituent: Silver Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 92.31% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

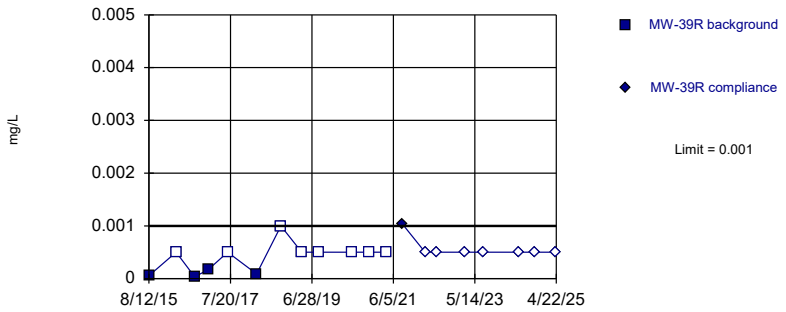
Constituent: Silver Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 66.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

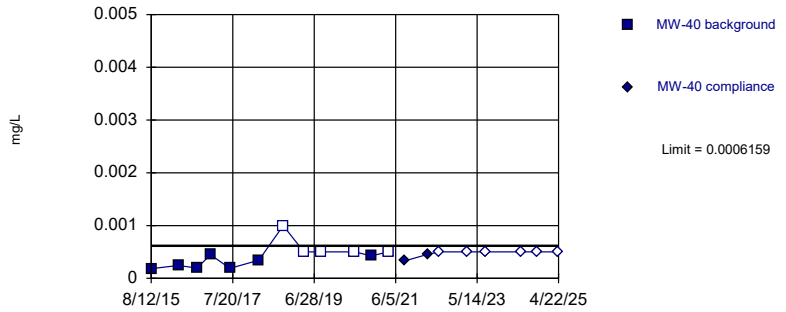
Constituent: Thallium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.0002893, Std. Dev.=0.0001065, n=12, 41.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8212, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

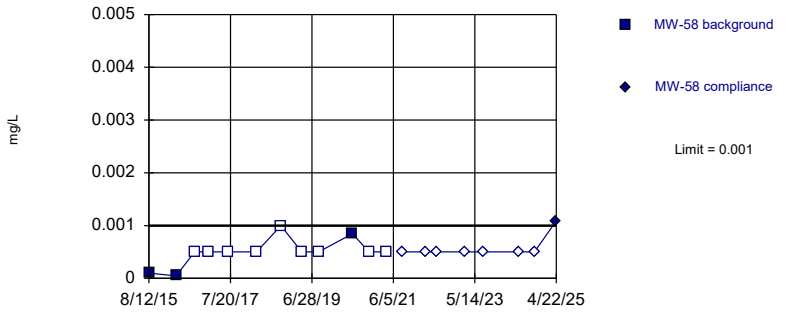
Constituent: Thallium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Exceeds Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 75% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

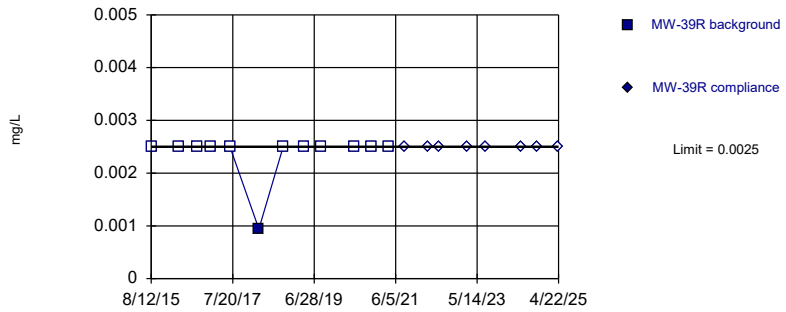
Constituent: Thallium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

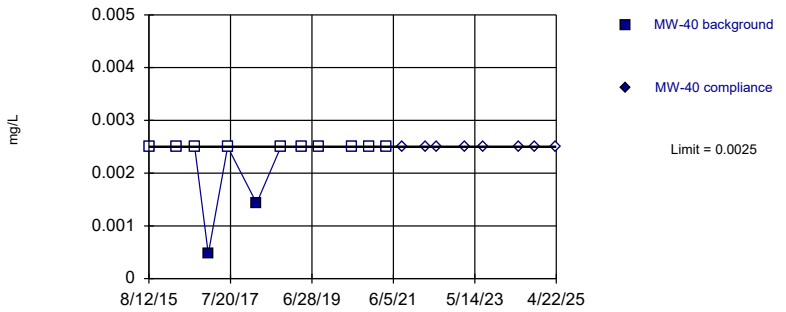
Constituent: Vanadium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

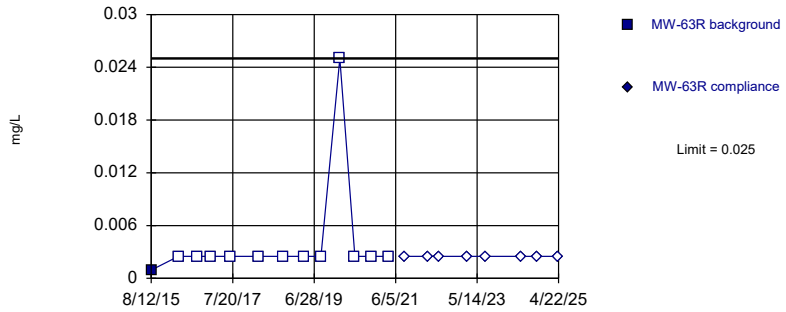
Constituent: Vanadium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 92.31% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

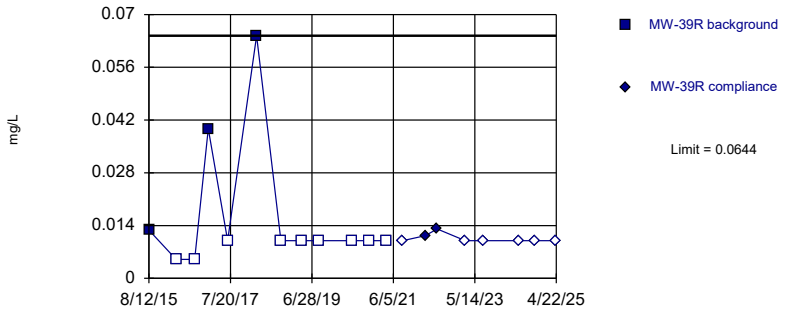
Constituent: Vanadium Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 75% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

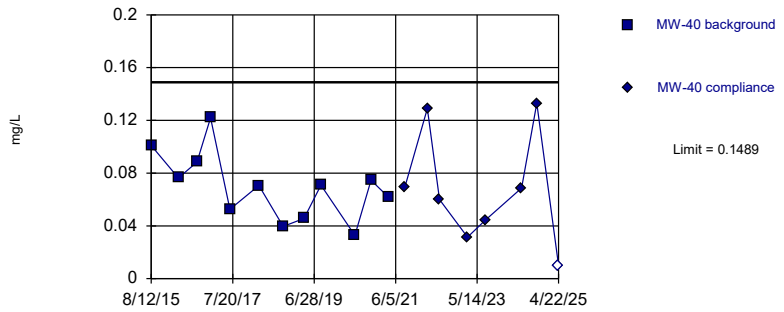
Constituent: Zinc Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.06968, Std. Dev.=0.02582, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9673, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Zinc Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL

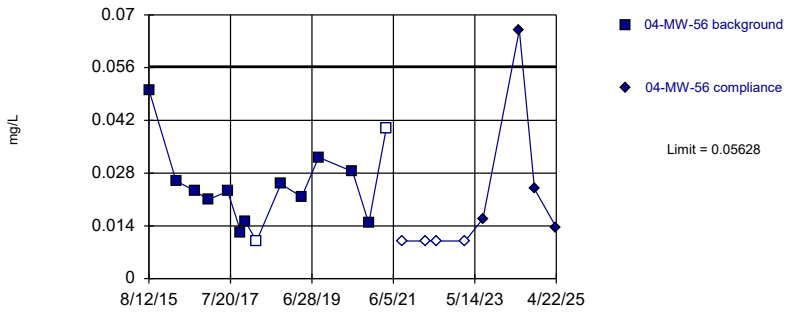
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.02449, Std. Dev.=0.01089, n=14, 14.29% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9285, critical = 0.825. Kappa = 2.92 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Zinc Analysis Run 6/13/2025 4:44 PM View: 2025_SSN-AMD_Wells_IntraPL

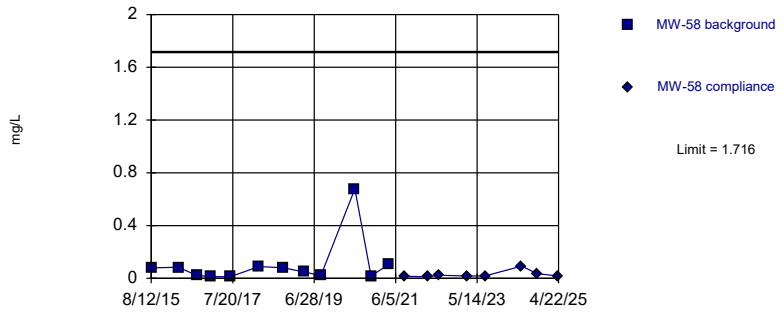
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on natural log transformation): Mean=-3.01, Std. Dev.=1.157, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8998, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Zinc Analysis Run 6/13/2025 4:45 PM View: 2025_SSN-AMD_Wells_IntraPL

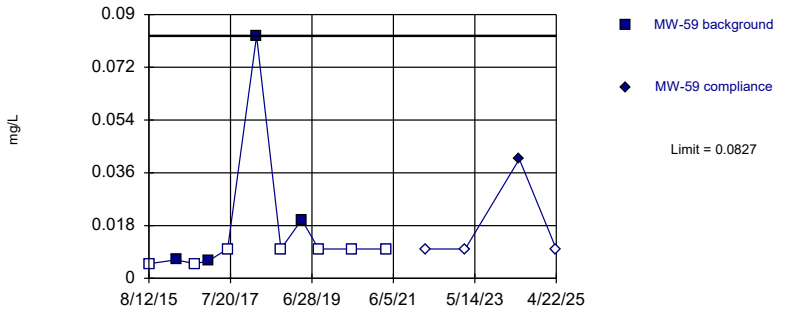
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 11 background values. 63.64% NDs. Well-constituent pair annual alpha = 0.02537. Individual comparison alpha = 0.01276 (1 of 2).

Constituent: Zinc Analysis Run 6/13/2025 4:45 PM View: 2025_SSN-AMD_Wells_IntraPL

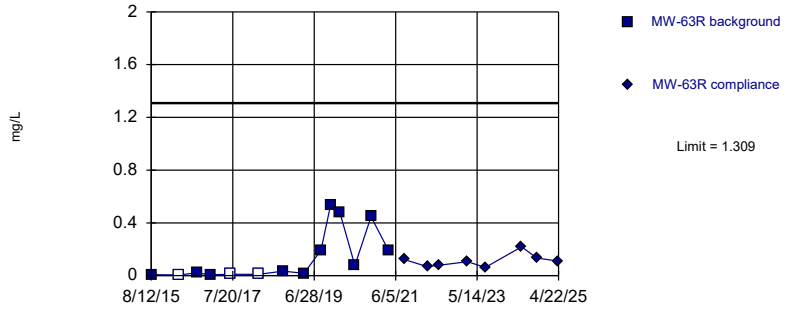
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube root transformation) (after Kaplan-Meier Adjustment): Mean=0.4131, Std. Dev.=0.2331, n=14, 21.43% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8389, critical = 0.825. Kappa = 2.92 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Zinc Analysis Run 6/13/2025 4:45 PM View: 2025_SSN-AMD_Wells_IntraPL

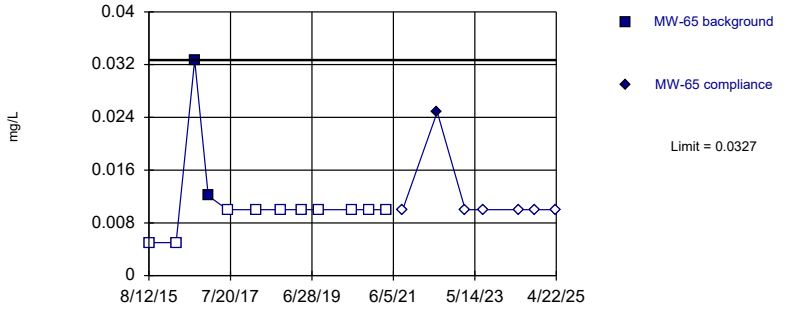
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Zinc Analysis Run 6/13/2025 4:45 PM View: 2025_SSN-AMD_Wells_IntraPL

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Intrawell Prediction Limit Summary Table and Graphs – Groundwater Underdrains

GU-6 Prediction Limit

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master Printed 6/13/2025, 1:40 PM

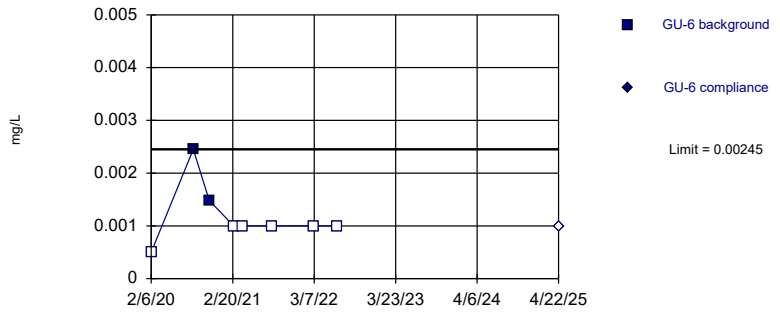
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Antimony (mg/L)	GU-6	0.00245	n/a	4/22/2025	0.001ND	No	8	75	n/a	0.02144	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	GU-6	0.01054	n/a	4/22/2025	0.000567J	No	8	50	sqrt(x)	0.000...	Param Intra 1 of 2
Barium (mg/L)	GU-6	0.148	n/a	4/22/2025	0.0345	No	8	0	n/a	0.02144	NP Intra (normality) ...
Beryllium (mg/L)	GU-6	0.00156	n/a	4/22/2025	0.0005ND	No	8	75	n/a	0.02144	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	GU-6	0.001244	n/a	4/22/2025	0.0001ND	No	8	0	No	0.000...	Param Intra 1 of 2
Chromium (mg/L)	GU-6	0.014	n/a	4/22/2025	0.0025ND	No	8	75	n/a	0.02144	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	GU-6	0.02649	n/a	4/22/2025	0.00818	No	8	0	No	0.000...	Param Intra 1 of 2
Copper (mg/L)	GU-6	0.0114	n/a	4/22/2025	0.0025ND	No	8	62.5	n/a	0.02144	NP Intra (NDs) 1 of 2
Lead (mg/L)	GU-6	0.01354	n/a	4/22/2025	0.00025ND	No	8	50	sqrt(x)	0.000...	Param Intra 1 of 2
Nickel (mg/L)	GU-6	0.125	n/a	4/22/2025	0.0332	No	8	0	No	0.000...	Param Intra 1 of 2
Selenium (mg/L)	GU-6	0.01079	n/a	4/22/2025	0.0025ND	No	8	0	No	0.000...	Param Intra 1 of 2
Silver (mg/L)	GU-6	0.00101	n/a	4/22/2025	0.0005ND	No	8	87.5	n/a	0.02144	NP Intra (NDs) 1 of 2
Thallium (mg/L)	GU-6	0.00306	n/a	4/22/2025	0.0005ND	No	8	87.5	n/a	0.02144	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	GU-6	0.0223	n/a	4/22/2025	0.0025ND	No	8	62.5	n/a	0.02144	NP Intra (NDs) 1 of 2
Zinc (mg/L)	GU-6	0.1187	n/a	4/22/2025	0.0231	No	8	0	No	0.000...	Param Intra 1 of 2

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

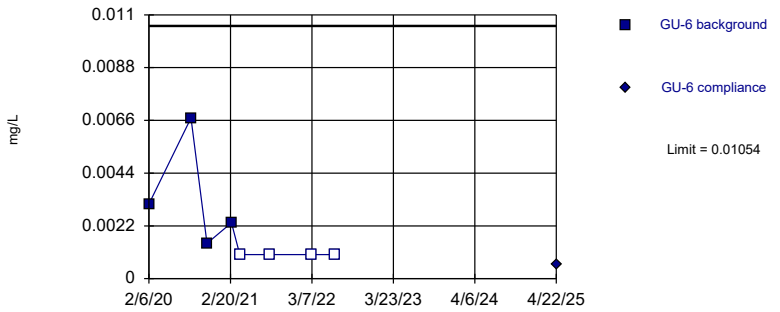
Constituent: Antimony Analysis Run 6/13/2025 1:38 PM View: 2025_SSN_GU-6_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.0472, Std. Dev.=0.01444, n=8, 50% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7641, critical = 0.749. Kappa = 3.84 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

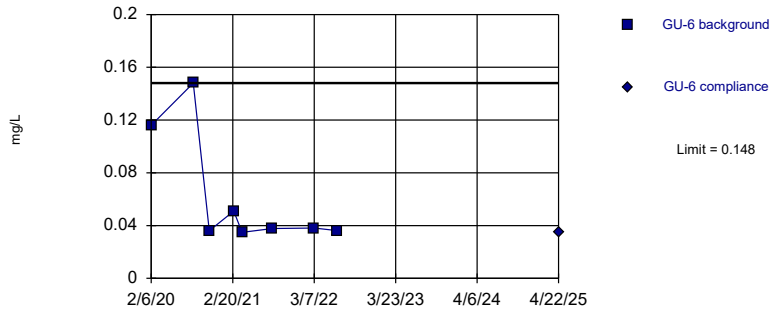
Constituent: Arsenic Analysis Run 6/13/2025 1:38 PM View: 2025_SSN_GU-6_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

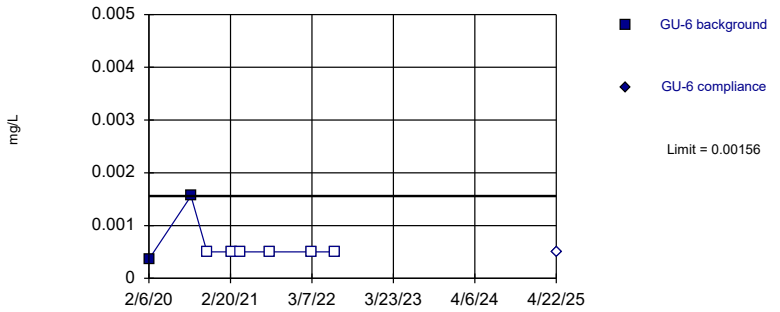
Constituent: Barium Analysis Run 6/13/2025 1:38 PM View: 2025_SSN_GU-6_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

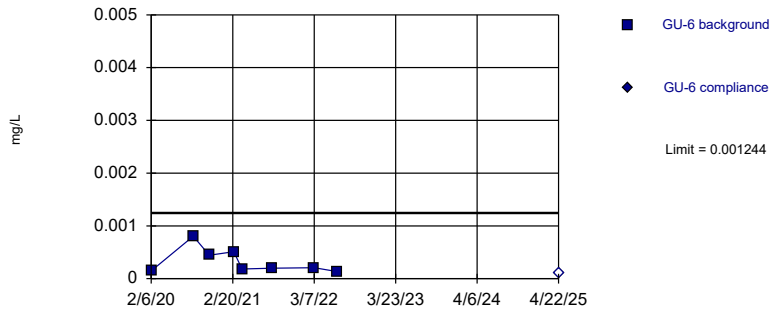
Constituent: Beryllium Analysis Run 6/13/2025 1:38 PM View: 2025_SSN_GU-6_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.0003281, Std. Dev.=0.0002385, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8098, critical = 0.749. Kappa = 3.84 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

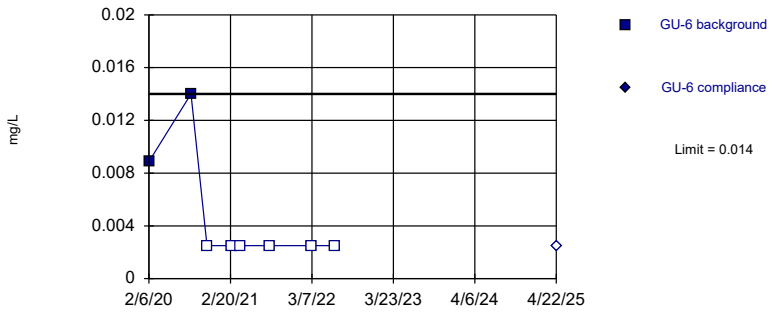
Constituent: Cadmium Analysis Run 6/13/2025 1:38 PM View: 2025_SSN_GU-6_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

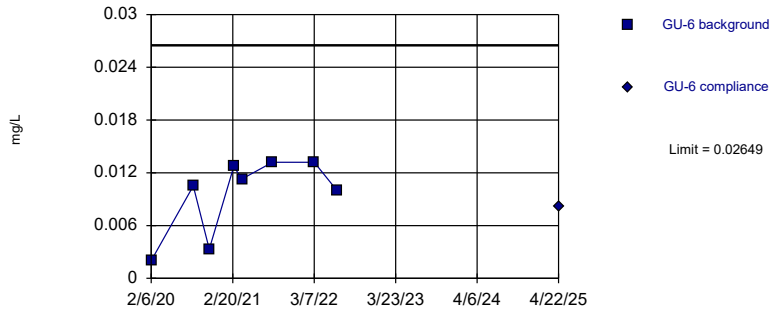
Constituent: Chromium Analysis Run 6/13/2025 1:38 PM View: 2025_SSN_GU-6_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.009525, Std. Dev.=0.004418, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7952, critical = 0.749. Kappa = 3.84 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

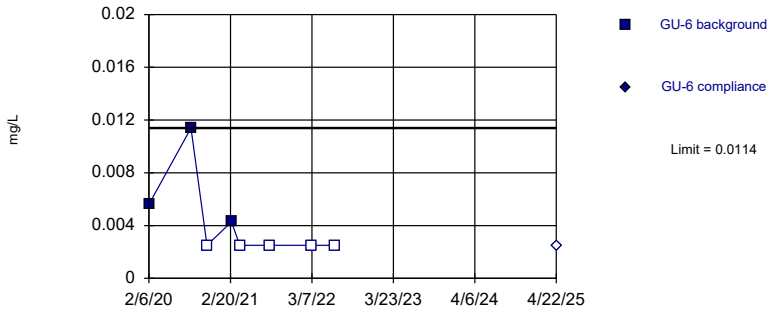
Constituent: Cobalt Analysis Run 6/13/2025 1:38 PM View: 2025_SSN_GU-6_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 62.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

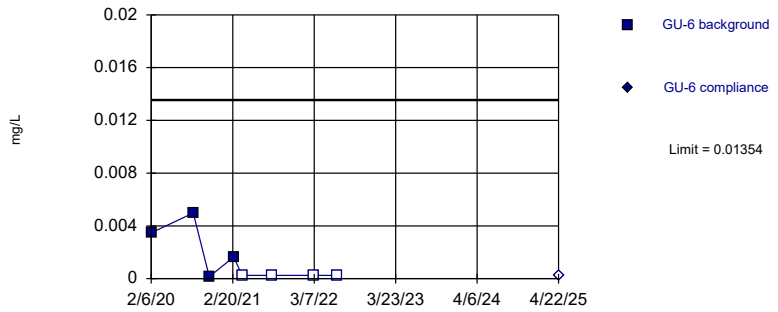
Constituent: Copper Analysis Run 6/13/2025 1:38 PM View: 2025_SSN_GU-6_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.02895, Std. Dev.=0.02276, n=8, 50% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.7634, critical = 0.749. Kappa = 3.84 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

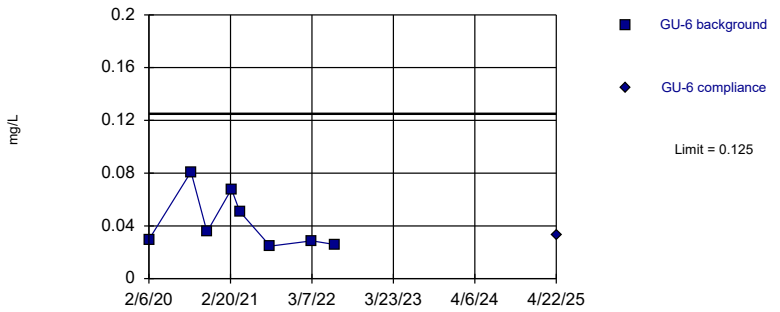
Constituent: Lead Analysis Run 6/13/2025 1:38 PM View: 2025_SSN_GU-6_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.043, Std. Dev.=0.02135, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8334, critical = 0.749. Kappa = 3.84 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

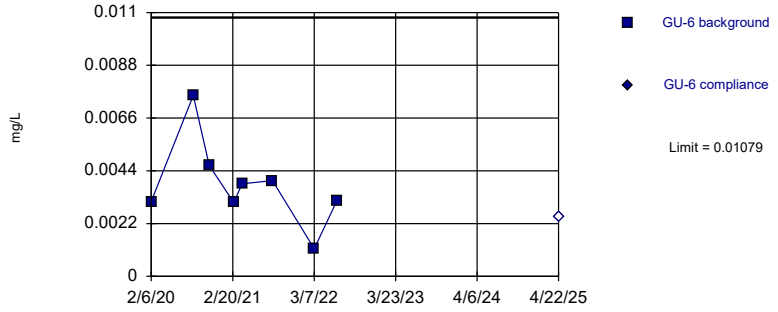
Constituent: Nickel Analysis Run 6/13/2025 1:38 PM View: 2025_SSN_GU-6_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.003815, Std. Dev.=0.001817, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.894, critical = 0.749. Kappa = 3.84 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

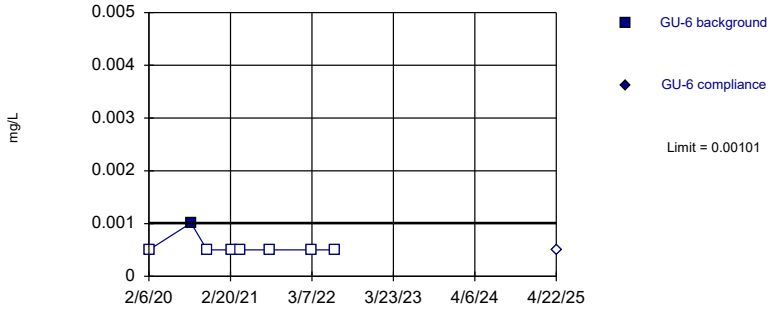
Constituent: Selenium Analysis Run 6/13/2025 1:38 PM View: 2025_SSN_GU-6_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

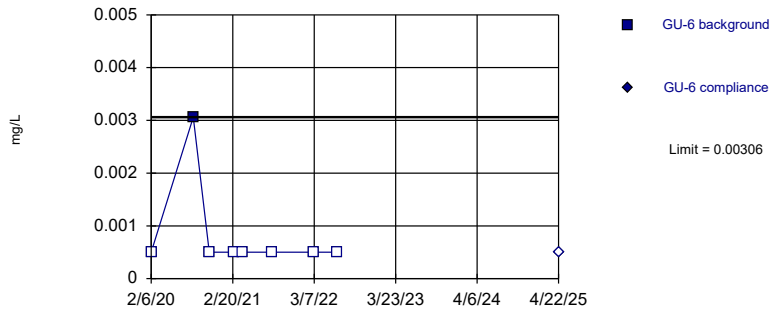
Constituent: Silver Analysis Run 6/13/2025 1:38 PM View: 2025_SSN_GU-6_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

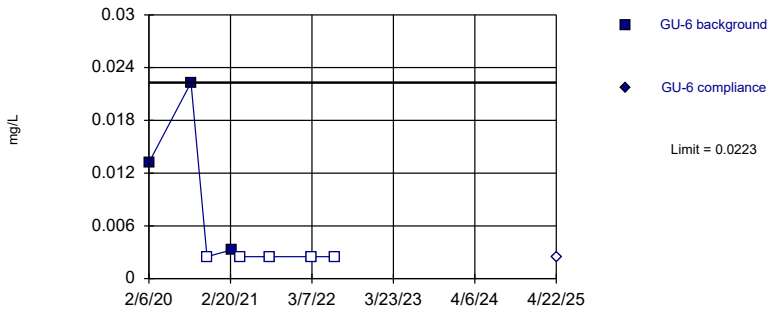
Constituent: Thallium Analysis Run 6/13/2025 1:38 PM View: 2025_SSN_GU-6_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 62.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2).

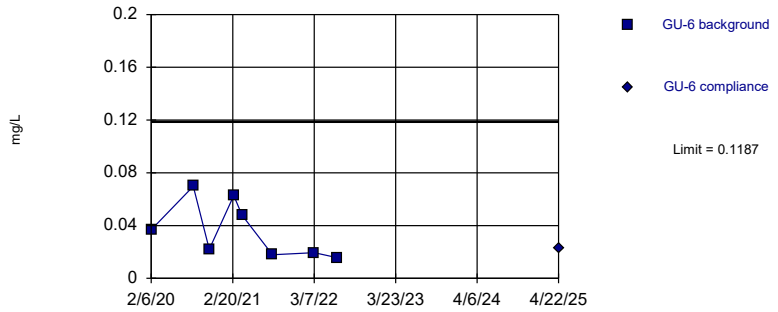
Constituent: Vanadium Analysis Run 6/13/2025 1:38 PM View: 2025_SSN_GU-6_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.03654, Std. Dev.=0.0214, n=8. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8666, critical = 0.749. Kappa = 3.84 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Zinc Analysis Run 6/13/2025 1:38 PM View: 2025_SSN_GU-6_IntraPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Interwell Prediction Limit Summary Table and Graphs – Detection & Assessment Monitoring Wells

DM and AM Prediction Limit

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master Printed 6/13/2025, 11:01 AM

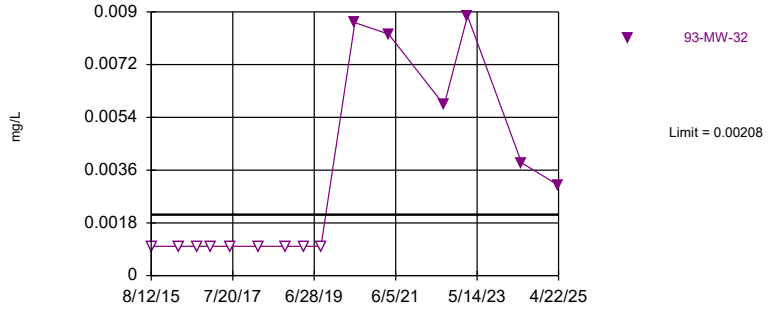
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	**93-MW-32**	**0.00208**	**n/a**	**4/22/2025**	**0.00308**	**Yes**	**24**	**83.33**	**n/a**	**0.002696**	**NP Inter (NDs) 1 of 2**
Barium (mg/L)	91-MW-14	0.03139	n/a	4/22/2025	0.0174	No	24	0	x^3	0.000...	Param Inter 1 of 2
Barium (mg/L)	**93-MW-32**	**0.03139**	**n/a**	**4/22/2025**	**0.0677**	**Yes**	**24**	**0**	**x^3**	**0.000...**	**Param Inter 1 of 2**
Barium (mg/L)	MW-62	0.03139	n/a	4/22/2025	0.0273	No	24	0	x^3	0.000...	Param Inter 1 of 2
Barium (mg/L)	**MW-81**	**0.03139**	**n/a**	**4/22/2025**	**0.0707**	**Yes**	**24**	**0**	**x^3**	**0.000...**	**Param Inter 1 of 2**
Cadmium (mg/L)	**93-MW-32**	**0.0008668**	**n/a**	**4/22/2025**	**0.000937**	**Yes**	**24**	**41.67**	**sqrt(x)**	**0.000...**	**Param Inter 1 of 2**
Cadmium (mg/L)	MW-81	0.0008668	n/a	4/22/2025	0.000273	No	24	41.67	sqrt(x)	0.000...	Param Inter 1 of 2
Cobalt (mg/L)	93-MW-32	0.04557	n/a	4/22/2025	0.00898	No	24	16.67	ln(x)	0.000...	Param Inter 1 of 2
Cobalt (mg/L)	MW-62	0.04557	n/a	4/22/2025	0.000521	No	24	16.67	ln(x)	0.000...	Param Inter 1 of 2
Cobalt (mg/L)	MW-81	0.04557	n/a	4/22/2025	0.000821	No	24	16.67	ln(x)	0.000...	Param Inter 1 of 2
Lead (mg/L)	93-MW-32	0.00232	n/a	4/22/2025	0.000852	No	24	75	n/a	0.002696	NP Inter (NDs) 1 of 2
Nickel (mg/L)	**93-MW-32**	**0.0356**	**n/a**	**4/22/2025**	**0.0651**	**Yes**	**24**	**16.67**	**ln(x)**	**0.000...**	**Param Inter 1 of 2**
Nickel (mg/L)	MW-62	0.0356	n/a	4/22/2025	0.00749	No	24	16.67	ln(x)	0.000...	Param Inter 1 of 2
Nickel (mg/L)	MW-81	0.0356	n/a	4/22/2025	0.0063	No	24	16.67	ln(x)	0.000...	Param Inter 1 of 2
Zinc (mg/L)	93-MW-32	0.0377	n/a	4/22/2025	0.0313	No	24	87.5	n/a	0.002696	NP Inter (NDs) 1 of 2

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Hollow symbols indicate censored values.

Exceeds Limit: 93-MW-32

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 83.33% NDs. Annual per-constituent alpha = 0.07279. Individual comparison alpha = 0.002696 (1 of 2). Assumes 13 future values.

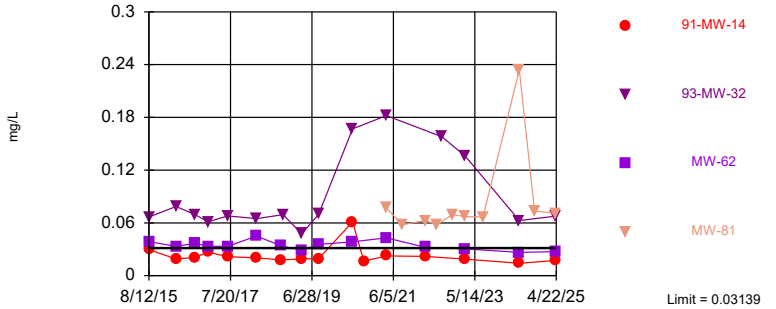
Constituent: Arsenic Analysis Run 6/13/2025 10:58 AM View: 2025_SSN-DM_and_AM_InterPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Exceeds Limit: 93-MW-32, MW-81

Prediction Limit

Interwell Parametric



Background Data Summary (based on cube transformation): Mean=0.00001086, Std. Dev.=0.000007964, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8891, critical = 0.884. Kappa = 2.521 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.003506. Individual comparison alpha = 0.0002508. Comparing 4 points to limit. Assumes 10 future values.

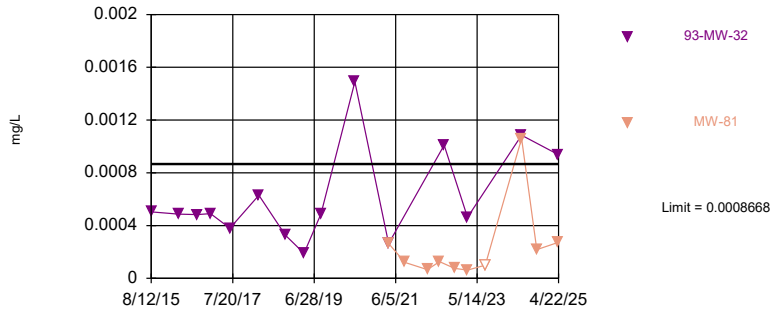
Constituent: Barium Analysis Run 6/13/2025 10:58 AM View: 2025_SSN-DM_and_AM_InterPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Exceeds Limit: 93-MW-32

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.01273, Std. Dev.=0.006627, n=24, 41.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8941, critical = 0.884. Kappa = 2.521 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.003506. Individual comparison alpha = 0.0002508. Comparing 2 points to limit. Assumes 12 future values.

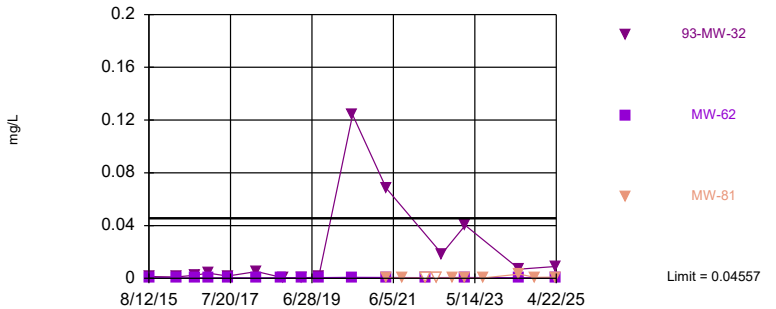
Constituent: Cadmium Analysis Run 6/13/2025 10:58 AM View: 2025_SSN-DM_and_AM_InterPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on natural log transformation) (after Kaplan-Meier Adjustment): Mean=-7.375, Std. Dev.=1.7, n=24, 16.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.952, critical = 0.884. Kappa = 2.521 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.003506. Individual comparison alpha = 0.0002508. Comparing 3 points to limit. Assumes 11 future values.

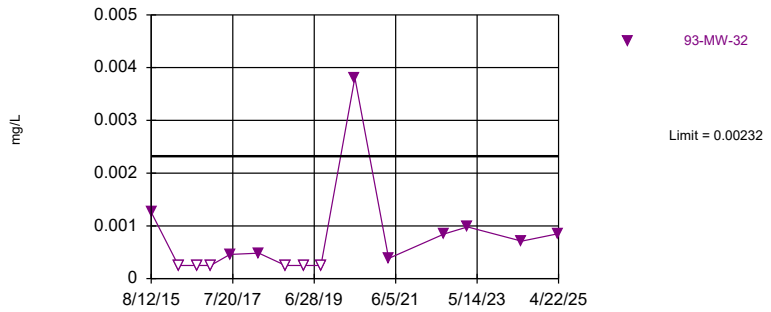
Constituent: Cobalt Analysis Run 6/13/2025 10:58 AM View: 2025_SSN-DM_and_AM_InterPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 75% NDs. Annual per-constituent alpha = 0.07279. Individual comparison alpha = 0.002696 (1 of 2). Assumes 13 future values.

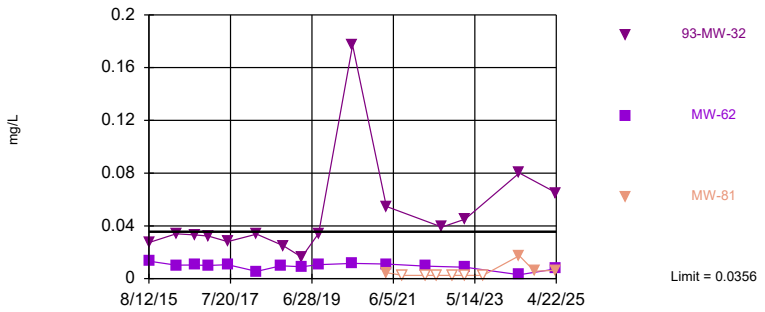
Constituent: Lead Analysis Run 6/13/2025 10:58 AM View: 2025_SSN-DM_and_AM_InterPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Exceeds Limit: 93-MW-32

Prediction Limit

Interwell Parametric



Background Data Summary (based on natural log transformation) (after Kaplan-Meier Adjustment): Mean=-5.23, Std. Dev.=0.7517, n=24, 16.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9262, critical = 0.884. Kappa = 2.521 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.003506. Individual comparison alpha = 0.0002508. Comparing 3 points to limit. Assumes 11 future values.

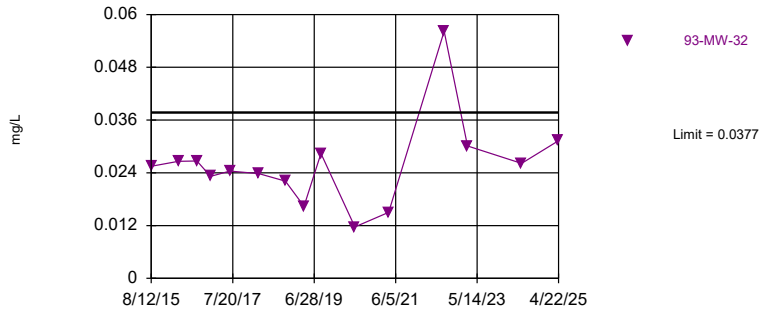
Constituent: Nickel Analysis Run 6/13/2025 10:58 AM View: 2025_SSN-DM_and_AM_InterPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 87.5% NDs. Annual per-constituent alpha = 0.07279. Individual comparison alpha = 0.002696 (1 of 2). Assumes 13 future values.

Constituent: Zinc Analysis Run 6/13/2025 10:58 AM View: 2025_SSN-DM_and_AM_InterPL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Mann-Kendall/Sen's Slope Trend Test Summary Table and Graphs – Assessment Monitoring Wells

AM Wells Trend Test

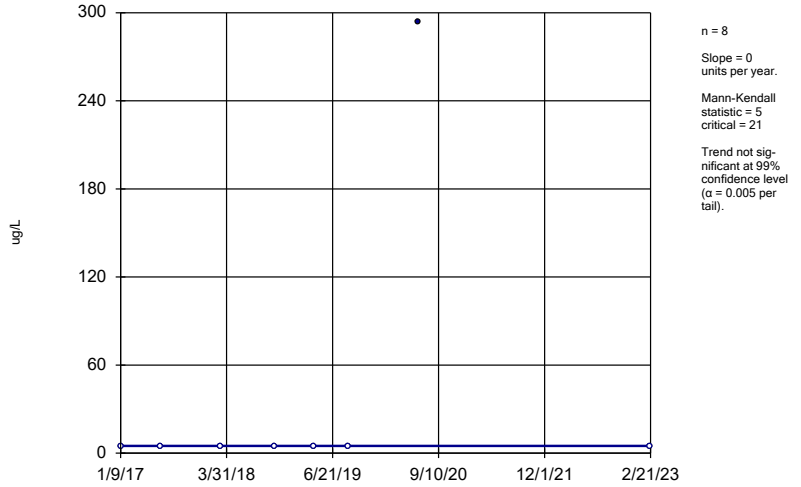
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM Printed 6/16/2025, 3:55 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
2-Butanone (ug/L)	93-MW-32	0	5	21	No	8	87.5	n/a	n/a	0.01	NP
Acetone (ug/L)	93-MW-32	0	9	21	No	8	75	n/a	n/a	0.01	NP
Antimony (mg/L)	93-MW-32	0	11	21	No	8	87.5	n/a	n/a	0.01	NP
Arsenic (mg/L)	93-MW-32	0.0002075	3	21	No	8	25	n/a	n/a	0.01	NP
Barium (mg/L)	93-MW-32	-0.0009478	-2	-21	No	8	0	n/a	n/a	0.01	NP
Barium (mg/L)	MW-62	-0.001463	-10	-21	No	8	0	n/a	n/a	0.01	NP
Barium (mg/L)	MW-81	0.004035	14	21	No	8	0	n/a	n/a	0.01	NP
Cadmium (mg/L)	93-MW-32	0.00009279	8	21	No	8	0	n/a	n/a	0.01	NP
Cadmium (mg/L)	MW-81	0.0000694	14	21	No	8	12.5	n/a	n/a	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-81	0.3127	18	21	No	8	0	n/a	n/a	0.01	NP
Cobalt (mg/L)	93-MW-32	0.001267	2	21	No	8	0	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-62	0.000009996	2	21	No	8	0	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-81	0.0001854	11	21	No	8	25	n/a	n/a	0.01	NP
Copper (mg/L)	93-MW-32	0	1	21	No	8	75	n/a	n/a	0.01	NP
Lead (mg/L)	93-MW-32	0.00009778	11	21	No	8	25	n/a	n/a	0.01	NP
Lead (mg/L)	MW-81	0	3	21	No	8	87.5	n/a	n/a	0.01	NP
Nickel (mg/L)	93-MW-32	0.007714	12	21	No	8	0	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-62	-0.0006225	-14	-21	No	8	0	n/a	n/a	0.01	NP
Nickel (mg/L)	MW-81	0.001261	14	21	No	8	62.5	n/a	n/a	0.01	NP
Selenium (mg/L)	MW-62	0	6	21	No	8	75	n/a	n/a	0.01	NP
Tetrachloroethene (ug/L)	MW-81	-0.2018	-16	-21	No	8	12.5	n/a	n/a	0.01	NP
Toluene (ug/L)	93-MW-32	0	3	21	No	8	87.5	n/a	n/a	0.01	NP
Vanadium (mg/L)	MW-81	0	3	21	No	8	87.5	n/a	n/a	0.01	NP
Zinc (mg/L)	93-MW-32	0.002987	10	21	No	8	0	n/a	n/a	0.01	NP
Zinc (mg/L)	MW-81	0	3	21	No	8	87.5	n/a	n/a	0.01	NP

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Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-32

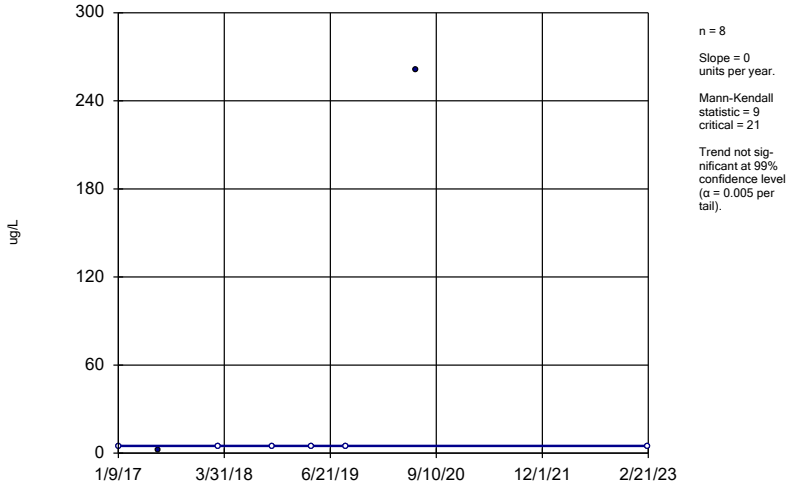


Constituent: 2-Butanone Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-32

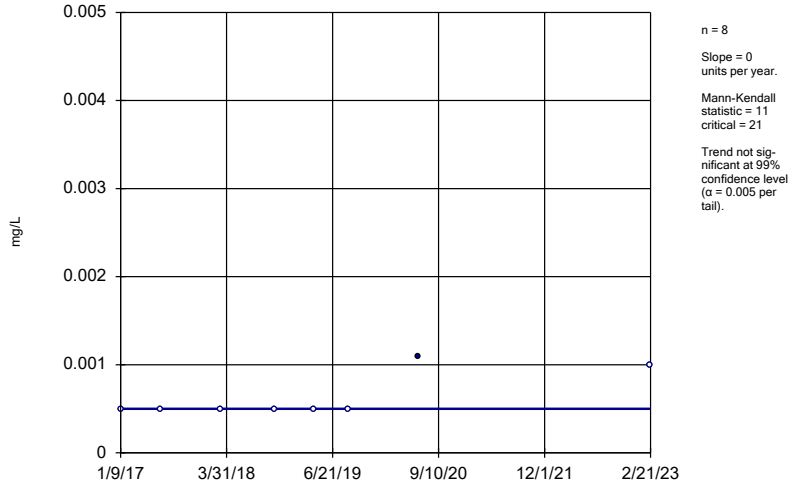


Constituent: Acetone Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-32

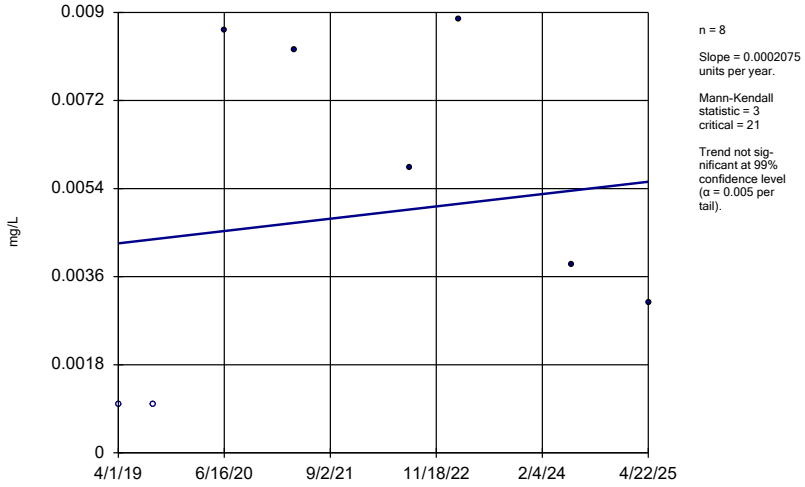


Constituent: Antimony Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-32

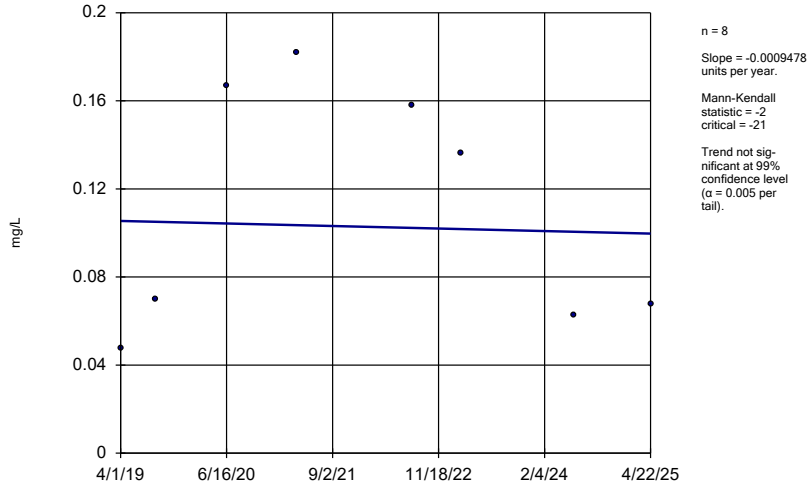


Constituent: Arsenic Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Sen's Slope Estimator

93-MW-32



n = 8

Slope = -0.0009478 units per year.

Mann-Kendall statistic = -2
critical = -21

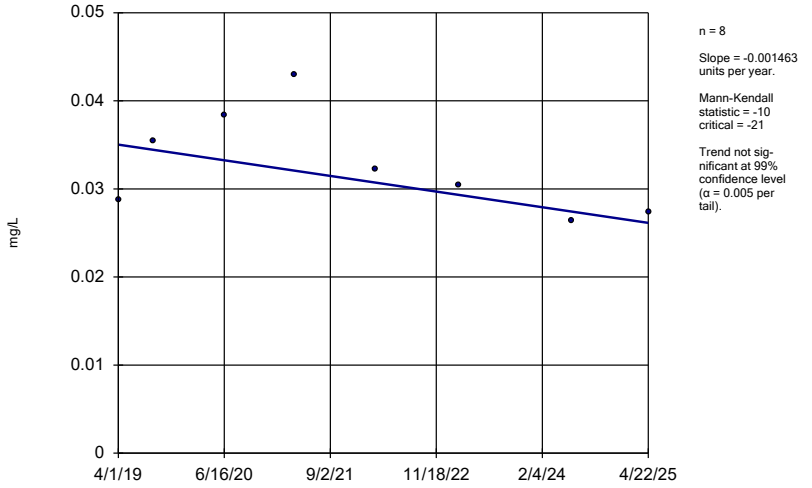
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Sen's Slope Estimator

MW-62



n = 8

Slope = -0.001463 units per year.

Mann-Kendall statistic = -10
critical = -21

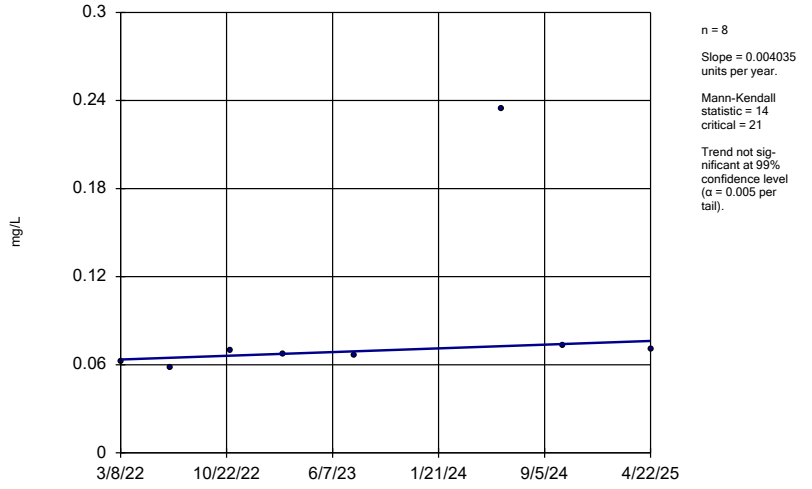
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Sen's Slope Estimator

MW-81



n = 8

Slope = 0.004035 units per year.

Mann-Kendall statistic = 14
critical = 21

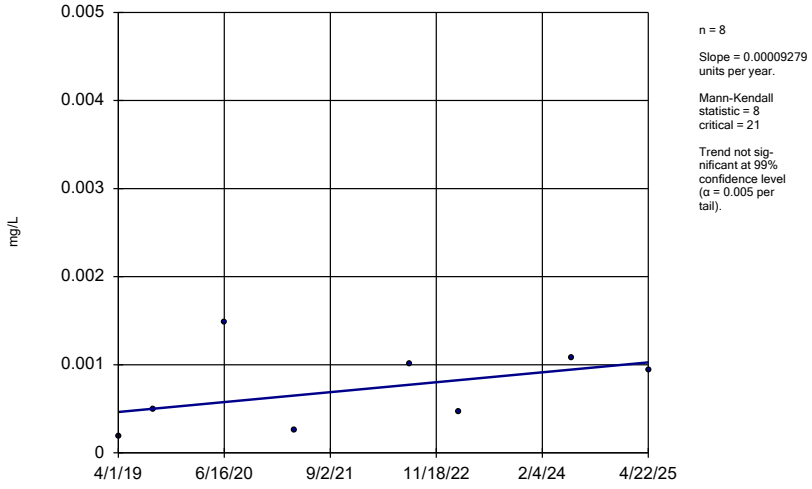
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Sen's Slope Estimator

93-MW-32



n = 8

Slope = 0.00009279 units per year.

Mann-Kendall statistic = 8
critical = 21

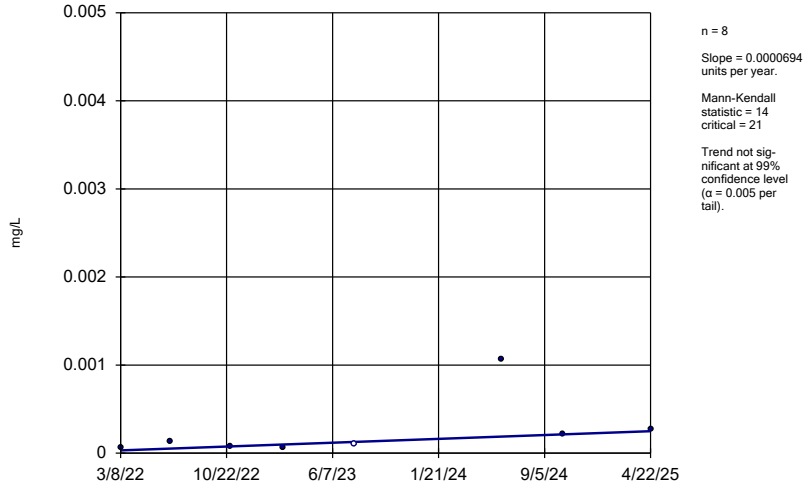
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cadmium Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-81



n = 8

Slope = 0.0000694 units per year.

Mann-Kendall statistic = 14 critical = 21

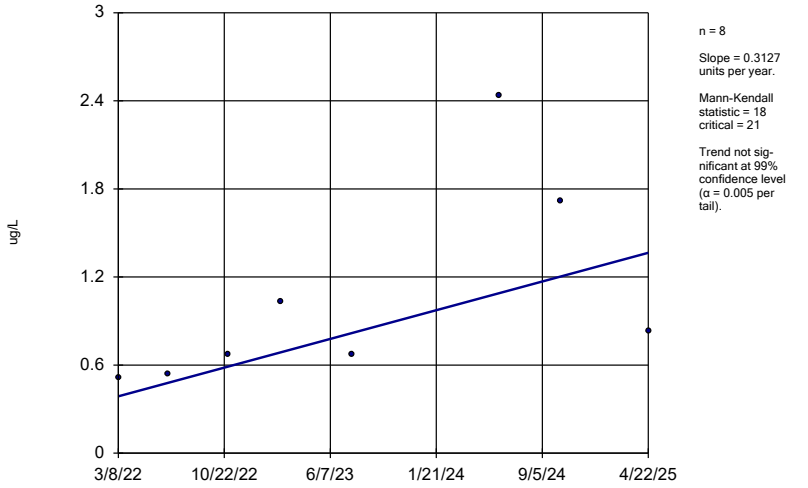
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cadmium Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Sen's Slope Estimator

MW-81



n = 8

Slope = 0.3127 units per year.

Mann-Kendall statistic = 18 critical = 21

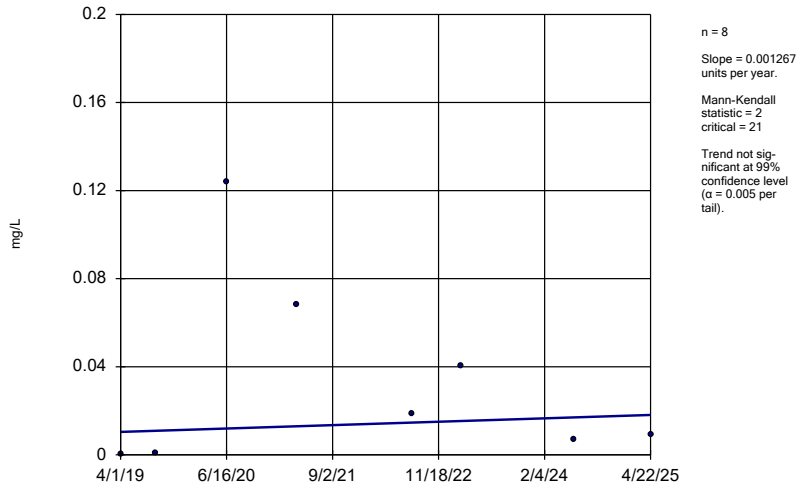
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: cis-1,2-Dichloroethene Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Sen's Slope Estimator

93-MW-32



n = 8

Slope = 0.001267 units per year.

Mann-Kendall statistic = 2 critical = 21

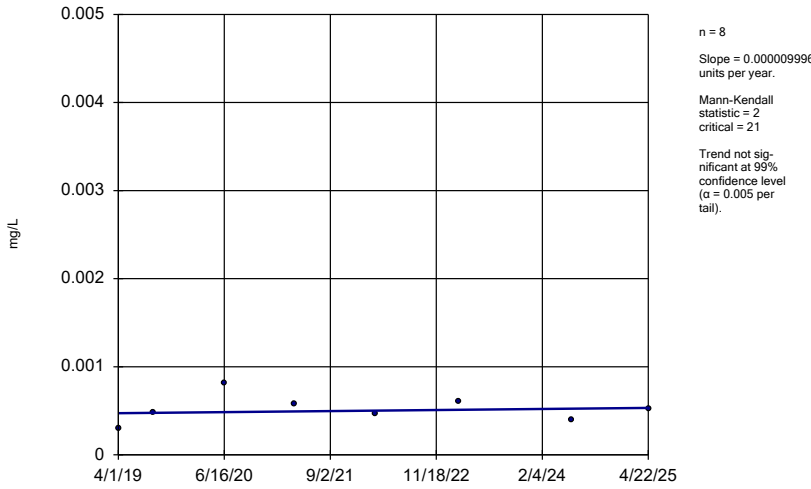
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Sen's Slope Estimator

MW-62



n = 8

Slope = 0.000009996 units per year.

Mann-Kendall statistic = 2 critical = 21

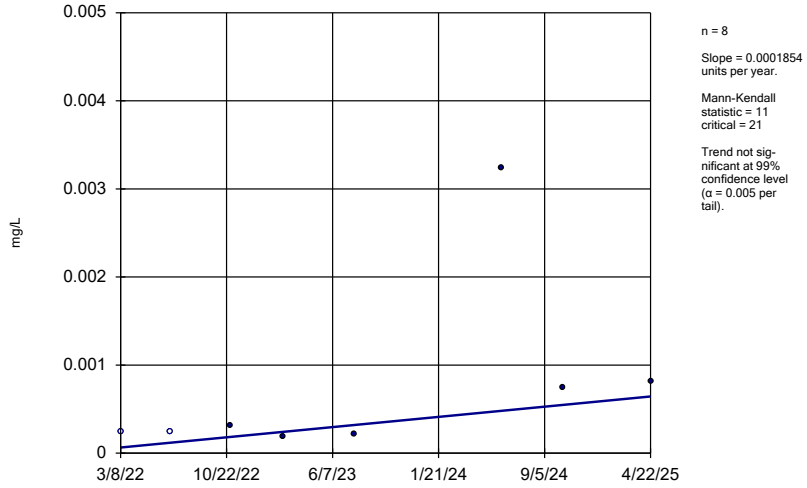
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-81

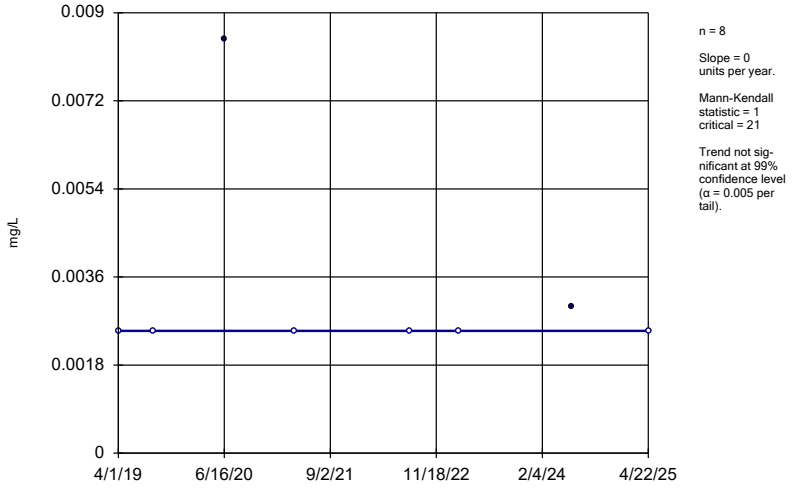


Constituent: Cobalt Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-32

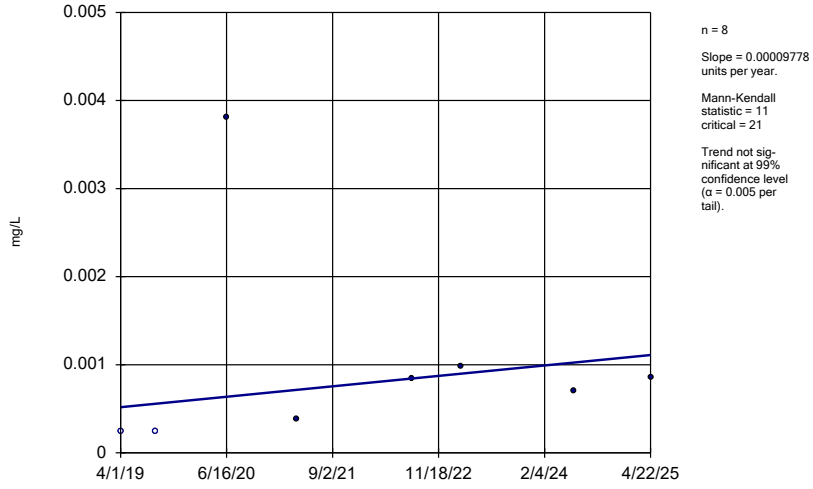


Constituent: Copper Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-32

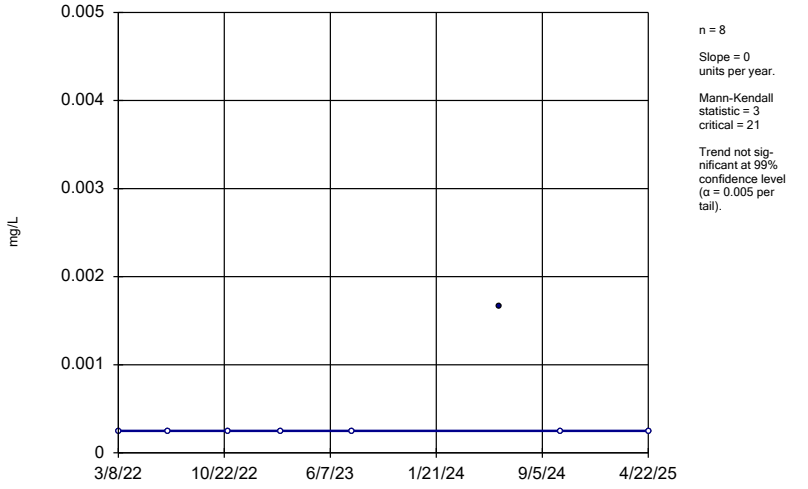


Constituent: Lead Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-81

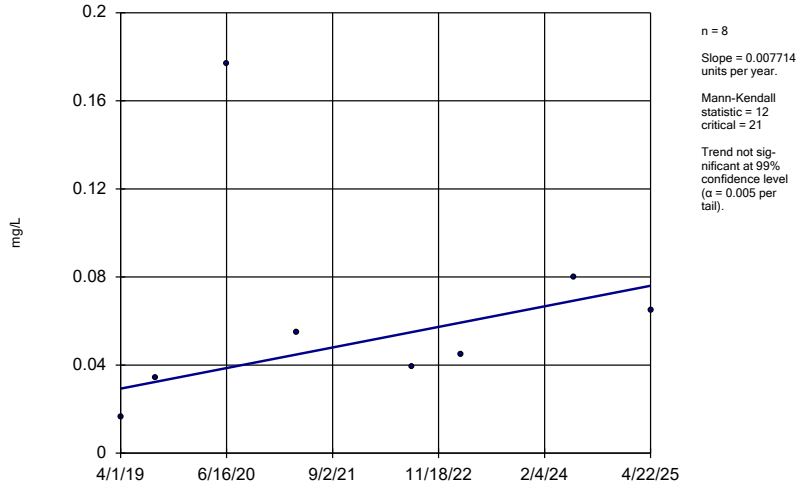


Constituent: Lead Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Sen's Slope Estimator

93-MW-32



n = 8

Slope = 0.007714 units per year.

Mann-Kendall statistic = 12 critical = 21

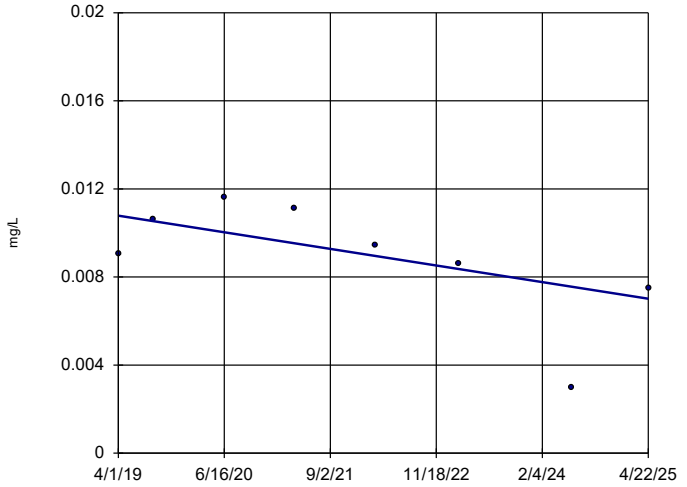
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Sen's Slope Estimator

MW-62



n = 8

Slope = -0.0006225 units per year.

Mann-Kendall statistic = -14 critical = -21

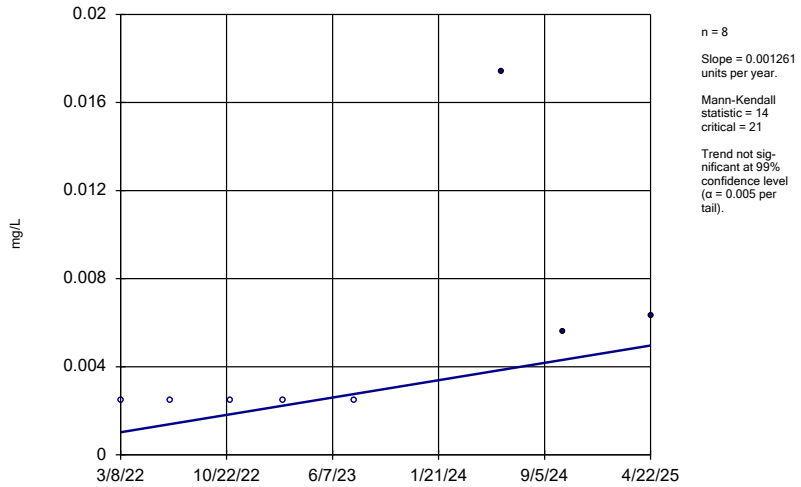
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-81



n = 8

Slope = 0.001261 units per year.

Mann-Kendall statistic = 14 critical = 21

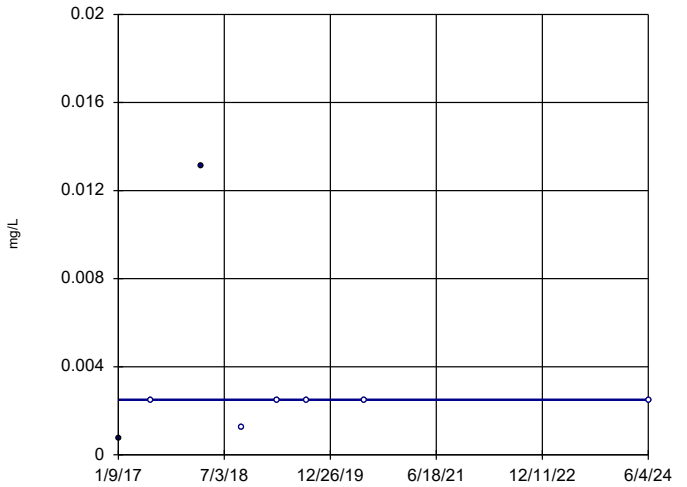
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-62



n = 8

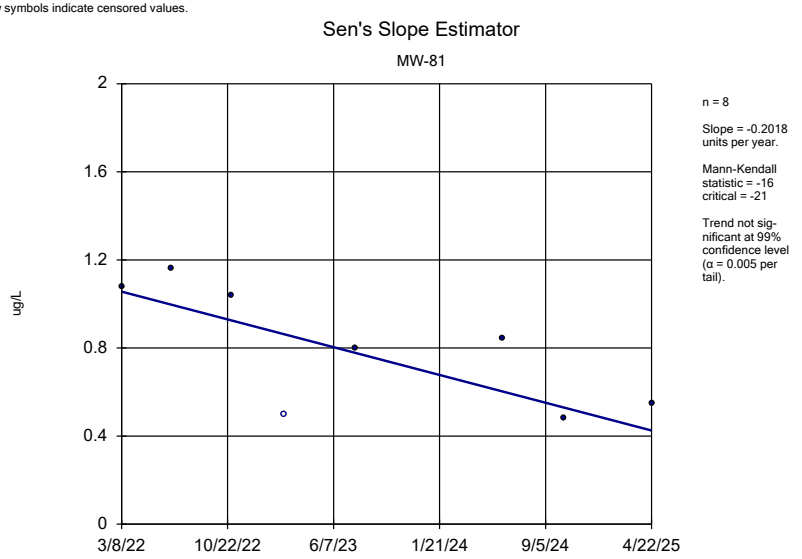
Slope = 0 units per year.

Mann-Kendall statistic = 6 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

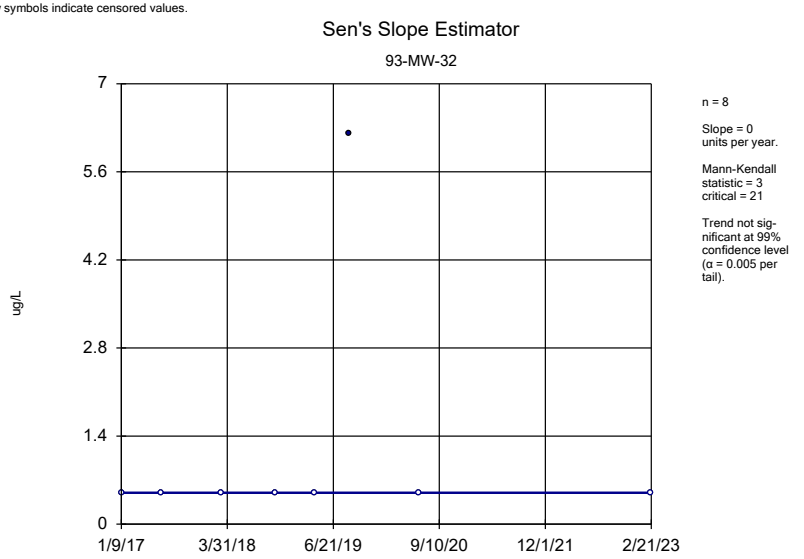
Constituent: Selenium Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Hollow symbols indicate censored values.



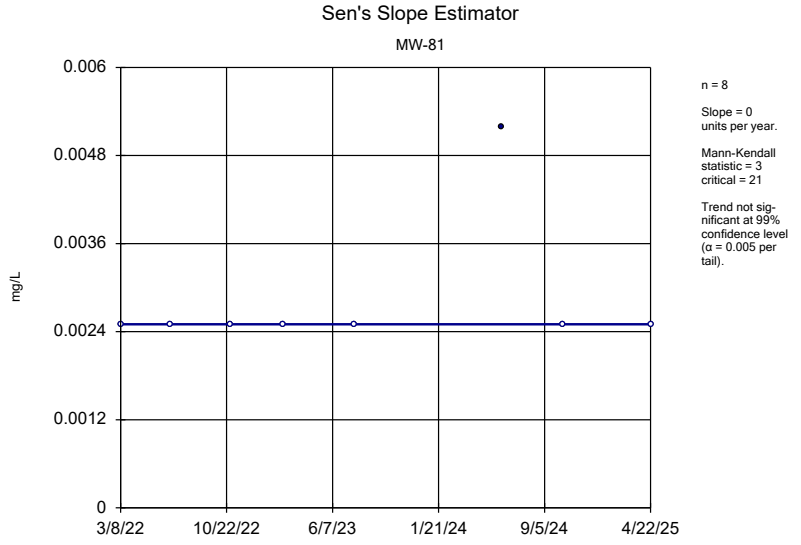
Constituent: Tetrachloroethene Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kend
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Hollow symbols indicate censored values.



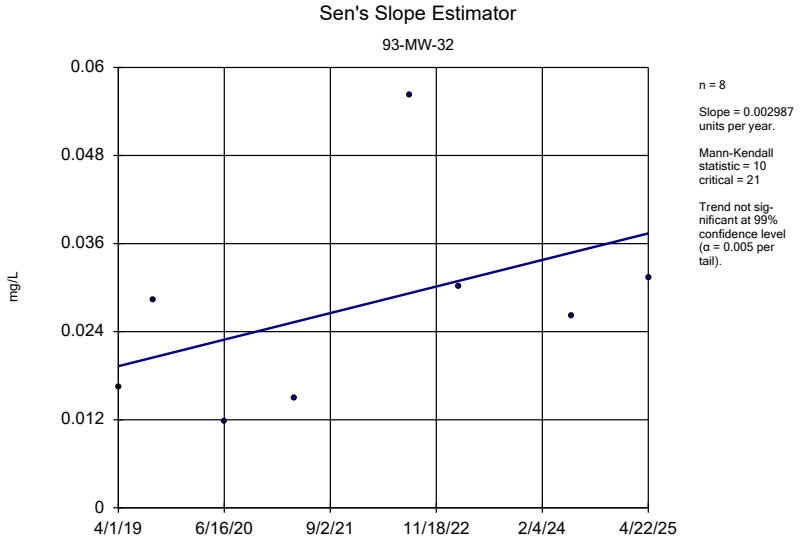
Constituent: Toluene Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Hollow symbols indicate censored values.



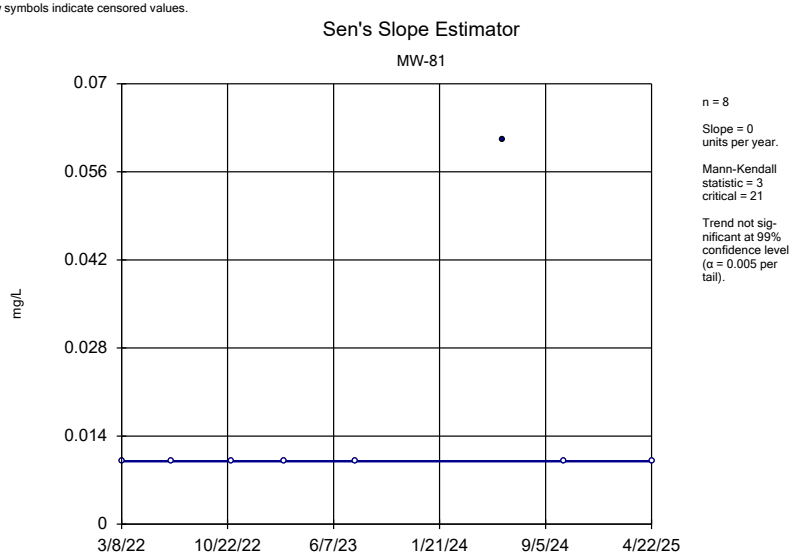
Constituent: Vanadium Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Constituent: Zinc Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.



Constituent: Zinc Analysis Run 6/16/2025 3:50 PM View: 2025_SSN-AM_Wells-Mann_Kendall
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

Mann-Kendall/Sen's Slope Trend Test Summary Table and Graphs – AMD Wells Organics and Sulfide

AMD Wells Trend Test

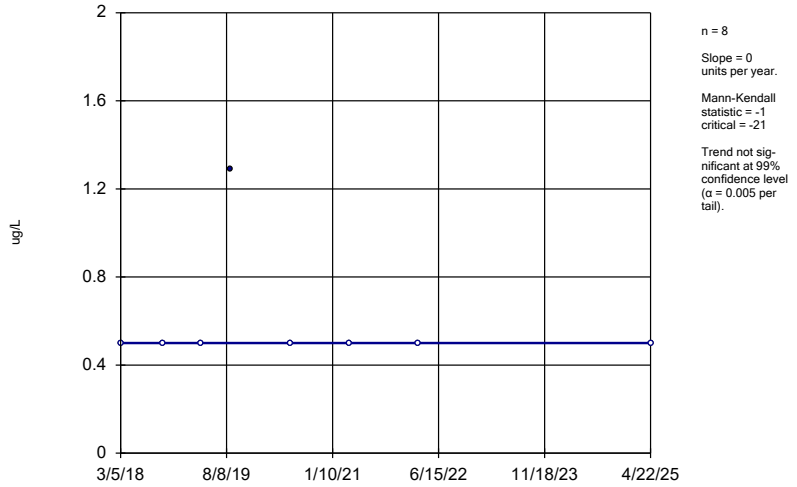
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM Printed 6/16/2025, 5:16 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
1,1-Dichloroethane (ug/L)	MW-59	0	-1	-21	No	8	87.5	n/a	n/a	0.01	NP
1,1-Dichloroethane (ug/L)	MW-64	-0.03741	-6	-21	No	8	50	n/a	n/a	0.01	NP
1,1-Dichloroethane (ug/L)	MW-65	-0.1224	-14	-21	No	8	12.5	n/a	n/a	0.01	NP
2-Methylnaphthalene (ug/L)	04-MW-56	-0.004419	-1	-8	No	4	75	n/a	n/a	0.01	NP
2-Methylnaphthalene (ug/L)	MW-39R	0.008666	1	12	No	5	80	n/a	n/a	0.01	NP
2-Methylnaphthalene (ug/L)	MW-58	0.026	1	12	No	5	80	n/a	n/a	0.01	NP
2-Methylnaphthalene (ug/L)	MW-65	0.04641	3	12	No	5	80	n/a	n/a	0.01	NP
Acetone (ug/L)	MW-40	0	3	21	No	8	75	n/a	n/a	0.01	NP
Acetone (ug/L)	MW-59	0.6587	11	21	No	8	25	n/a	n/a	0.01	NP
Benzene (ug/L)	MW-40	-0.02872	-4	-21	No	8	0	n/a	n/a	0.01	NP
Benzene (ug/L)	MW-59	-0.02036	-2	-21	No	8	12.5	n/a	n/a	0.01	NP
Benzene (ug/L)	MW-65	0.1411	7	21	No	8	25	n/a	n/a	0.01	NP
Chloroethane (ug/L)	MW-65	-0.4316	-7	-21	No	8	0	n/a	n/a	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-40	0.6367	10	21	No	8	0	n/a	n/a	0.01	NP
Naphthalene (ug/L)	MW-40	0	3	14	No	6	83.33	n/a	n/a	0.01	NP
Sulfide (mg/L)	MW-59	0	-5	-21	No	8	87.5	n/a	n/a	0.01	NP
Sulfide (mg/L)	MW-65	0	-7	-21	No	8	87.5	n/a	n/a	0.01	NP
Vinyl chloride (ug/L)	MW-40	0.1133	16	21	No	8	12.5	n/a	n/a	0.01	NP

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-59



n = 8

Slope = 0
units per year.

Mann-Kendall
statistic = -1
critical = -21

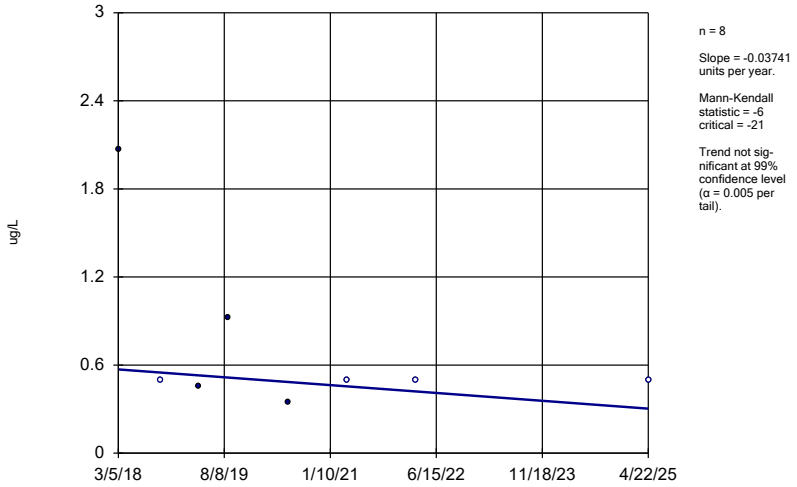
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: 1,1-Dichloroethane Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confiden
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-64



n = 8

Slope = -0.03741
units per year.

Mann-Kendall
statistic = -6
critical = -21

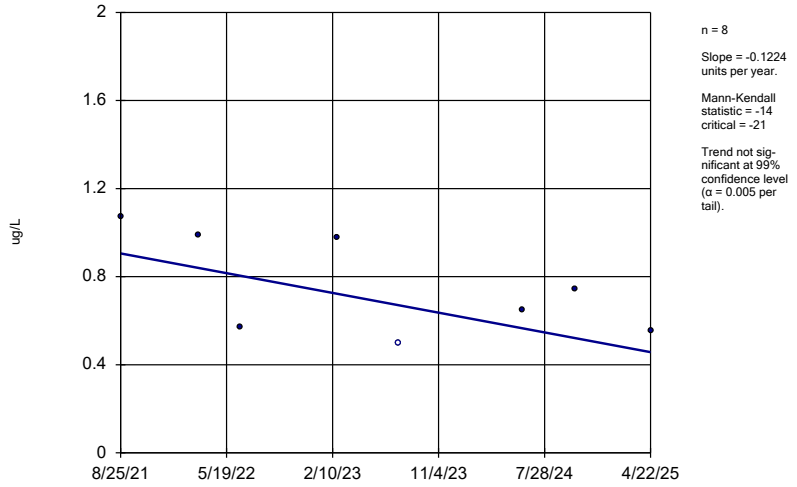
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: 1,1-Dichloroethane Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confiden
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-65



n = 8

Slope = -0.1224
units per year.

Mann-Kendall
statistic = -14
critical = -21

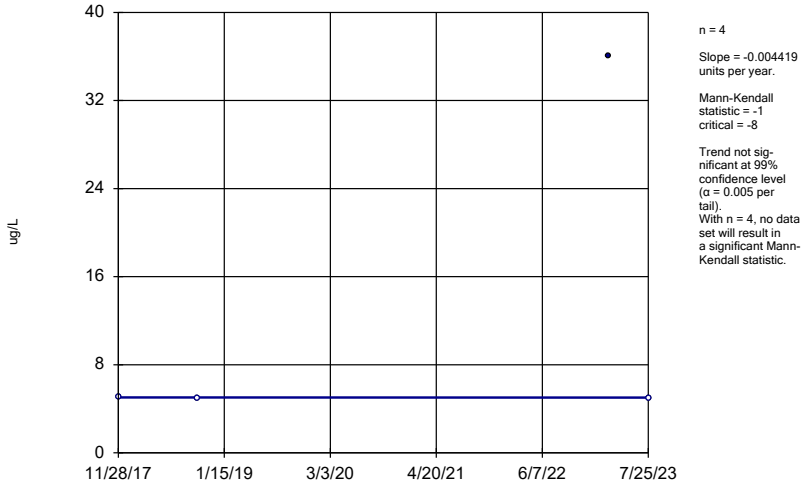
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: 1,1-Dichloroethane Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confiden
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Hollow symbols indicate censored values.

Sen's Slope Estimator

04-MW-56



n = 4

Slope = -0.004419
units per year.

Mann-Kendall
statistic = -1
critical = -8

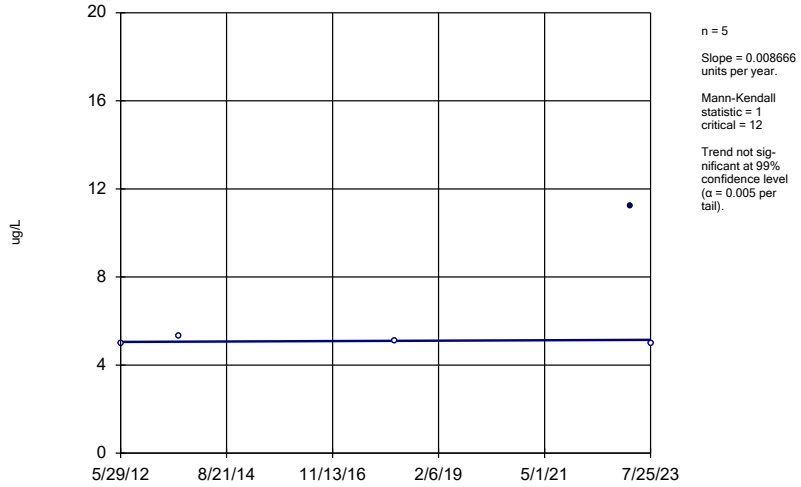
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).
With n = 4, no data
set will result in
a significant Mann-
Kendall statistic.

Constituent: 2-Methylnaphthalene Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confide
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-39R



n = 5

Slope = 0.008666 units per year.

Mann-Kendall statistic = 1
critical = 12

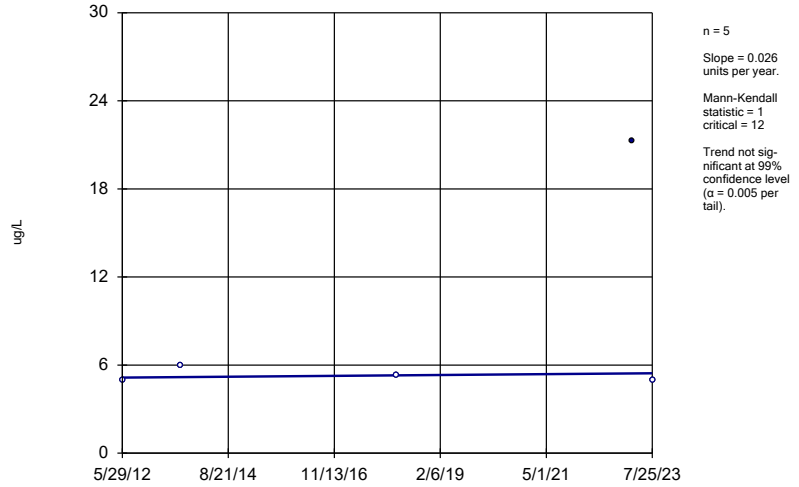
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: 2-Methylnaphthalene Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confide
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-58



n = 5

Slope = 0.026 units per year.

Mann-Kendall statistic = 1
critical = 12

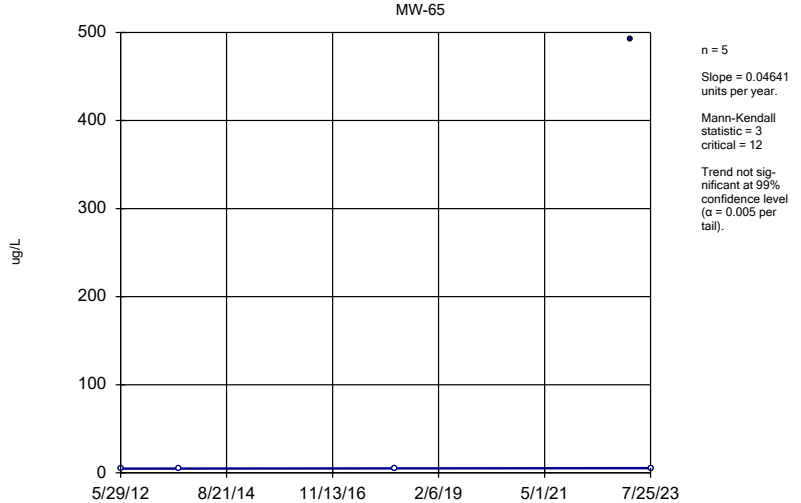
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: 2-Methylnaphthalene Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confide
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-65



n = 5

Slope = 0.04641 units per year.

Mann-Kendall statistic = 3
critical = 12

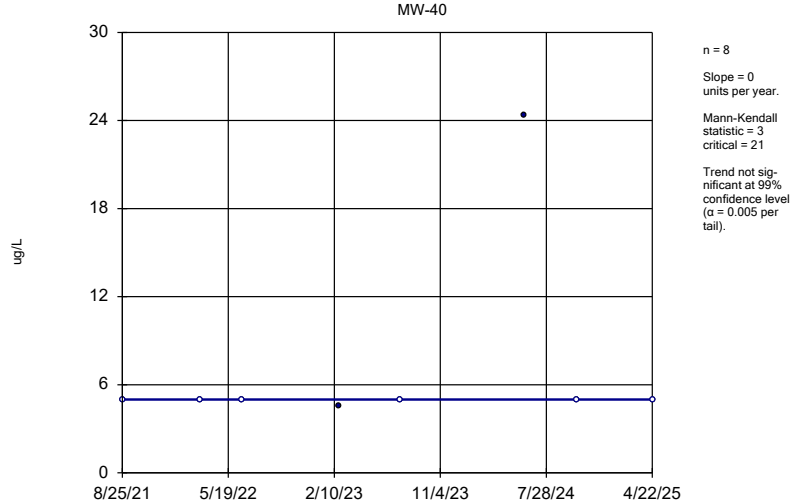
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: 2-Methylnaphthalene Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confide
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-40



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 3
critical = 21

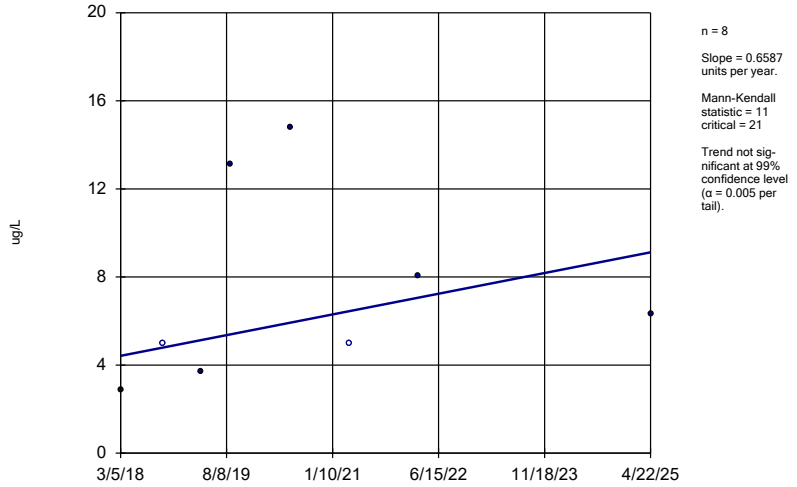
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Acetone Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-59



n = 8

Slope = 0.6587 units per year.

Mann-Kendall statistic = 11
critical = 21

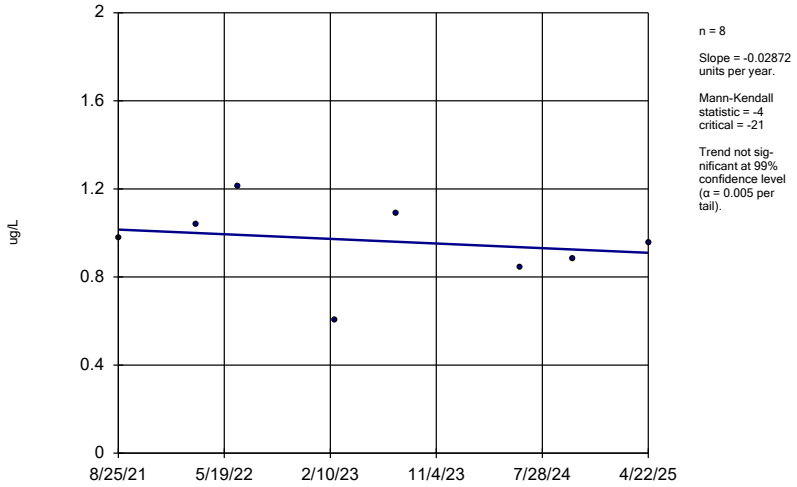
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Acetone Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Sen's Slope Estimator

MW-40



n = 8

Slope = -0.02872 units per year.

Mann-Kendall statistic = -4
critical = -21

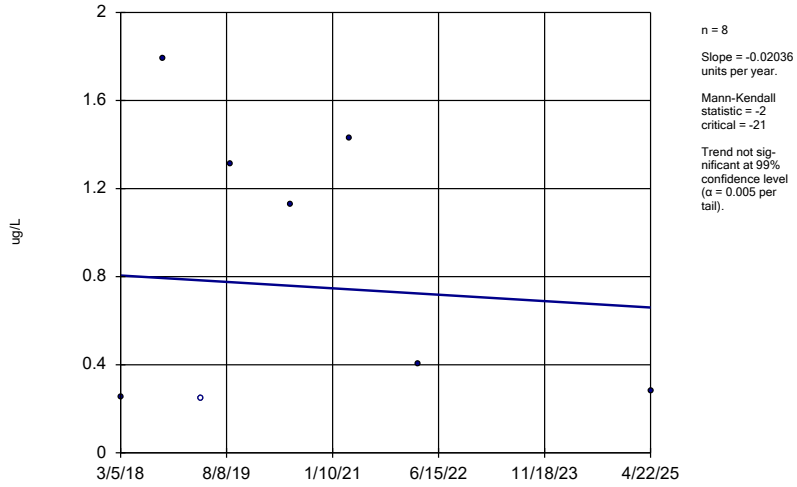
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Benzene Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confidence_Interva
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-59



n = 8

Slope = -0.02036 units per year.

Mann-Kendall statistic = -2
critical = -21

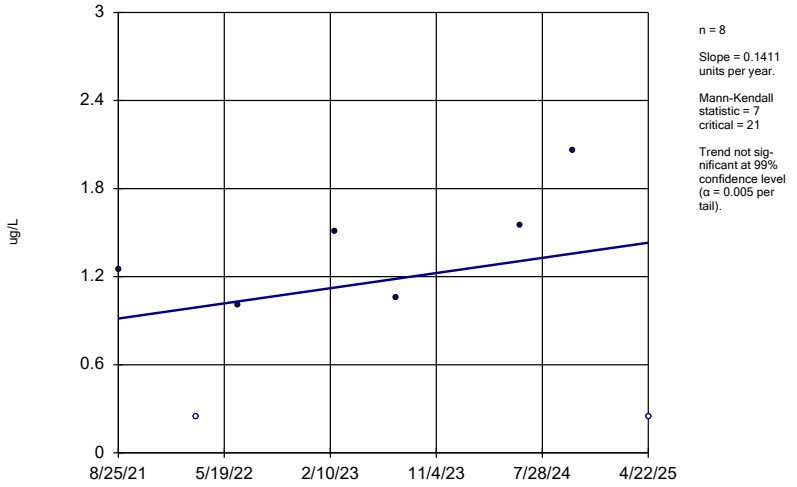
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Benzene Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confidence_Interva
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-65



n = 8

Slope = 0.1411 units per year.

Mann-Kendall statistic = 7
critical = 21

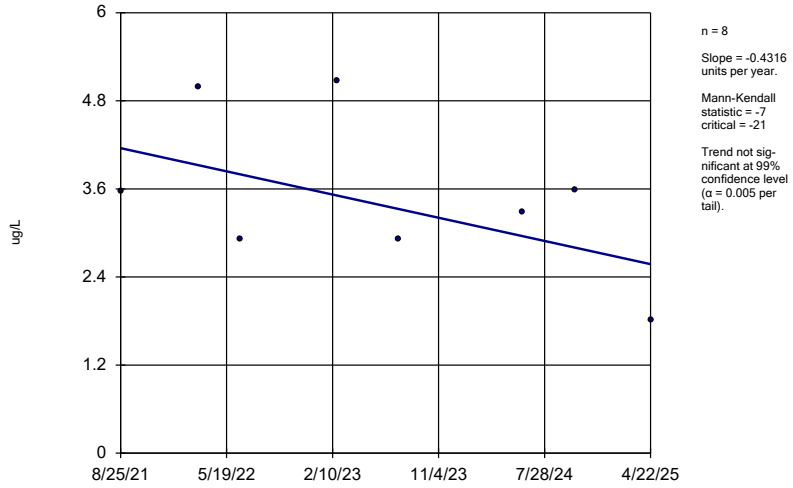
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Benzene Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confidence_Interva
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Sen's Slope Estimator

MW-65

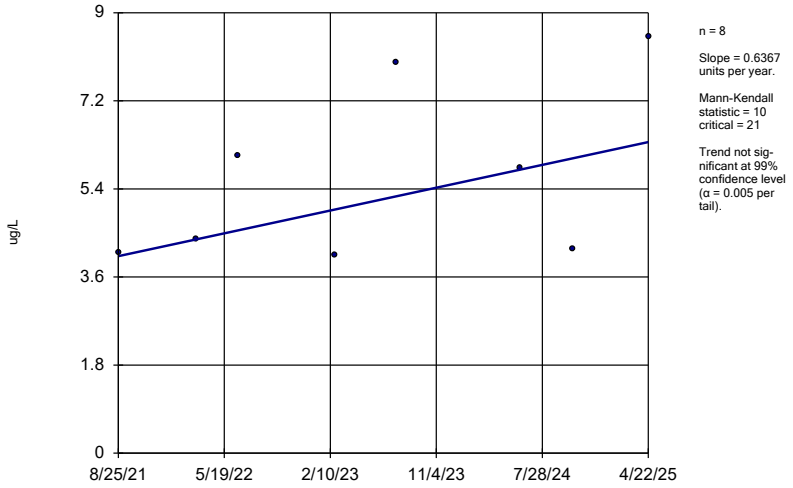


Constituent: Chloroethane Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confidence_Int
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-40

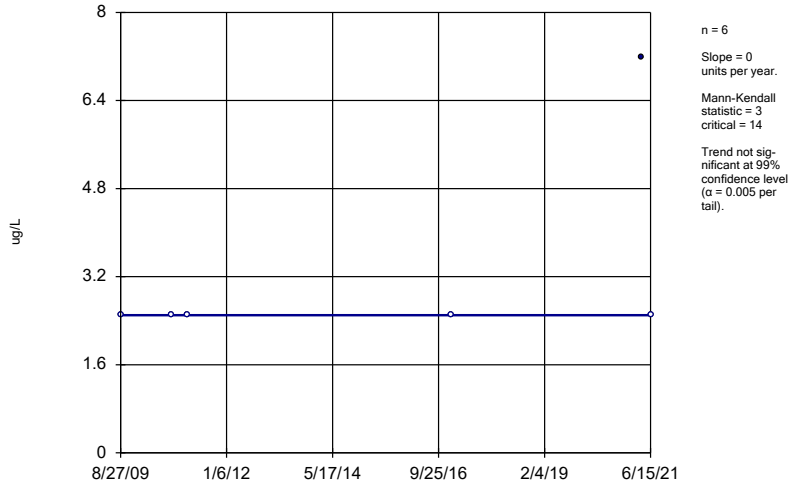


Constituent: cis-1,2-Dichloroethene Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confi
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-40

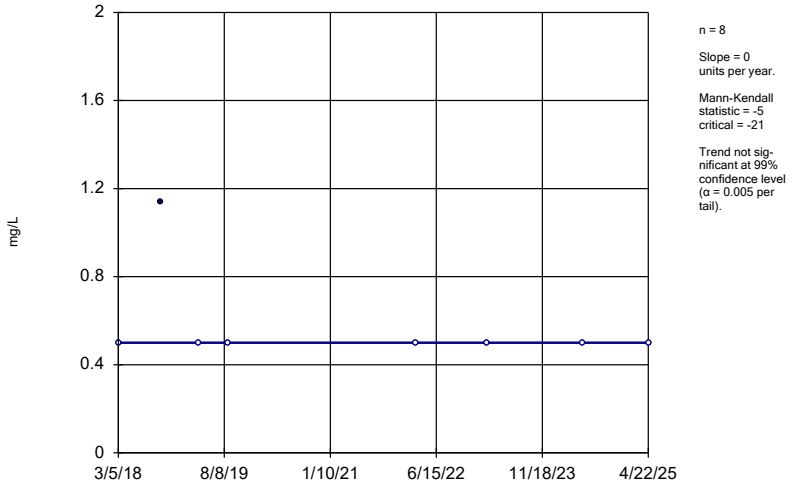


Constituent: Naphthalene Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confidence_Int
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

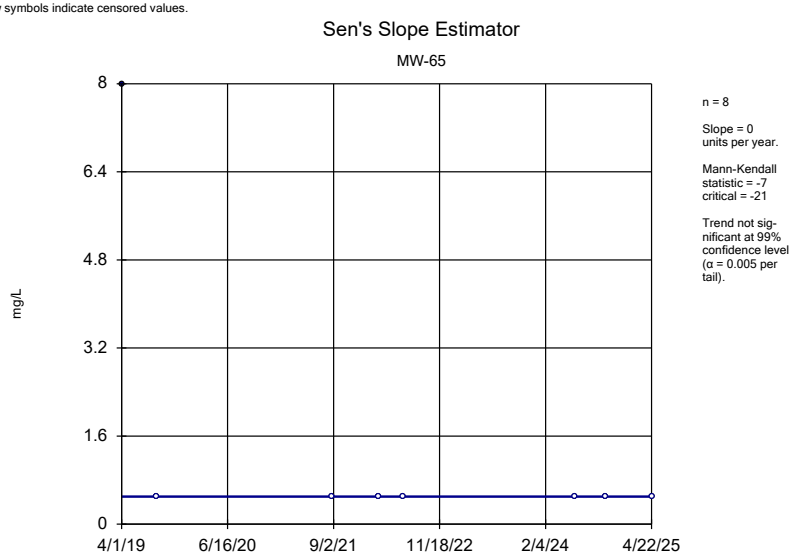
Sen's Slope Estimator

MW-59



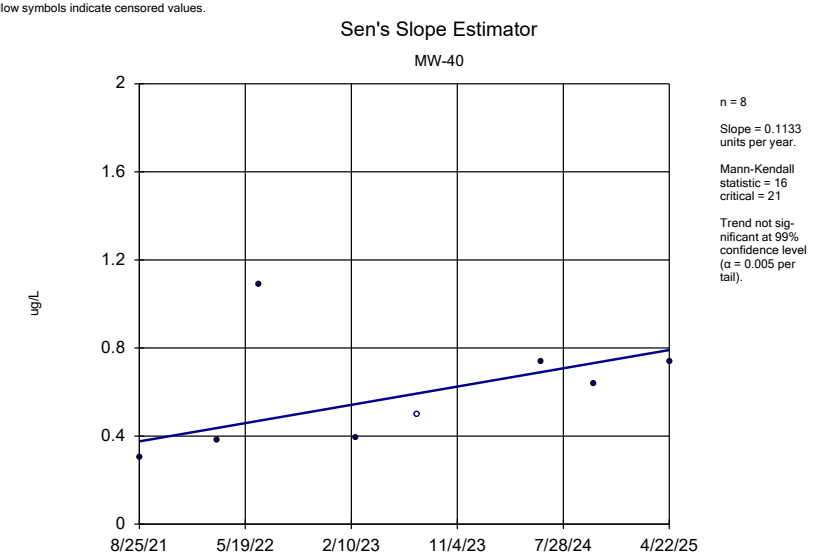
Constituent: Sulfide Analysis Run 6/16/2025 5:14 PM View: 2025_SSN-AMD_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Hollow symbols indicate censored values.



Constituent: Sulfide Analysis Run 6/16/2025 5:15 PM View: 2025_SSN-AMD_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Hollow symbols indicate censored values.



Constituent: Vinyl chloride Analysis Run 6/16/2025 5:15 PM View: 2025_SSN-AMD_Wells-Confidence_Int
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

Confidence Interval Summary Table and Graphs – Assessment Monitoring Wells

AM Wells Confidence Interval

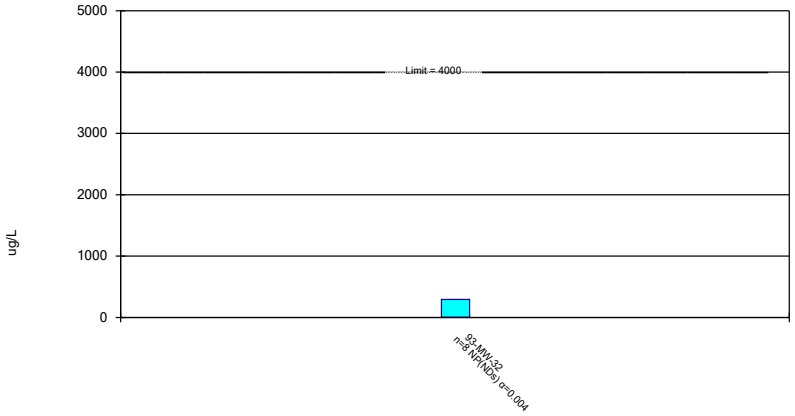
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM Printed 6/16/2025, 4:36 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
2-Butanone (ug/L)	93-MW-32	294	5	4000	No	8	87.5	No	0.004	NP (NDs)
Acetone (ug/L)	93-MW-32	261	1.91	6300	No	8	75	No	0.004	NP (NDs)
Antimony (mg/L)	93-MW-32	0.0011	0.0005	0.006	No	8	87.5	No	0.004	NP (NDs)
Arsenic (mg/L)	93-MW-32	0.008249	0.002371	0.01	No	8	25	No	0.01	Param.
Barium (mg/L)	93-MW-32	0.1693	0.05341	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-62	0.03888	0.02664	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-81	0.234	0.0579	2	No	8	0	No	0.004	NP (normality)
Cadmium (mg/L)	93-MW-32	0.001225	0.0002558	0.005	No	8	0	No	0.01	Param.
Cadmium (mg/L)	MW-81	0.00106	0.000062	0.005	No	8	12.5	No	0.004	NP (normality)
cis-1,2-Dichloroethene (ug/L)	MW-81	1.776	0.3274	70	No	8	0	No	0.01	Param.
Cobalt (mg/L)	93-MW-32	0.07942	0	0.01691	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-62	0.0006821	0.0003557	0.01691	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-81	0.00324	0.000193	0.01691	No	8	25	No	0.004	NP (normality)
Copper (mg/L)	93-MW-32	0.00847	0.0025	1.3	No	8	75	No	0.004	NP (NDs)
Lead (mg/L)	93-MW-32	0.00381	0.00025	0.015	No	8	25	No	0.004	NP (normality)
Lead (mg/L)	MW-81	0.00166	0.00025	0.015	No	8	87.5	No	0.004	NP (NDs)
Nickel (mg/L)	93-MW-32	0.1166	0.01137	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-62	0.01176	0.005958	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-81	0.0174	0.0025	0.1	No	8	62.5	No	0.004	NP (NDs)
Selenium (mg/L)	MW-62	0.0131	0.000753	0.05	No	8	75	No	0.004	NP (NDs)
Tetrachloroethene (ug/L)	MW-81	1.096	0.5172	5	No	8	12.5	No	0.01	Param.
Toluene (ug/L)	93-MW-32	6.22	0.5	1000	No	8	87.5	No	0.004	NP (NDs)
Vanadium (mg/L)	MW-81	0.00519	0.0025	0.035	No	8	87.5	No	0.004	NP (NDs)
Zinc (mg/L)	93-MW-32	0.04176	0.01206	2	No	8	0	No	0.01	Param.
Zinc (mg/L)	MW-81	0.0611	0.01	2	No	8	87.5	No	0.004	NP (NDs)

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Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

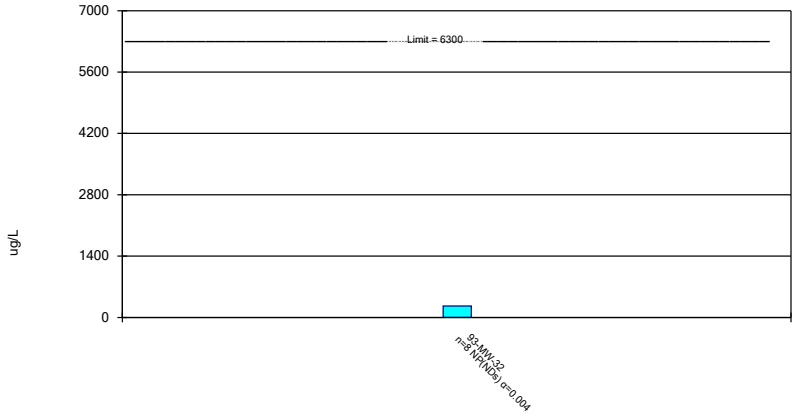


Constituent: 2-Butanone Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confidence_Interv
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

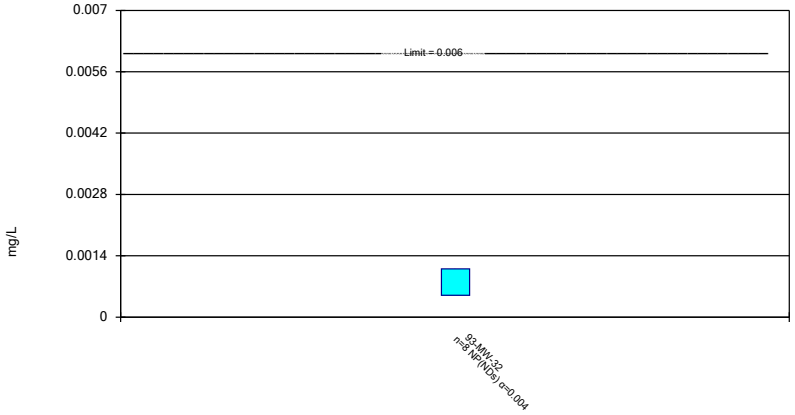


Constituent: Acetone Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

Sanitas™ v.10.0.26 Software licensed to SCS Engineers. UG

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

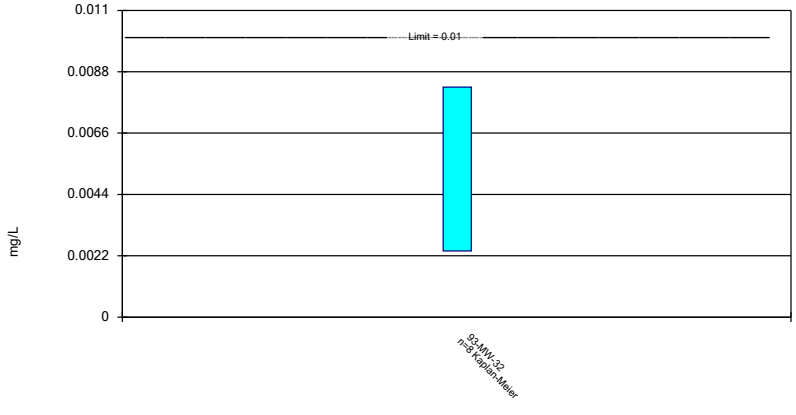


Constituent: Antimony Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

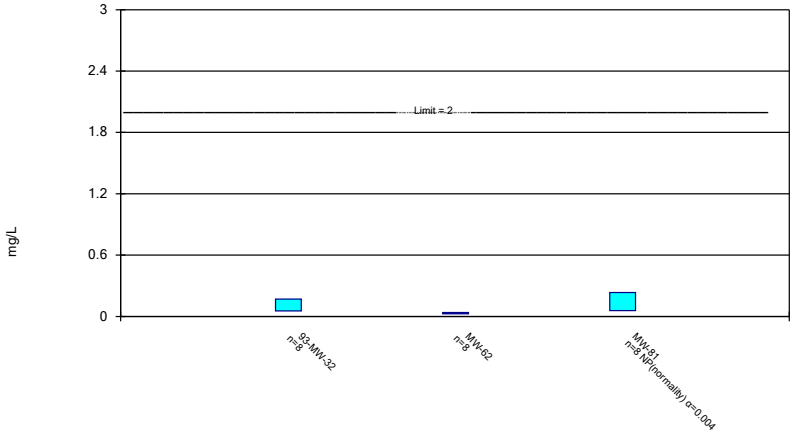


Constituent: Arsenic Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.

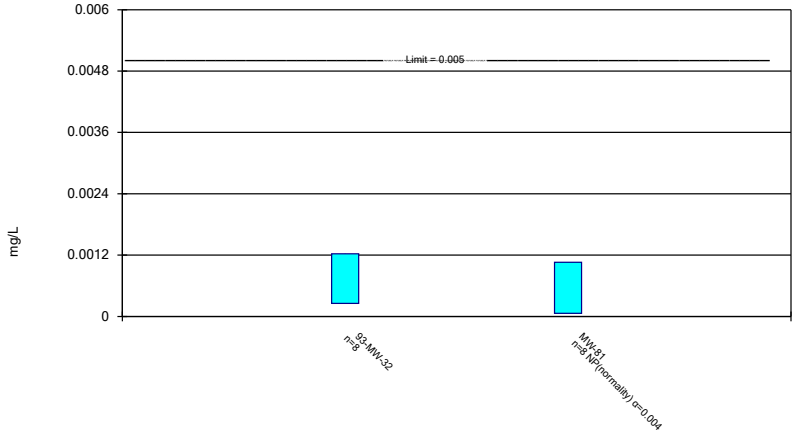


Constituent: Barium Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cadmium Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

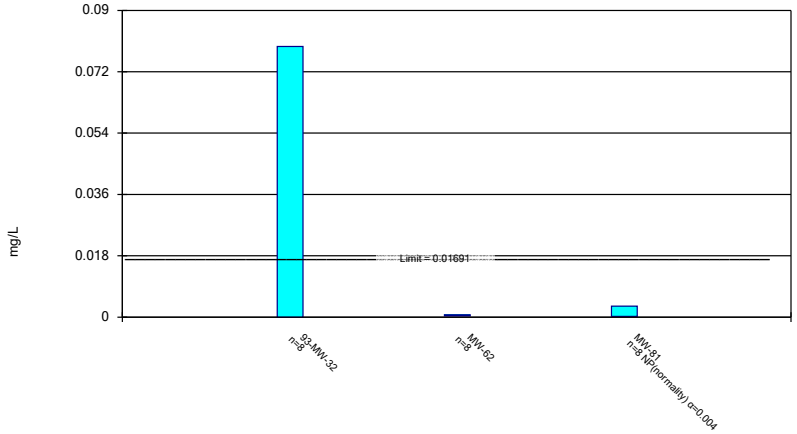


Constituent: cis-1,2-Dichloroethene Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confide
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.

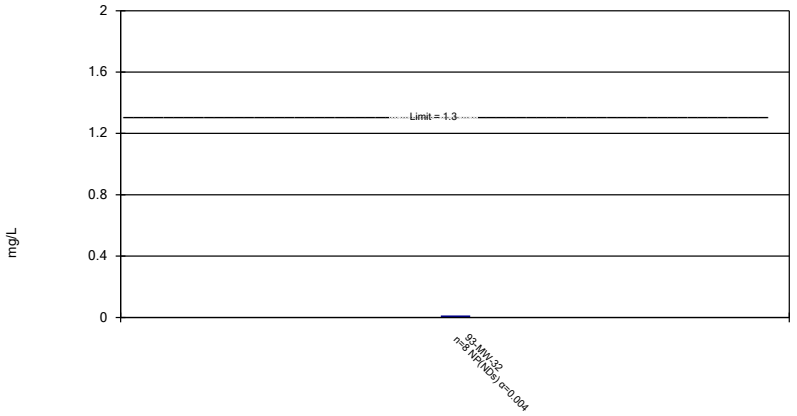


Constituent: Cobalt Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

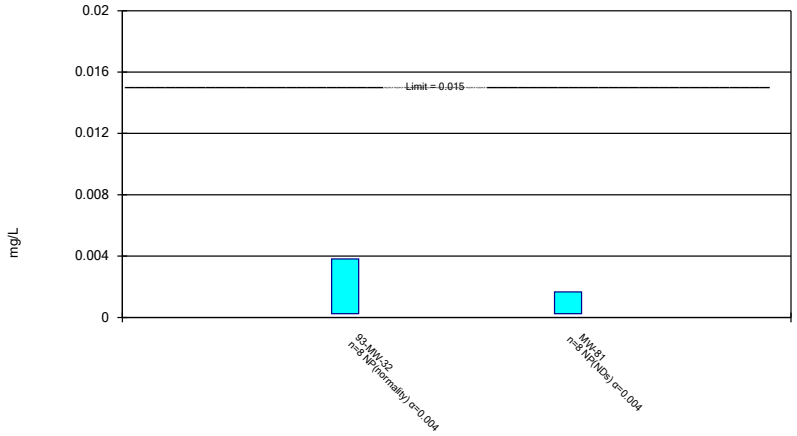


Constituent: Copper Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

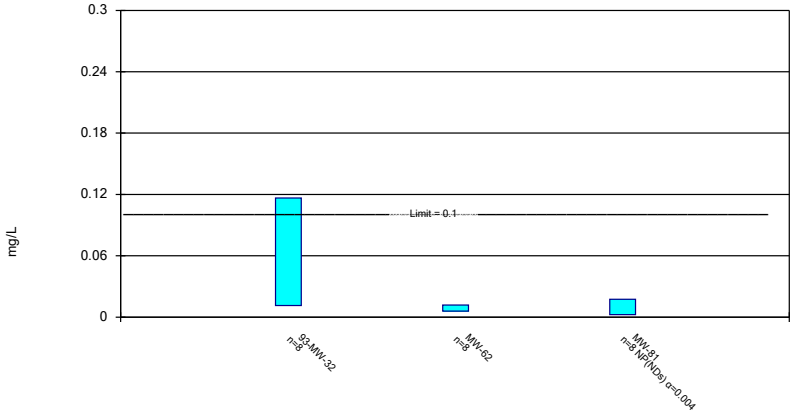


Constituent: Lead Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.

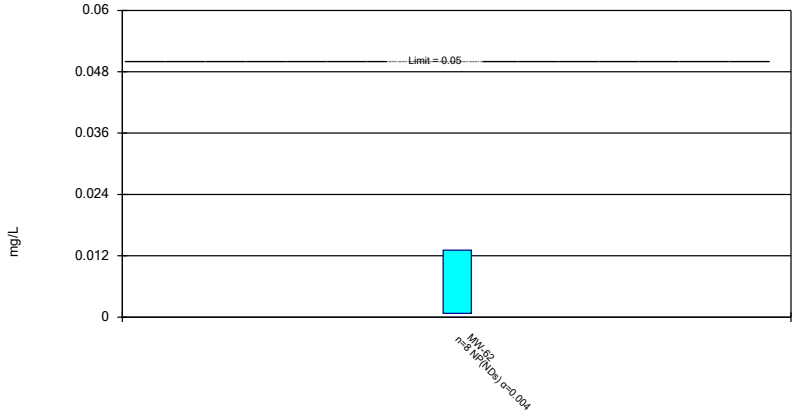


Constituent: Nickel Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

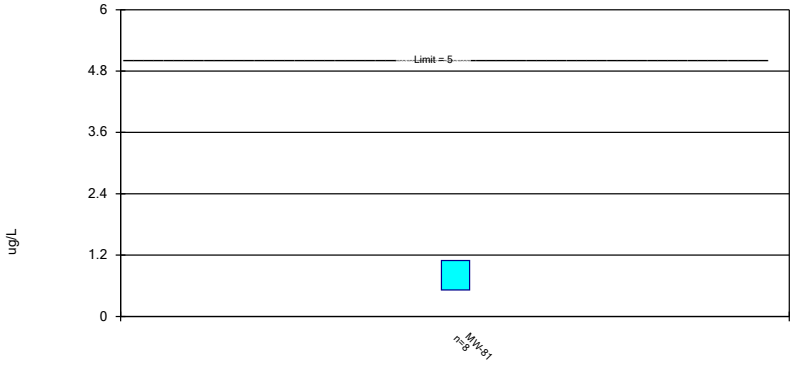


Constituent: Selenium Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

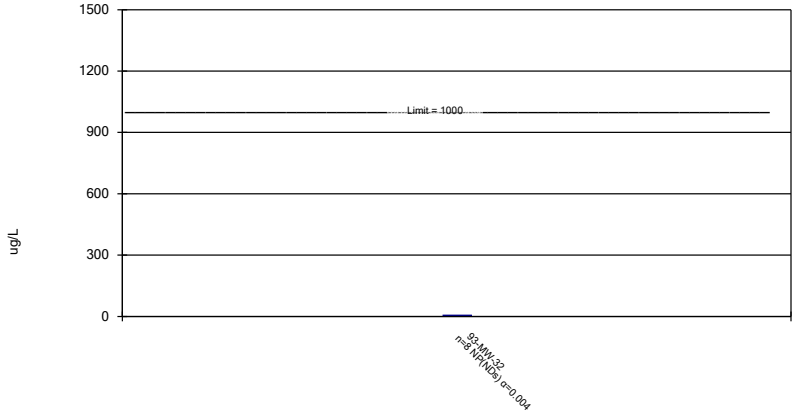


Constituent: Tetrachloroethene Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confidence
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

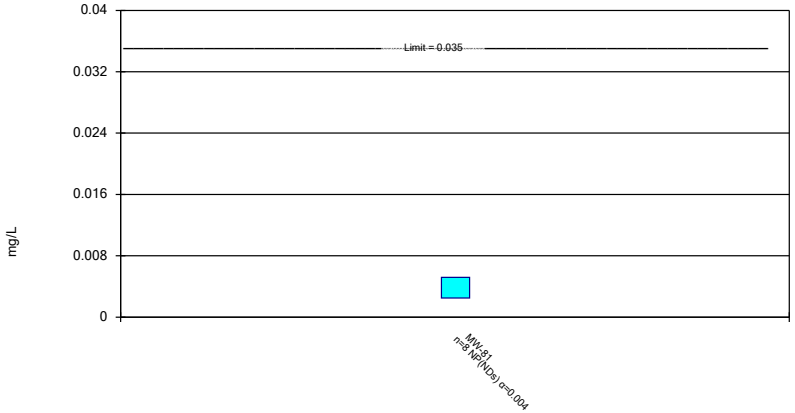


Constituent: Toluene Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

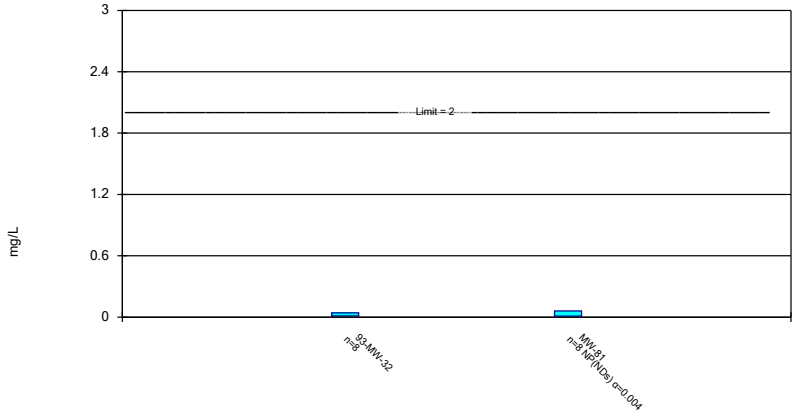


Constituent: Vanadium Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Zinc Analysis Run 6/16/2025 4:34 PM View: 2025_SSN-AM_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AM Wells-2025_SSN-AM

Confidence Interval Summary Table and Graphs – AMD Wells Organics and Sulfide

AMD Wells Confidence Interval

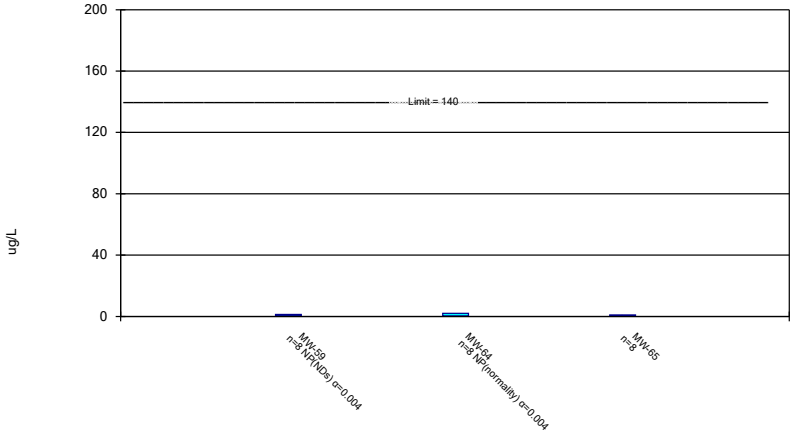
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM Printed 6/16/2025, 5:22 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
1,1-Dichloroethane (ug/L)	MW-59	1.29	0.5	140	No	8	87.5	No	0.004	NP (NDs)
1,1-Dichloroethane (ug/L)	MW-64	2.07	0.344	140	No	8	50	No	0.004	NP (normality)
1,1-Dichloroethane (ug/L)	MW-65	0.9946	0.5194	140	No	8	12.5	No	0.01	Param.
2-Methylnaphthalene (ug/L)	04-MW-56	36	5	28	No	4	75	No	0.0625	NP (NDs)
2-Methylnaphthalene (ug/L)	MW-39R	11.2	5	28	No	5	80	No	0.031	NP (NDs)
2-Methylnaphthalene (ug/L)	MW-58	21.3	5	28	No	5	80	No	0.031	NP (NDs)
2-Methylnaphthalene (ug/L)	MW-65	492	5	28	No	5	80	No	0.031	NP (NDs)
Acetone (ug/L)	MW-40	24.4	4.56	6300	No	8	75	No	0.004	NP (NDs)
Acetone (ug/L)	MW-59	11.86	2.978	6300	No	8	25	No	0.01	Param.
Benzene (ug/L)	MW-40	1.143	0.7587	5	No	8	0	No	0.01	Param.
Benzene (ug/L)	MW-59	1.52	0.1924	5	No	8	12.5	No	0.01	Param.
Benzene (ug/L)	MW-65	1.709	0.6509	5	No	8	25	No	0.01	Param.
Chloroethane (ug/L)	MW-65	4.669	2.369	2800	No	8	0	No	0.01	Param.
cis-1,2-Dichloroethene (ug/L)	MW-40	7.546	3.735	70	No	8	0	No	0.01	Param.
Naphthalene (ug/L)	MW-40	7.18	2.5	100	No	6	83.33	No	0.0155	NP (NDs)
Sulfide (mg/L)	MW-59	1.14	0.5	1	No	8	87.5	No	0.004	NP (NDs)
Sulfide (mg/L)	MW-65	7.98	0.5	1	No	8	87.5	No	0.004	NP (NDs)
Vinyl chloride (ug/L)	MW-40	0.8715	0.3246	2	No	8	12.5	No	0.01	Param.

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.

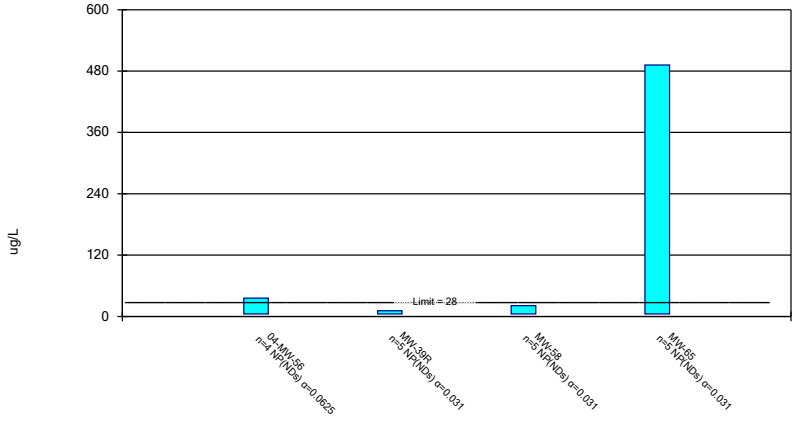


Constituent: 1,1-Dichloroethane Analysis Run 6/16/2025 5:21 PM View: 2025_SSN-AMD_Wells-Confiden
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

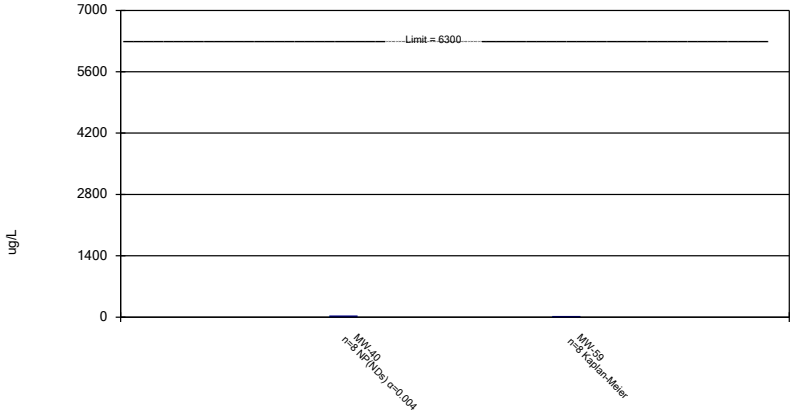


Constituent: 2-Methylnaphthalene Analysis Run 6/16/2025 5:21 PM View: 2025_SSN-AMD_Wells-Confide
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.

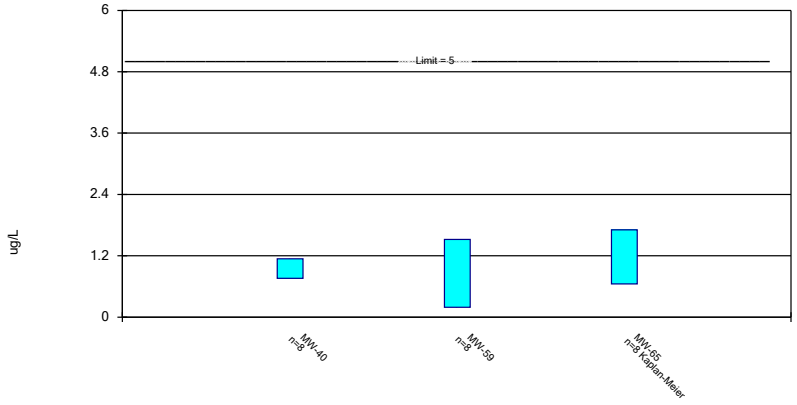


Constituent: Acetone Analysis Run 6/16/2025 5:21 PM View: 2025_SSN-AMD_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

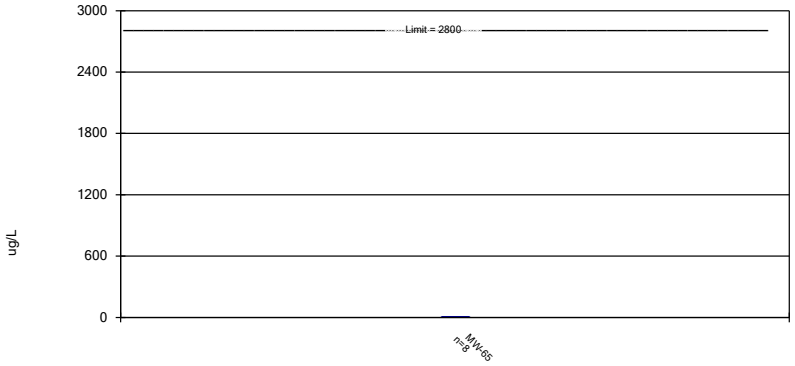


Constituent: Benzene Analysis Run 6/16/2025 5:21 PM View: 2025_SSN-AMD_Wells-Confidence_Interva
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

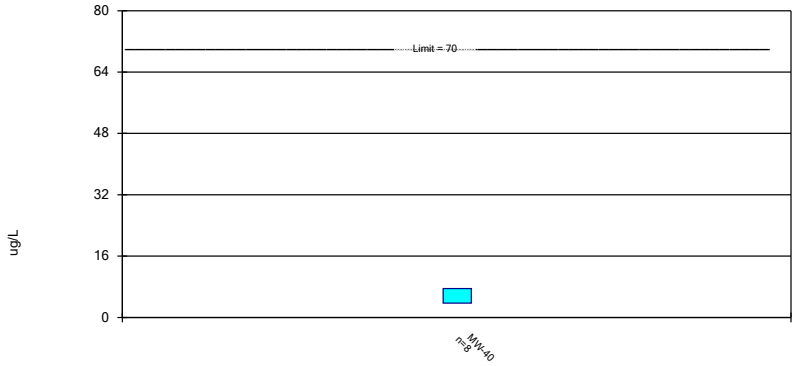


Constituent: Chloroethane Analysis Run 6/16/2025 5:21 PM View: 2025_SSN-AMD_Wells-Confidence_Int
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

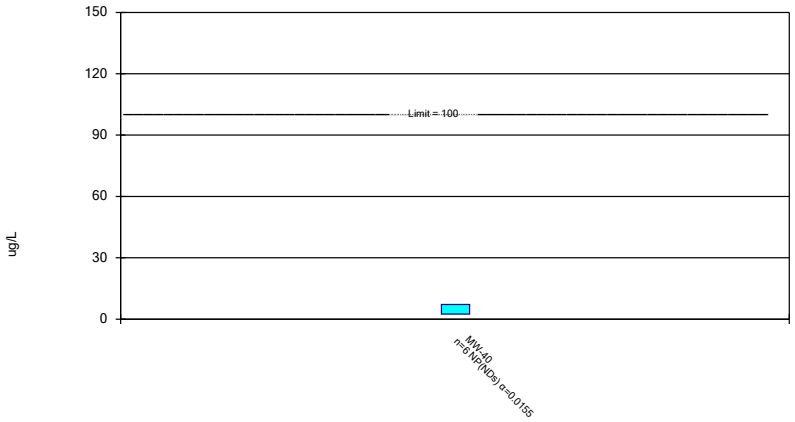


Constituent: cis-1,2-Dichloroethene Analysis Run 6/16/2025 5:21 PM View: 2025_SSN-AMD_Wells-Confi
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

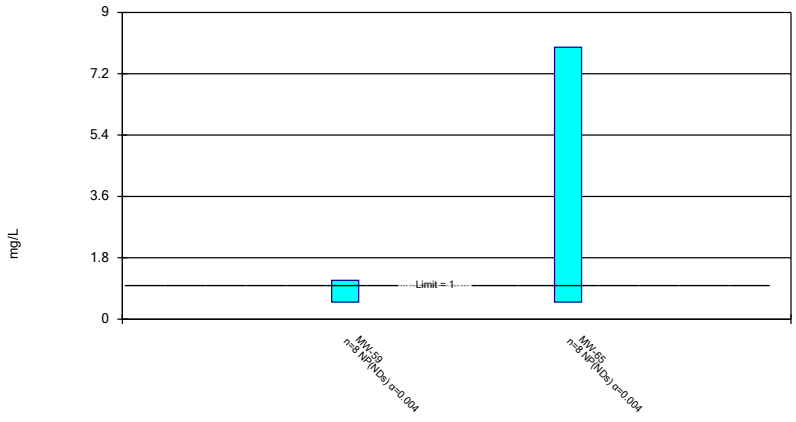


Constituent: Naphthalene Analysis Run 6/16/2025 5:21 PM View: 2025_SSN-AMD_Wells-Confidence_Int
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

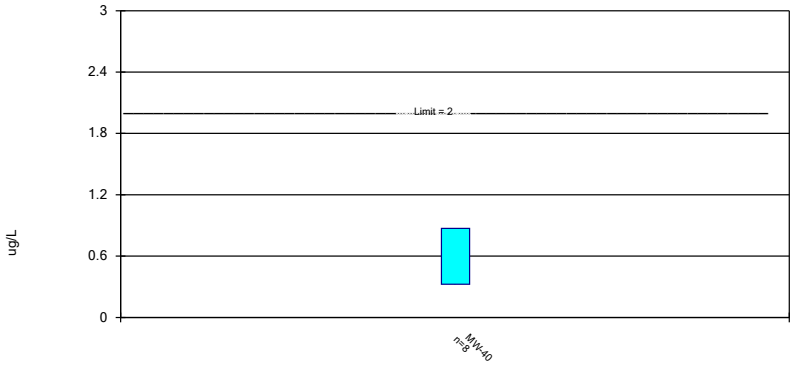


Constituent: Sulfide Analysis Run 6/16/2025 5:21 PM View: 2025_SSN-AMD_Wells-Confidence_Interval
Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Vinyl chloride Analysis Run 6/16/2025 5:21 PM View: 2025_SSN-AMD_Wells-Confidence_Int

Ottumwa-Wapello County LF Client: SCS Engineers Data: Ottumwa AMD Wells-2025_SSN-AM

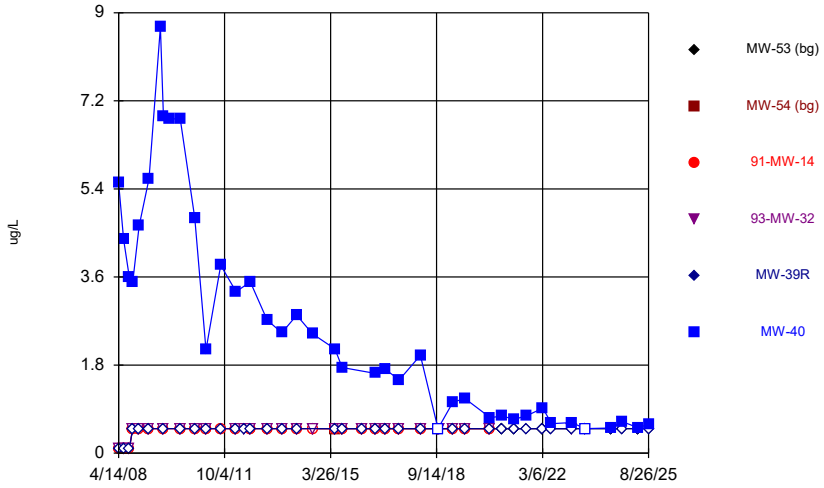
Attachment B

2nd 2025 Statistical Evaluation Output

Time Series Plots

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

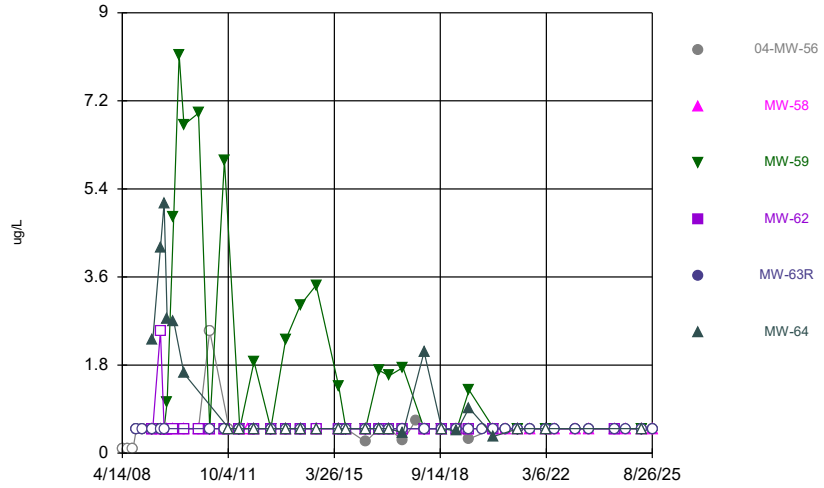
Time Series



Constituent: 1,1-Dichloroethane Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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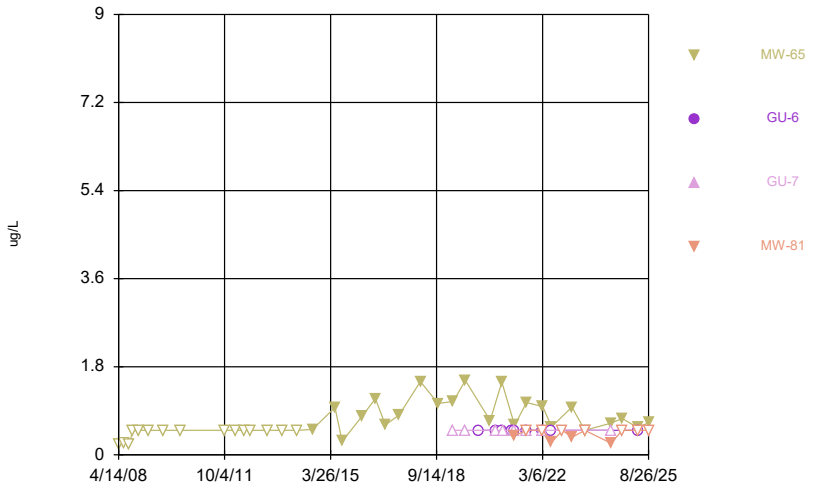
Time Series



Constituent: 1,1-Dichloroethane Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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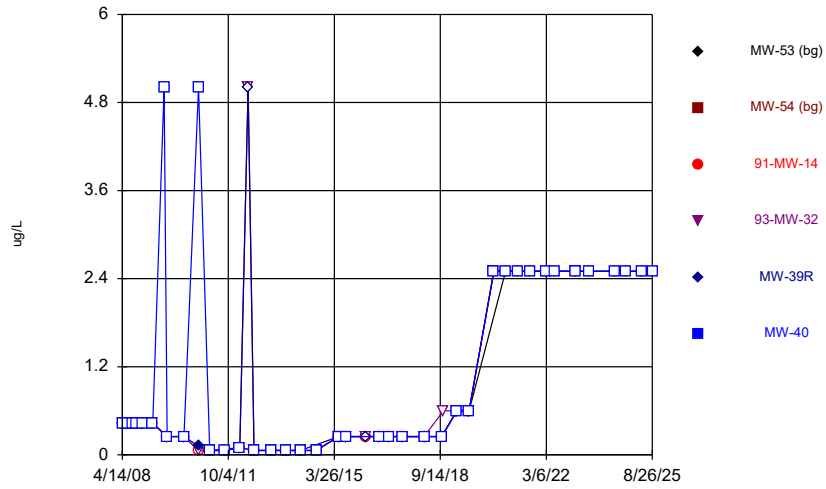
Time Series



Constituent: 1,1-Dichloroethane Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

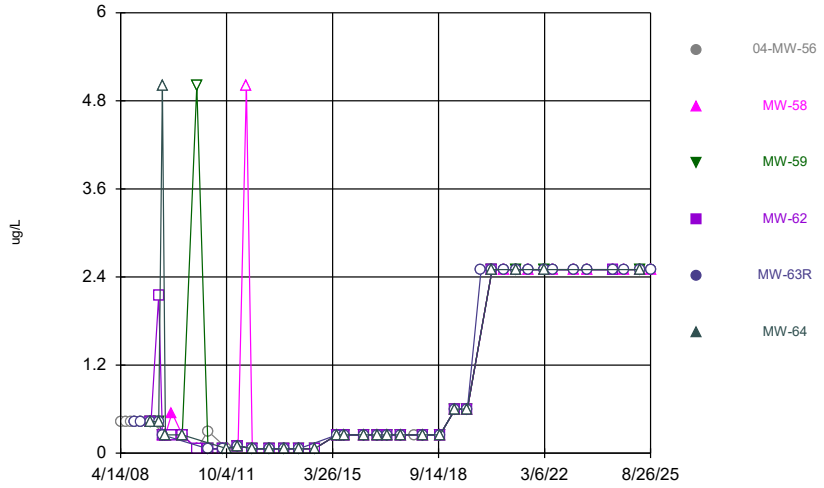
Time Series



Constituent: 1,2-Dibromo-3-chloropropane Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_S
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

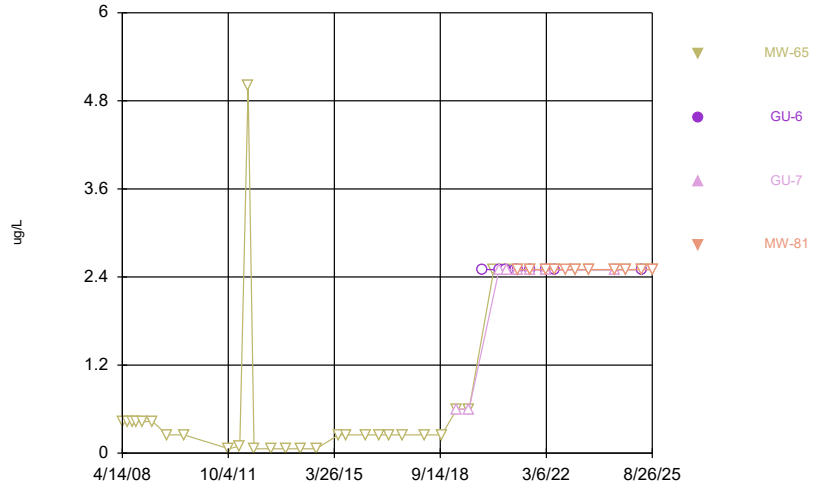
Time Series



Constituent: 1,2-Dibromo-3-chloropropane Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_S
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

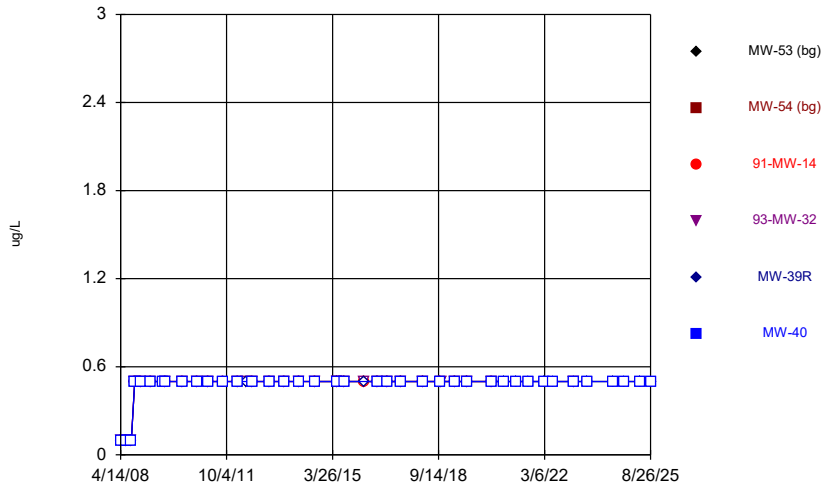
Time Series



Constituent: 1,2-Dibromo-3-chloropropane Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_S
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

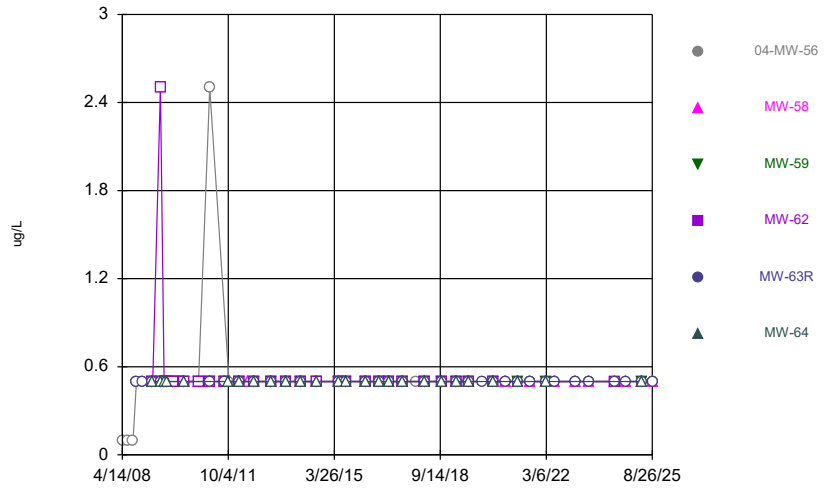
Time Series



Constituent: 1,2-Dichloroethane Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

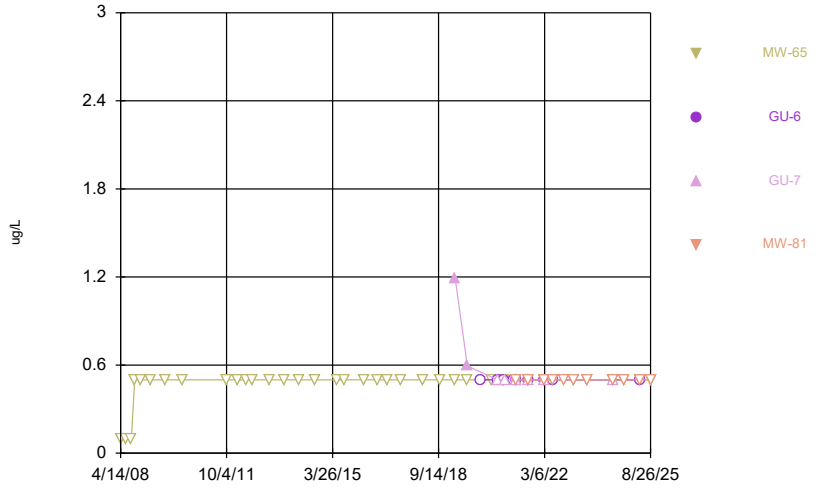
Time Series



Constituent: 1,2-Dichloroethane Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

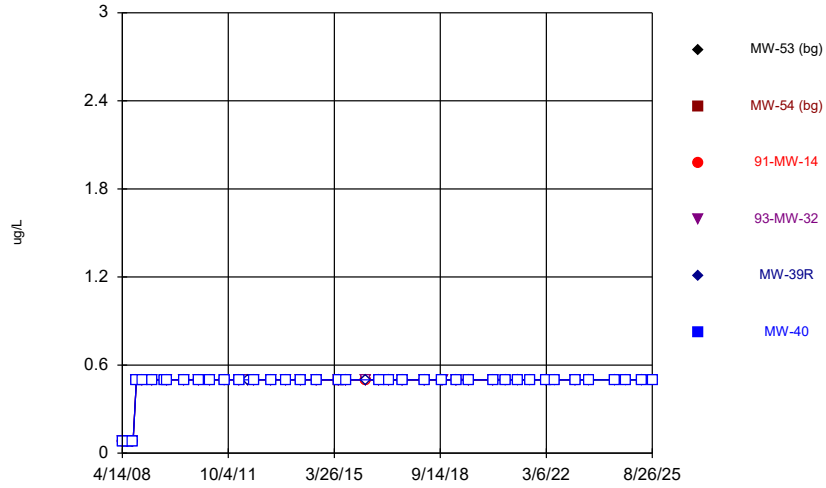
Time Series



Constituent: 1,2-Dichloroethane Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

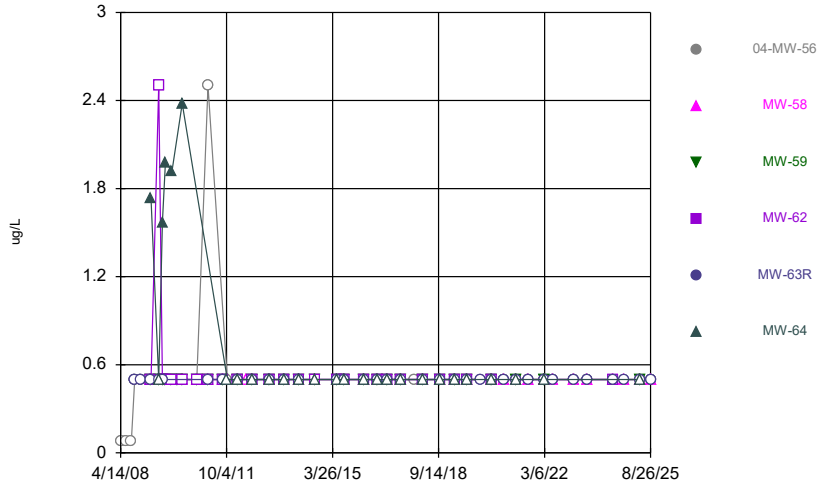
Time Series



Constituent: 1,4-Dichlorobenzene Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

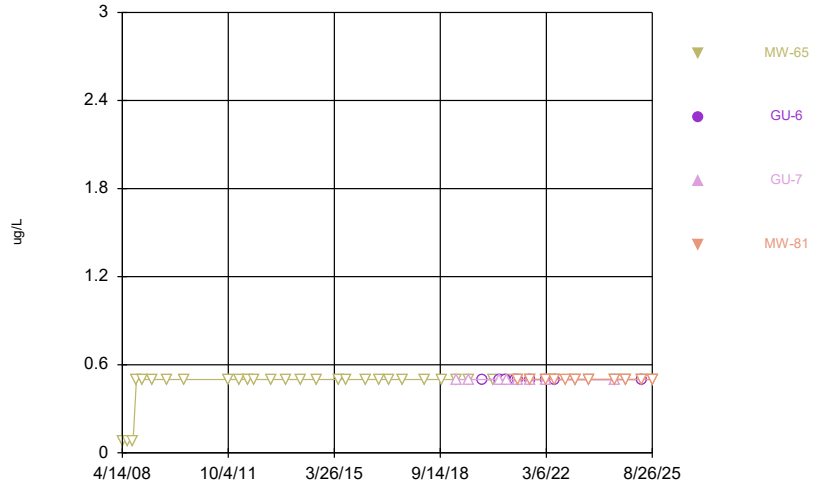
Time Series



Constituent: 1,4-Dichlorobenzene Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

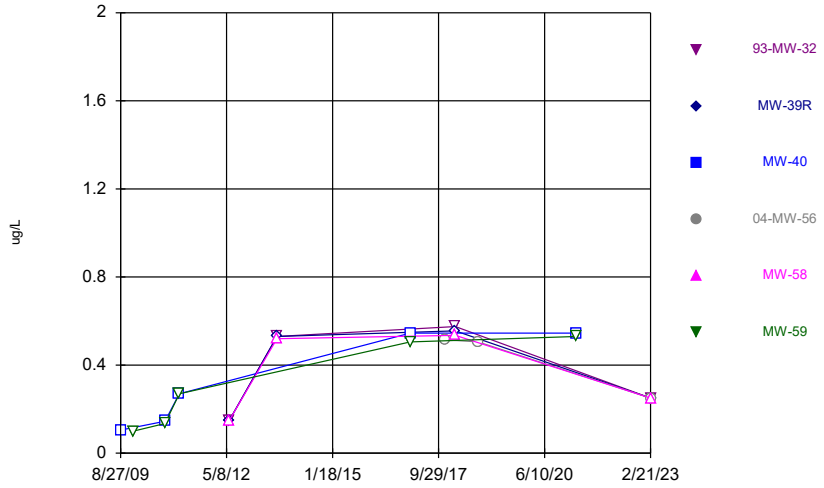
Time Series



Constituent: 1,4-Dichlorobenzene Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

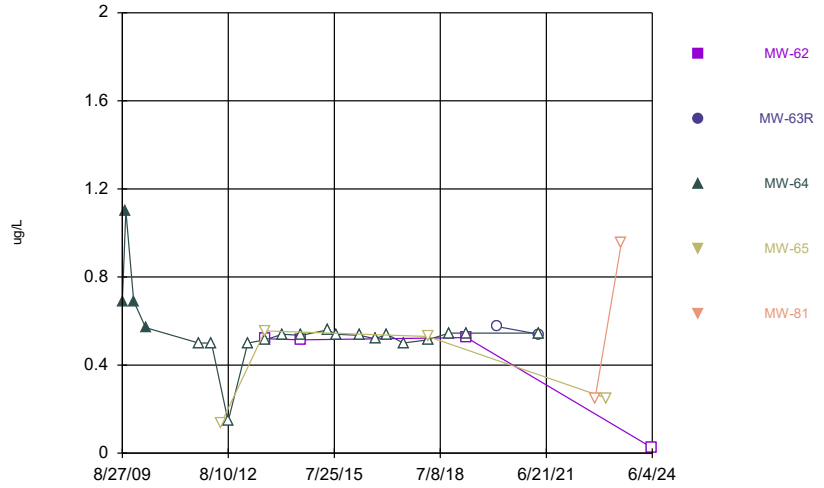
Time Series



Constituent: 2,4,5-TP [Silvex] [2C] Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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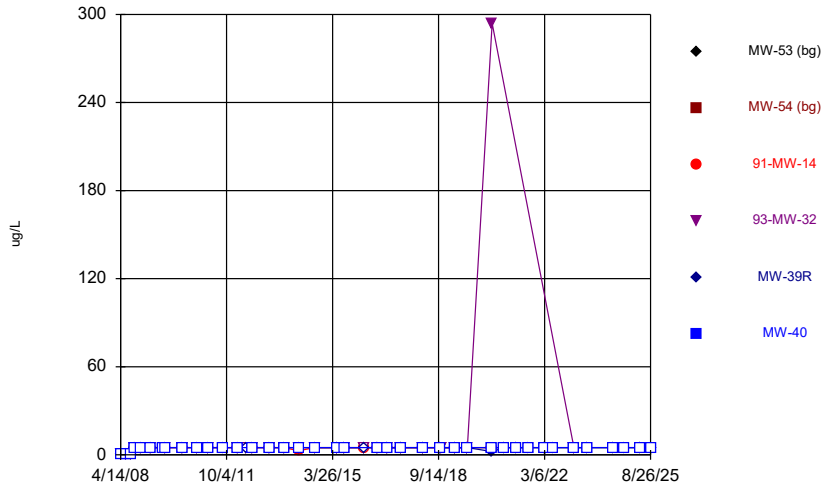
Time Series



Constituent: 2,4,5-TP [Silvex] [2C] Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

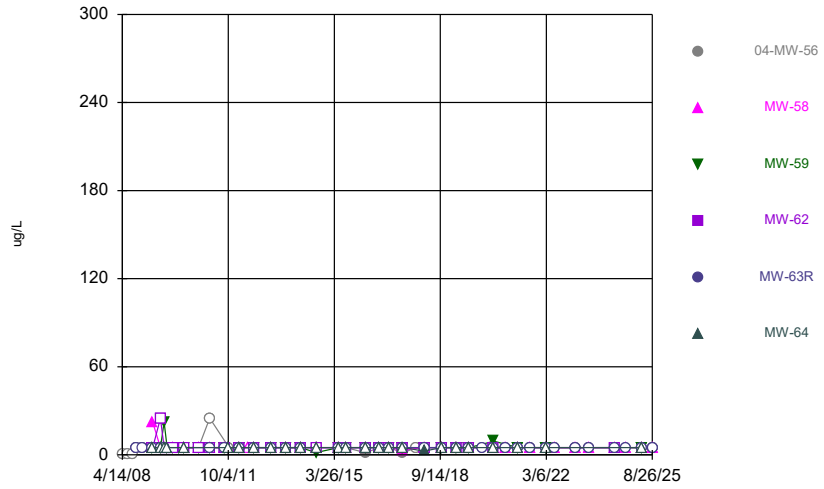
Time Series



Constituent: 2-Butanone Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

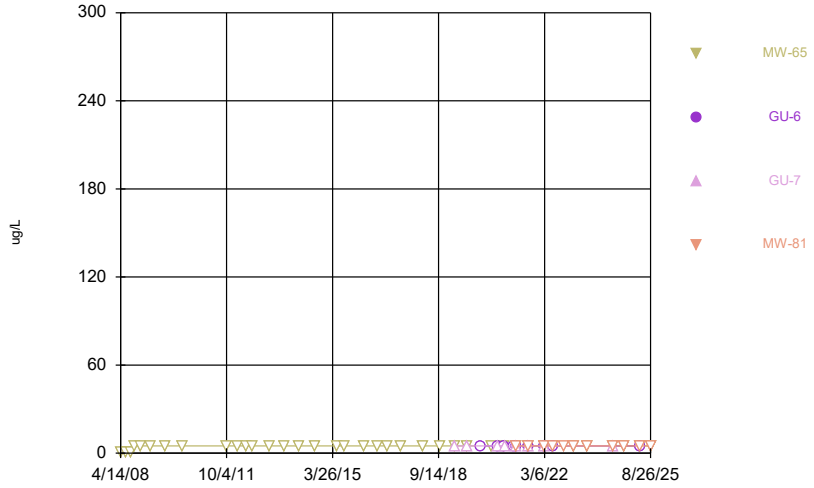
Time Series



Constituent: 2-Butanone Analysis Run 2/10/2026 10:46 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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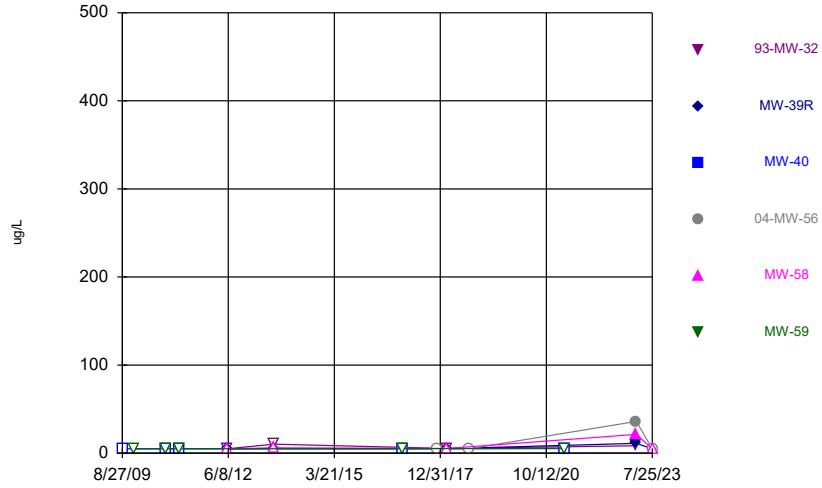
Time Series



Constituent: 2-Butanone Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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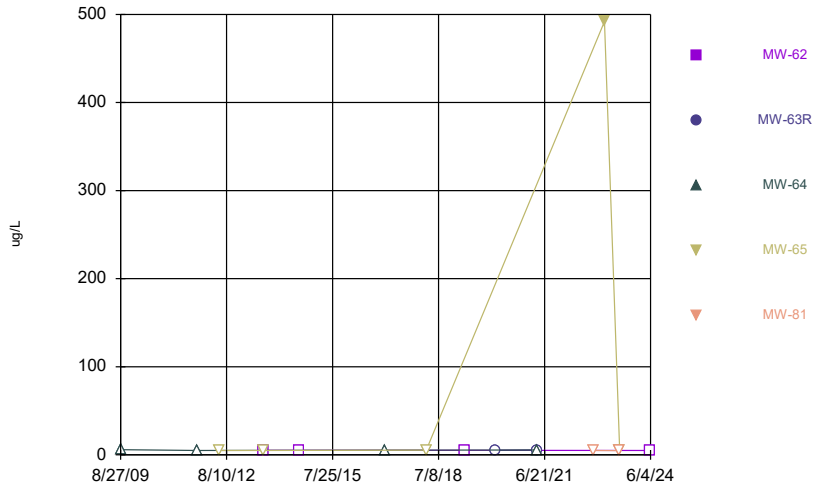
Time Series



Constituent: 2-Methylnaphthalene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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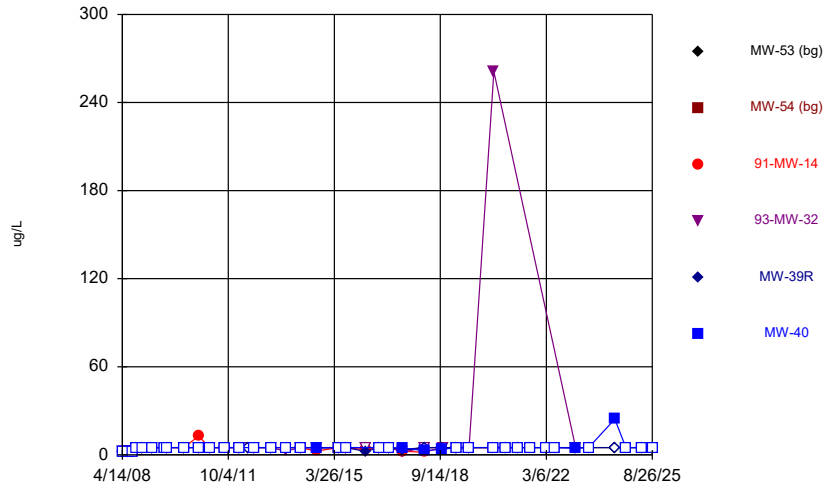
Time Series



Constituent: 2-Methylnaphthalene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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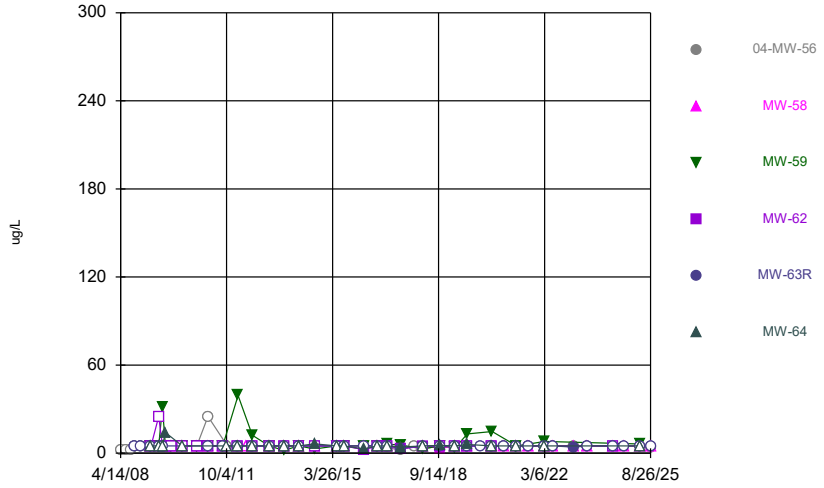
Time Series



Constituent: Acetone Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

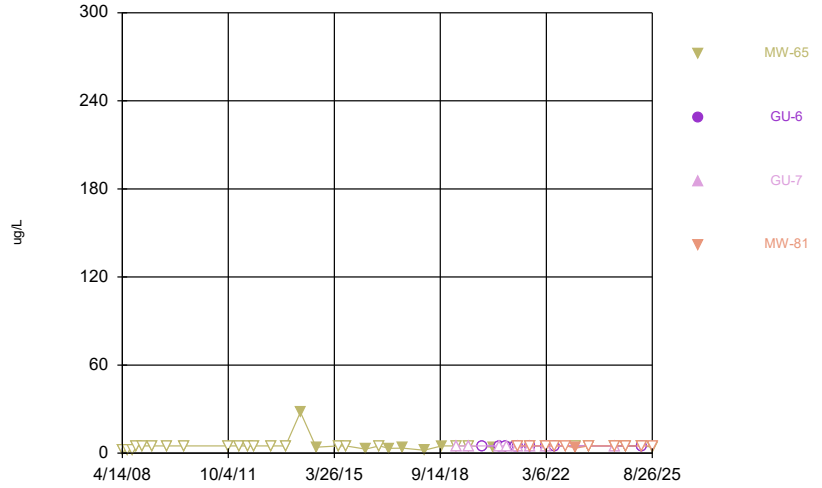
Time Series



Constituent: Acetone Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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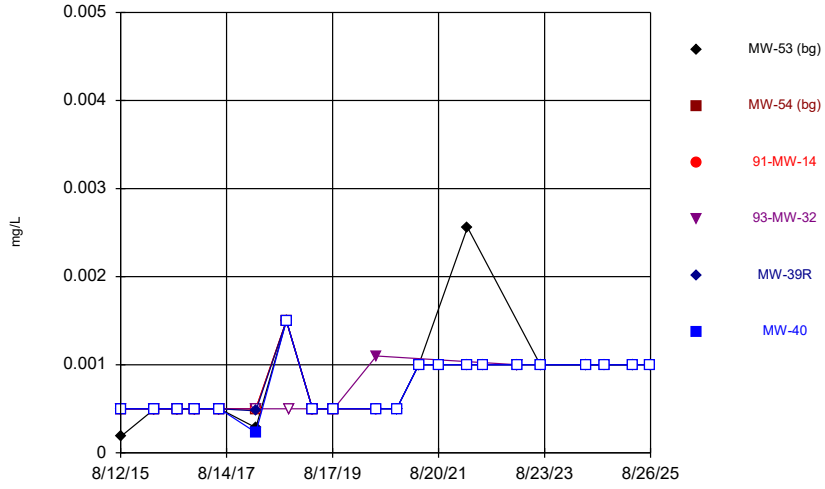
Time Series



Constituent: Acetone Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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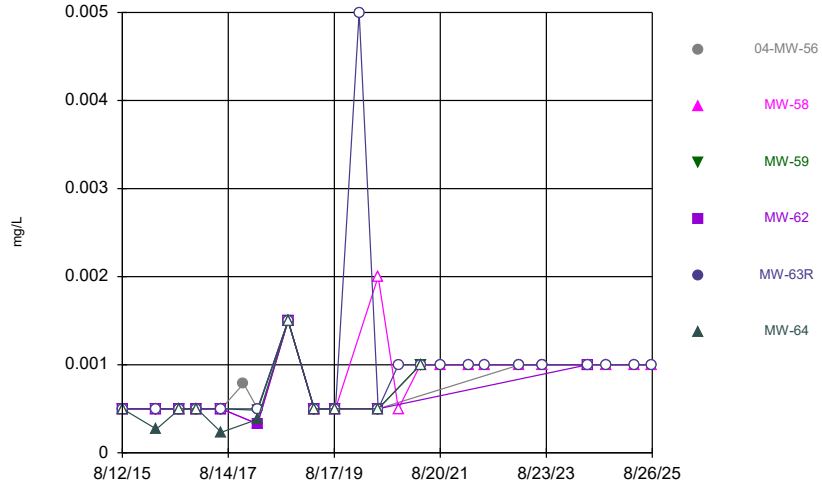
Time Series



Constituent: Antimony Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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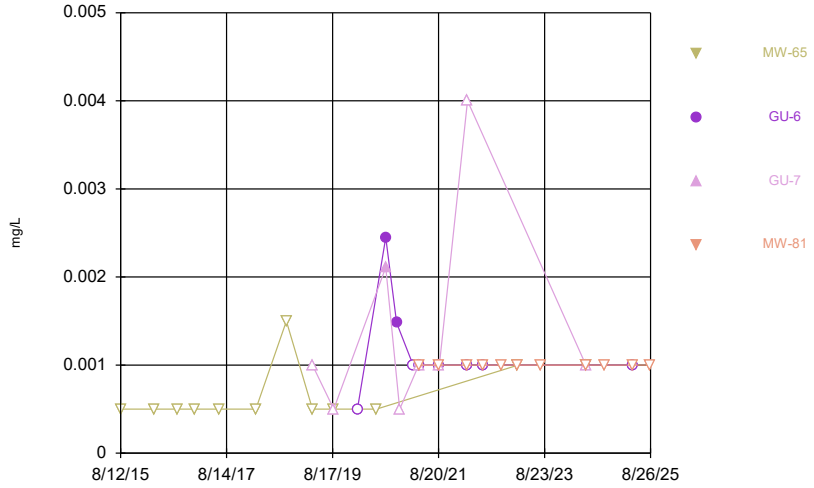
Time Series



Constituent: Antimony Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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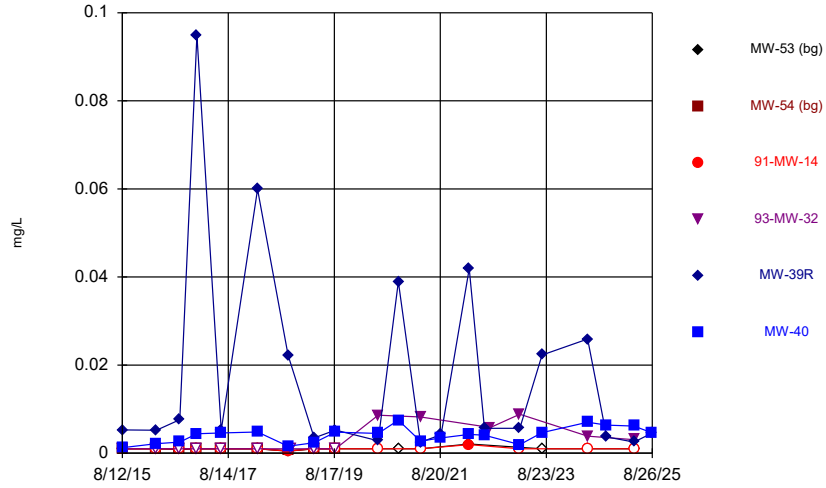
Time Series



Constituent: Antimony Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

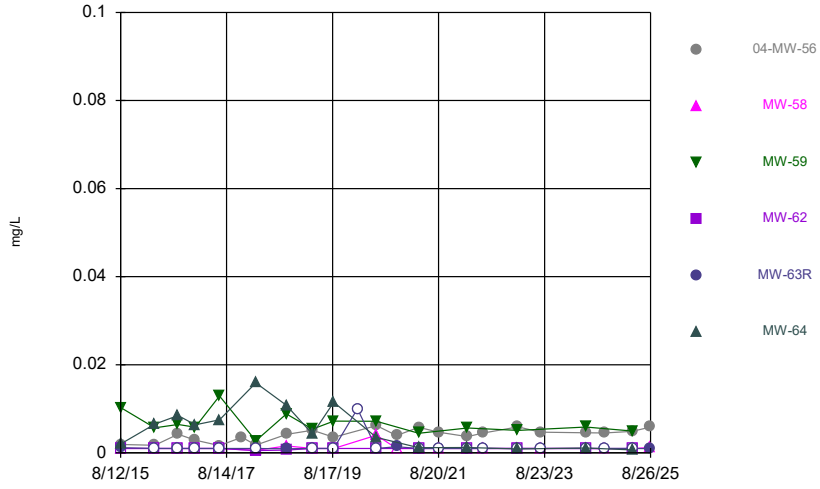
Time Series



Constituent: Arsenic Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

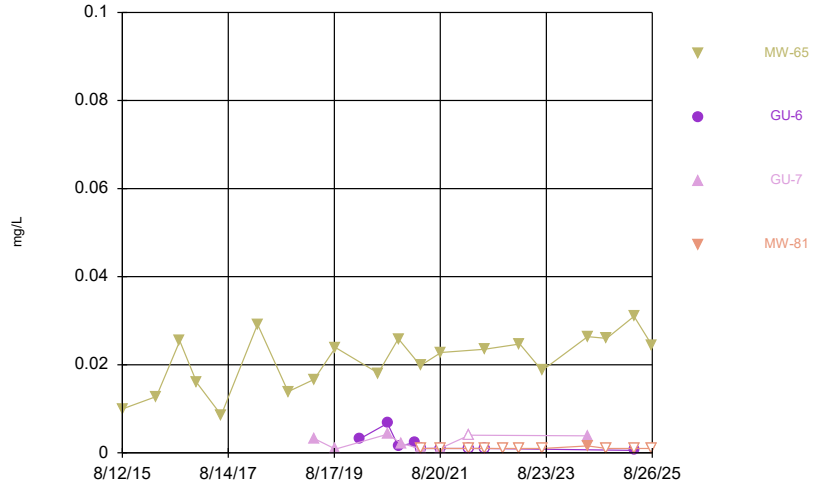
Time Series



Constituent: Arsenic Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

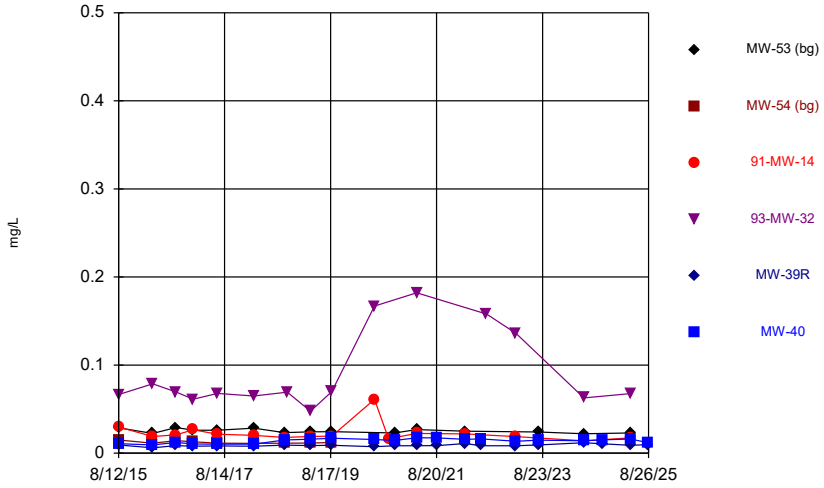
Time Series



Constituent: Arsenic Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

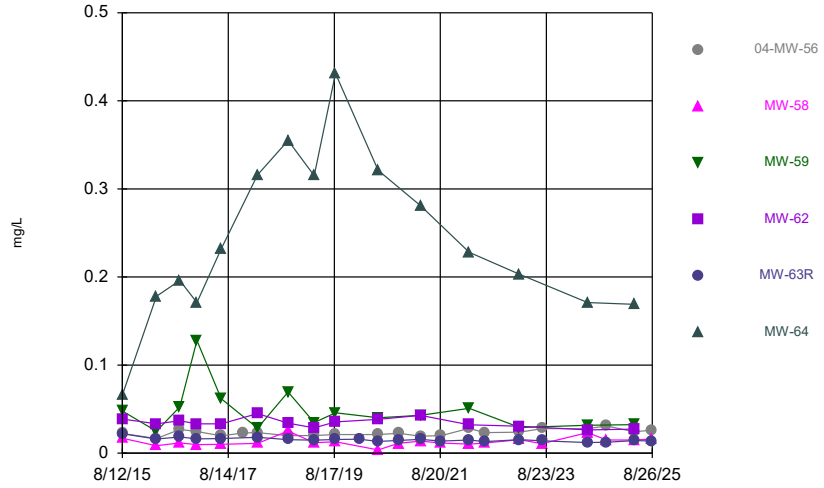
Time Series



Constituent: Barium Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

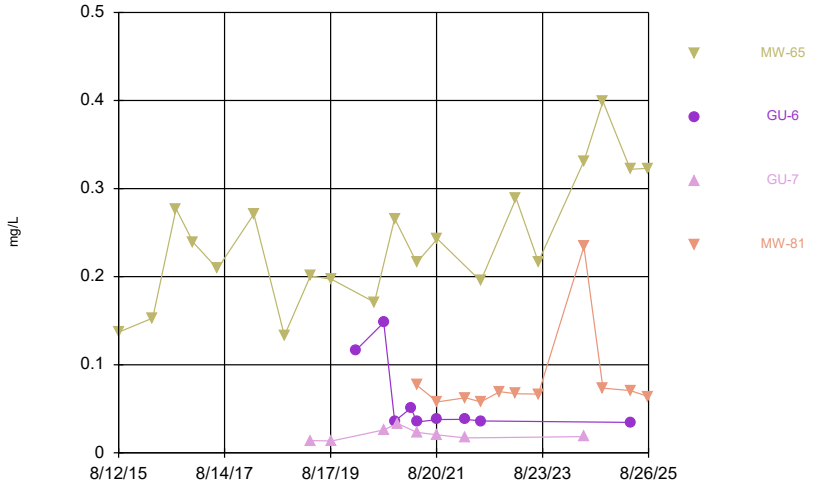
Time Series



Constituent: Barium Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

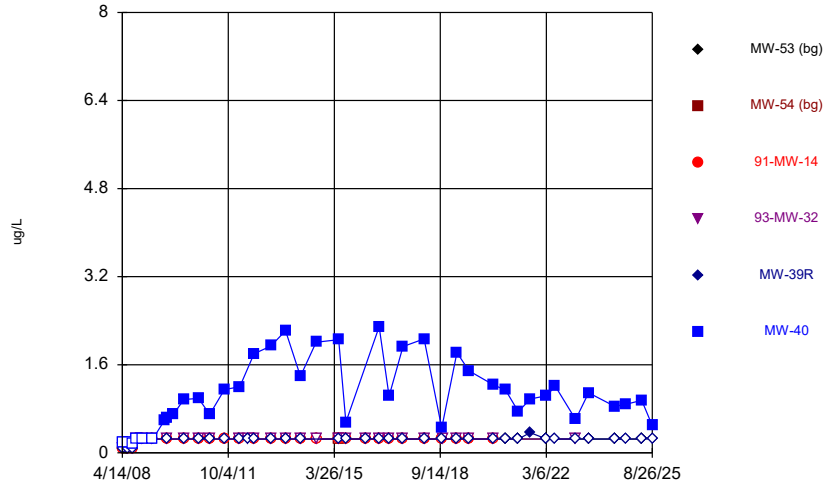
Time Series



Constituent: Barium Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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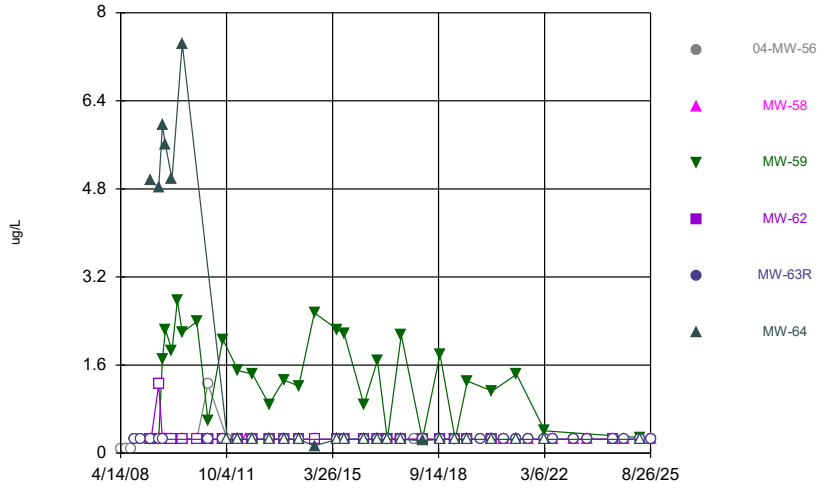
Time Series



Constituent: Benzene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

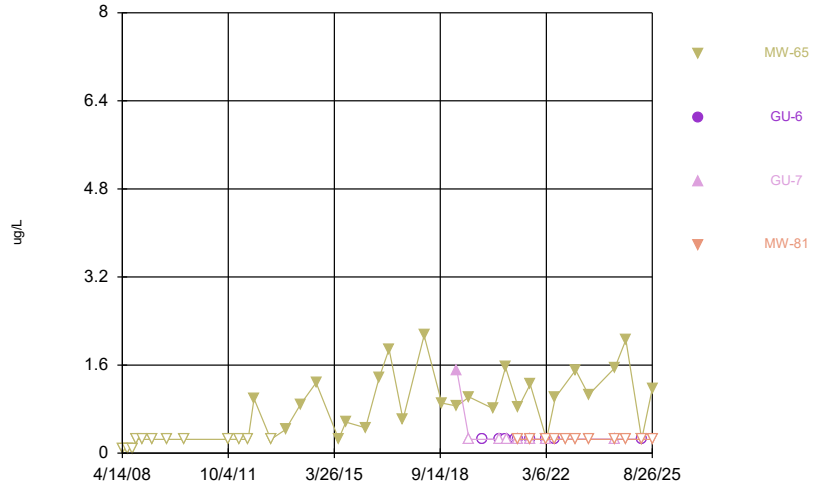
Time Series



Constituent: Benzene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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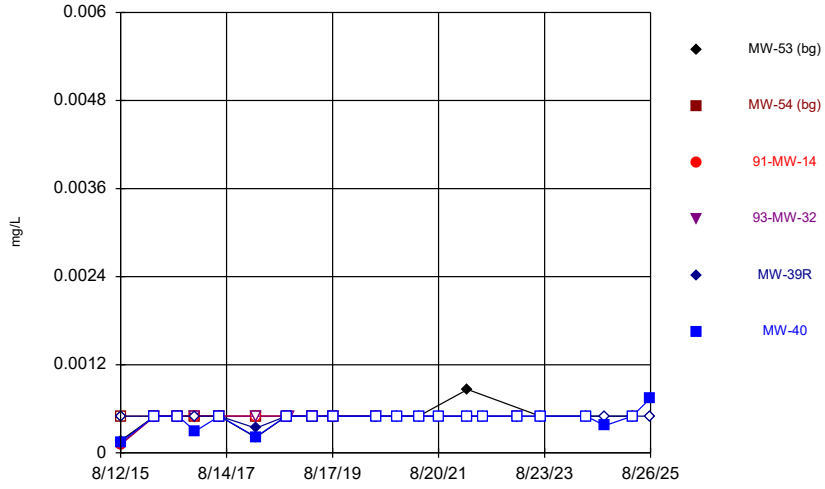
Time Series



Constituent: Benzene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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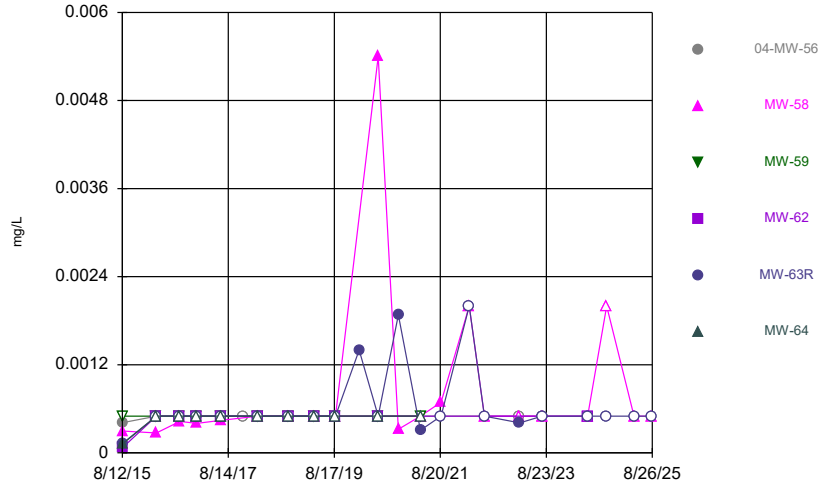
Time Series



Constituent: Beryllium Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

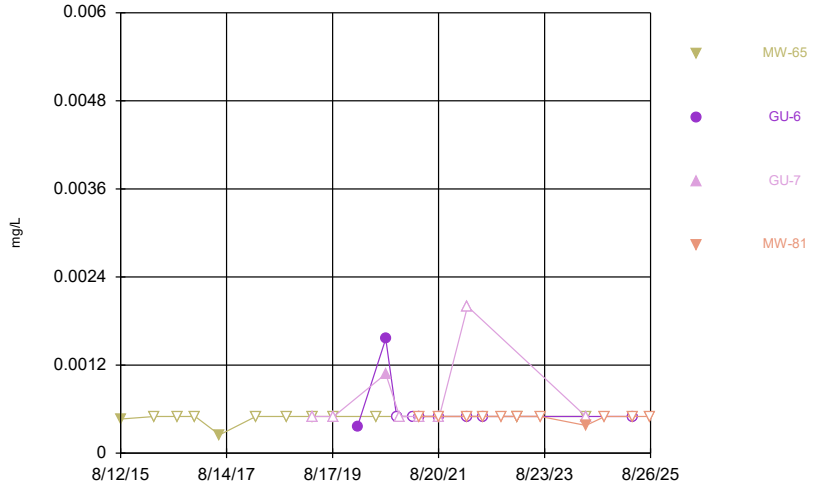
Time Series



Constituent: Beryllium Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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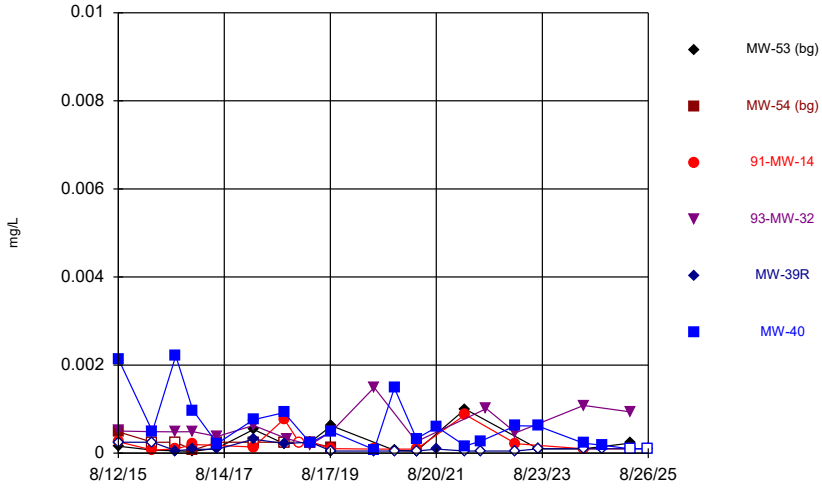
Time Series



Constituent: Beryllium Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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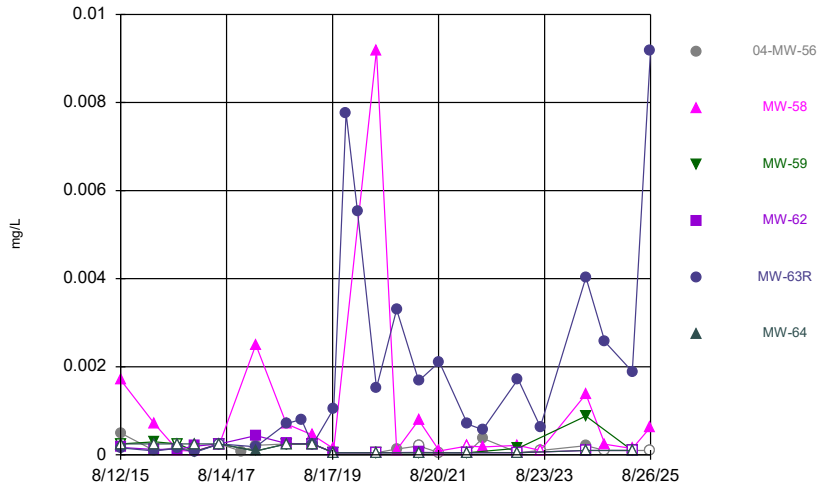
Time Series



Constituent: Cadmium Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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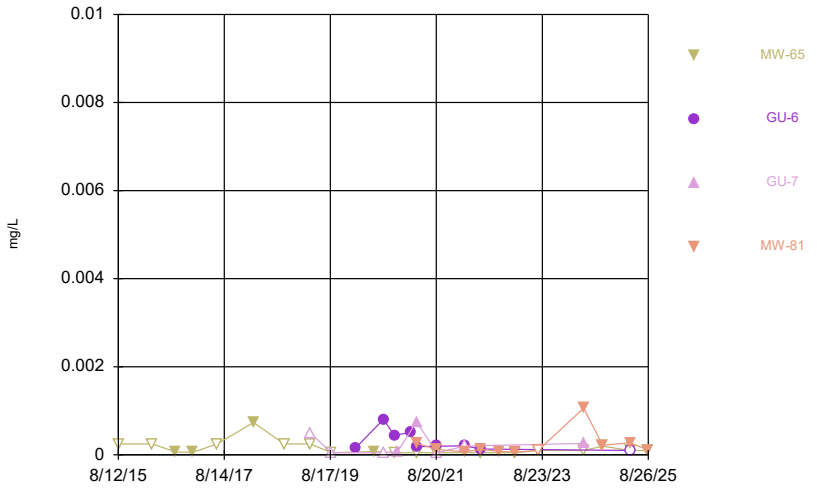
Time Series



Constituent: Cadmium Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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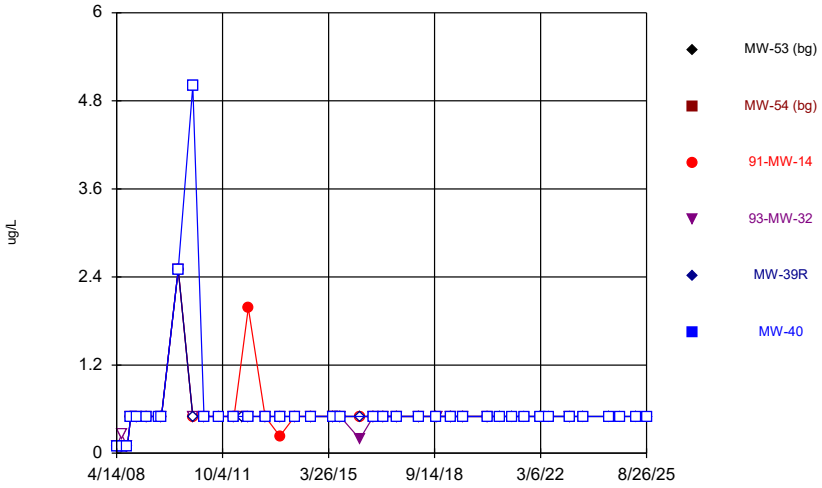
Time Series



Constituent: Cadmium Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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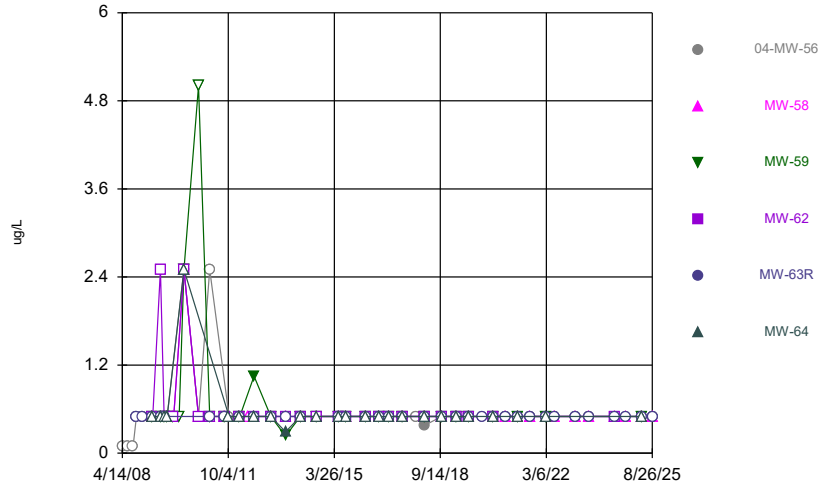
Time Series



Constituent: Carbon disulfide Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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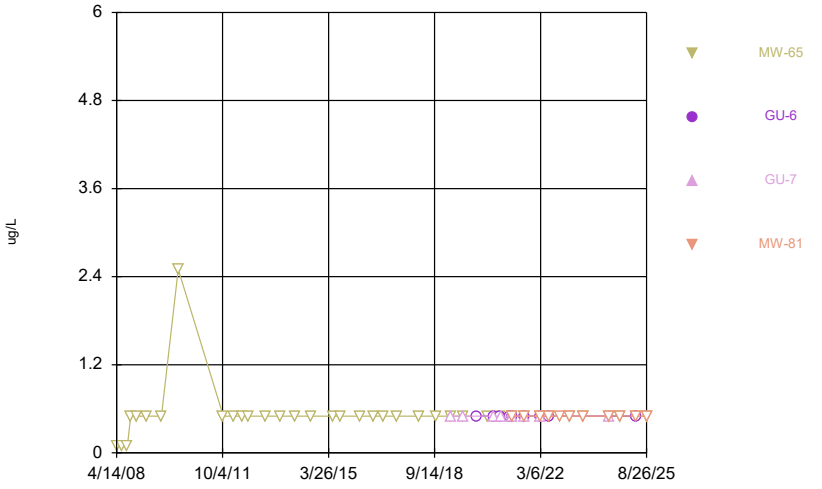
Time Series



Constituent: Carbon disulfide Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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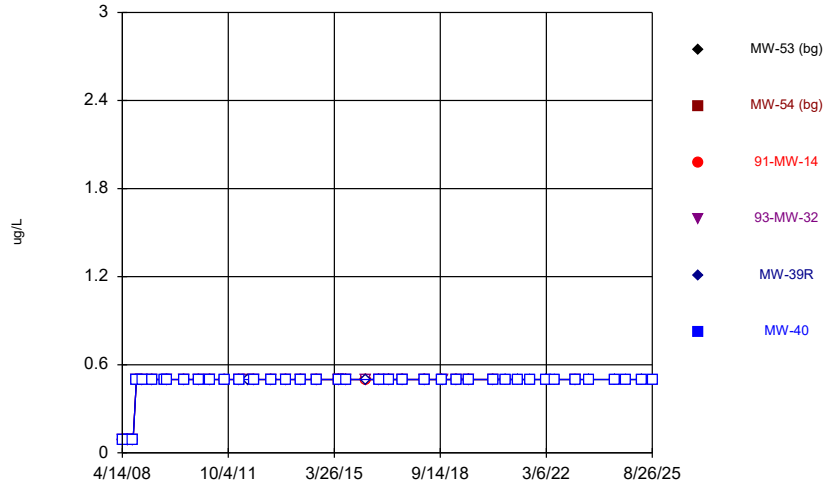
Time Series



Constituent: Carbon disulfide Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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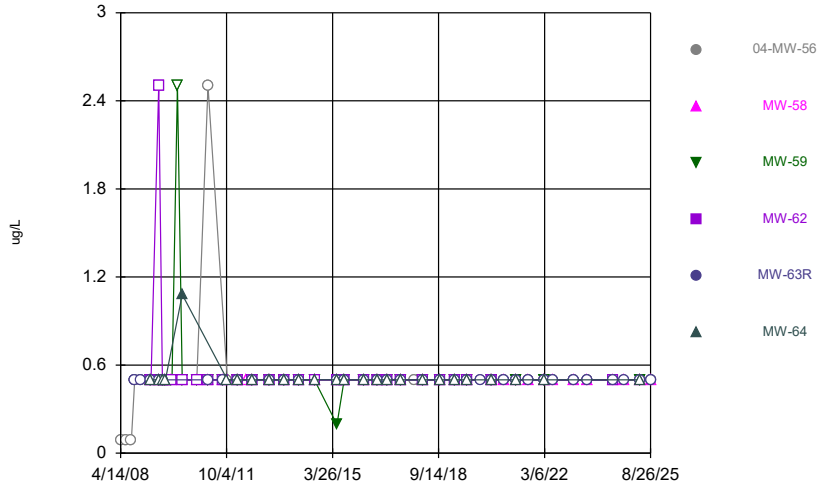
Time Series



Constituent: Chlorobenzene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

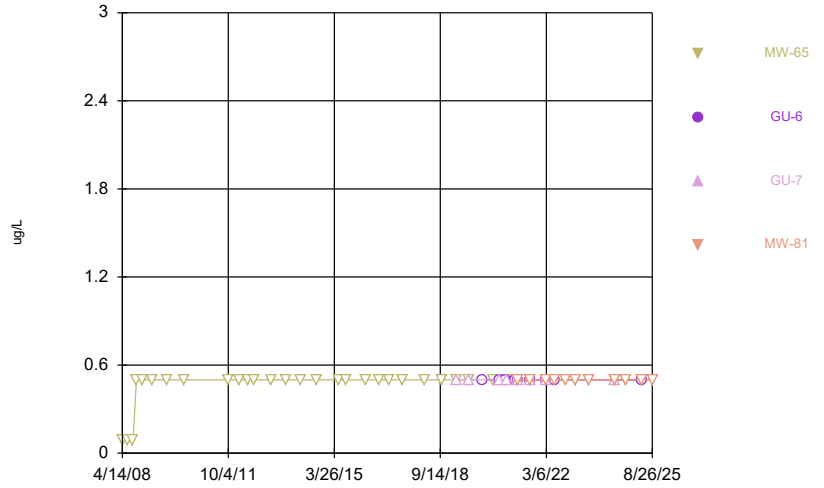
Time Series



Constituent: Chlorobenzene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

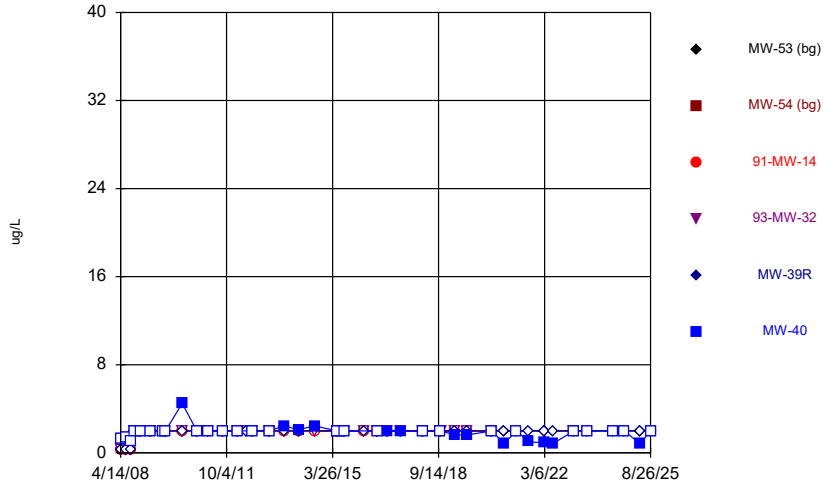
Time Series



Constituent: Chlorobenzene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

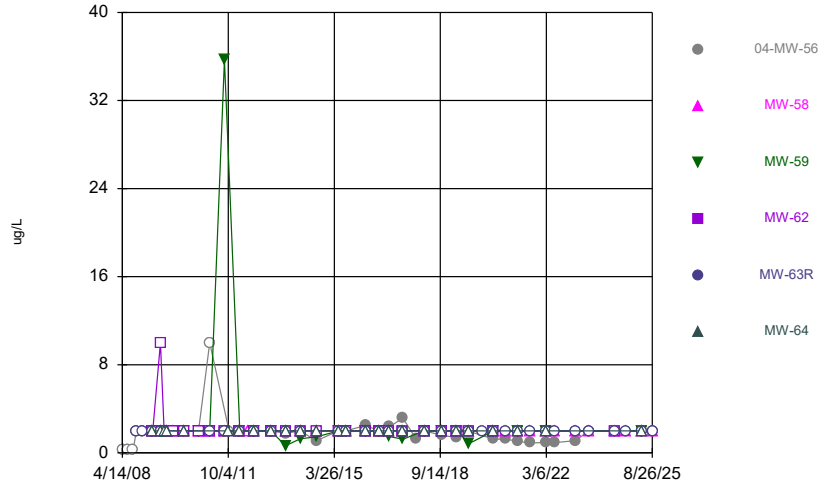
Time Series



Constituent: Chloroethane Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

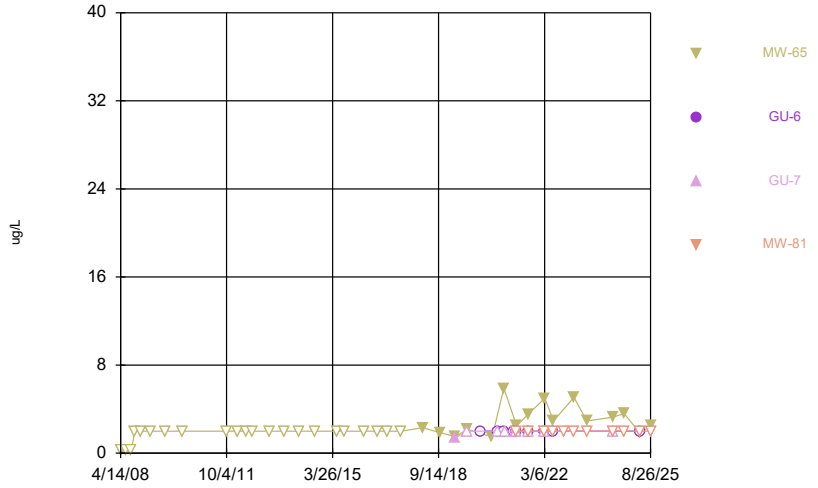
Time Series



Constituent: Chloroethane Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

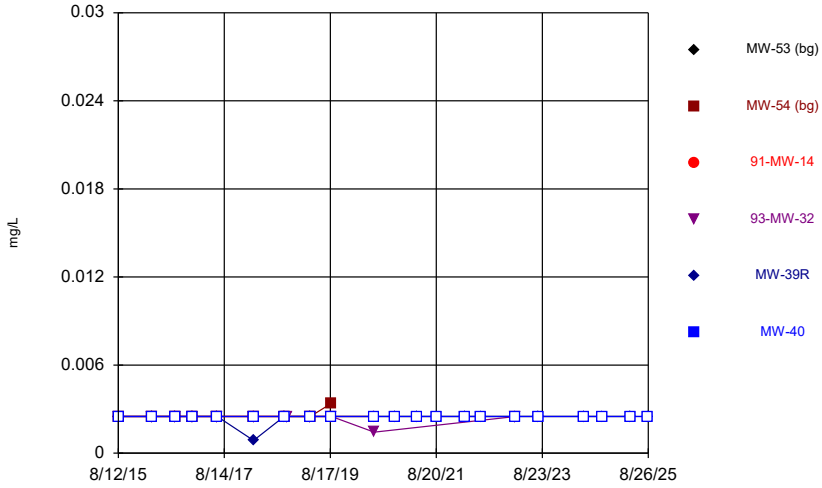
Time Series



Constituent: Chloroethane Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

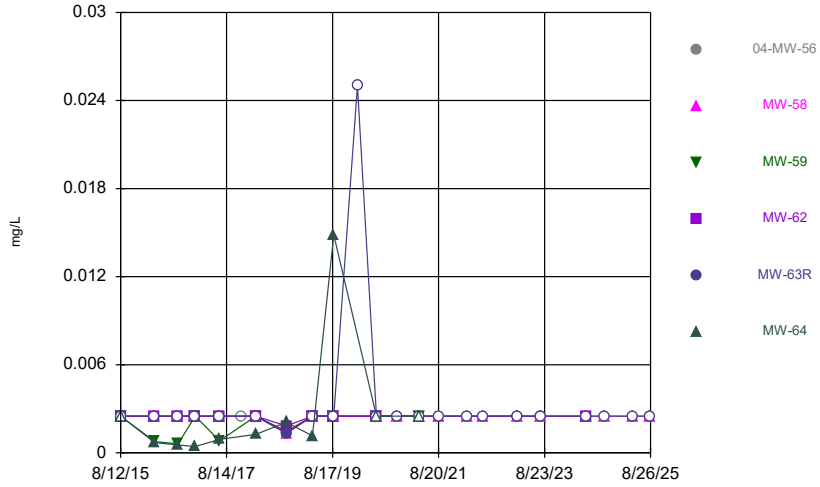
Time Series



Constituent: Chromium Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

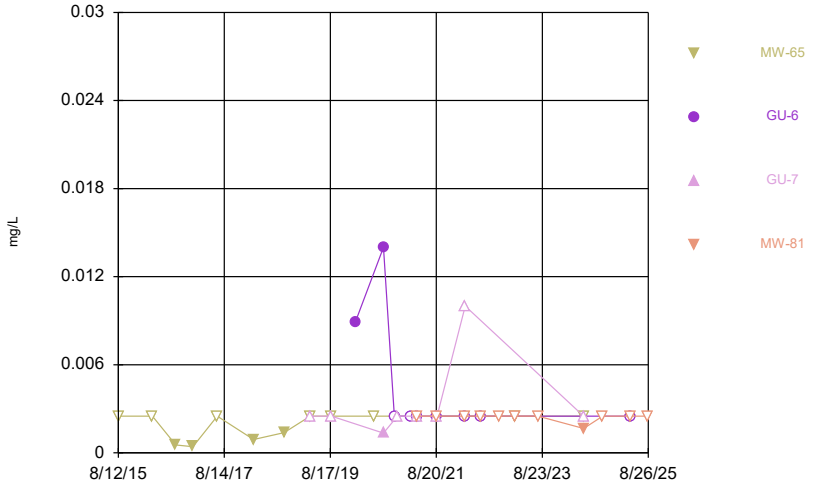
Time Series



Constituent: Chromium Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

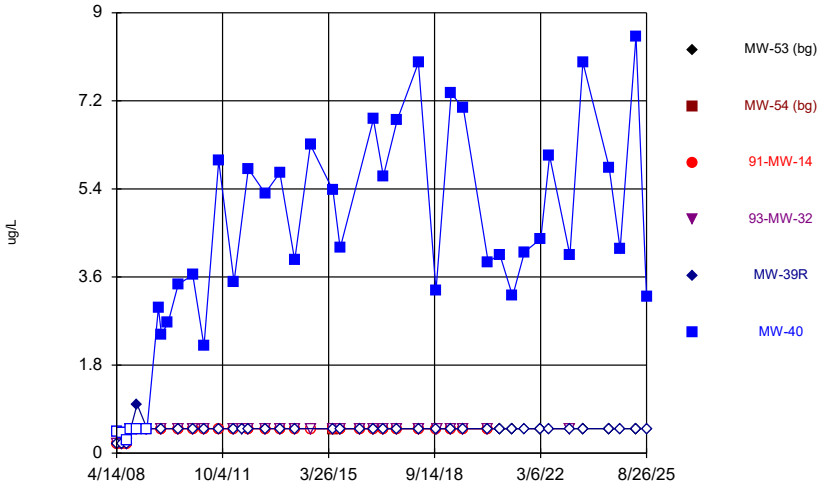
Time Series



Constituent: Chromium Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

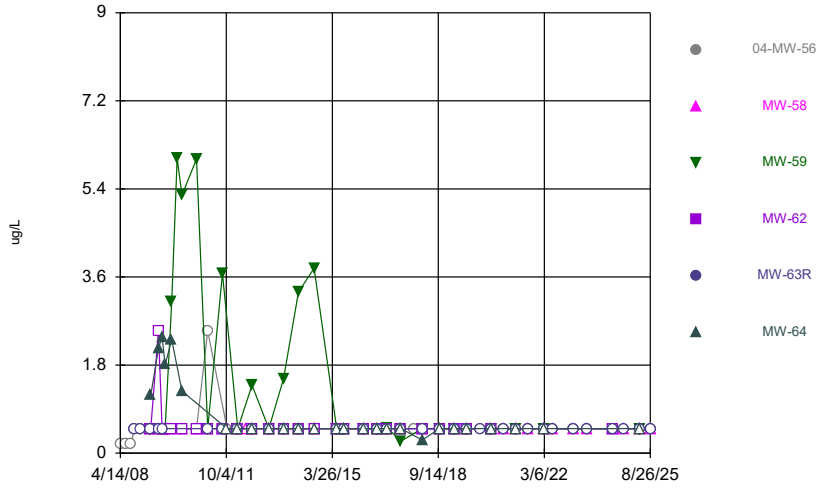
Time Series



Constituent: cis-1,2-Dichloroethene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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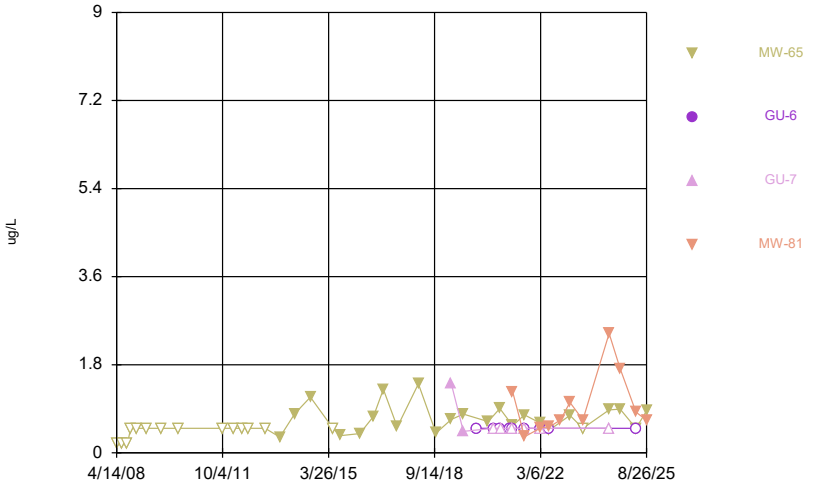
Time Series



Constituent: cis-1,2-Dichloroethene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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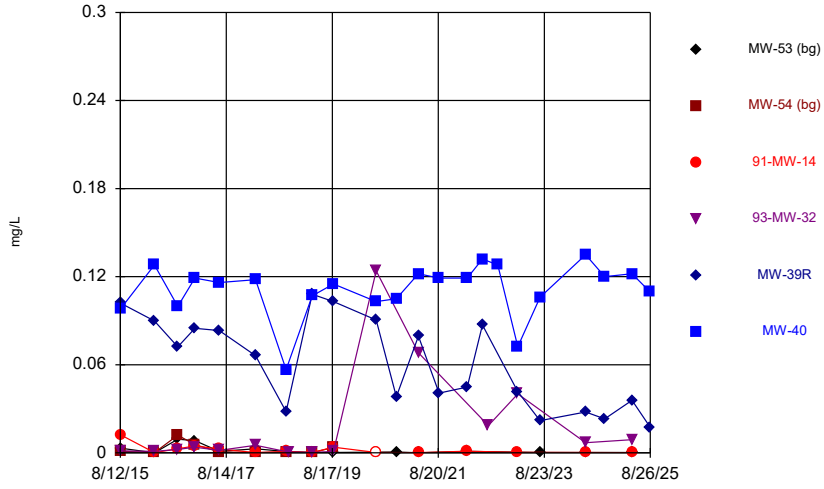
Time Series



Constituent: cis-1,2-Dichloroethene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

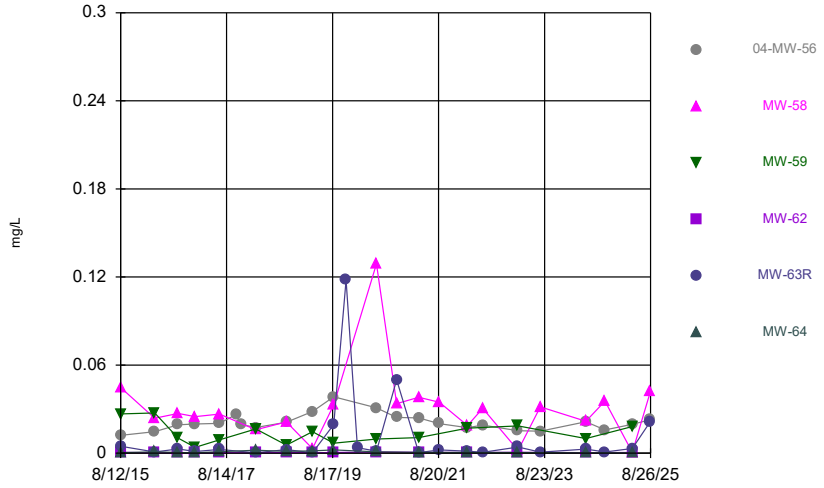
Time Series



Constituent: Cobalt Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

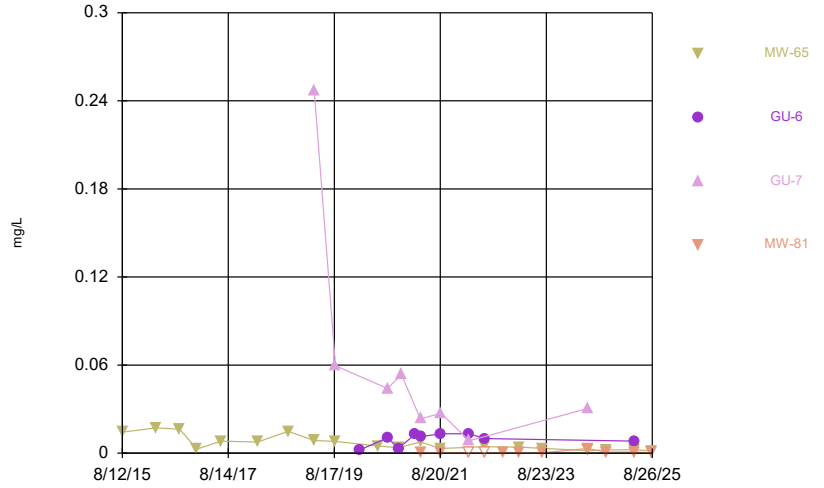
Time Series



Constituent: Cobalt Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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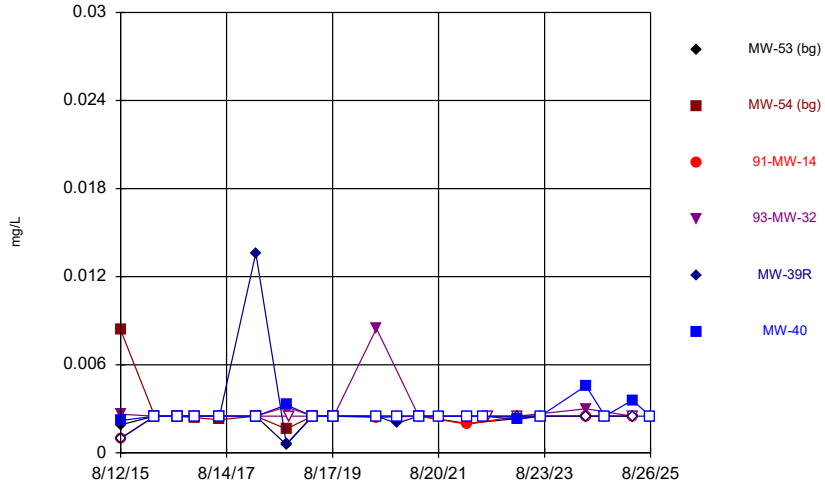
Time Series



Constituent: Cobalt Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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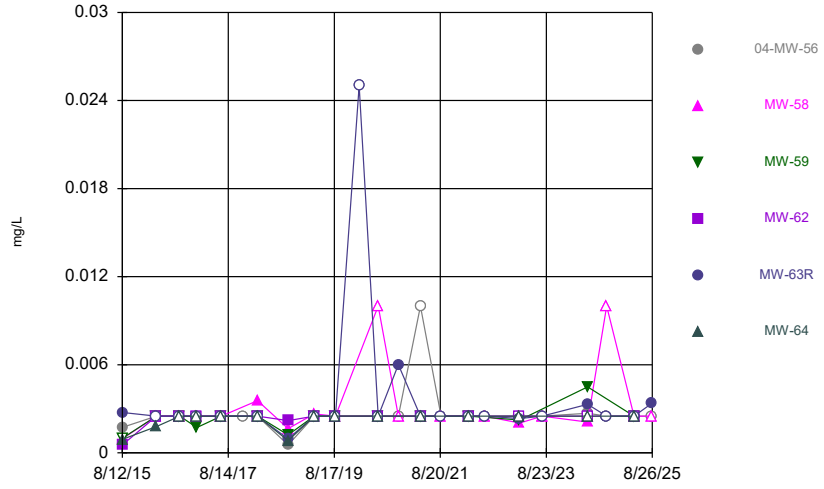
Time Series



Constituent: Copper Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

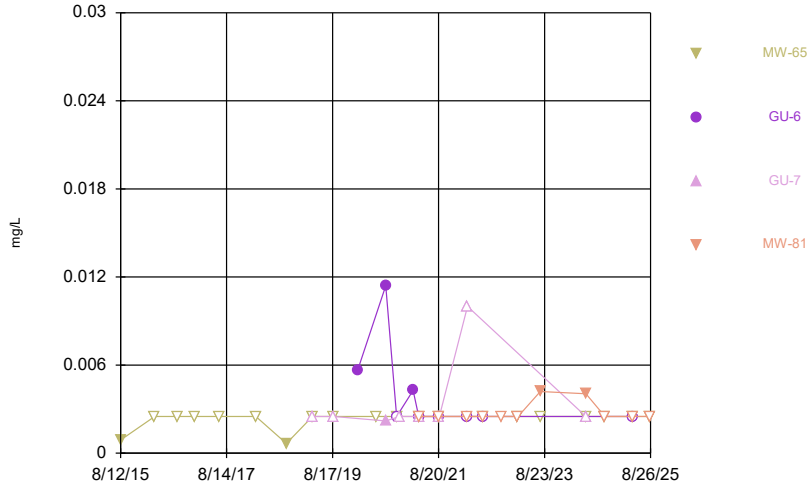
Time Series



Constituent: Copper Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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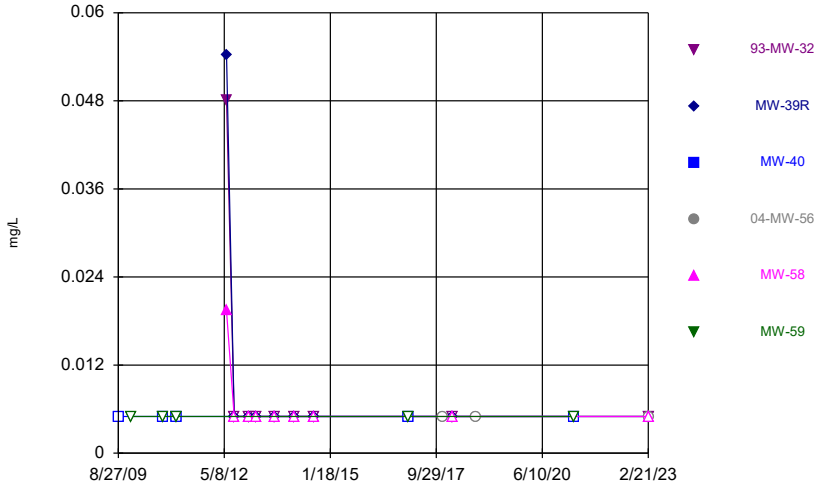
Time Series



Constituent: Copper Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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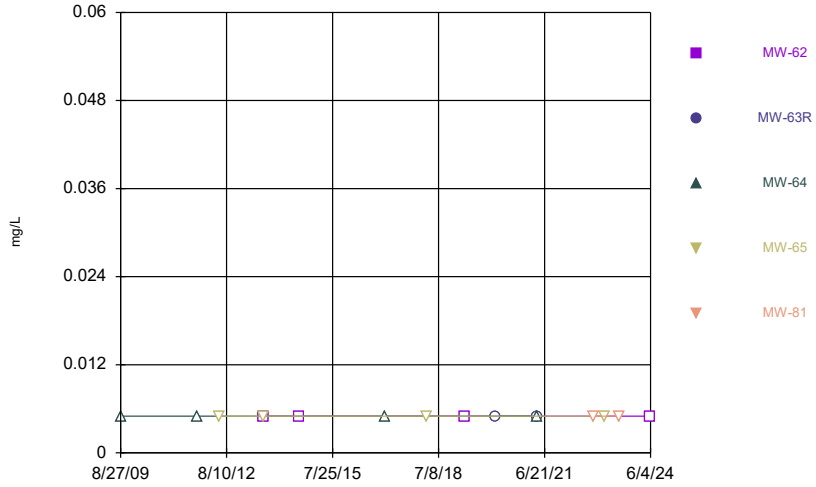
Time Series



Constituent: Cyanide Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

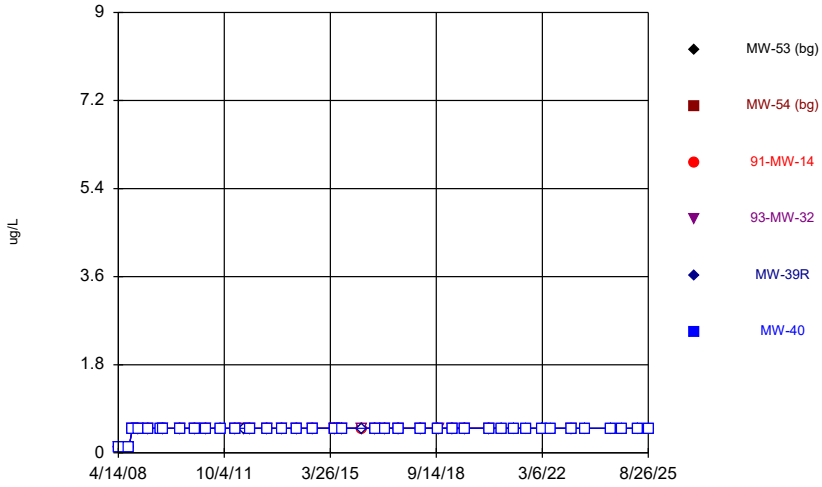
Time Series



Constituent: Cyanide Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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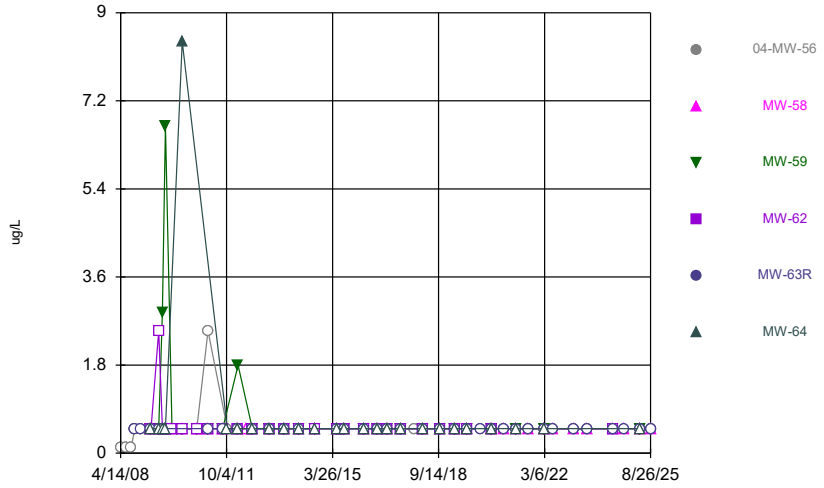
Time Series



Constituent: Ethylbenzene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

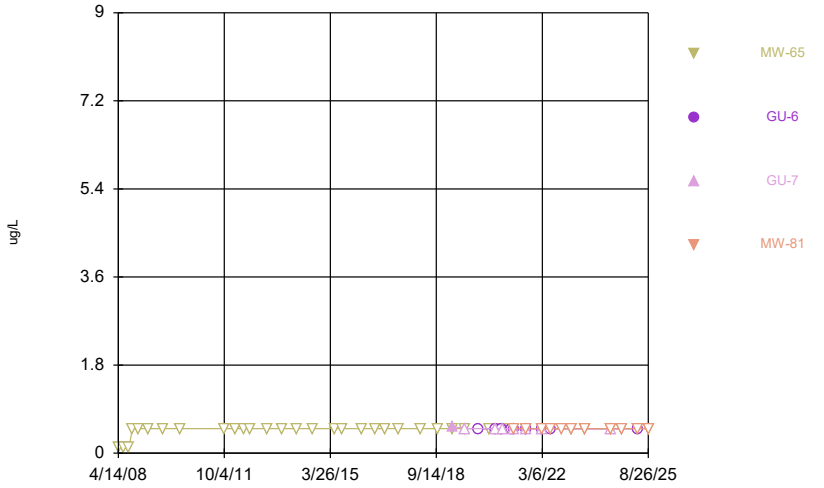
Time Series



Constituent: Ethylbenzene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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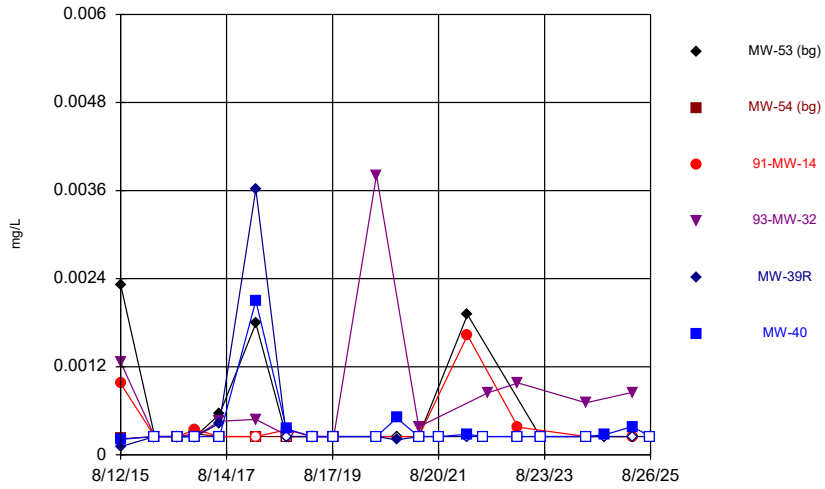
Time Series



Constituent: Ethylbenzene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

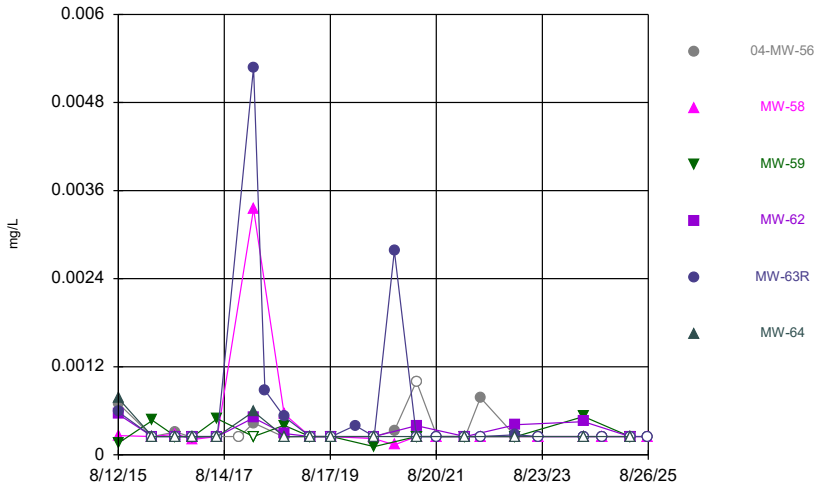
Time Series



Constituent: Lead Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

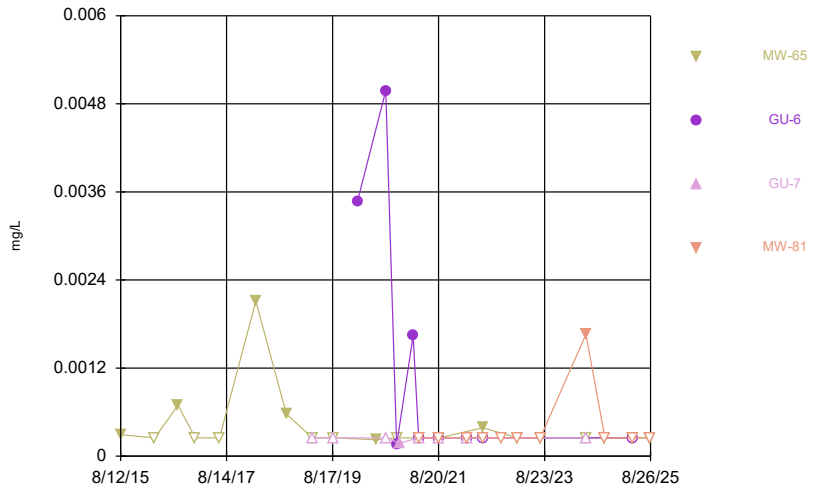
Time Series



Constituent: Lead Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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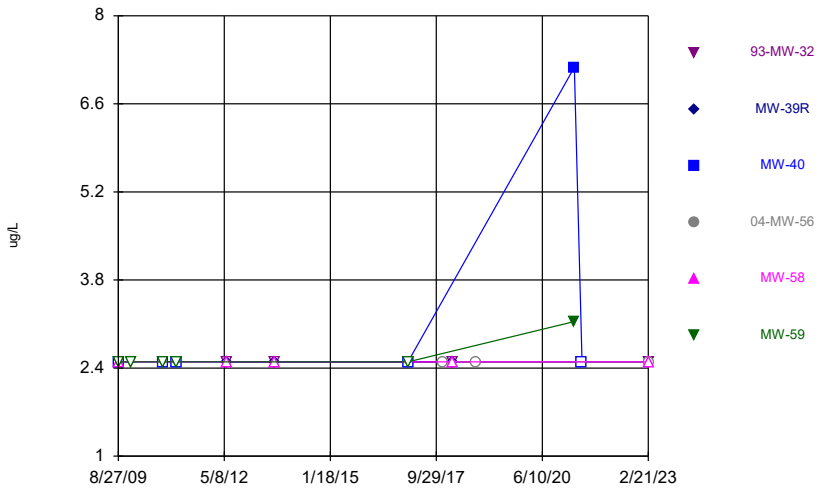
Time Series



Constituent: Lead Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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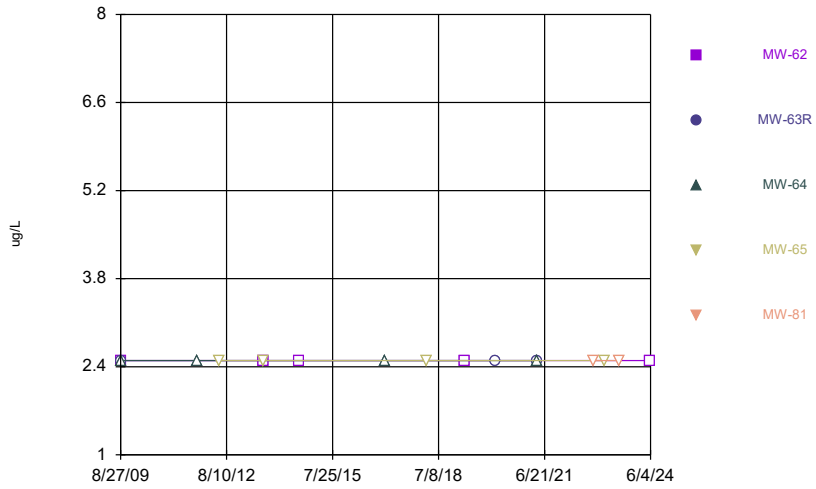
Time Series



Constituent: Naphthalene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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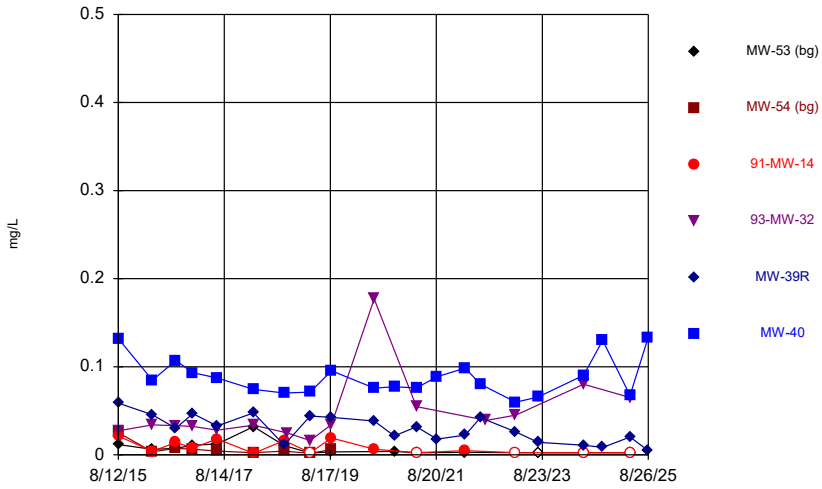
Time Series



Constituent: Naphthalene Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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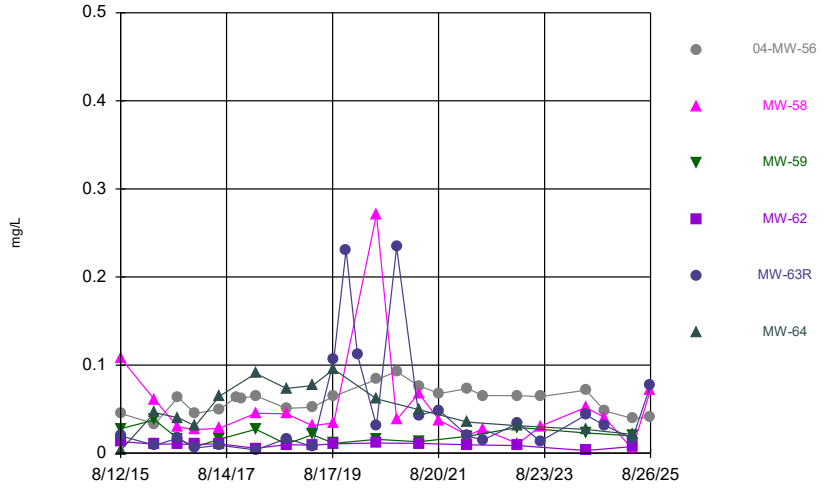
Time Series



Constituent: Nickel Analysis Run 2/10/2026 10:47 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

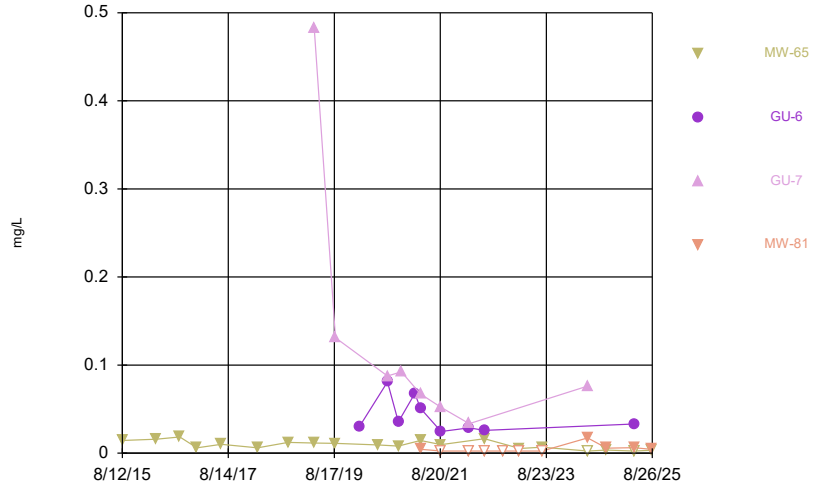
Time Series



Constituent: Nickel Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

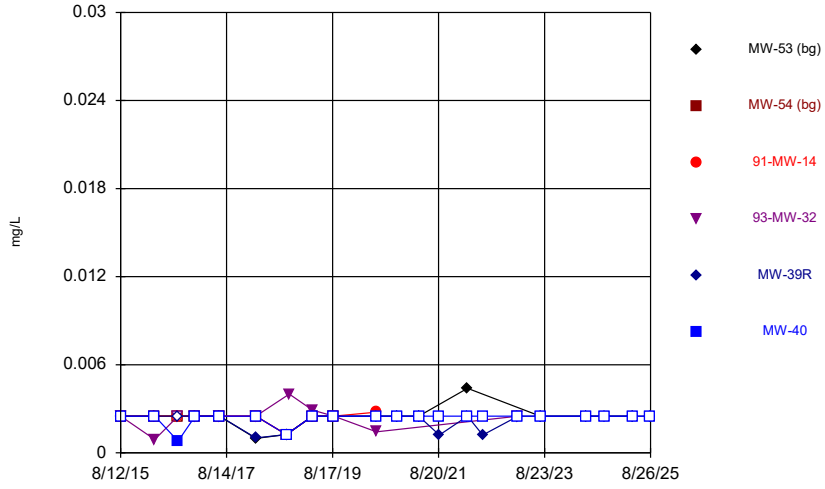
Time Series



Constituent: Nickel Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

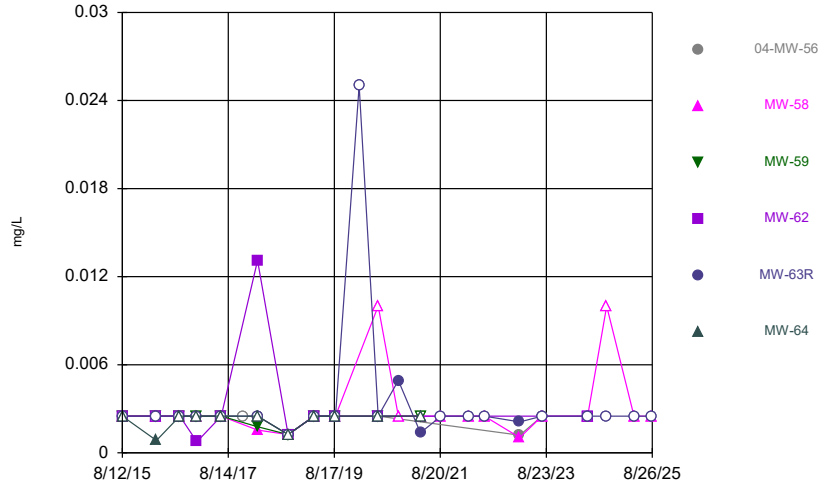
Time Series



Constituent: Selenium Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

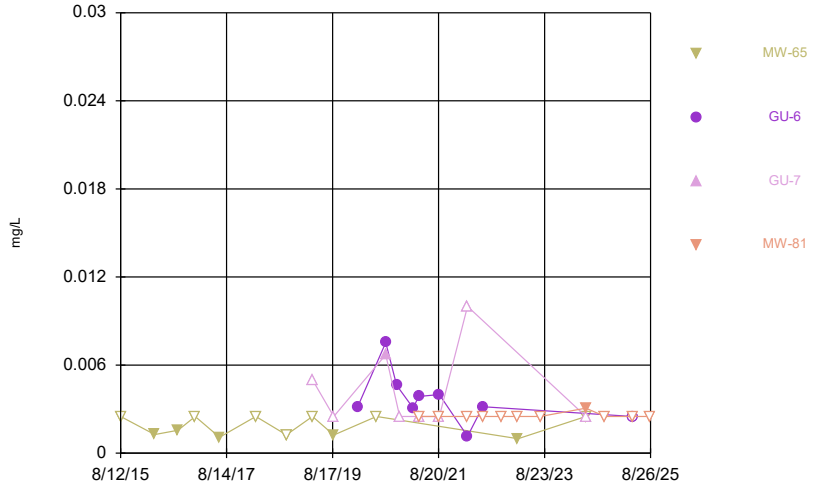
Time Series



Constituent: Selenium Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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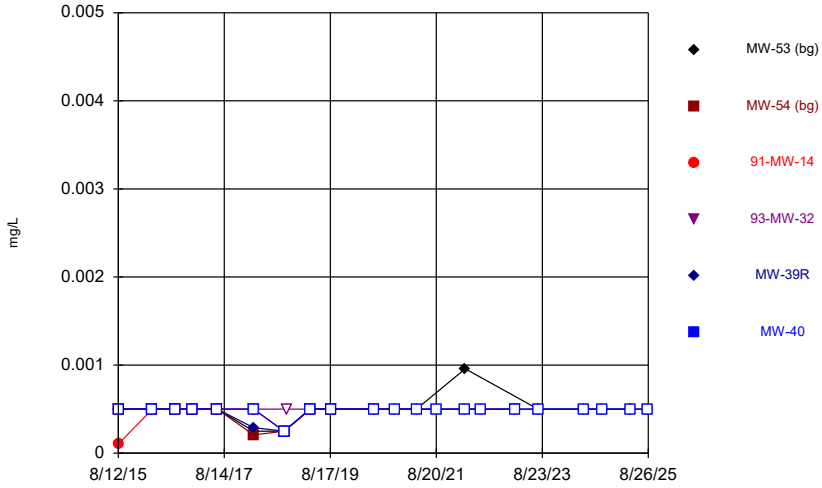
Time Series



Constituent: Selenium Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

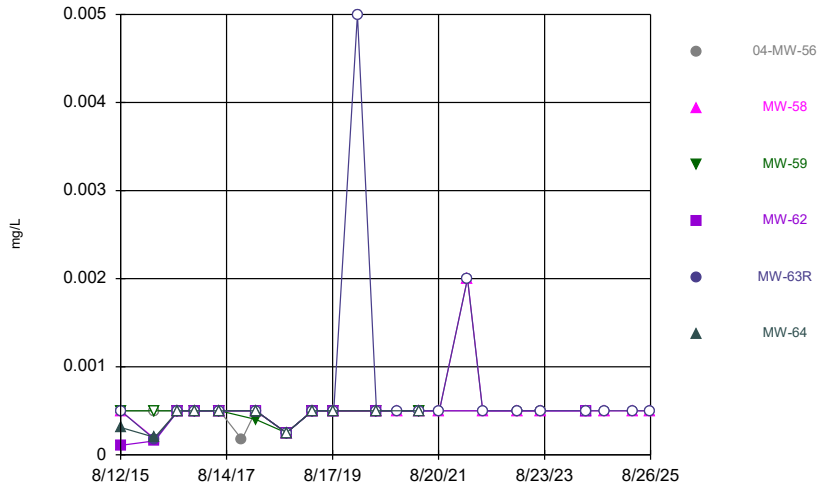
Time Series



Constituent: Silver Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

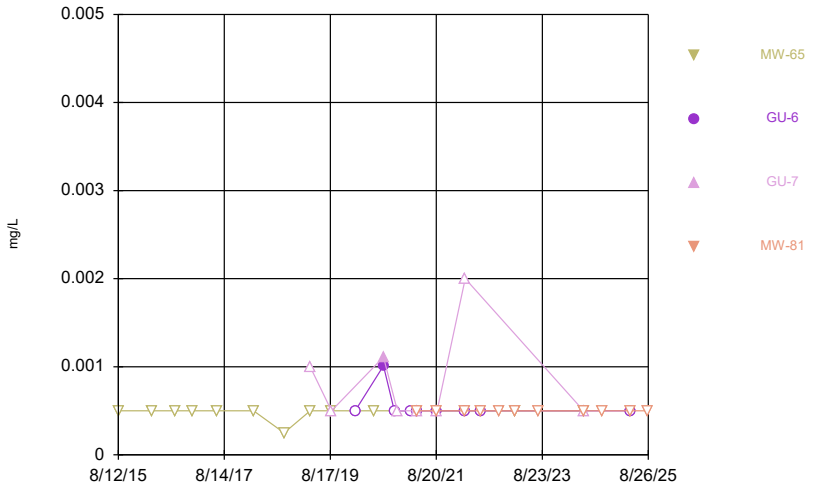
Time Series



Constituent: Silver Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

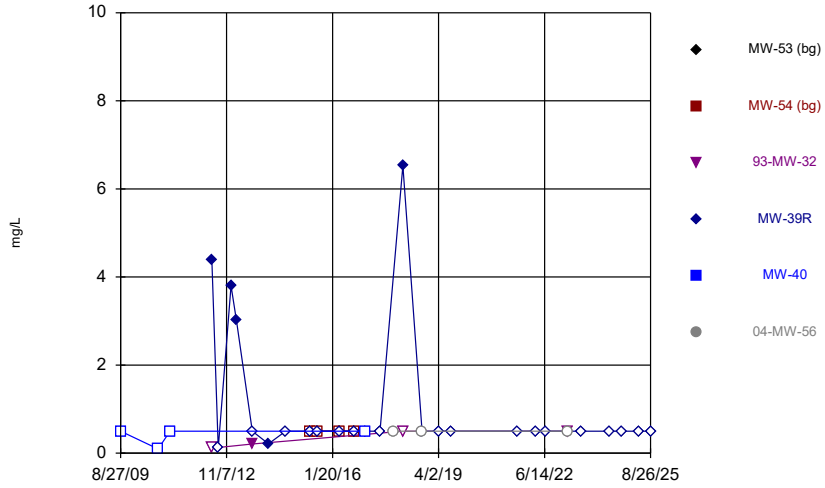
Time Series



Constituent: Silver Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

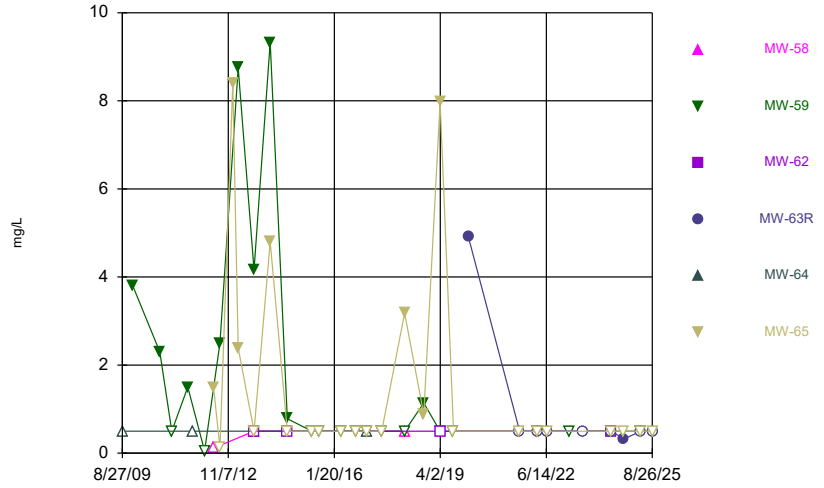
Time Series



Constituent: Sulfide Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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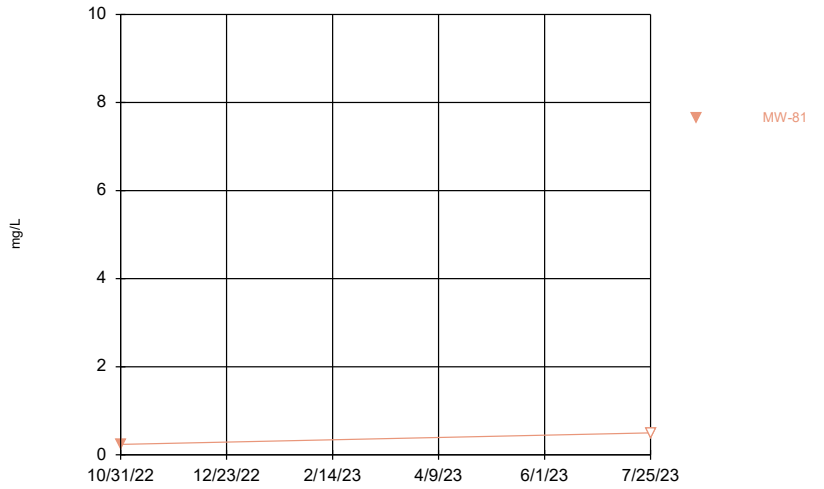
Time Series



Constituent: Sulfide Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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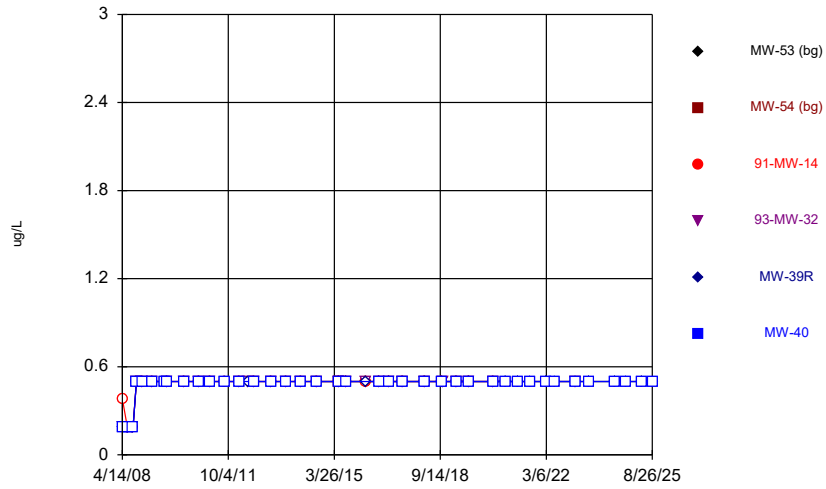
Time Series



Constituent: Sulfide Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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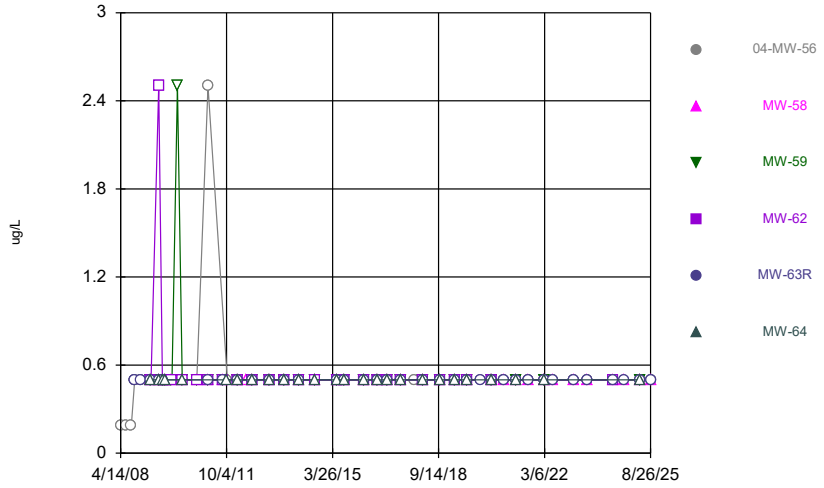
Time Series



Constituent: Tetrachloroethene Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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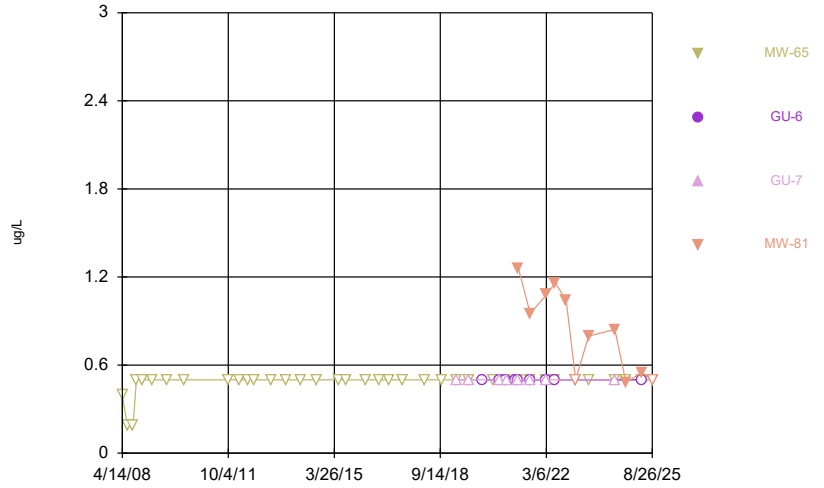
Time Series



Constituent: Tetrachloroethene Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

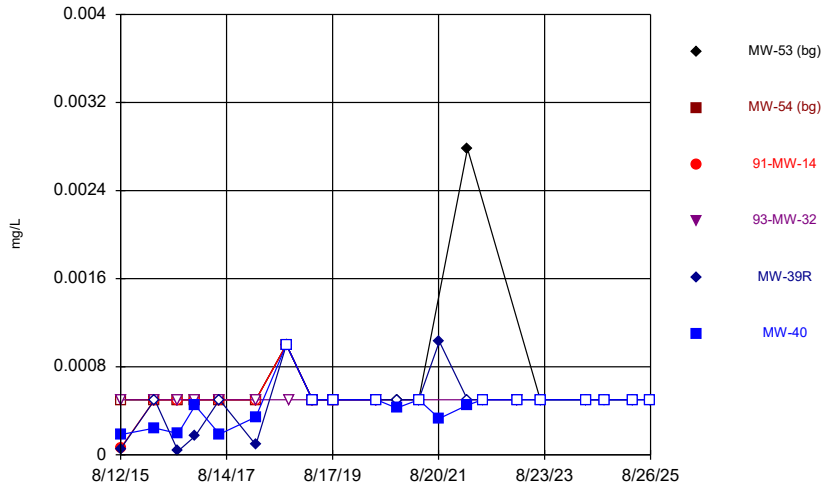
Time Series



Constituent: Tetrachloroethene Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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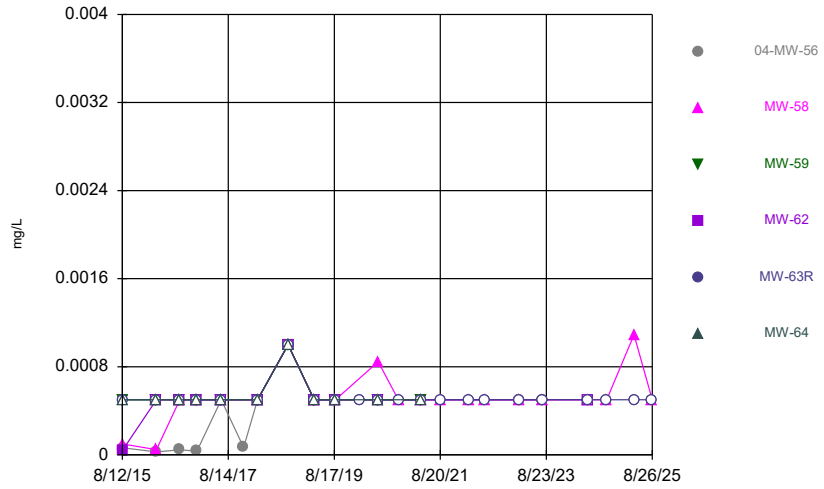
Time Series



Constituent: Thallium Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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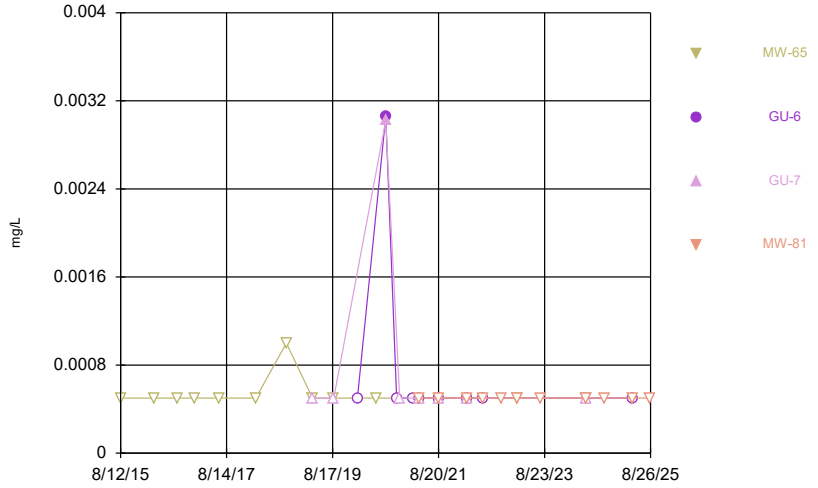
Time Series



Constituent: Thallium Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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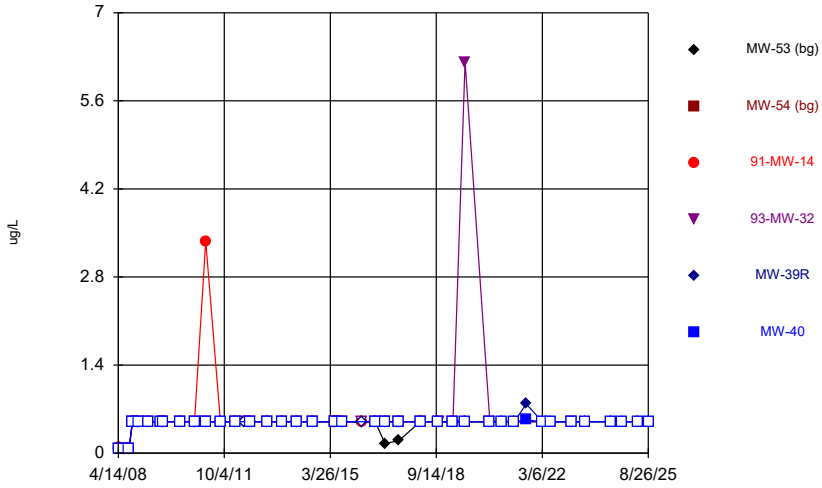
Time Series



Constituent: Thallium Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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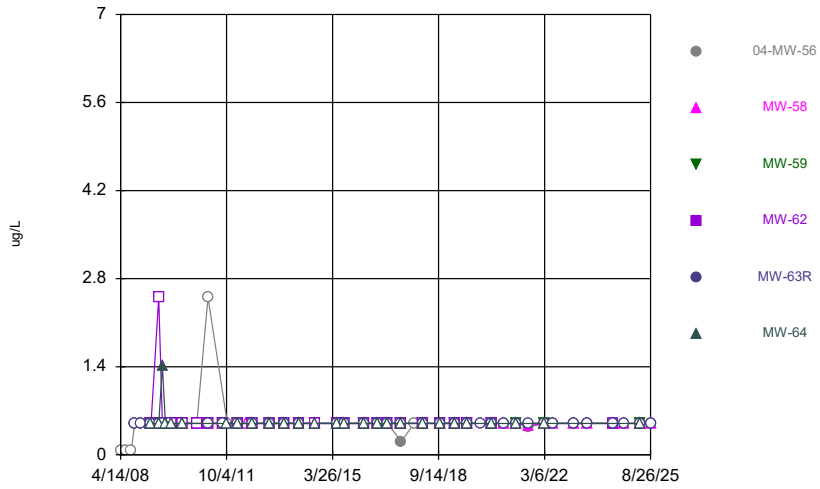
Time Series



Constituent: Toluene Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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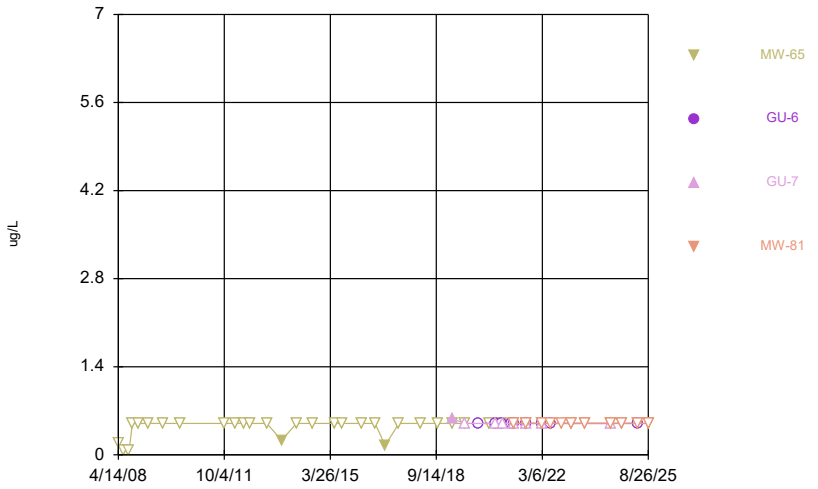
Time Series



Constituent: Toluene Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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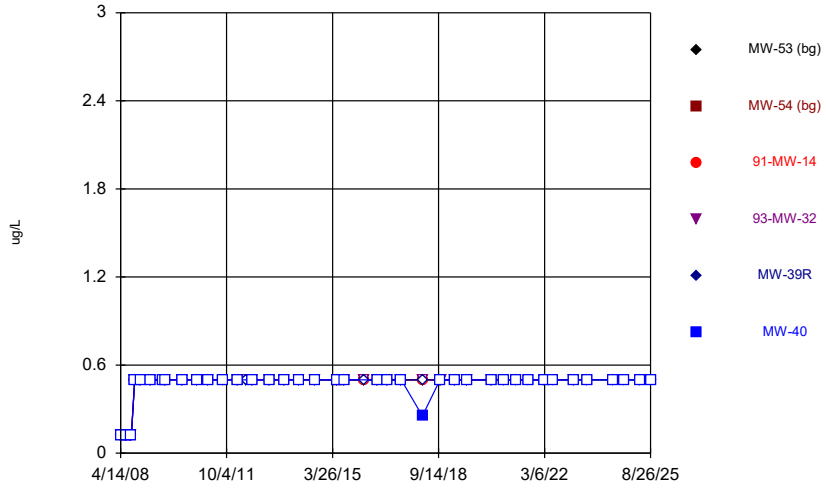
Time Series



Constituent: Toluene Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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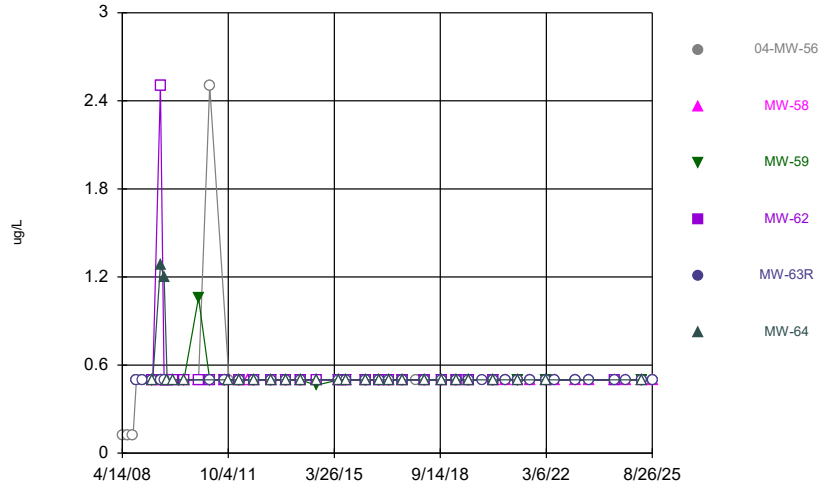
Time Series



Constituent: Trichloroethene Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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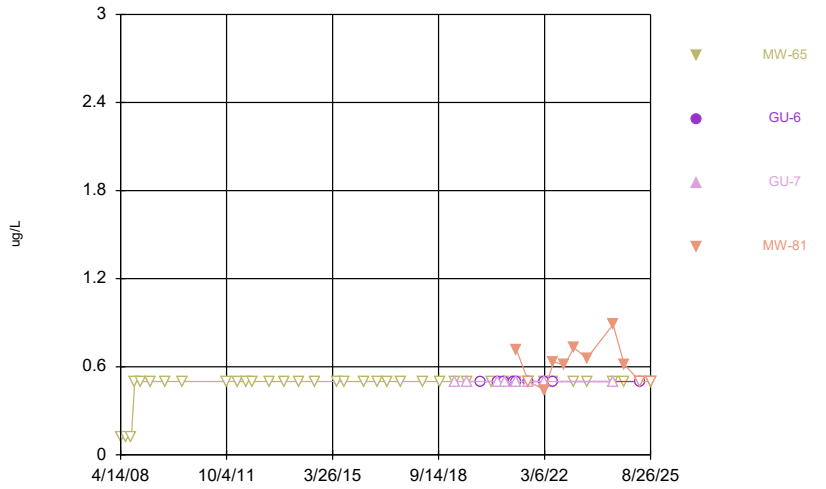
Time Series



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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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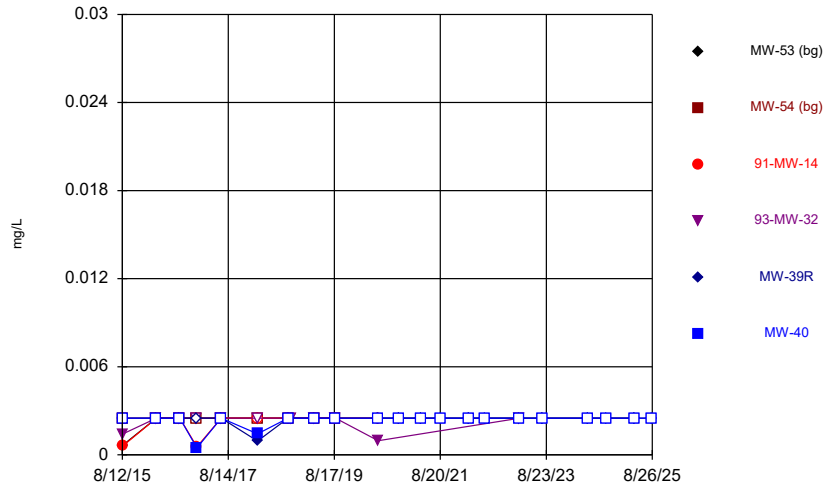
Time Series



Constituent: Trichloroethene Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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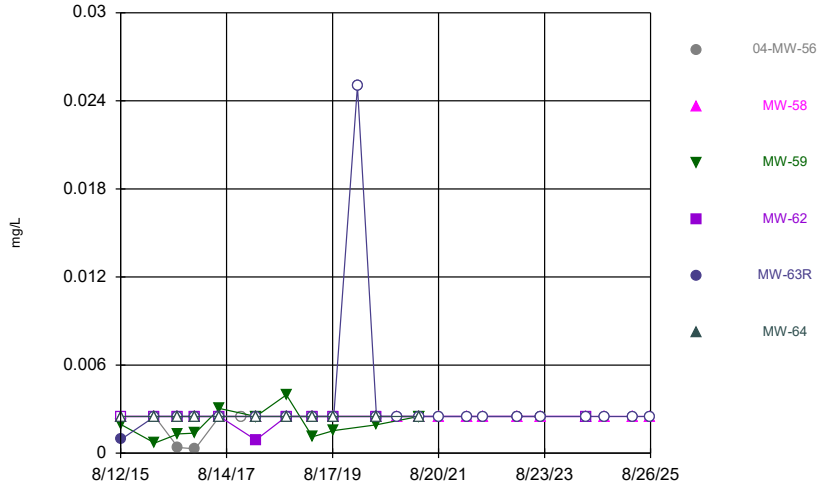
Time Series



Constituent: Vanadium Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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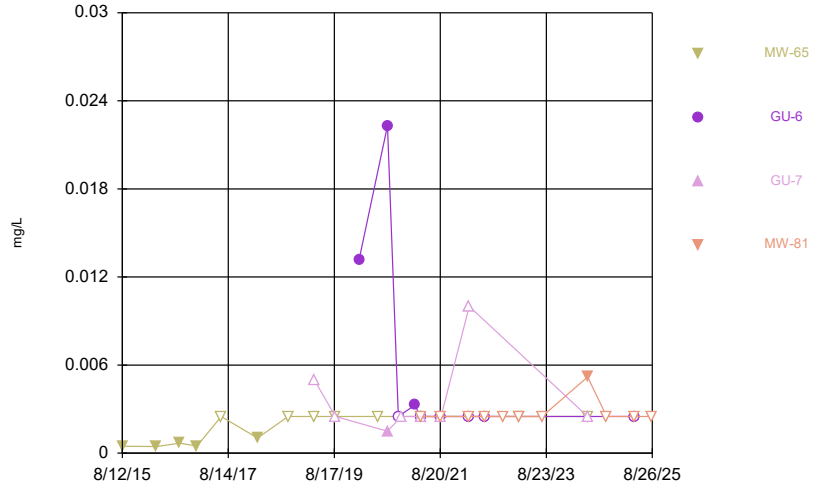
Time Series



Constituent: Vanadium Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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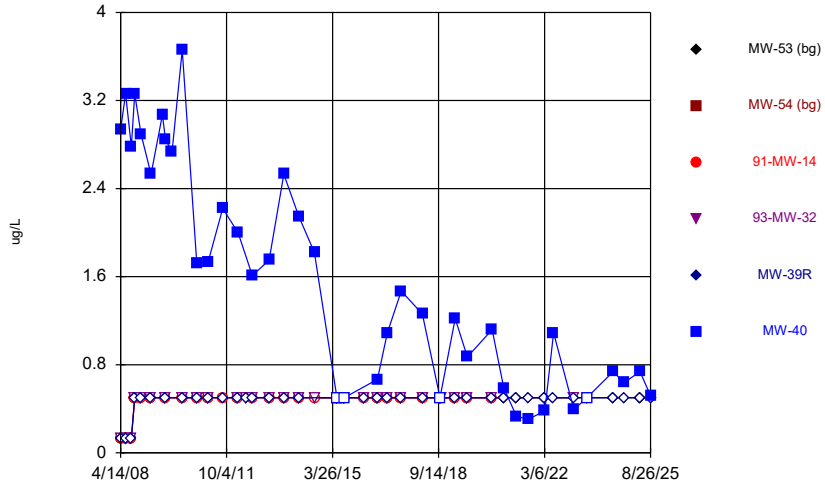
Time Series



Constituent: Vanadium Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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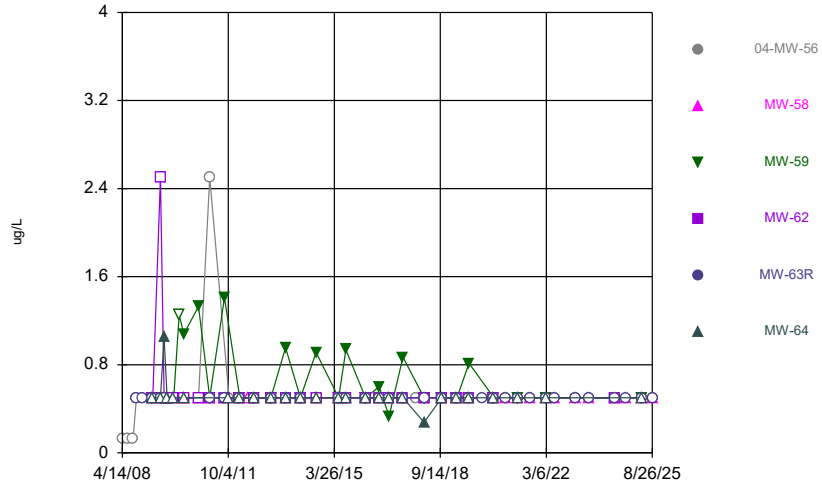
Time Series



Constituent: Vinyl chloride Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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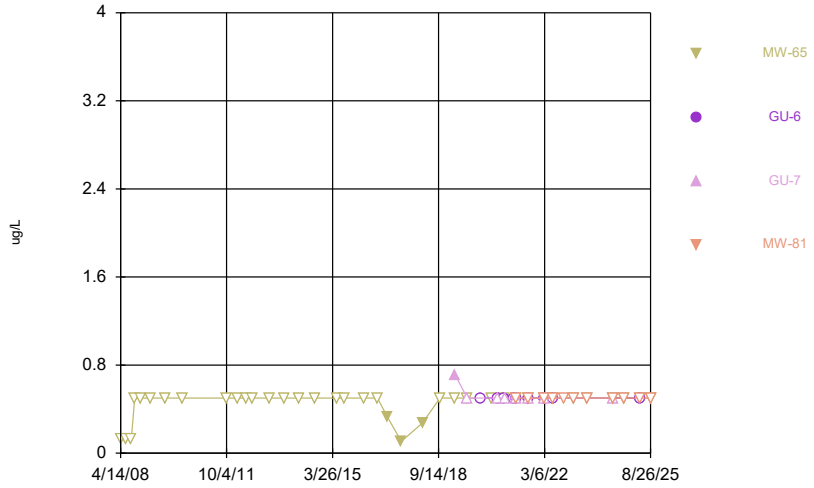
Time Series



Constituent: Vinyl chloride Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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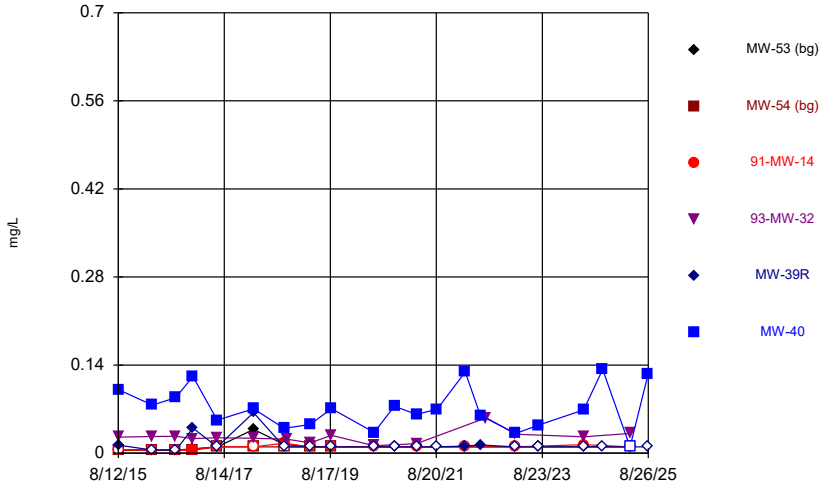
Time Series



Constituent: Vinyl chloride Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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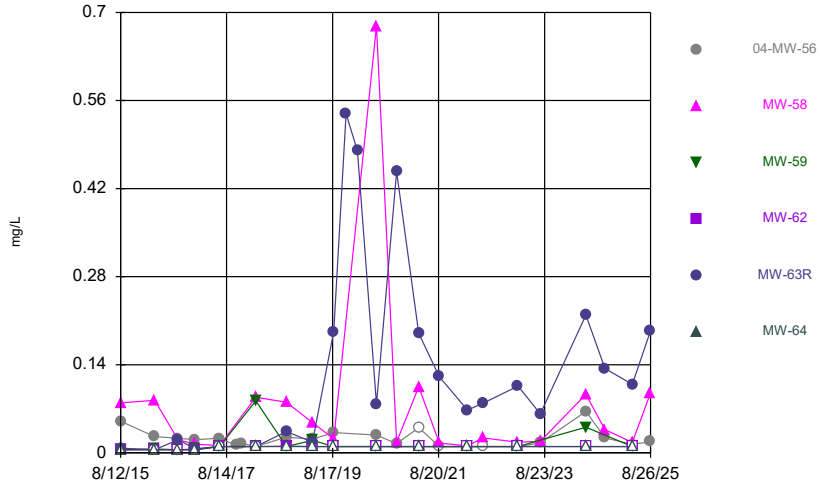
Time Series



Constituent: Zinc Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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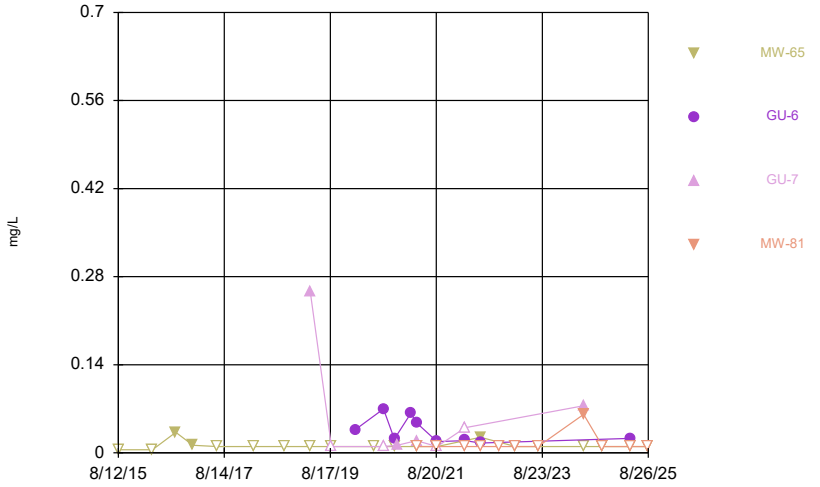
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Constituent: Zinc Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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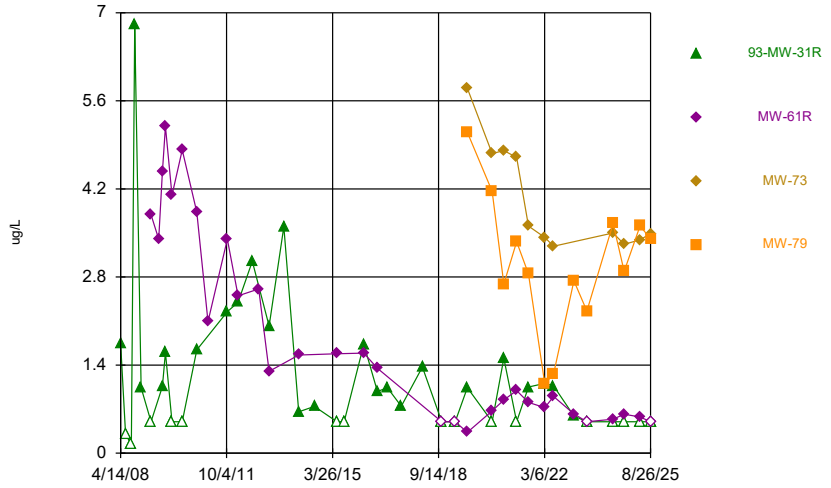
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Constituent: Zinc Analysis Run 2/10/2026 10:48 AM View: 2025_AWQR-Time_Series
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Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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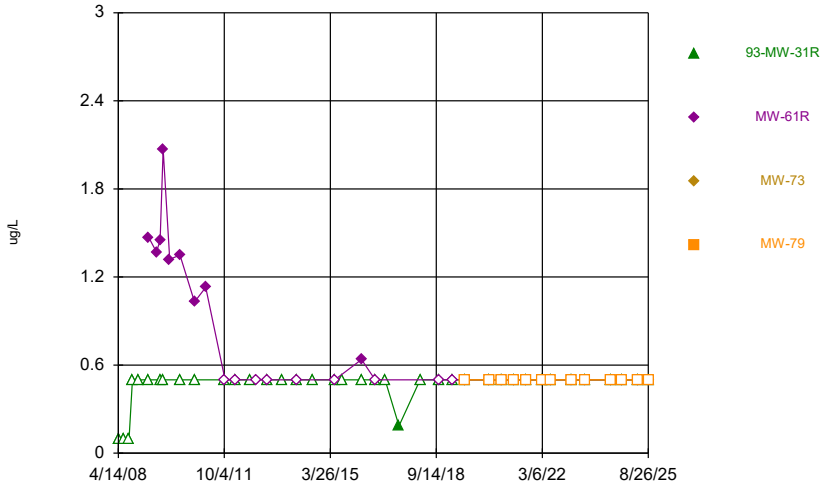
Time Series



Constituent: 1,1-Dichloroethane Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Sourc
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

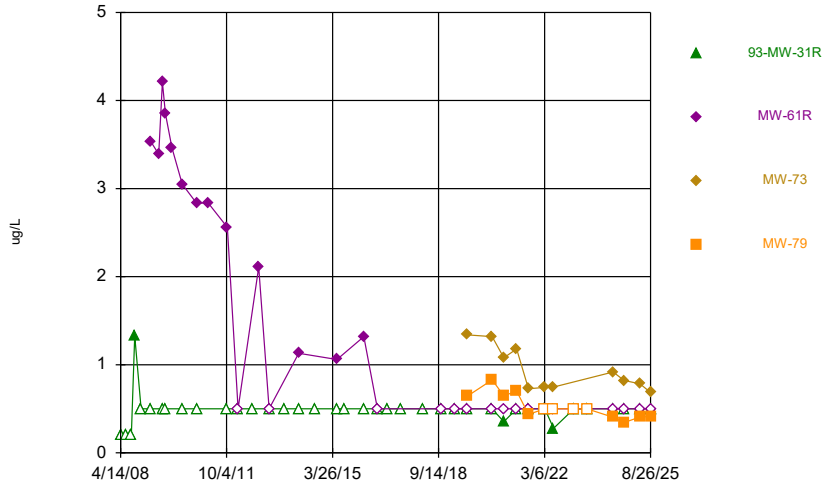
Time Series



Constituent: 1,2-Dichloroethane Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Sourc
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

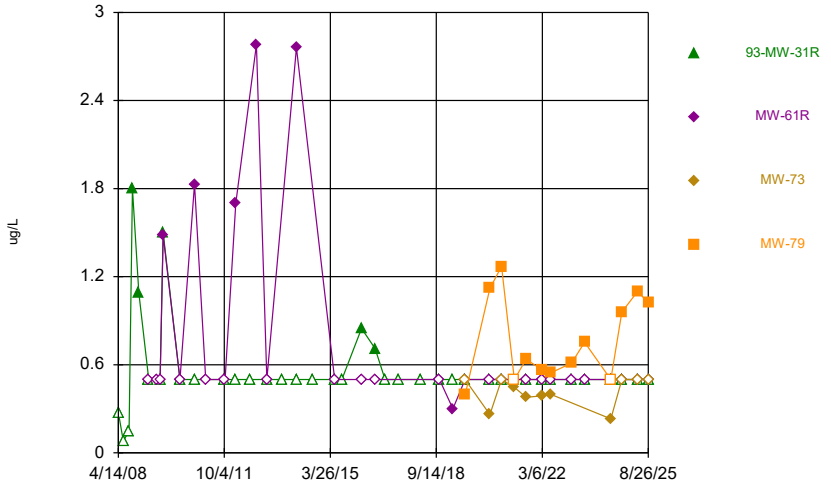
Time Series



Constituent: 1,2-Dichloropropane Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Sour
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

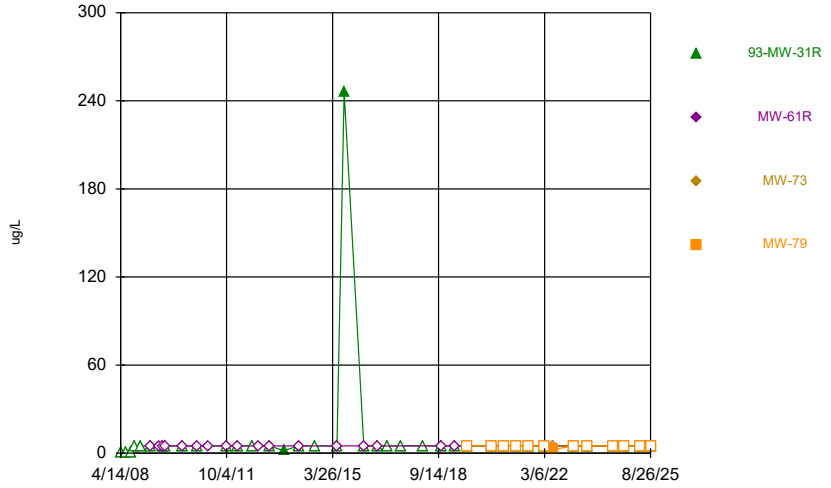
Time Series



Constituent: 1,4-Dichlorobenzene Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Sour
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

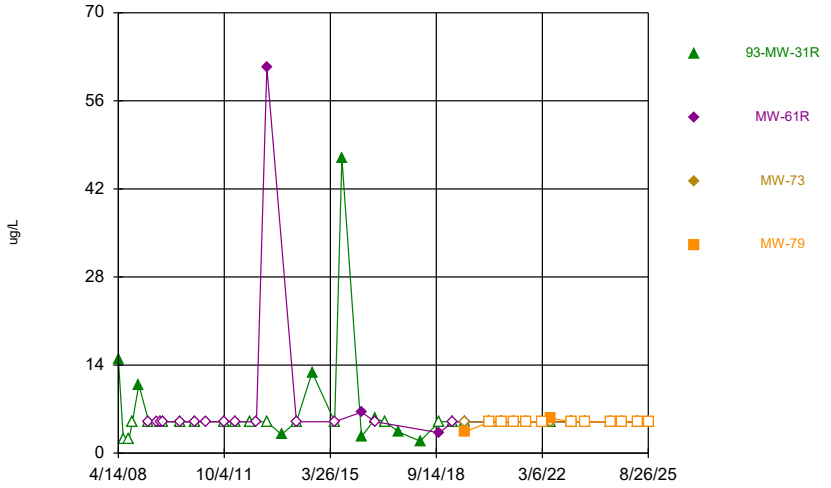
Time Series



Constituent: 2-Butanone Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

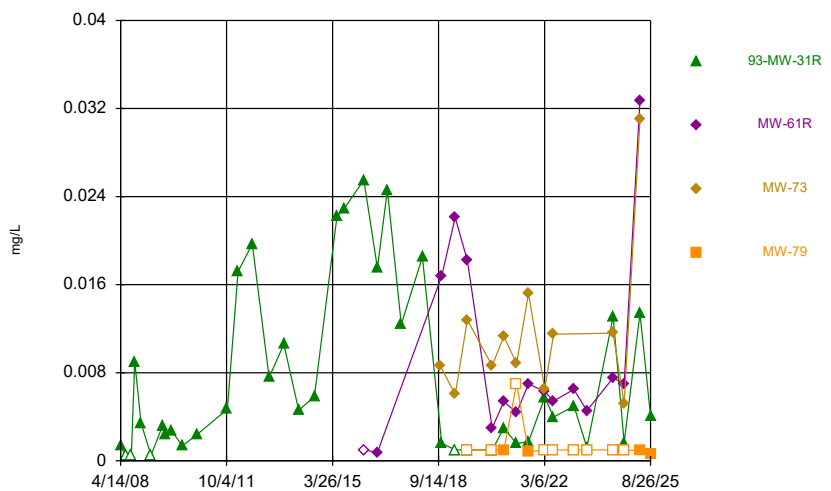
Time Series



Constituent: Acetone Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

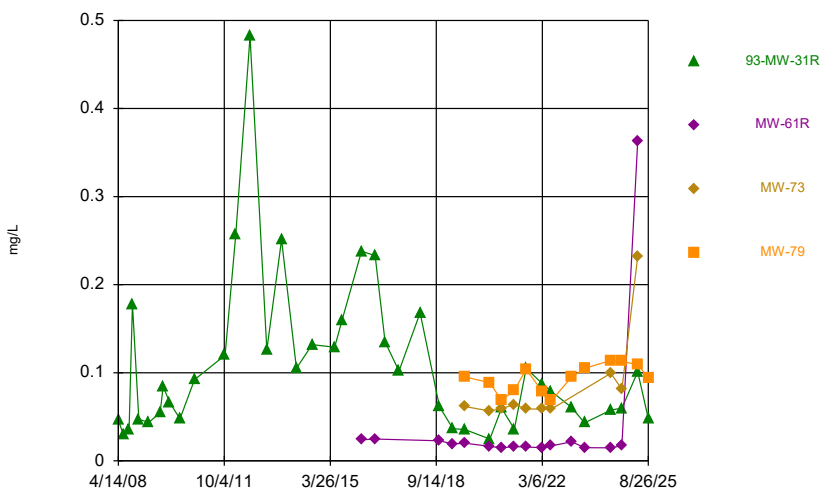
Time Series



Constituent: Arsenic Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

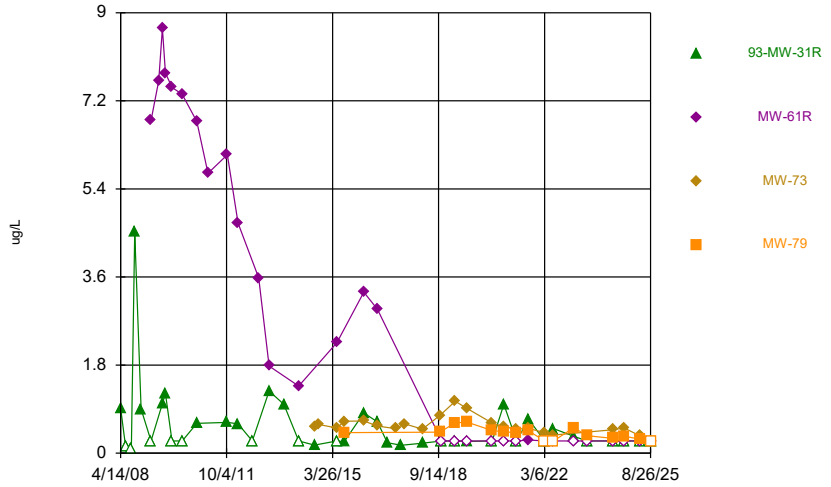
Time Series



Constituent: Barium Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

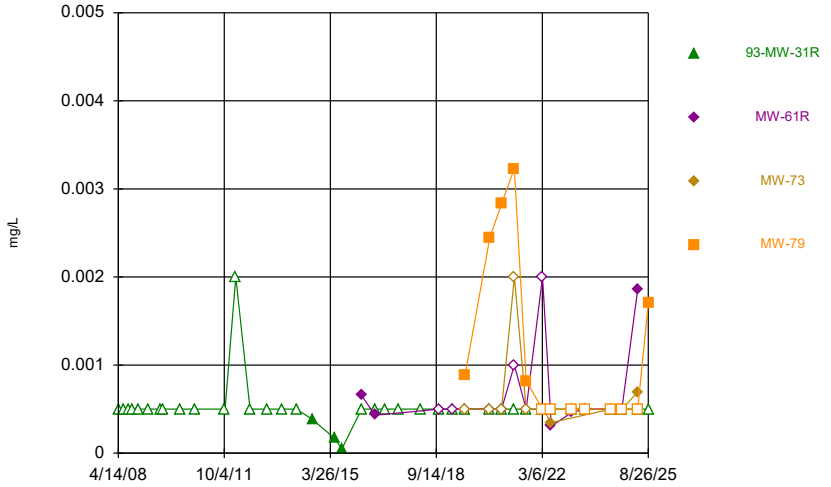
Time Series



Constituent: Benzene Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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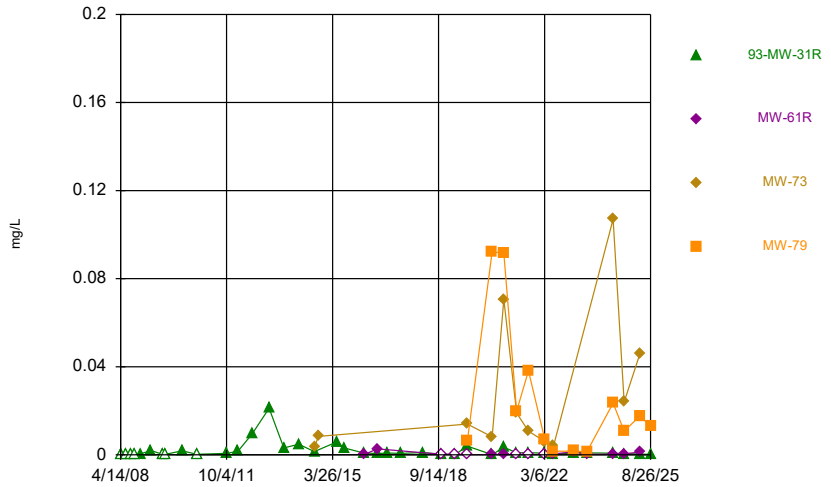
Time Series



Constituent: Beryllium Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
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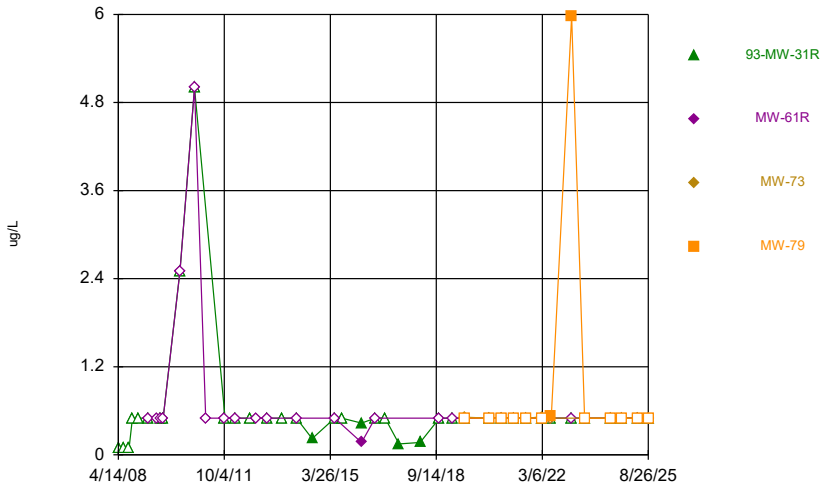
Time Series



Constituent: Cadmium Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

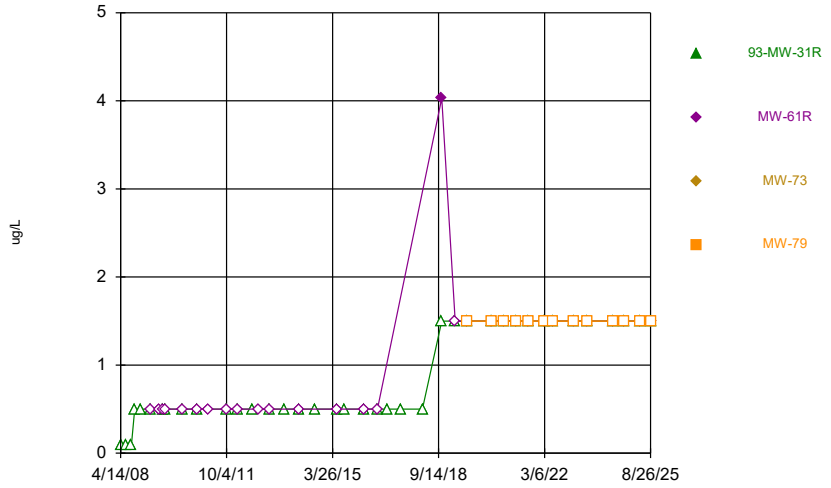
Time Series



Constituent: Carbon disulfide Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

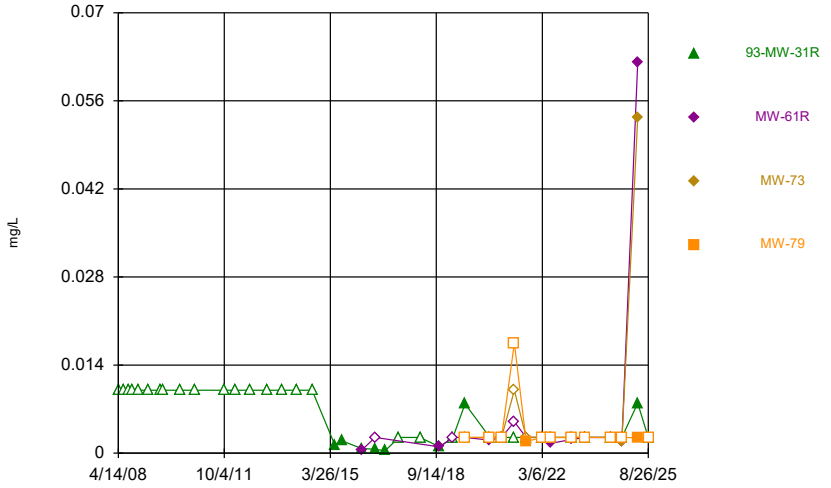
Time Series



Constituent: Chloroform Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

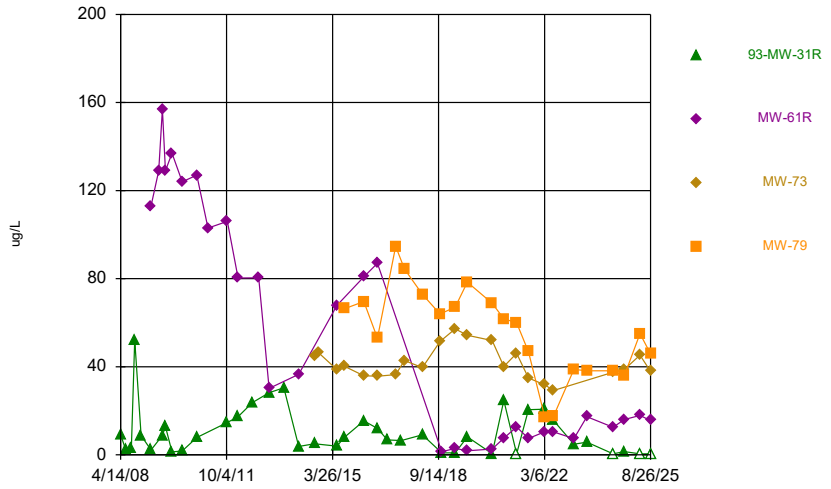
Time Series



Constituent: Chromium Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

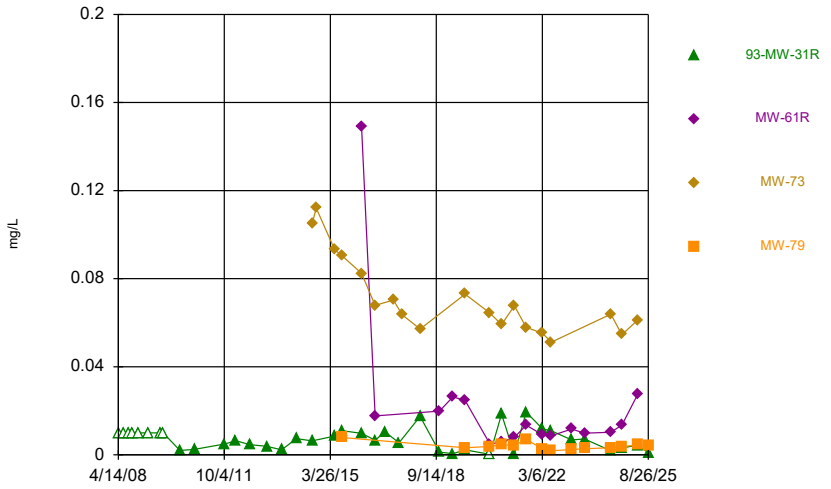
Time Series



Constituent: cis-1,2-Dichloroethene Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series So
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

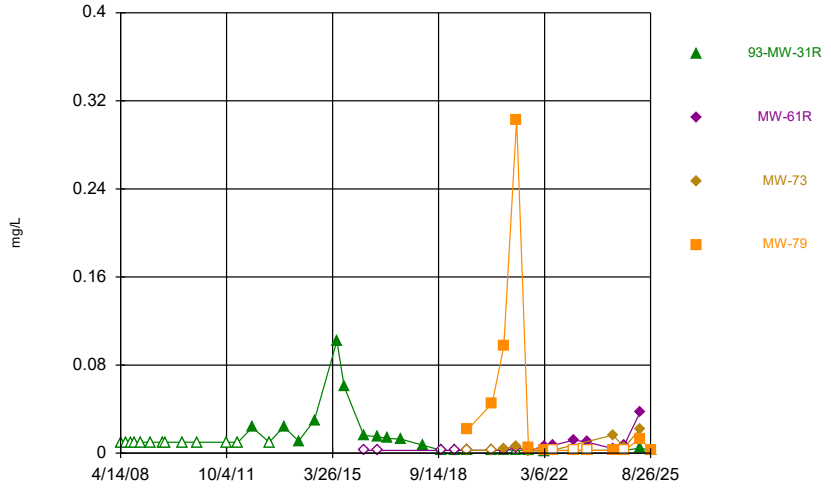
Time Series



Constituent: Cobalt Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

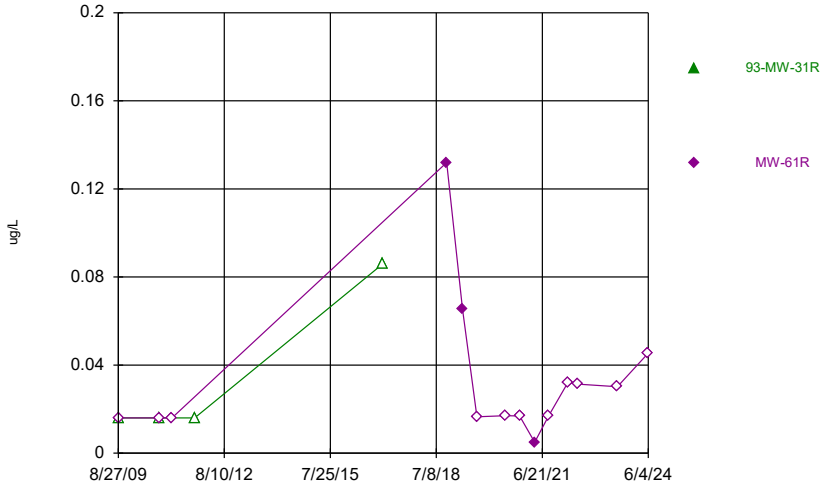
Time Series



Constituent: Copper Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

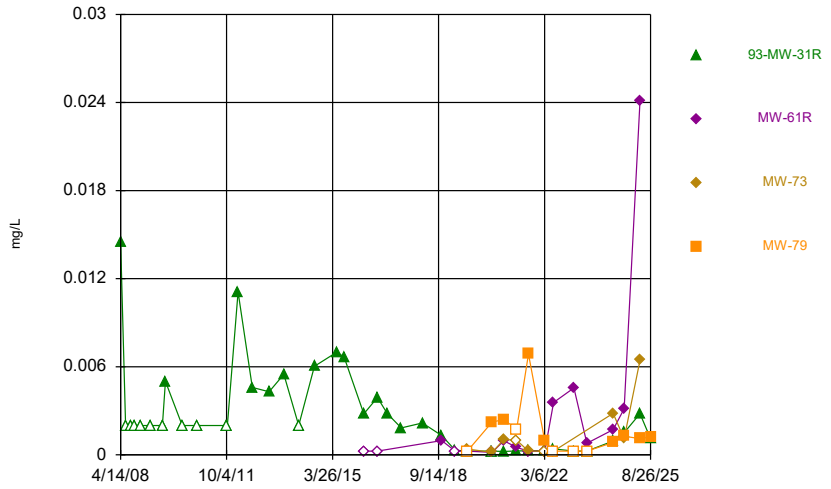
Time Series



Constituent: Endosulfan I Analysis Run 2/10/2026 10:56 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

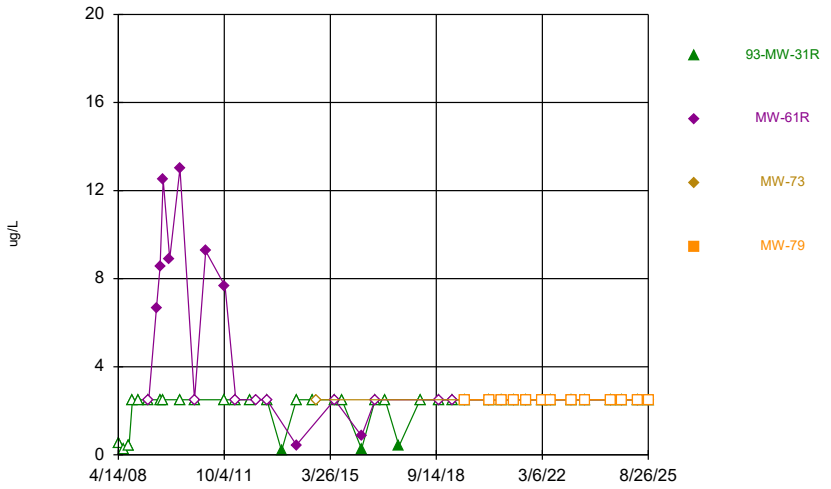
Time Series



Constituent: Lead Analysis Run 2/10/2026 10:57 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

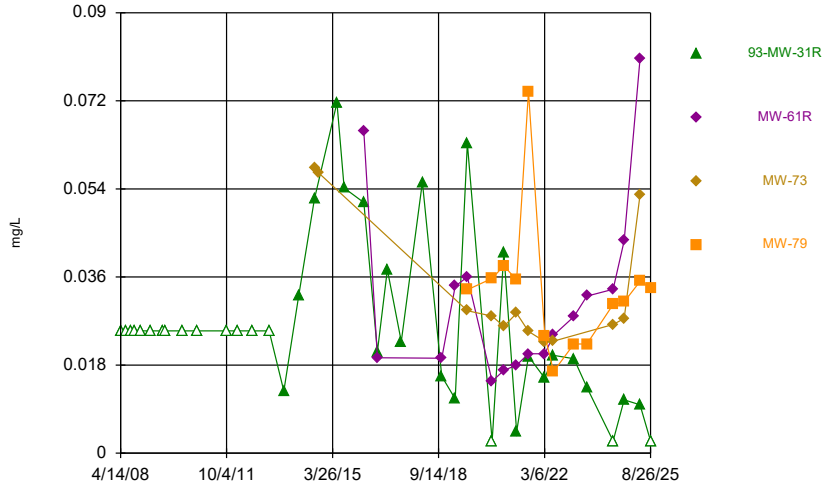
Time Series



Constituent: Methylene Chloride Analysis Run 2/10/2026 10:57 AM View: 2025 AWQR Time Series Sourc
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

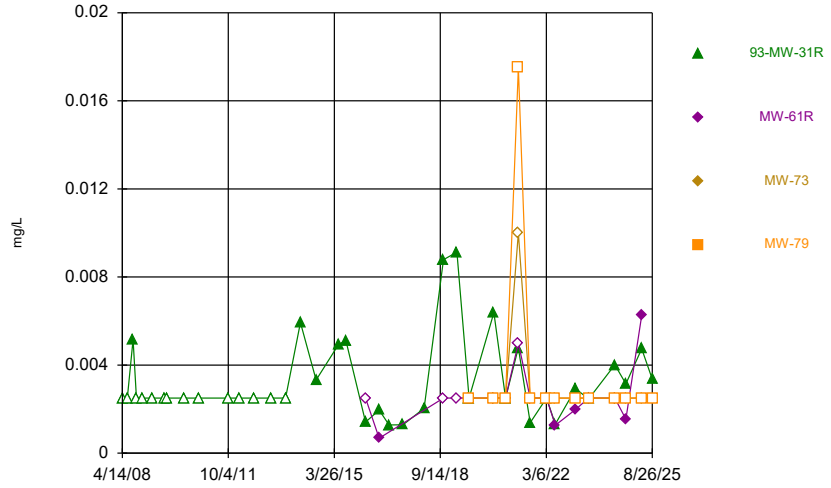
Time Series



Constituent: Nickel Analysis Run 2/10/2026 10:57 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

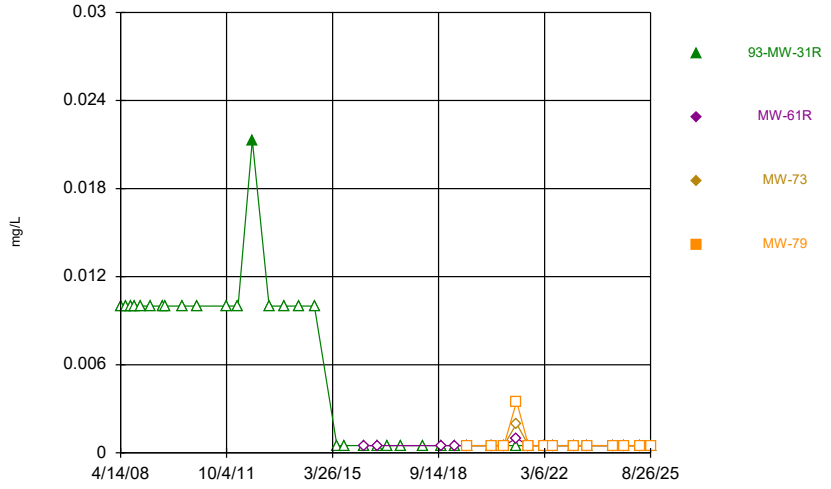
Time Series



Constituent: Selenium Analysis Run 2/10/2026 10:57 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

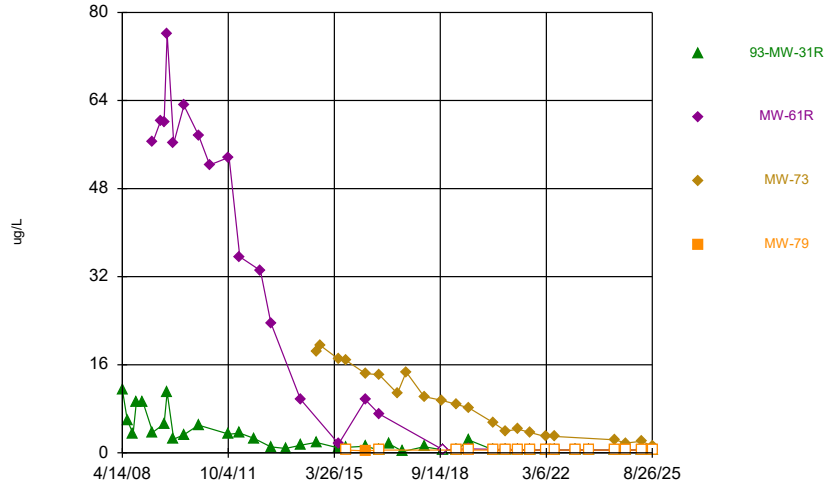
Time Series



Constituent: Silver Analysis Run 2/10/2026 10:57 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

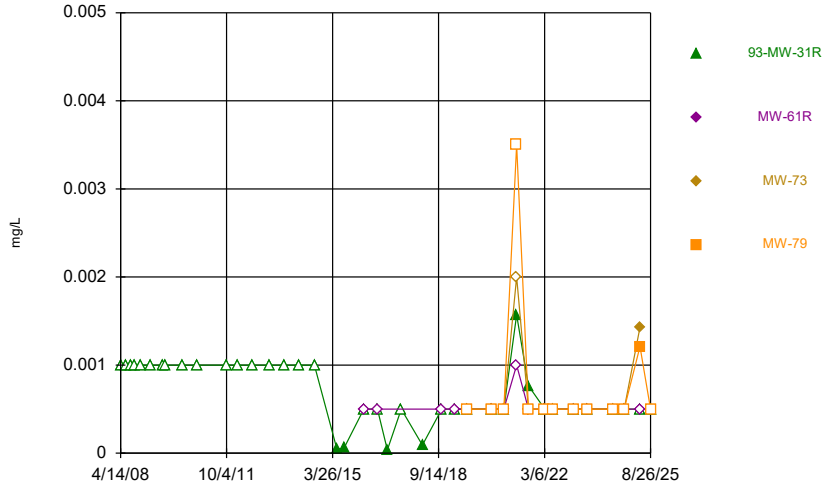
Time Series



Constituent: Tetrachloroethene Analysis Run 2/10/2026 10:57 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

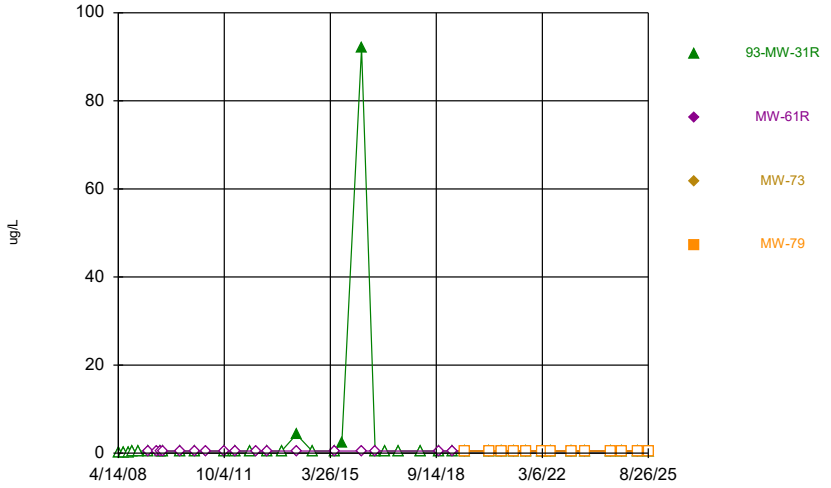
Time Series



Constituent: Thallium Analysis Run 2/10/2026 10:57 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

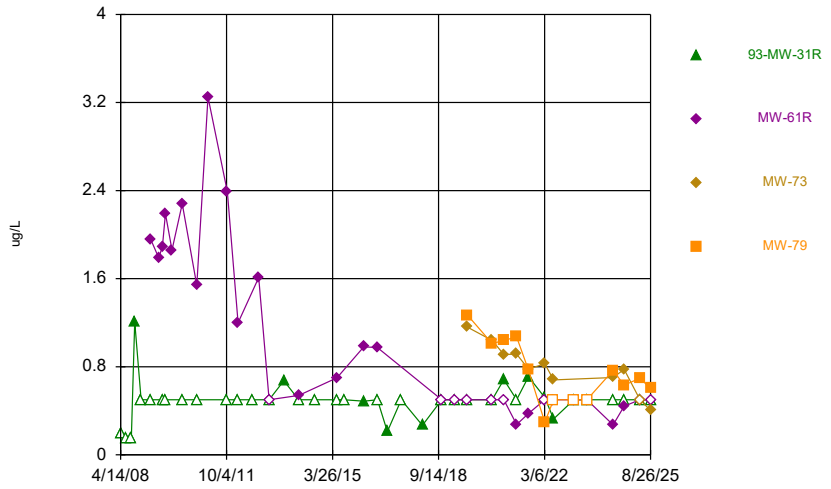
Time Series



Constituent: Toluene Analysis Run 2/10/2026 10:57 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

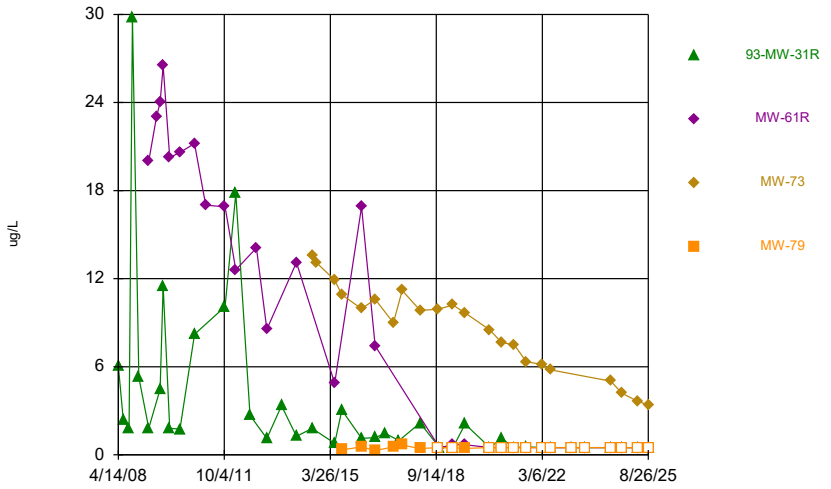
Time Series



Constituent: trans-1,2-Dichloroethene Analysis Run 2/10/2026 10:57 AM View: 2025 AWQR Time Series
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

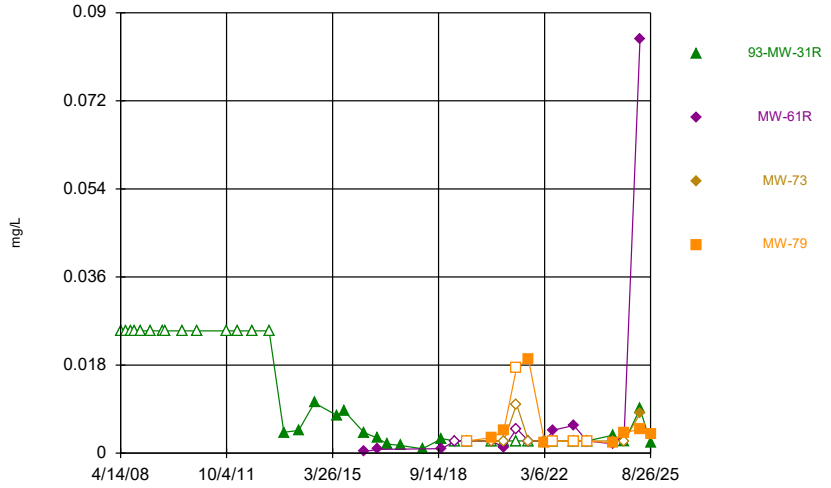
Time Series



Constituent: Trichloroethene Analysis Run 2/10/2026 10:57 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

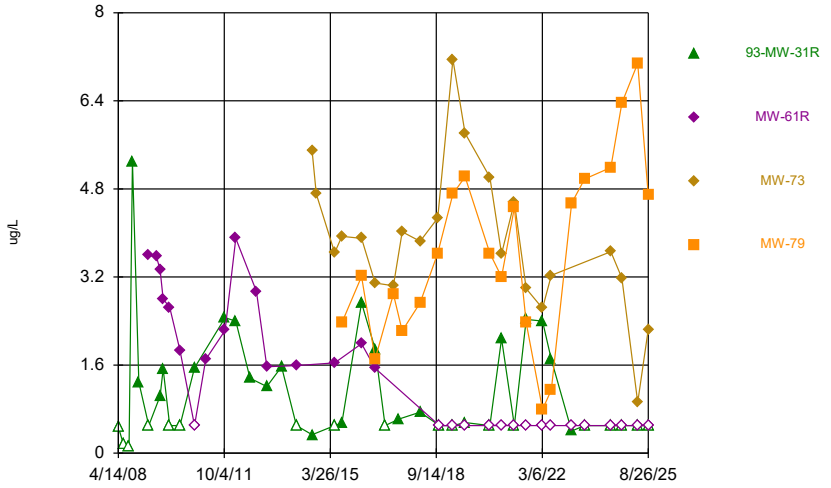
Time Series



Constituent: Vanadium Analysis Run 2/10/2026 10:57 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

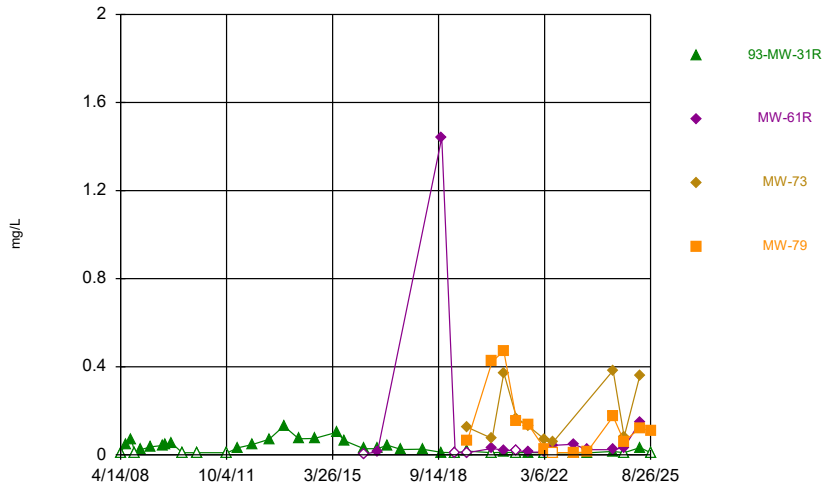
Time Series



Constituent: Vinyl chloride Analysis Run 2/10/2026 10:57 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Zinc Analysis Run 2/10/2026 10:57 AM View: 2025 AWQR Time Series Source
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Outlier Tests Summary Table and Graphs

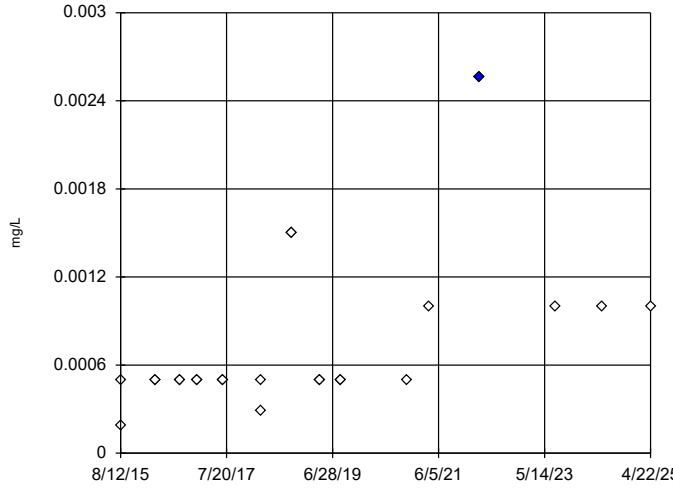
Outlier Analysis

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master Printed 1/29/2026, 11:06 AM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Antimony (mg/L)	**MW-53,MW-54**	**Yes**	**0.00256**	**n/a w/combined bg**	**OH**	**NaN**	**24**	**0.0007304**	**0.0005157**	**n/a**	**n/a**
Arsenic (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	OH	NaN	24	0.0009988	0.0002682	n/a	n/a
Barium (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	NP (nrm)/OH	NaN	24	0.0203	0.006637	unknown	ShapiroWilk
Beryllium (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	OH	NaN	24	0.0004892	0.0001188	n/a	n/a
Cadmium (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	EPA/OH	0.05	24	0.0002412	0.0002234	ln(x)	ShapiroWilk
Chromium (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	OH	NaN	24	0.002537	0.0001817	n/a	n/a
Cobalt (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	EPA/OH	0.05	24	0.002201	0.003324	ln(x)	ShapiroWilk
Copper (mg/L)	**MW-53,MW-54**	**Yes**	**0.00191,0.000562,0.002,0.00837,0.00226,0.00163**	**n/a w/combined bg**	**NP (nrm)/OH**	**NaN**	**24**	**0.002568**	**0.001311**	**unknown**	**ShapiroWilk**
Lead (mg/L)	**MW-53,MW-54**	**Yes**	**0.00232,0.00191,0.00179**	**n/a w/combined bg**	**OH**	**NaN**	**24**	**0.0004824**	**0.0005975**	**n/a**	**n/a**
Nickel (mg/L)	MW-54,MW-53	No	n/a	n/a w/combined bg	EPA/OH	0.05	24	0.007267	0.007379	ln(x)	ShapiroWilk
Selenium (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	OH	NaN	24	0.002412	0.0006201	n/a	n/a
Silver (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	OH	NaN	24	0.0004756	0.0001428	n/a	n/a
Thallium (mg/L)	**MW-53,MW-54**	**Yes**	**0.00278**	**n/a w/combined bg**	**OH**	**NaN**	**24**	**0.0006367**	**0.0004778**	**n/a**	**n/a**
Vanadium (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	OH	NaN	24	0.002422	0.0003803	n/a	n/a
Zinc (mg/L)	MW-53,MW-54	No	n/a	n/a w/combined bg	OH	NaN	24	0.009732	0.006482	n/a	n/a

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

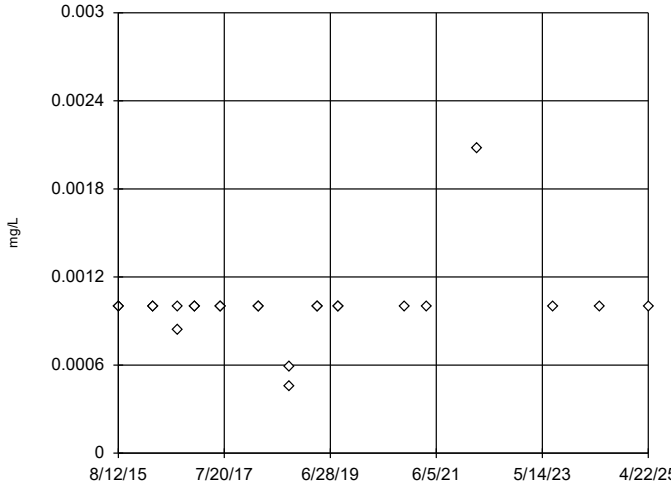
Statistical outlier is drawn as solid.
Outlier per Ohio method.

Constituent: Antimony Analysis Run 1/29/2026 11:03 AM View: 2025_AWQR-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

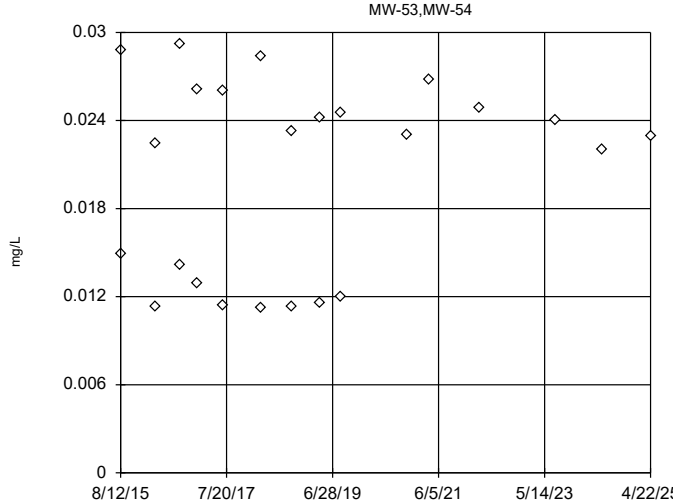
No statistical outliers.

Constituent: Arsenic Analysis Run 1/29/2026 11:03 AM View: 2025_AWQR-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

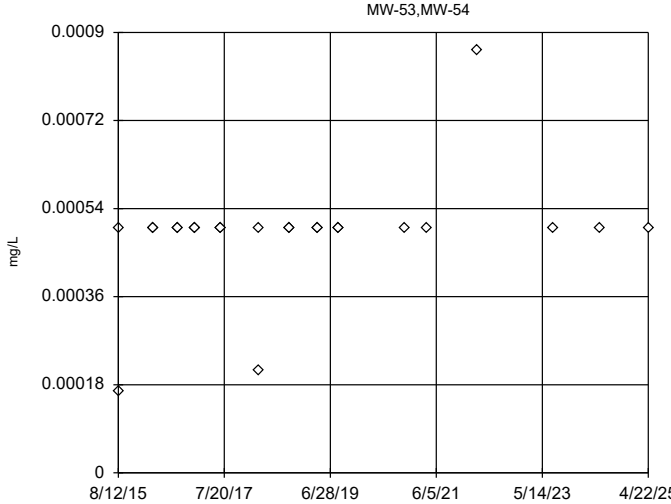
High cutoff = 0.06445, low cutoff = -0.02655, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 1/29/2026 11:03 AM View: 2025_AWQR-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



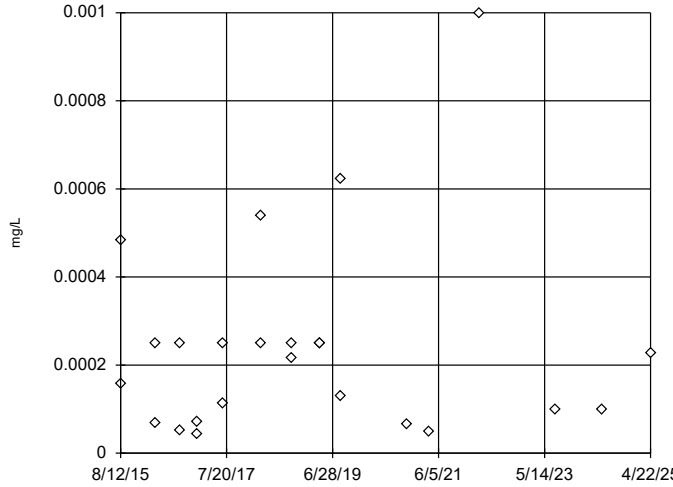
n = 24

No statistical outliers.

Constituent: Beryllium Analysis Run 1/29/2026 11:03 AM View: 2025_AWQR-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

EPA Screening (suspected outliers for Rosner's Test)

MW-53,MW-54



n = 24

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.0002412, std. dev. 0.0002234, critical Tn 2.644

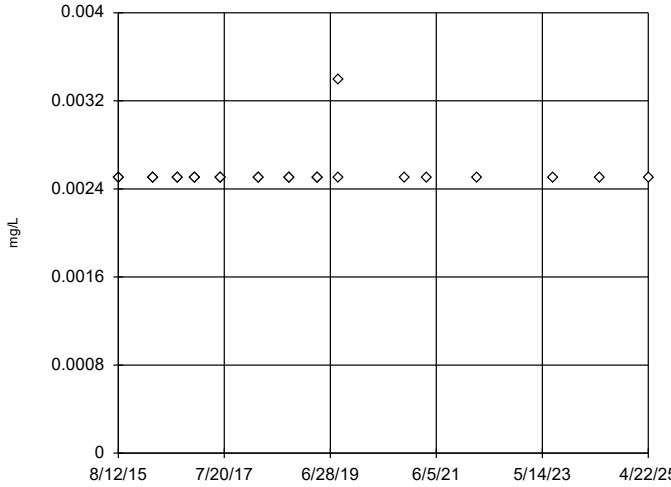
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.9513
Critical = 0.884 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Cadmium Analysis Run 1/29/2026 11:03 AM View: 2025_AWQR-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

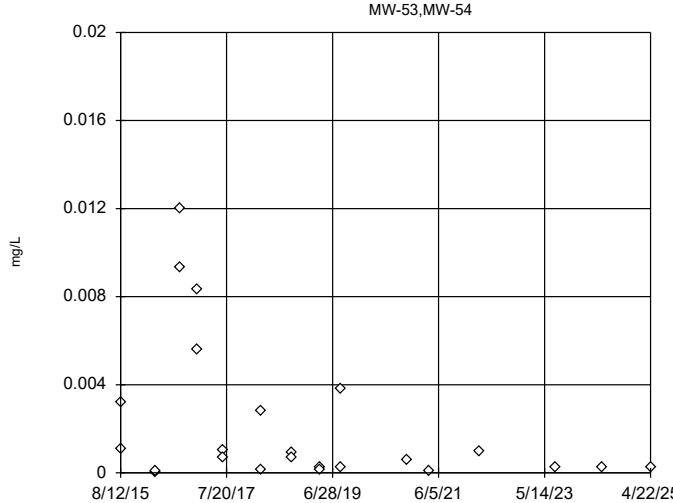
No statistical outliers.

Constituent: Chromium Analysis Run 1/29/2026 11:03 AM View: 2025_AWQR-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Rosner's Test)

MW-53,MW-54



n = 24

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.002201, std. dev. 0.003324, critical Tn 2.644

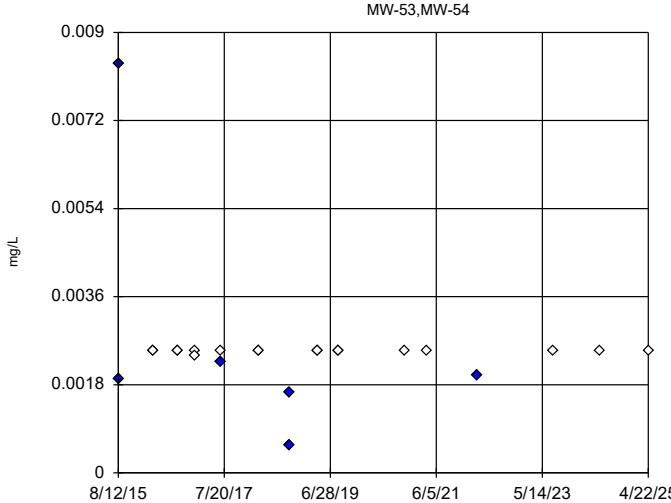
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.952
Critical = 0.884 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Cobalt Analysis Run 1/29/2026 11:03 AM View: 2025_AWQR-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

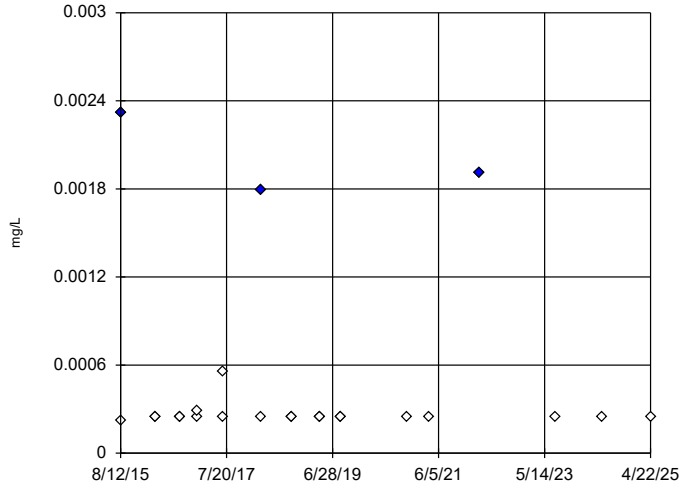
Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

High cutoff = 0.002665, low cutoff = 0.00228, based on IQR multiplier of 3.

Constituent: Copper Analysis Run 1/29/2026 11:03 AM View: 2025_AWQR-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

Statistical outliers are drawn as solid.
Outliers per Ohio method.

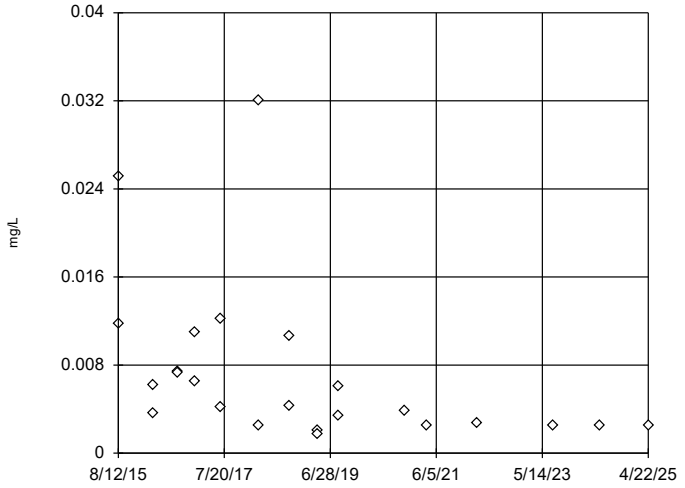
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.5633
Critical = 0.884
The distribution, after removal of suspect values, was found to be normally distributed.

Constituent: Lead Analysis Run 1/29/2026 11:03 AM View: 2025_AWQR-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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EPA Screening (suspected outliers for Rosner's Test)

MW-54,MW-53



n = 24

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.007267, std. dev. 0.007379, critical Tn 2.644

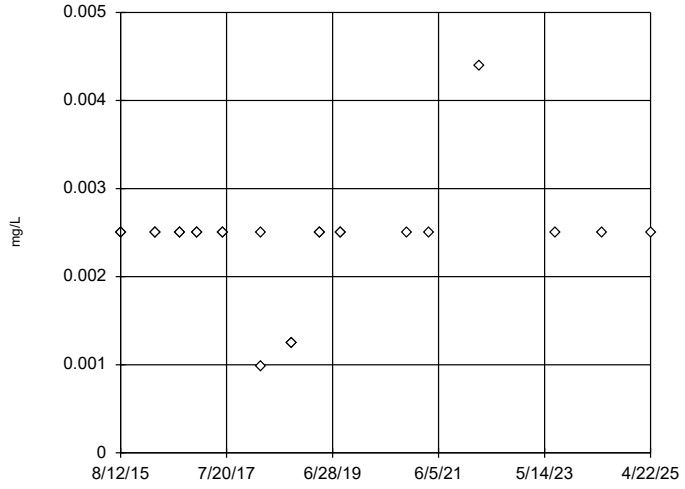
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.9262
Critical = 0.884 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Nickel Analysis Run 1/29/2026 11:03 AM View: 2025_AWQR-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

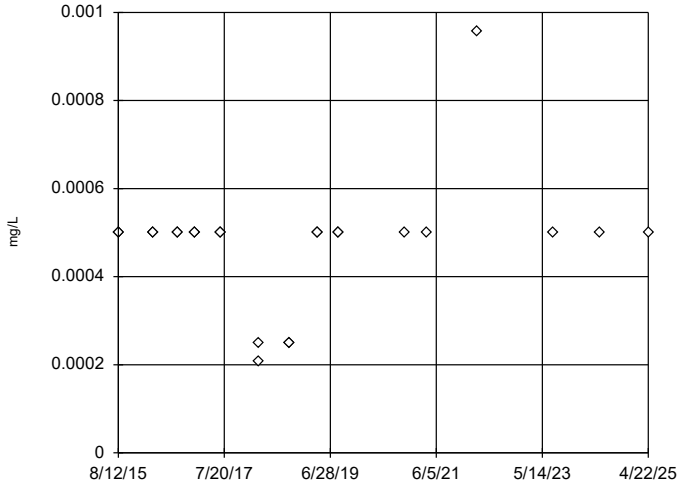
No statistical outliers.

Constituent: Selenium Analysis Run 1/29/2026 11:03 AM View: 2025_AWQR-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

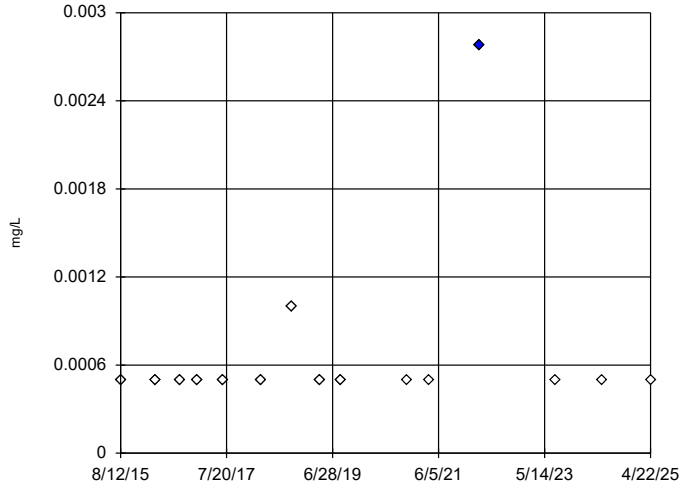
No statistical outliers.

Constituent: Silver Analysis Run 1/29/2026 11:03 AM View: 2025_AWQR-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

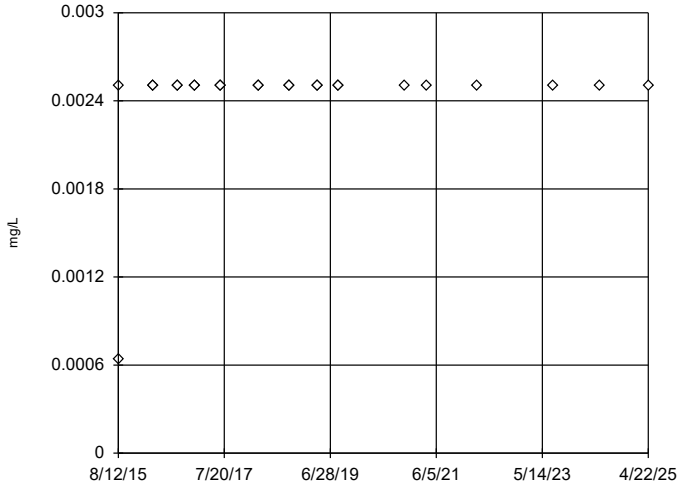
Statistical outlier is drawn as solid.
Outlier per Ohio method.

Constituent: Thallium Analysis Run 1/29/2026 11:03 AM View: 2025_AWQR-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

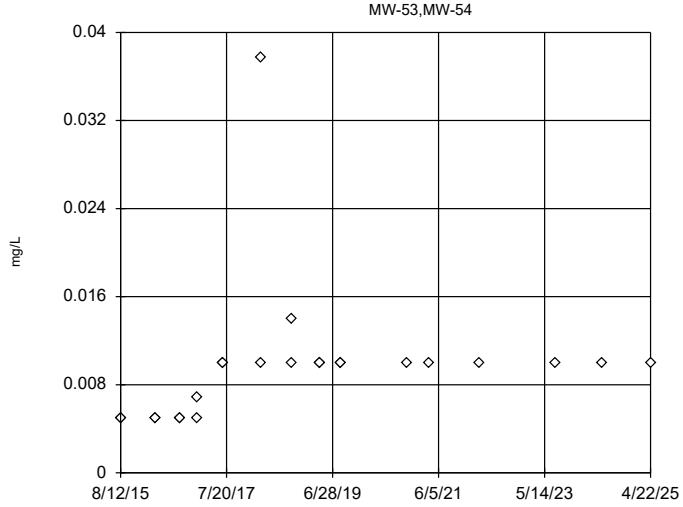
No statistical outliers.

Constituent: Vanadium Analysis Run 1/29/2026 11:03 AM View: 2025_AWQR-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-53,MW-54



n = 24

No statistical outliers.

Constituent: Zinc Analysis Run 1/29/2026 11:03 AM View: 2025_AWQR-BG_Outliers
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Interwell Prediction Limit Summary Table and Graphs – AMD Wells

AMD Interwell Prediction Limit

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master Printed 1/29/2026, 1:09 PM

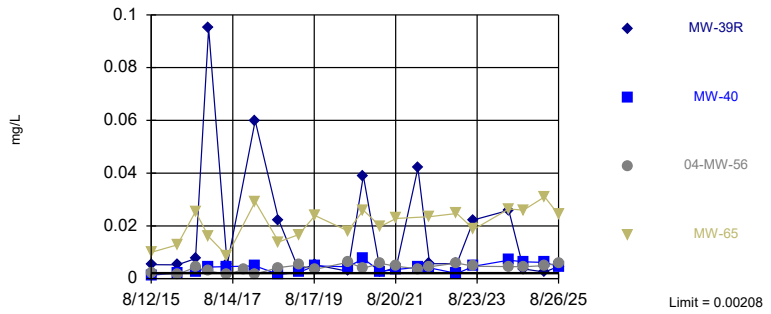
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	%NDs	Transform	Alpha	Method
Arsenic (mg/L)	**MW-39R**	**0.00208**	**n/a**	**8/26/2025**	**0.00461**	**Yes**	**24**	**MW-53,MW-54**	**83.33**	**n/a**	**0.002696**	**NP Inter (NDs) 1 of 2**
Arsenic (mg/L)	**MW-40**	**0.00208**	**n/a**	**8/26/2025**	**0.00458**	**Yes**	**24**	**MW-53,MW-54**	**83.33**	**n/a**	**0.002696**	**NP Inter (NDs) 1 of 2**
Arsenic (mg/L)	**04-MW-56**	**0.00208**	**n/a**	**8/26/2025**	**0.00588**	**Yes**	**24**	**MW-53,MW-54**	**83.33**	**n/a**	**0.002696**	**NP Inter (NDs) 1 of 2**
Arsenic (mg/L)	**MW-65**	**0.00208**	**n/a**	**8/26/2025**	**0.0243**	**Yes**	**24**	**MW-53,MW-54**	**83.33**	**n/a**	**0.002696**	**NP Inter (NDs) 1 of 2**
Barium (mg/L)	MW-39R	0.03139	n/a	8/26/2025	0.00968	No	24	MW-53,MW-54	0	x^3	0.0002508	Param Inter 1 of 2
Barium (mg/L)	MW-40	0.03139	n/a	8/26/2025	0.01185	No	24	MW-53,MW-54	0	x^3	0.0002508	Param Inter 1 of 2
Barium (mg/L)	04-MW-56	0.03139	n/a	8/26/2025	0.0262	No	24	MW-53,MW-54	0	x^3	0.0002508	Param Inter 1 of 2
Barium (mg/L)	MW-58	0.03139	n/a	8/26/2025	0.016	No	24	MW-53,MW-54	0	x^3	0.0002508	Param Inter 1 of 2
Barium (mg/L)	MW-63R	0.03139	n/a	8/26/2025	0.0138	No	24	MW-53,MW-54	0	x^3	0.0002508	Param Inter 1 of 2
Barium (mg/L)	**MW-65**	**0.03139**	**n/a**	**8/26/2025**	**0.323**	**Yes**	**24**	**MW-53,MW-54**	**0**	**x^3**	**0.0002508**	**Param Inter 1 of 2**
Beryllium (mg/L)	MW-40	0.000864	n/a	8/26/2025	0.000747J	No	24	MW-53,MW-54	87.5	n/a	0.002696	NP Inter (NDs) 1 of 2
Cadmium (mg/L)	MW-58	0.0008668	n/a	8/26/2025	0.000629	No	24	MW-53,MW-54	41.67	sqrt(x)	0.0002508	Param Inter 1 of 2
Cadmium (mg/L)	**MW-63R**	**0.0008668**	**n/a**	**8/26/2025**	**0.00919**	**Yes**	**24**	**MW-53,MW-54**	**41.67**	**sqrt(x)**	**0.0002508**	**Param Inter 1 of 2**
Cobalt (mg/L)	MW-39R	0.04557	n/a	8/26/2025	0.0174	No	24	MW-53,MW-54	16.67	ln(x)	0.0002508	Param Inter 1 of 2
Cobalt (mg/L)	**MW-40**	**0.04557**	**n/a**	**8/26/2025**	**0.1095**	**Yes**	**24**	**MW-53,MW-54**	**16.67**	**ln(x)**	**0.0002508**	**Param Inter 1 of 2**
Cobalt (mg/L)	04-MW-56	0.04557	n/a	8/26/2025	0.0228	No	24	MW-53,MW-54	16.67	ln(x)	0.0002508	Param Inter 1 of 2
Cobalt (mg/L)	MW-58	0.04557	n/a	8/26/2025	0.0423	No	24	MW-53,MW-54	16.67	ln(x)	0.0002508	Param Inter 1 of 2
Cobalt (mg/L)	MW-63R	0.04557	n/a	8/26/2025	0.0217	No	24	MW-53,MW-54	16.67	ln(x)	0.0002508	Param Inter 1 of 2
Cobalt (mg/L)	MW-65	0.04557	n/a	8/26/2025	0.001655	No	24	MW-53,MW-54	16.67	ln(x)	0.0002508	Param Inter 1 of 2
Nickel (mg/L)	**MW-40**	**0.0356**	**n/a**	**8/26/2025**	**0.1335**	**Yes**	**24**	**MW-53,MW-54**	**16.67**	**ln(x)**	**0.0002508**	**Param Inter 1 of 2**
Nickel (mg/L)	**04-MW-56**	**0.0356**	**n/a**	**8/26/2025**	**0.0407**	**Yes**	**24**	**MW-53,MW-54**	**16.67**	**ln(x)**	**0.0002508**	**Param Inter 1 of 2**
Nickel (mg/L)	**MW-58**	**0.0356**	**n/a**	**8/26/2025**	**0.0718**	**Yes**	**24**	**MW-53,MW-54**	**16.67**	**ln(x)**	**0.0002508**	**Param Inter 1 of 2**
Nickel (mg/L)	**MW-63R**	**0.0356**	**n/a**	**8/26/2025**	**0.0769**	**Yes**	**24**	**MW-53,MW-54**	**16.67**	**ln(x)**	**0.0002508**	**Param Inter 1 of 2**
Zinc (mg/L)	**MW-40**	**0.0377**	**n/a**	**8/26/2025**	**0.1265**	**Yes**	**24**	**MW-53,MW-54**	**87.5**	**n/a**	**0.002696**	**NP Inter (NDs) 1 of 2**
Zinc (mg/L)	**MW-58**	**0.0377**	**n/a**	**8/26/2025**	**0.0953**	**Yes**	**24**	**MW-53,MW-54**	**87.5**	**n/a**	**0.002696**	**NP Inter (NDs) 1 of 2**
Zinc (mg/L)	**MW-63R**	**0.0377**	**n/a**	**8/26/2025**	**0.194**	**Yes**	**24**	**MW-53,MW-54**	**87.5**	**n/a**	**0.002696**	**NP Inter (NDs) 1 of 2**

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Exceeds Limit: MW-39R, MW-40, 04-MW-56, MW-65

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 83.33% NDs. Annual per-constituent alpha = 0.07279. Individual comparison alpha = 0.002696 (1 of 2). Comparing 4 points to limit. Assumes 10 future values.

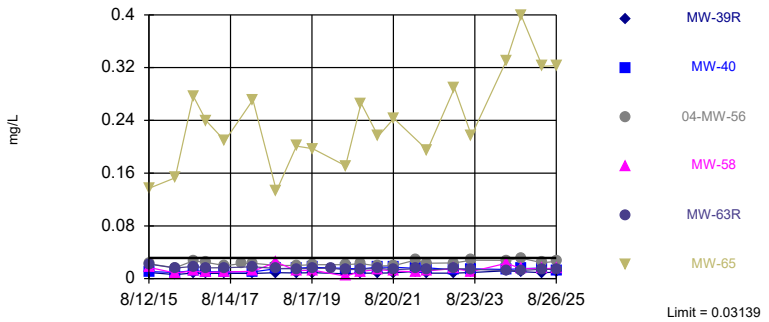
Constituent: Arsenic Analysis Run 1/29/2026 1:07 PM View: 2025 AWQR AMD PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Exceeds Limit: MW-65

Prediction Limit

Interwell Parametric



Background Data Summary (based on cube transformation): Mean=0.00001086, Std. Dev.=0.000007964, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8891, critical = 0.884. Kappa = 2.521 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.003506. Individual comparison alpha = 0.0002508. Comparing 6 points to limit. Assumes 8 future values.

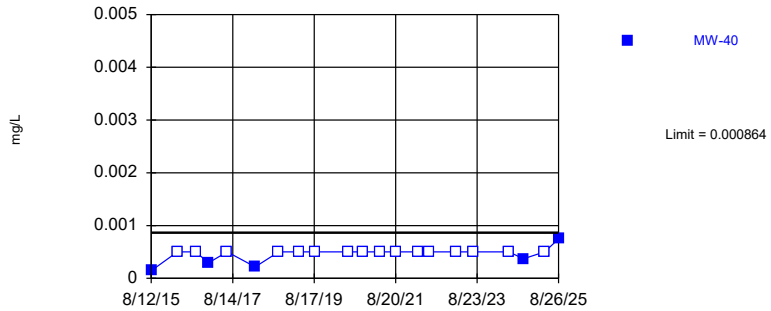
Constituent: Barium Analysis Run 1/29/2026 1:07 PM View: 2025 AWQR AMD PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 87.5% NDs. Annual per-constituent alpha = 0.07279. Individual comparison alpha = 0.002696 (1 of 2). Assumes 13 future values.

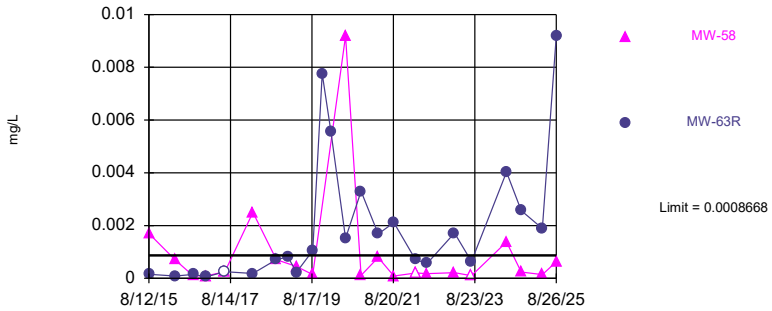
Constituent: Beryllium Analysis Run 1/29/2026 1:07 PM View: 2025 AWQR AMD PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Exceeds Limit: MW-63R

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.01273, Std. Dev.=0.006627, n=24, 41.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8941, critical = 0.884. Kappa = 2.521 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.003506. Individual comparison alpha = 0.0002508. Comparing 2 points to limit. Assumes 12 future values.

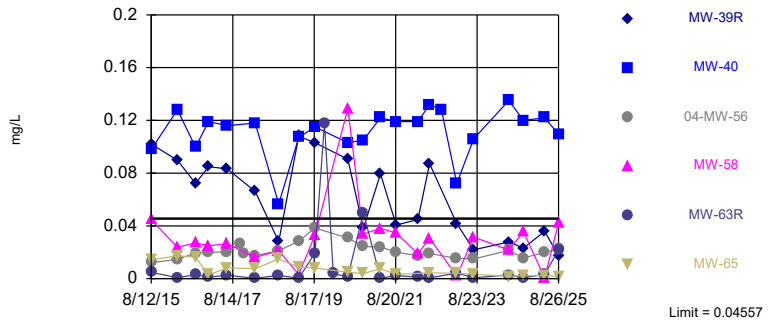
Constituent: Cadmium Analysis Run 1/29/2026 1:07 PM View: 2025 AWQR AMD PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Exceeds Limit: MW-40

Prediction Limit

Interwell Parametric



Background Data Summary (based on natural log transformation) (after Kaplan-Meier Adjustment): Mean=-7.375, Std. Dev.=1.7, n=24, 16.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.952, critical = 0.884. Kappa = 2.521 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.003506. Individual comparison alpha = 0.0002508. Comparing 6 points to limit. Assumes 8 future values.

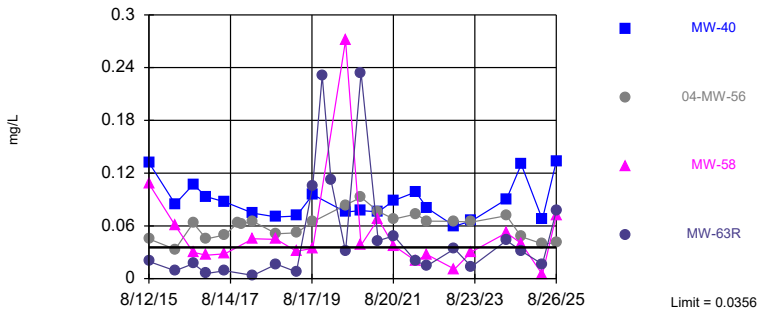
Constituent: Cobalt Analysis Run 1/29/2026 1:07 PM View: 2025 AWQR AMD PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Exceeds Limit: MW-40, 04-MW-56, MW-58, MW-63R

Prediction Limit

Interwell Parametric



Background Data Summary (based on natural log transformation) (after Kaplan-Meier Adjustment): Mean=-5.23, Std. Dev.=0.7517, n=24, 16.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9262, critical = 0.884. Kappa = 2.521 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.003506. Individual comparison alpha = 0.0002508. Comparing 4 points to limit. Assumes 10 future values.

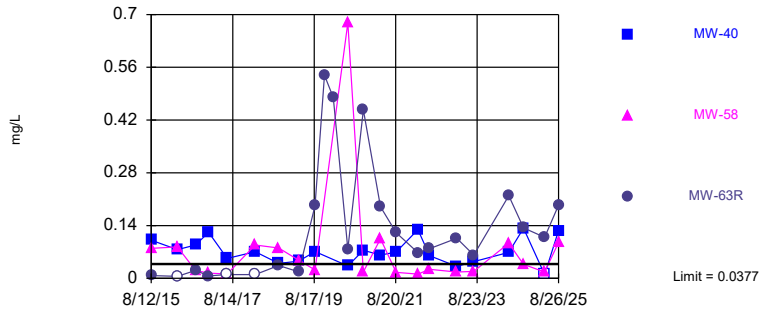
Constituent: Nickel Analysis Run 1/29/2026 1:07 PM View: 2025 AWQR AMD PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Exceeds Limit: MW-40, MW-58, MW-63R

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 87.5% NDs. Annual per-constituent alpha = 0.07279. Individual comparison alpha = 0.002696 (1 of 2). Comparing 3 points to limit. Assumes 11 future values.

Constituent: Zinc Analysis Run 1/29/2026 1:07 PM View: 2025 AWQR AMD PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Intrawell Prediction Limit Summary Table and Graphs – AMD Wells

AMD Intrawell Prediction Limit

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master Printed 2/10/2026, 11:22 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	%NDs	Transform	Alpha	Method
Antimony (mg/L)	MW-39R	0.0015	n/a	8/26/2025	0.001ND	No	12	n/a	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Antimony (mg/L)	MW-40	0.0015	n/a	8/26/2025	0.001ND	No	12	n/a	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Antimony (mg/L)	MW-58	0.002	n/a	8/26/2025	0.001ND	No	12	n/a	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	MW-39R	0.1791	n/a	8/26/2025	0.00461	No	12	n/a	0	x^(1/3)	0.0002508	Param Intra 1 of 2
Arsenic (mg/L)	MW-40	0.00912	n/a	8/26/2025	0.00458	No	12	n/a	0	No	0.0002508	Param Intra 1 of 2
Arsenic (mg/L)	04-MW-56	0.008195	n/a	8/26/2025	0.00588	No	13	n/a	0	No	0.0002508	Param Intra 1 of 2
Arsenic (mg/L)	MW-58	0.004	n/a	8/26/2025	0.00121J	No	12	n/a	83.33	n/a	0.01077	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	MW-63R	0.01	n/a	8/26/2025	0.000944J	No	13	n/a	76.92	n/a	0.009692	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	MW-65	0.03865	n/a	8/26/2025	0.0243	No	12	n/a	0	No	0.0002508	Param Intra 1 of 2
Barium (mg/L)	MW-39R	0.01096	n/a	8/26/2025	0.00968	No	12	n/a	0	No	0.0002508	Param Intra 1 of 2
Barium (mg/L)	MW-40	0.02238	n/a	8/26/2025	0.01185	No	12	n/a	0	No	0.0002508	Param Intra 1 of 2
Barium (mg/L)	04-MW-56	0.0295	n/a	8/26/2025	0.0262	No	13	n/a	0	No	0.0002508	Param Intra 1 of 2
Barium (mg/L)	MW-58	0.02799	n/a	8/26/2025	0.016	No	12	n/a	0	No	0.0002508	Param Intra 1 of 2
Barium (mg/L)	MW-63R	0.02289	n/a	8/26/2025	0.0138	No	13	n/a	0	No	0.0002508	Param Intra 1 of 2
Barium (mg/L)	MW-65	0.3614	n/a	8/26/2025	0.323	No	12	n/a	0	No	0.0002508	Param Intra 1 of 2
Beryllium (mg/L)	MW-39R	0.0005	n/a	8/26/2025	0.0005ND	No	12	n/a	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	MW-40	0.0005	n/a	8/26/2025	0.000747J	No	12	n/a	75	n/a	0.01077	NP Intra (NDs) 1 of 2
Beryllium (mg/L)	MW-58	0.0054	n/a	8/26/2025	0.0005ND	No	12	n/a	41.67	n/a	0.01077	NP Intra (normality) 1 of 2
Beryllium (mg/L)	MW-63R	0.00188	n/a	8/26/2025	0.0005ND	No	13	n/a	69.23	n/a	0.009692	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	MW-39R	0.000319	n/a	8/26/2025	0.0001ND	No	12	n/a	58.33	n/a	0.01077	NP Intra (NDs) 1 of 2
Cadmium (mg/L)	MW-40	0.003094	n/a	8/26/2025	0.0001ND	No	12	n/a	0	No	0.0002508	Param Intra 1 of 2
Cadmium (mg/L)	04-MW-56	0.0005274	n/a	8/26/2025	0.0001ND	No	13	n/a	38.46	No	0.0002508	Param Intra 1 of 2
Cadmium (mg/L)	MW-58	0.01314	n/a	8/26/2025	0.000629	No	12	n/a	8.333	x^(1/3)	0.0002508	Param Intra 1 of 2
Cadmium (mg/L)	MW-63R	0.01037	n/a	8/26/2025	0.00919	No	15	n/a	6.667	sqrt(x)	0.0002508	Param Intra 1 of 2
Cadmium (mg/L)	MW-65	0.000735	n/a	8/26/2025	0.0001ND	No	12	n/a	66.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Chromium (mg/L)	MW-39R	0.0025	n/a	8/26/2025	0.0025ND	No	12	n/a	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Chromium (mg/L)	MW-58	0.0025	n/a	8/26/2025	0.0025ND	No	12	n/a	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Chromium (mg/L)	MW-63R	0.025	n/a	8/26/2025	0.0025ND	No	13	n/a	92.31	n/a	0.009692	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	MW-39R	0.1546	n/a	8/26/2025	0.0174	No	12	n/a	0	No	0.0002508	Param Intra 1 of 2
Cobalt (mg/L)	MW-40	0.164	n/a	8/26/2025	0.1095	No	12	n/a	0	No	0.0002508	Param Intra 1 of 2
Cobalt (mg/L)	04-MW-56	0.04254	n/a	8/26/2025	0.0228	No	14	n/a	0	No	0.0002508	Param Intra 1 of 2
Cobalt (mg/L)	MW-58	0.1521	n/a	8/26/2025	0.0423	No	12	n/a	0	sqrt(x)	0.0002508	Param Intra 1 of 2
Cobalt (mg/L)	MW-63R	0.6753	n/a	8/26/2025	0.0217	No	14	n/a	0	ln(x)	0.0002508	Param Intra 1 of 2
Cobalt (mg/L)	MW-65	0.02472	n/a	8/26/2025	0.001655	No	12	n/a	0	No	0.0002508	Param Intra 1 of 2
Copper (mg/L)	MW-39R	0.0136	n/a	8/26/2025	0.0025ND	No	12	n/a	75	n/a	0.01077	NP Intra (NDs) 1 of 2
Copper (mg/L)	MW-40	0.00326	n/a	8/26/2025	0.0025ND	No	12	n/a	83.33	n/a	0.01077	NP Intra (NDs) 1 of 2
Copper (mg/L)	04-MW-56	0.01	n/a	8/26/2025	0.0025ND	No	13	n/a	84.62	n/a	0.009692	NP Intra (NDs) 1 of 2
Copper (mg/L)	MW-58	0.01	n/a	8/26/2025	0.0025ND	No	12	n/a	66.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Copper (mg/L)	MW-63R	0.025	n/a	8/26/2025	0.00339J	No	13	n/a	76.92	n/a	0.009692	NP Intra (NDs) 1 of 2
Copper (mg/L)	MW-65	0.0025	n/a	8/26/2025	0.0025ND	No	12	n/a	83.33	n/a	0.01077	NP Intra (NDs) 1 of 2
Lead (mg/L)	MW-39R	0.00362	n/a	8/26/2025	0.00025ND	No	12	n/a	66.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Lead (mg/L)	MW-40	0.0021	n/a	8/26/2025	0.00025ND	No	12	n/a	66.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Lead (mg/L)	04-MW-56	0.001	n/a	8/26/2025	0.00025ND	No	13	n/a	53.85	n/a	0.009692	NP Intra (NDs) 1 of 2
Lead (mg/L)	MW-58	0.00335	n/a	8/26/2025	0.00025ND	No	12	n/a	41.67	n/a	0.01077	NP Intra (normality) 1 of 2
Lead (mg/L)	MW-63R	0.00528	n/a	8/26/2025	0.00025ND	No	14	n/a	57.14	n/a	0.008612	NP Intra (NDs) 1 of 2
Lead (mg/L)	MW-65	0.00211	n/a	8/26/2025	0.00025ND	No	12	n/a	58.33	n/a	0.01077	NP Intra (NDs) 1 of 2
Nickel (mg/L)	MW-39R	0.07721	n/a	8/26/2025	0.00488J	No	12	n/a	0	No	0.0002508	Param Intra 1 of 2
Nickel (mg/L)	MW-40	0.1424	n/a	8/26/2025	0.1335	No	12	n/a	0	No	0.0002508	Param Intra 1 of 2
Nickel (mg/L)	04-MW-56	0.1075	n/a	8/26/2025	0.0407	No	14	n/a	0	No	0.0002508	Param Intra 1 of 2
Nickel (mg/L)	MW-58	0.3946	n/a	8/26/2025	0.0718	No	12	n/a	0	ln(x)	0.0002508	Param Intra 1 of 2

AMD Intrawell Prediction Limit

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master Printed 2/10/2026, 11:22 AM

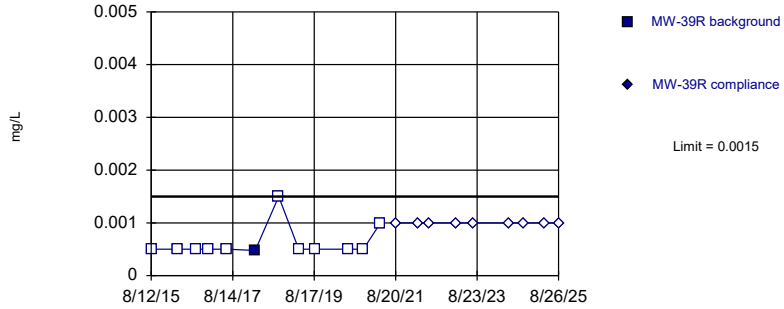
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	%NDs	Transform	Alpha	Method
Nickel (mg/L)	MW-63R	0.4863	n/a	8/26/2025	0.0769	No	14	n/a	0	x^(1/3)	0.0002508	Param Intra 1 of 2
Nickel (mg/L)	MW-65	0.02329	n/a	8/26/2025	0.0034J	No	12	n/a	0	No	0.0002508	Param Intra 1 of 2
Selenium (mg/L)	MW-39R	0.0025	n/a	8/26/2025	0.0025ND	No	12	n/a	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Selenium (mg/L)	MW-40	0.0025	n/a	8/26/2025	0.0025ND	No	12	n/a	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Selenium (mg/L)	MW-58	0.01	n/a	8/26/2025	0.0025ND	No	12	n/a	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Selenium (mg/L)	MW-63R	0.025	n/a	8/26/2025	0.0025ND	No	13	n/a	84.62	n/a	0.009692	NP Intra (NDs) 1 of 2
Silver (mg/L)	MW-39R	0.0005	n/a	8/26/2025	0.0005ND	No	12	n/a	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Silver (mg/L)	MW-58	0.0005	n/a	8/26/2025	0.0005ND	No	12	n/a	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Silver (mg/L)	MW-63R	0.005	n/a	8/26/2025	0.0005ND	No	13	n/a	92.31	n/a	0.009692	NP Intra (NDs) 1 of 2
Thallium (mg/L)	MW-39R	0.001	n/a	8/26/2025	0.0005ND	No	12	n/a	66.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Thallium (mg/L)	MW-40	0.0006159	n/a	8/26/2025	0.0005ND	No	12	n/a	41.67	No	0.0002508	Param Intra 1 of 2
Thallium (mg/L)	MW-58	0.001	n/a	8/26/2025	0.0005ND	No	12	n/a	75	n/a	0.01077	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	MW-39R	0.0025	n/a	8/26/2025	0.0025ND	No	12	n/a	91.67	n/a	0.01077	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	MW-40	0.0025	n/a	8/26/2025	0.0025ND	No	12	n/a	83.33	n/a	0.01077	NP Intra (NDs) 1 of 2
Vanadium (mg/L)	MW-63R	0.025	n/a	8/26/2025	0.0025ND	No	13	n/a	92.31	n/a	0.009692	NP Intra (NDs) 1 of 2
Zinc (mg/L)	MW-39R	0.0644	n/a	8/26/2025	0.01ND	No	12	n/a	75	n/a	0.01077	NP Intra (NDs) 1 of 2
Zinc (mg/L)	MW-40	0.1489	n/a	8/26/2025	0.1265	No	12	n/a	0	No	0.0002508	Param Intra 1 of 2
Zinc (mg/L)	04-MW-56	0.05628	n/a	8/26/2025	0.0176J	No	14	n/a	14.29	No	0.0002508	Param Intra 1 of 2
Zinc (mg/L)	MW-58	1.716	n/a	8/26/2025	0.0953	No	12	n/a	0	ln(x)	0.0002508	Param Intra 1 of 2
Zinc (mg/L)	MW-63R	1.309	n/a	8/26/2025	0.194	No	14	n/a	21.43	x^(1/3)	0.0002508	Param Intra 1 of 2
Zinc (mg/L)	MW-65	0.0327	n/a	8/26/2025	0.01ND	No	12	n/a	83.33	n/a	0.01077	NP Intra (NDs) 1 of 2

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

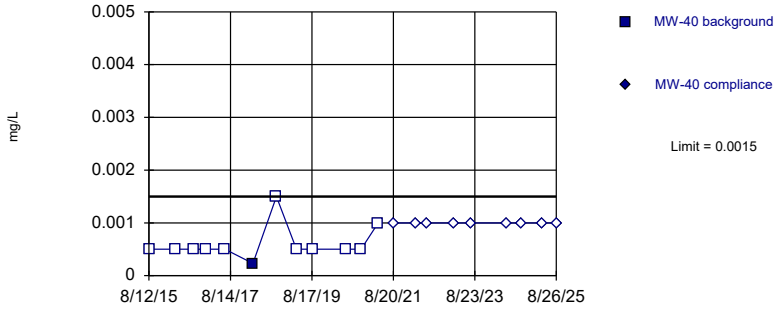
Constituent: Antimony Analysis Run 2/10/2026 11:19 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

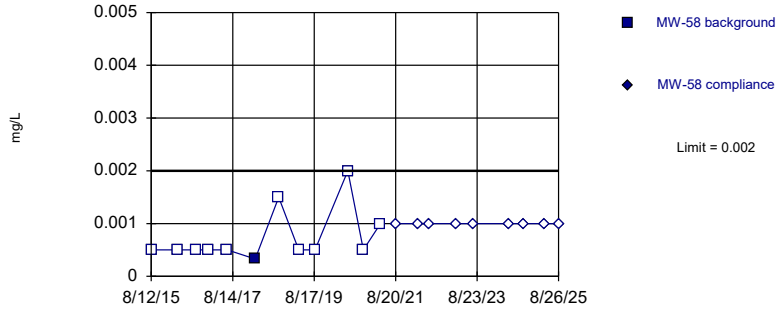
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

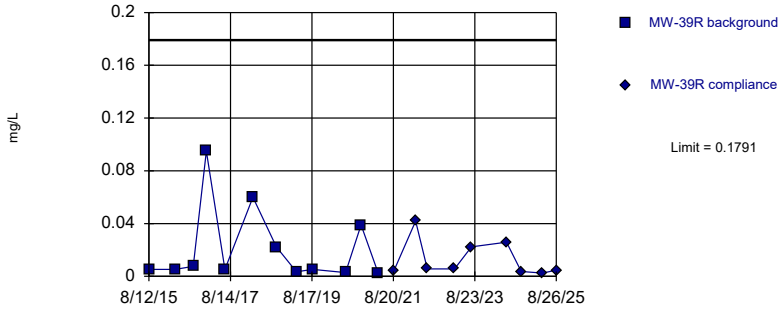
Constituent: Antimony Analysis Run 2/10/2026 11:19 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube root transformation): Mean=0.2322, Std. Dev.=0.108, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8078, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

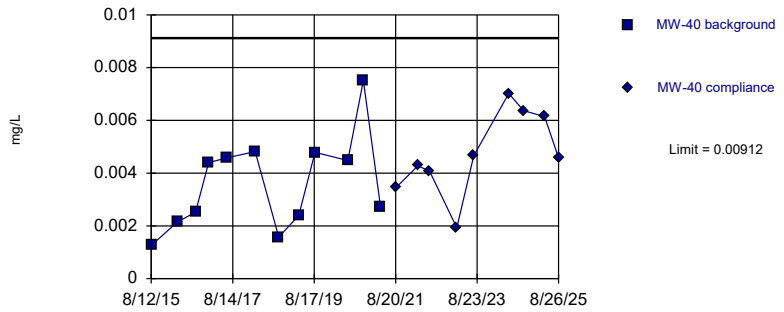
Constituent: Antimony Analysis Run 2/10/2026 11:19 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Constituent: Arsenic Analysis Run 2/10/2026 11:19 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.003601, Std. Dev.=0.001799, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9115, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

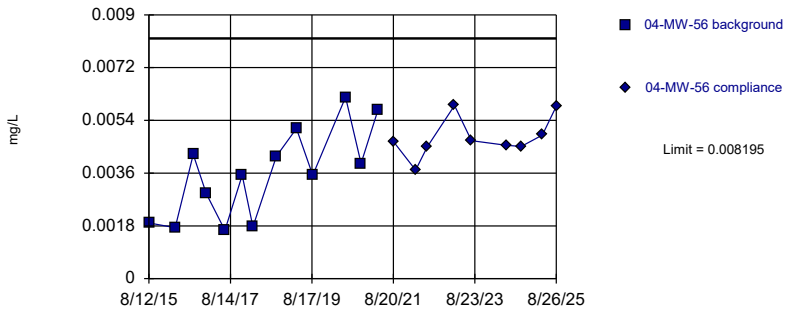
Constituent: Arsenic Analysis Run 2/10/2026 11:19 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.003573, Std. Dev.=0.001544, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9254, critical = 0.814. Kappa = 2.994 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

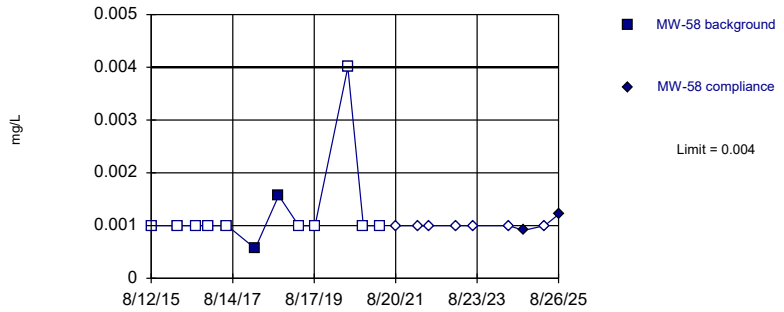
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

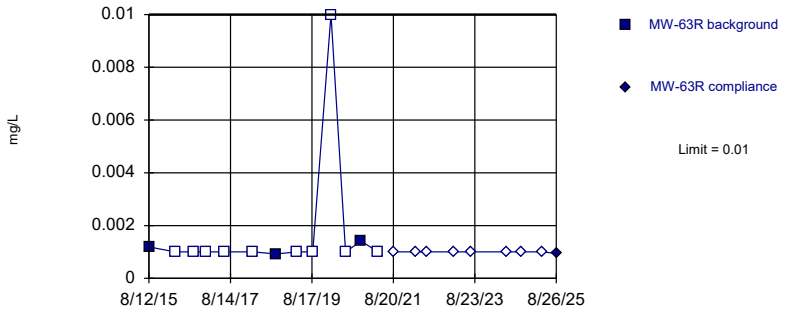
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 76.92% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

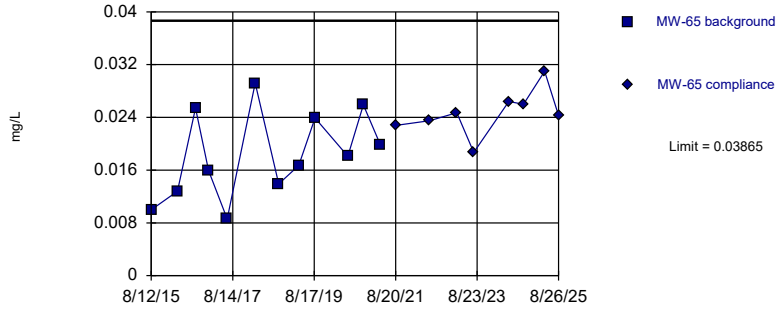
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.01835, Std. Dev.=0.00662, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9608, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

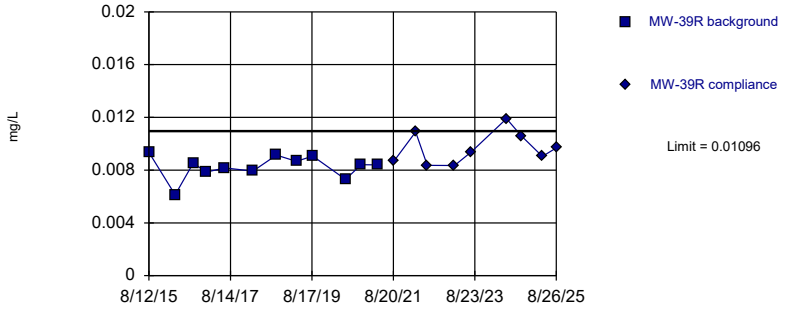
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.008242, Std. Dev.=0.0008849, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9139, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

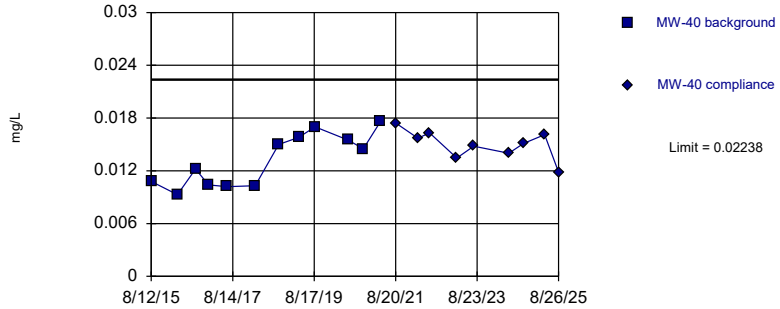
Constituent: Barium Analysis Run 2/10/2026 11:19 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.01322, Std. Dev.=0.002986, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8947, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

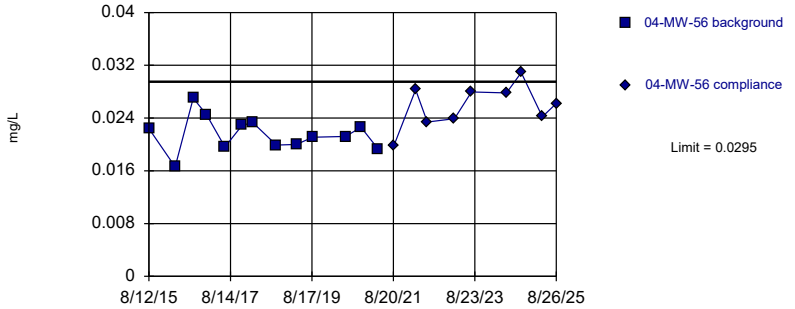
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.02157, Std. Dev.=0.002649, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9788, critical = 0.814. Kappa = 2.994 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

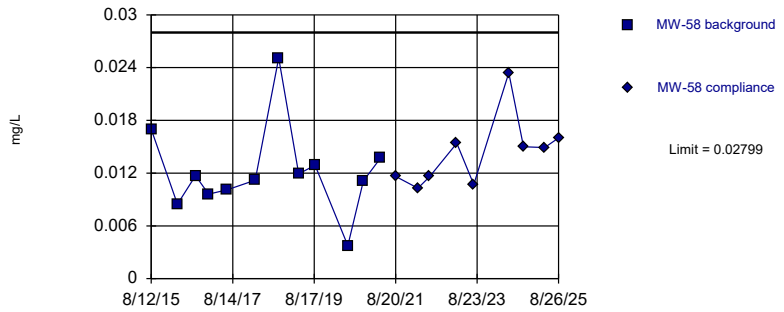
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.01221, Std. Dev.=0.005143, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.881, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

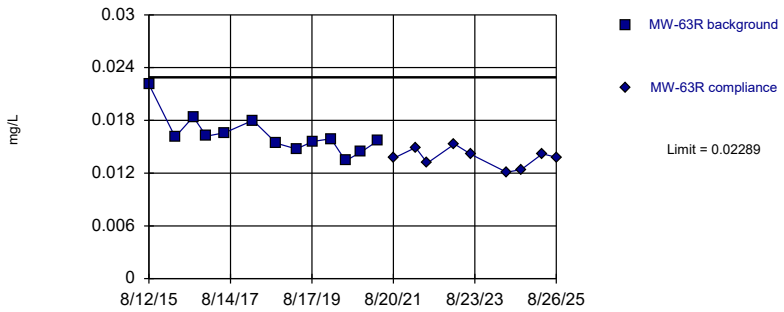
Constituent: Barium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.01635, Std. Dev.=0.002185, n=13. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8721, critical = 0.814. Kappa = 2.994 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

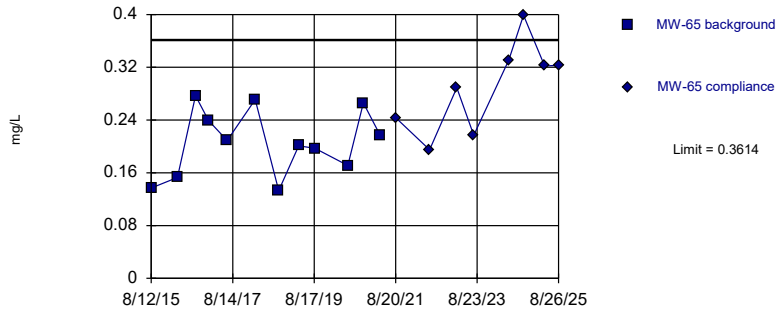
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.2058, Std. Dev.=0.05072, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9355, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

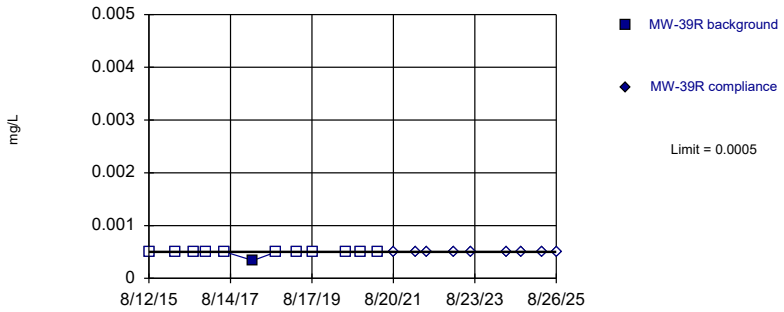
Constituent: Barium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

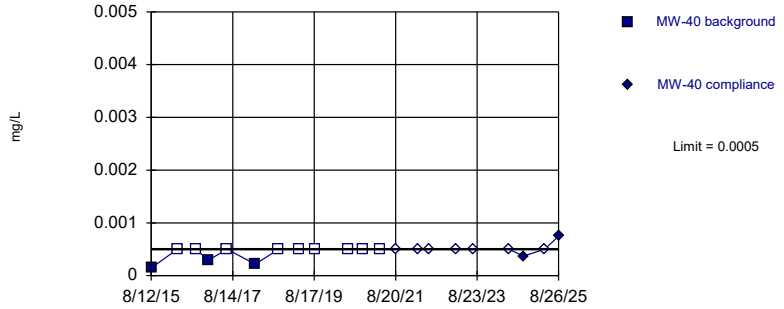
Constituent: Beryllium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 75% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

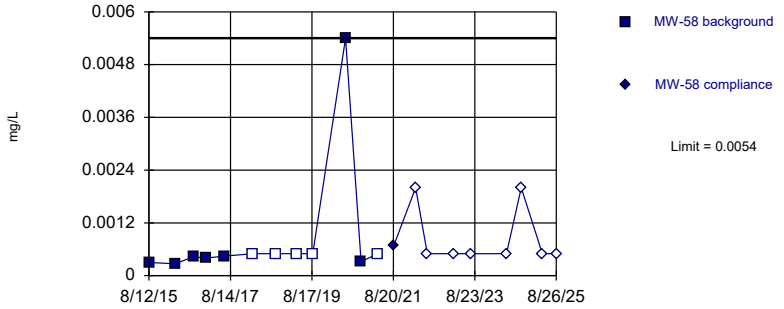
Constituent: Beryllium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. 41.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

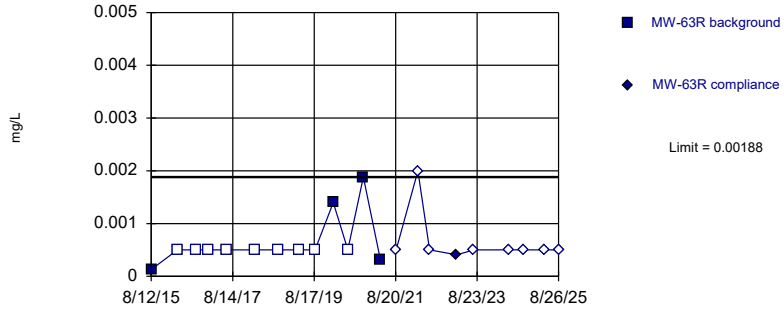
Constituent: Beryllium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 69.23% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

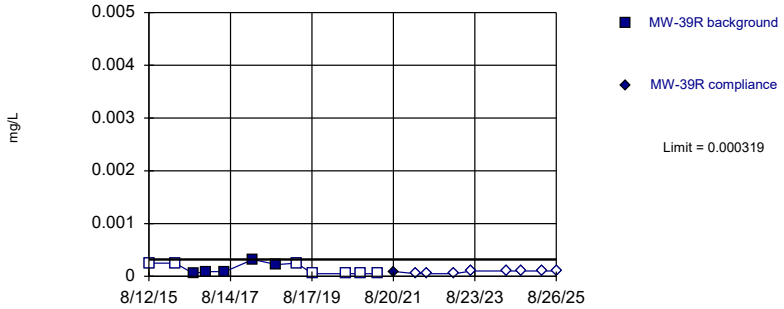
Constituent: Beryllium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 58.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

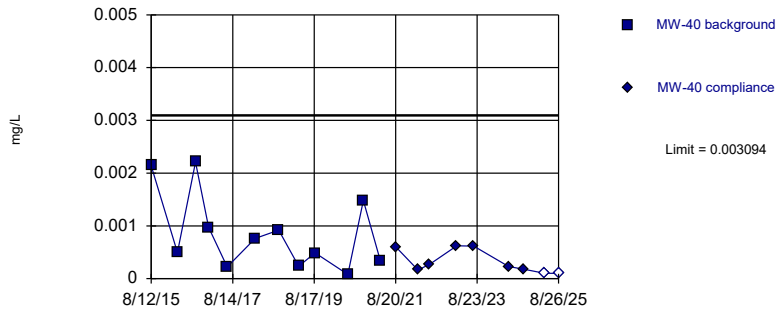
Constituent: Cadmium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.0008613, Std. Dev.=0.0007278, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8651, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

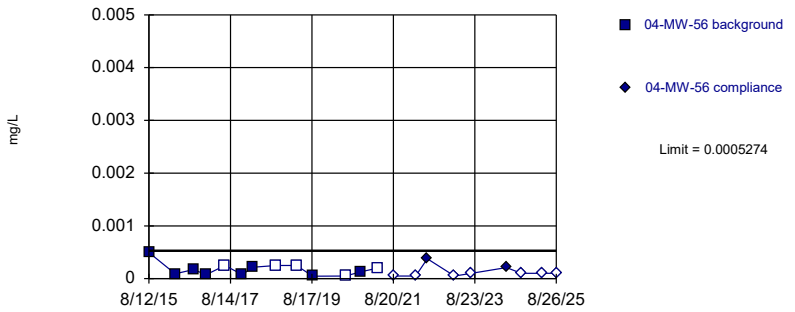
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.0001493, Std. Dev.=0.0001263, n=13, 38.46% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8604, critical = 0.814. Kappa = 2.994 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

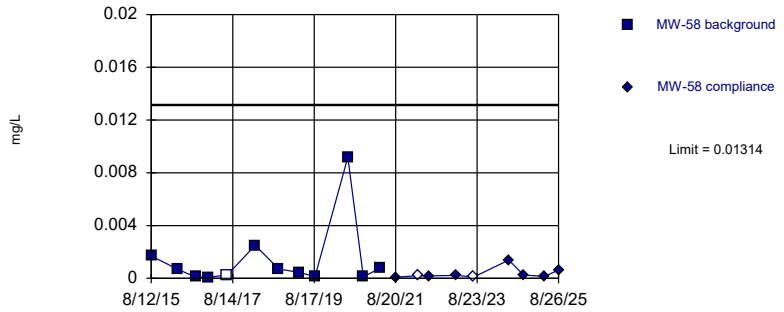
Constituent: Cadmium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube root transformation): Mean=0.08872, Std. Dev.=0.04801, n=12, 8.333% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8416, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

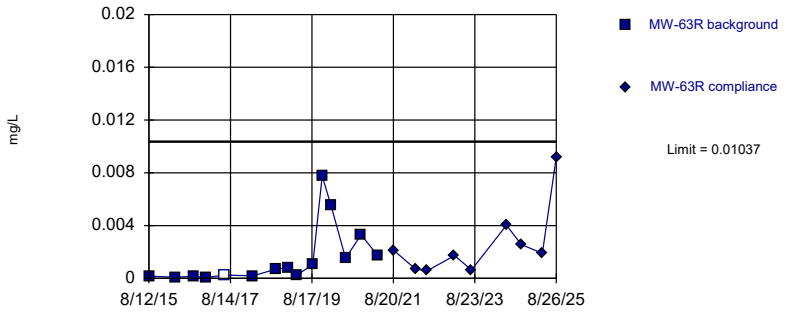
Constituent: Cadmium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=0.03157, Std. Dev.=0.02468, n=15, 6.667% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8489, critical = 0.835. Kappa = 2.846 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

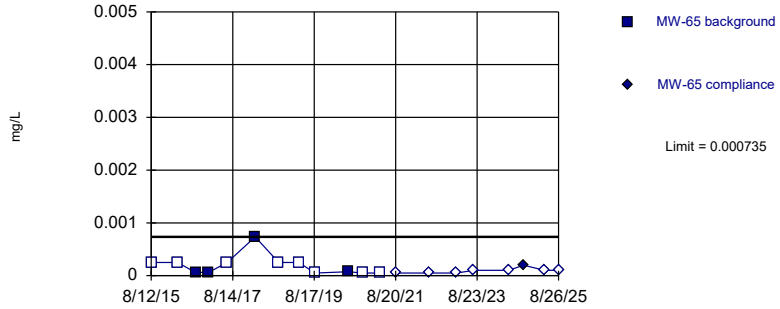
Constituent: Cadmium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 66.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

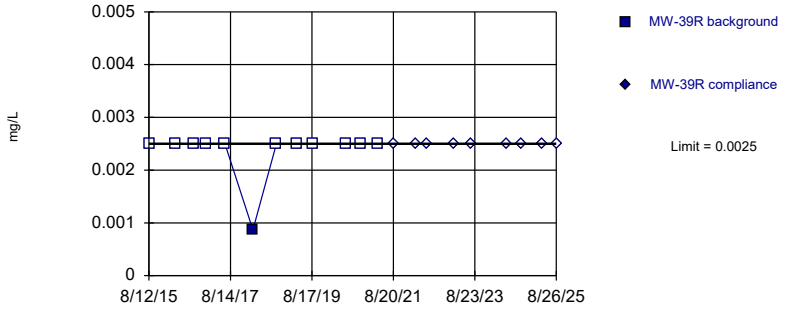
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

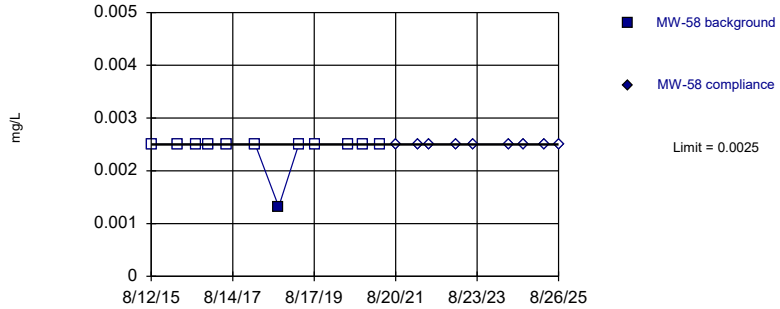
Constituent: Chromium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

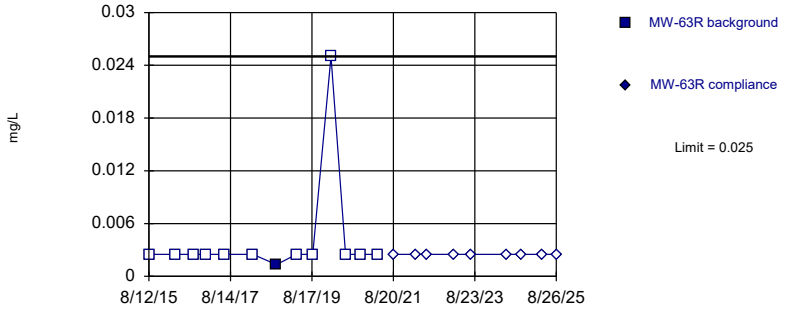
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 92.31% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

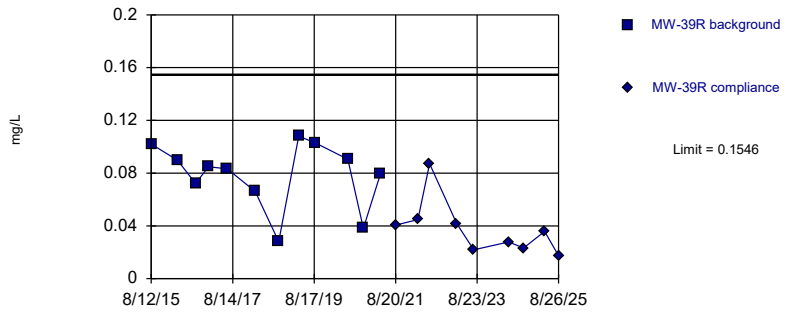
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.0788, Std. Dev.=0.02471, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8968, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

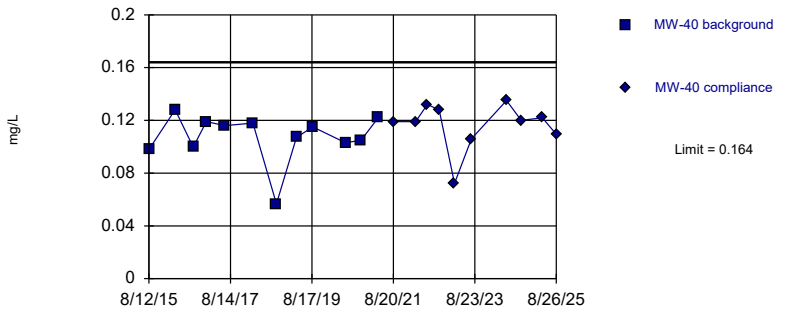
Constituent: Cobalt Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.1073, Std. Dev.=0.01849, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8102, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

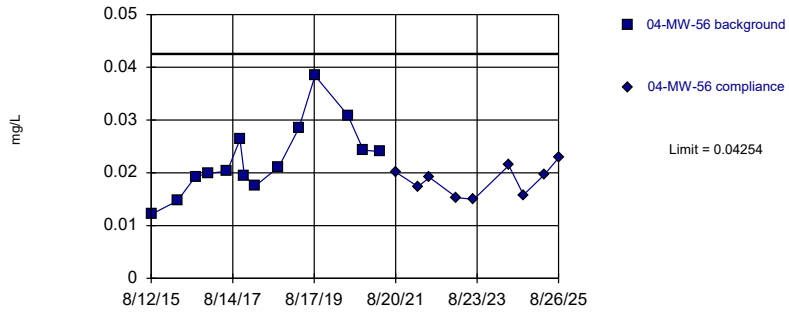
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.02261, Std. Dev.=0.006824, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9557, critical = 0.825. Kappa = 2.92 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

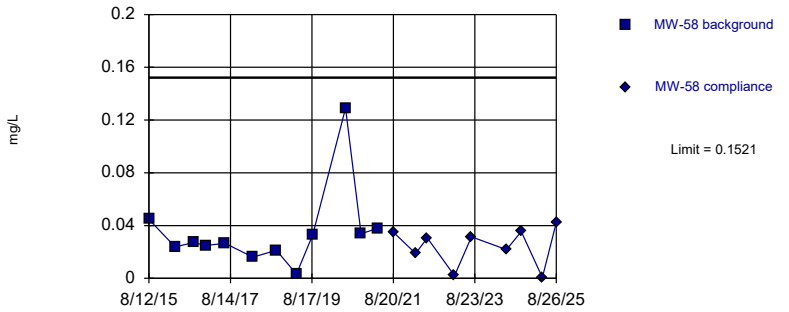
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Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on square root transformation): Mean=0.1749, Std. Dev.=0.07013, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.836, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

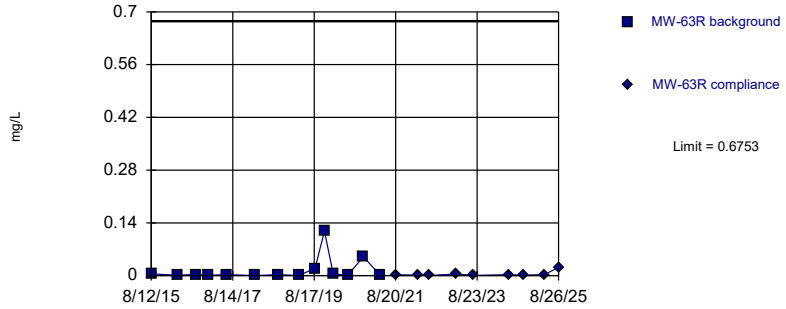
Constituent: Cobalt Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on natural log transformation): Mean=-5.947, Std. Dev.=1.902, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9406, critical = 0.825. Kappa = 2.92 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

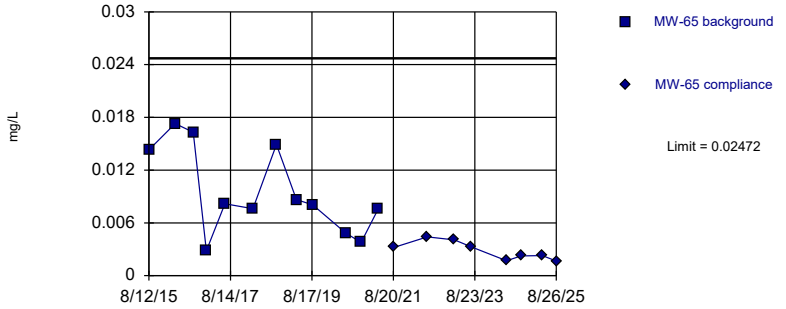
Constituent: Cobalt Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.009528, Std. Dev.=0.004953, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9029, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

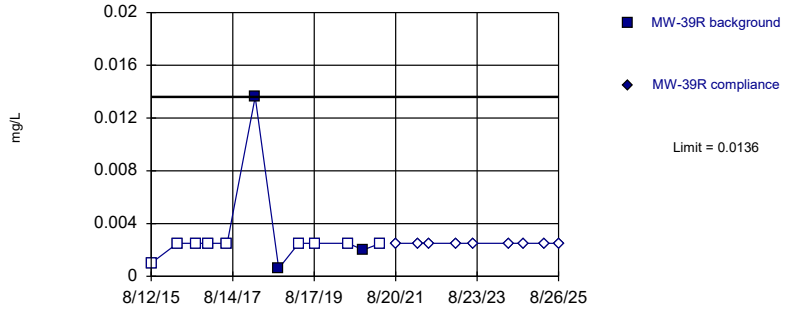
Constituent: Cobalt Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 75% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

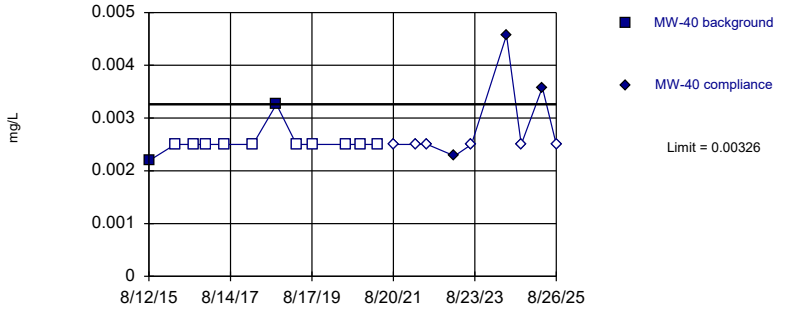
Constituent: Copper Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

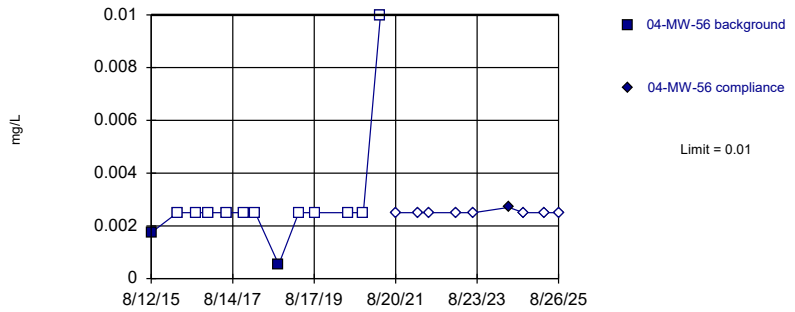
Constituent: Copper Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 84.62% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

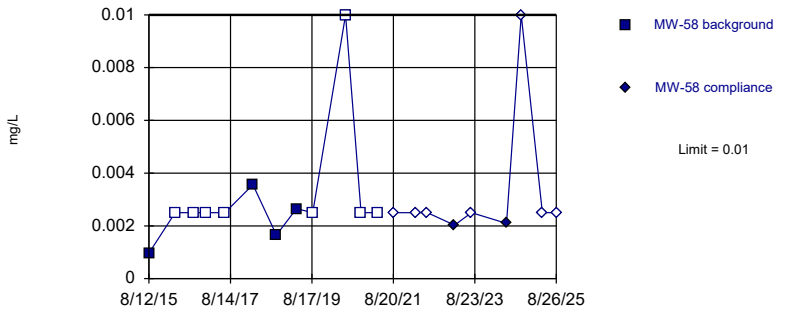
Constituent: Copper Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 66.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

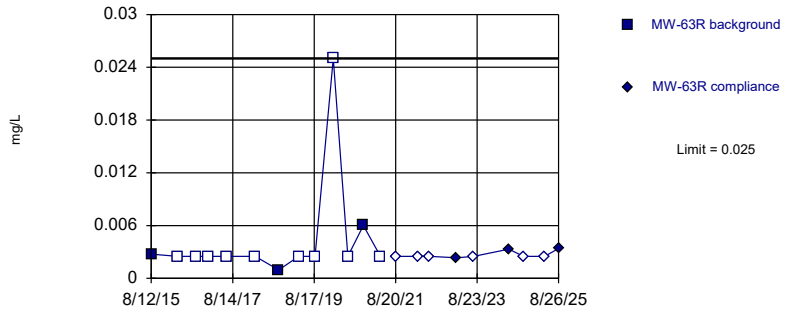
Constituent: Copper Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 76.92% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

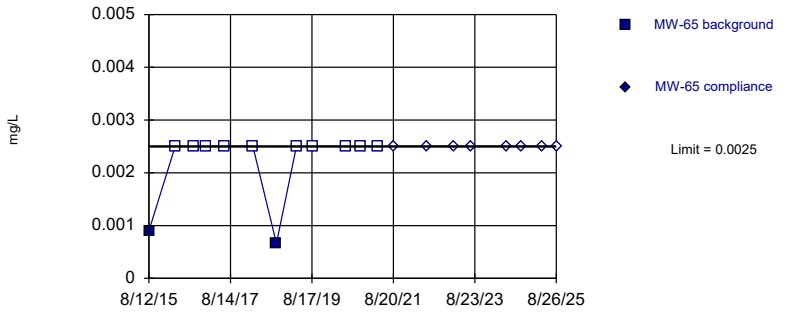
Constituent: Copper Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

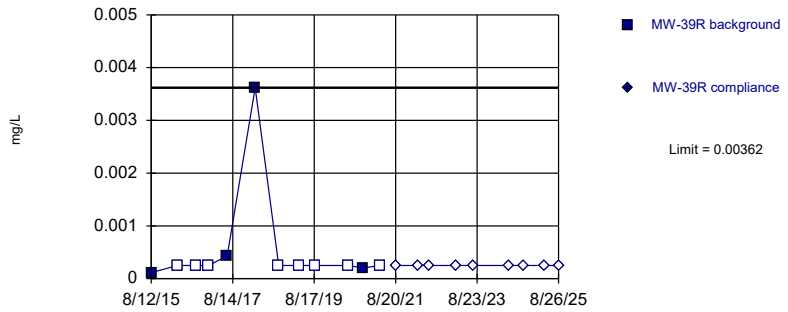
Constituent: Copper Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 66.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

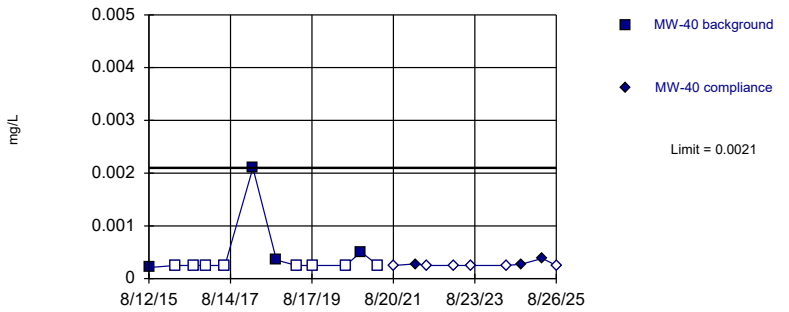
Constituent: Lead Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 66.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

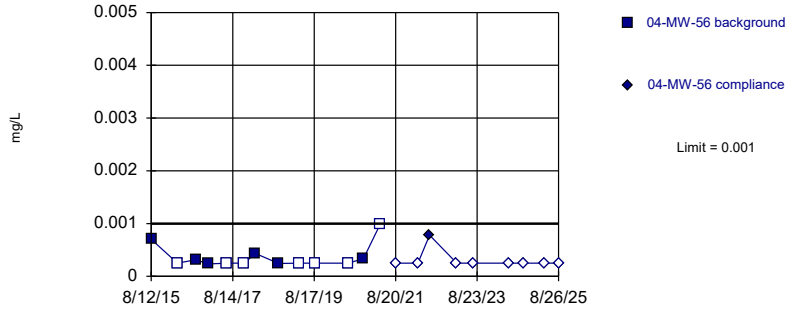
Constituent: Lead Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 53.85% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

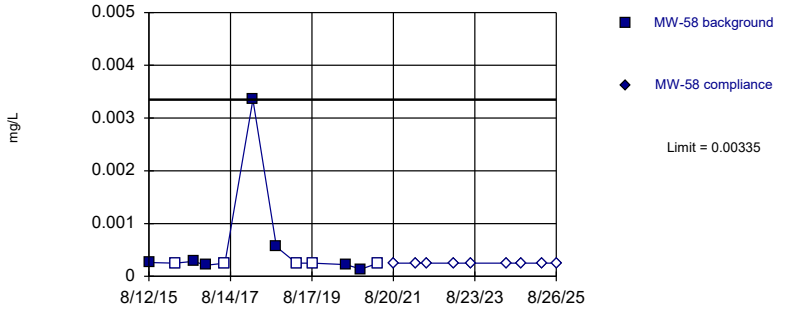
Constituent: Lead Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.01 alpha level. Limit is highest of 12 background values. 41.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

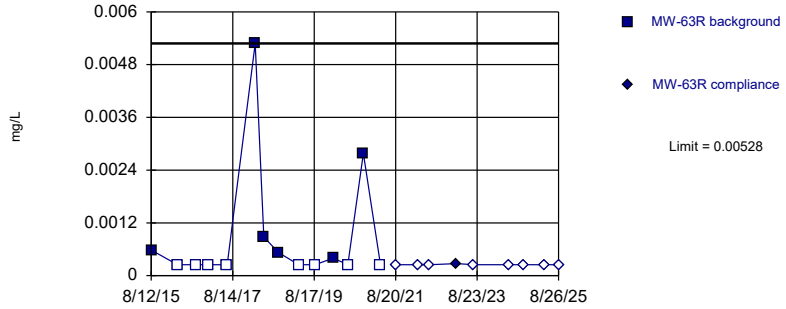
Constituent: Lead Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 14 background values. 57.14% NDs. Well-constituent pair annual alpha = 0.01715. Individual comparison alpha = 0.008612 (1 of 2).

Constituent: Lead Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL

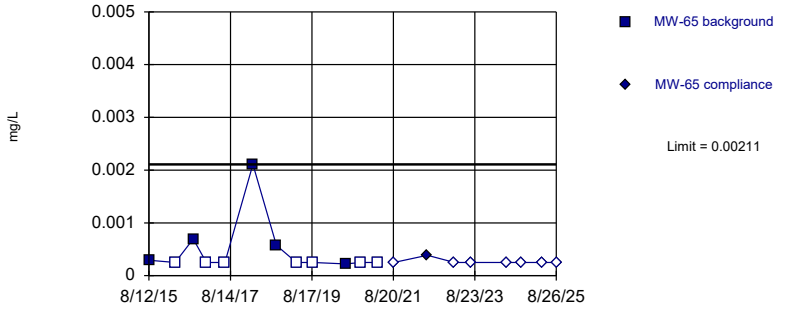
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 58.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Lead Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL

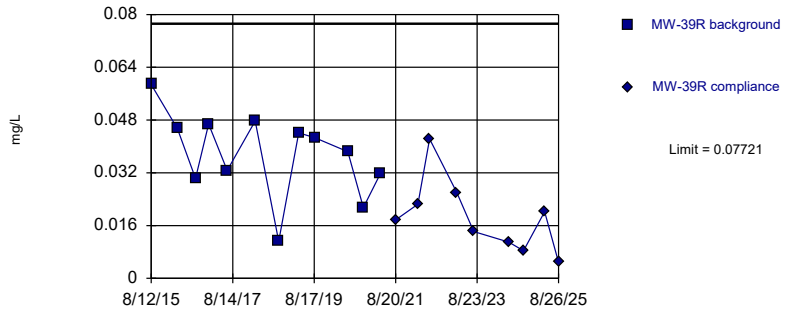
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.0376, Std. Dev.=0.01291, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9619, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Nickel Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL

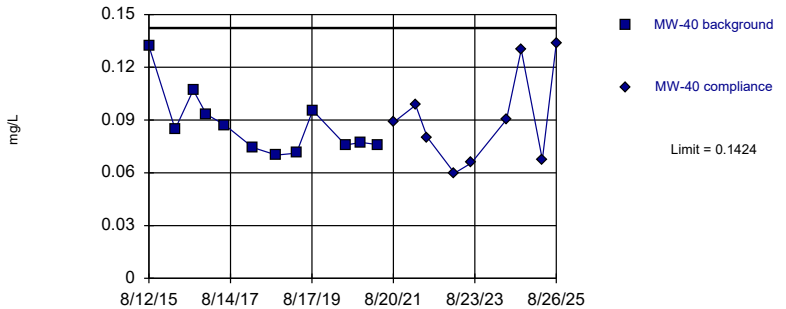
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.08705, Std. Dev.=0.01803, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8391, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Nickel Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL

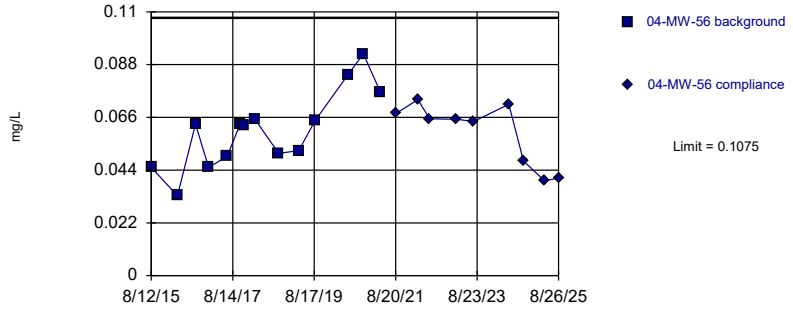
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.06055, Std. Dev.=0.01608, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.962, critical = 0.825. Kappa = 2.92 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Nickel Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL

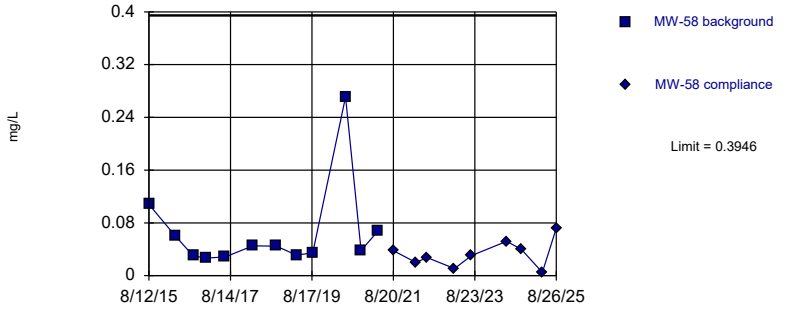
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on natural log transformation): Mean=-3.003, Std. Dev.=0.6758, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8309, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Nickel Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL

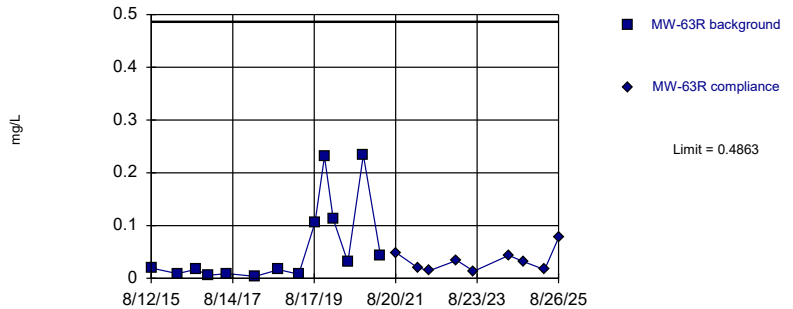
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube root transformation): Mean=0.327, Std. Dev.=0.1573, n=14. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8596, critical = 0.825. Kappa = 2.92 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Nickel Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

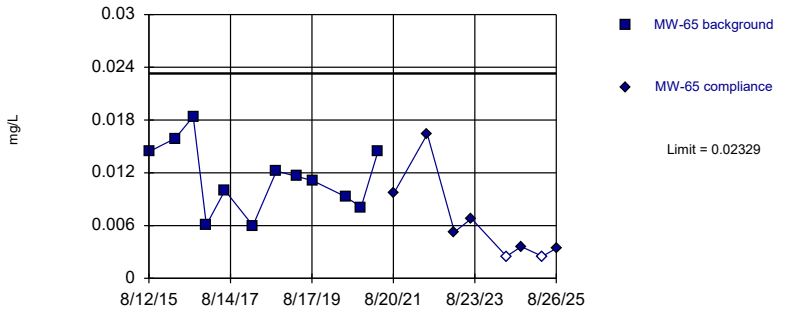
Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.01146, Std. Dev.=0.003858, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9696, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Nickel Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL

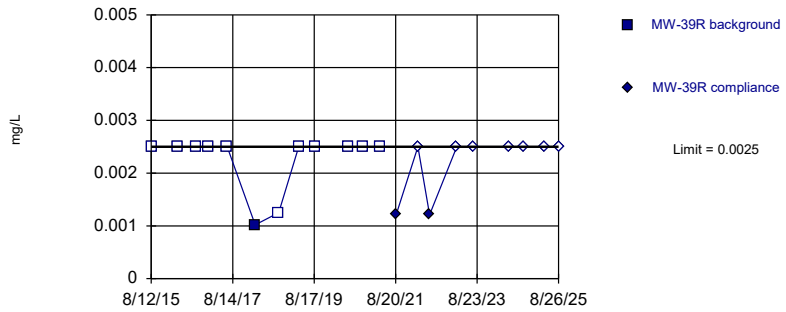
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

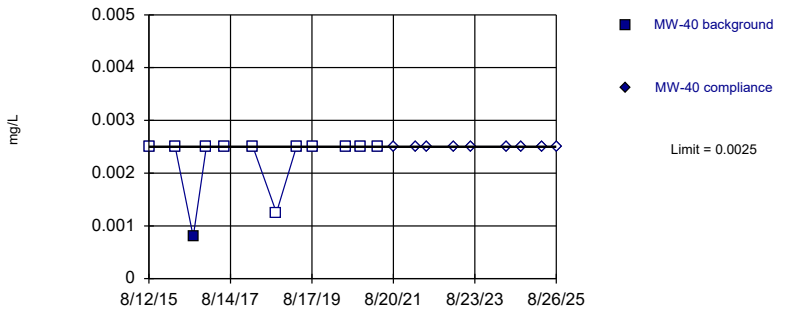
Constituent: Selenium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

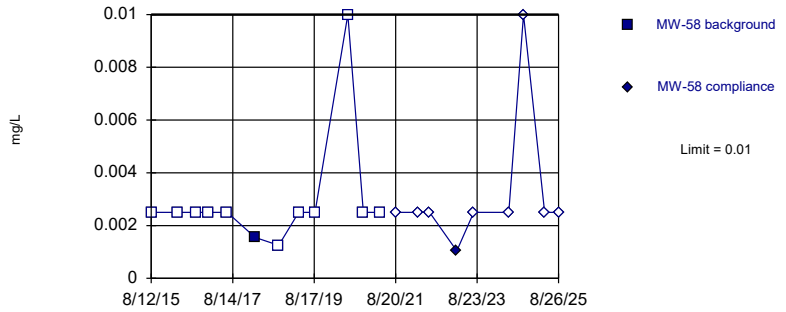
Constituent: Selenium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

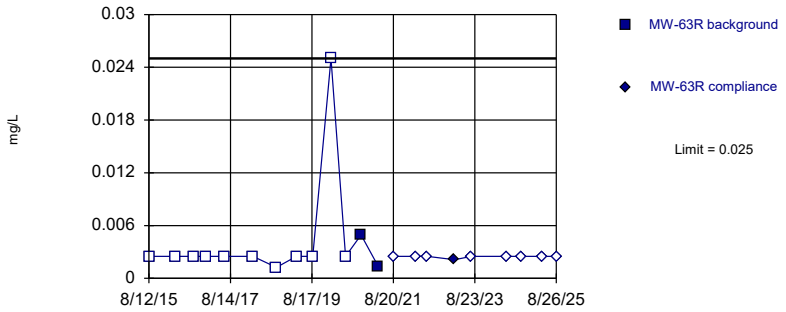
Constituent: Selenium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 84.62% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

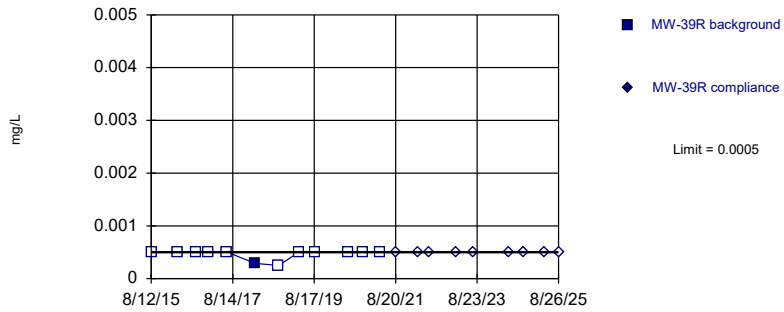
Constituent: Selenium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

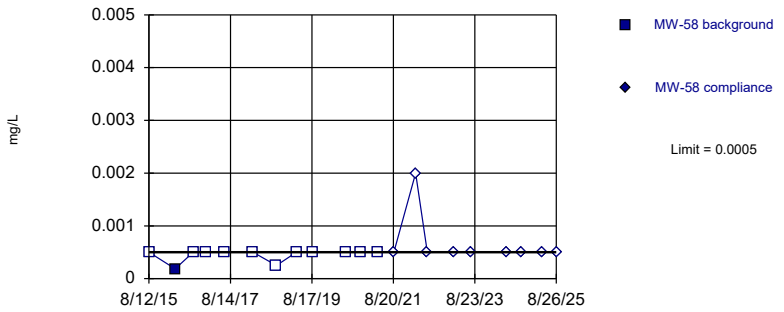
Constituent: Silver Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

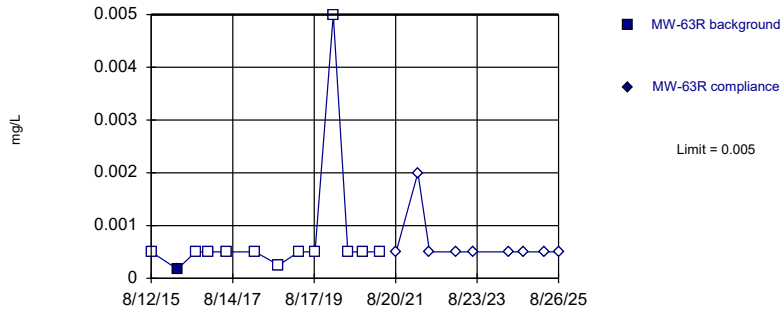
Constituent: Silver Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 92.31% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

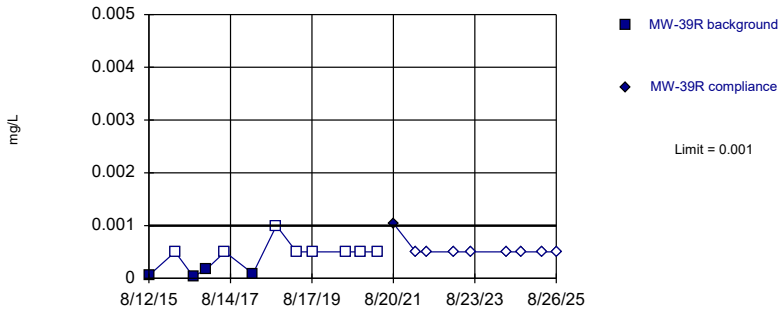
Constituent: Silver Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 66.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

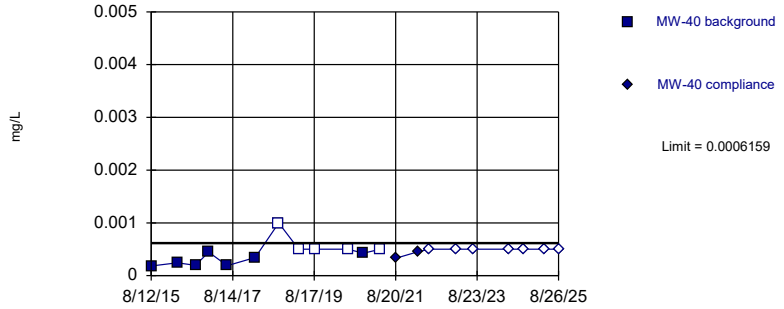
Constituent: Thallium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (after Kaplan-Meier Adjustment): Mean=0.0002893, Std. Dev.=0.0001065, n=12, 41.67% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8212, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

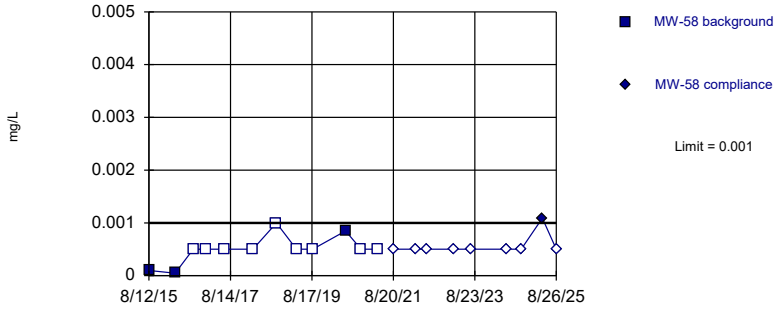
Constituent: Thallium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 75% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

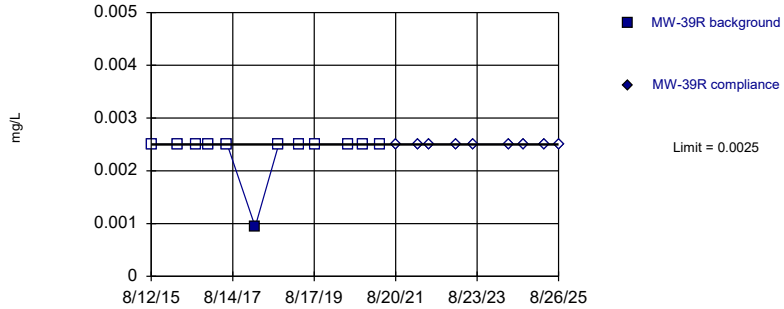
Constituent: Thallium Analysis Run 2/10/2026 11:20 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 91.67% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

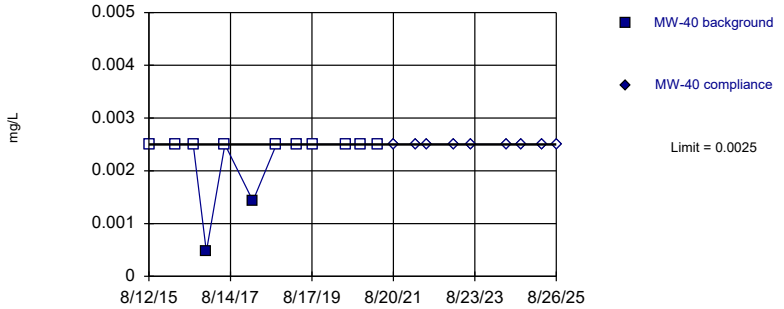
Constituent: Vanadium Analysis Run 2/10/2026 11:21 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

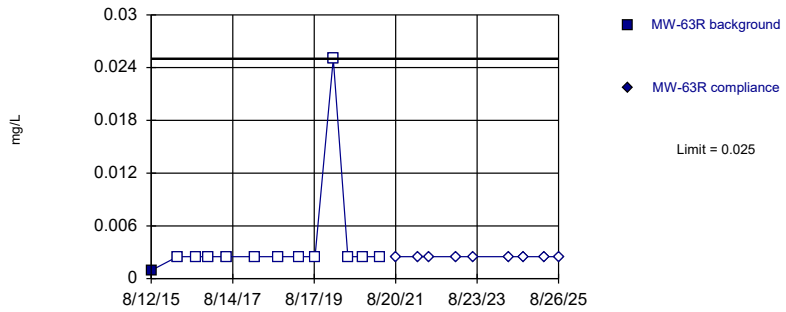
Constituent: Vanadium Analysis Run 2/10/2026 11:21 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 13 background values. 92.31% NDs. Well-constituent pair annual alpha = 0.01929. Individual comparison alpha = 0.009692 (1 of 2).

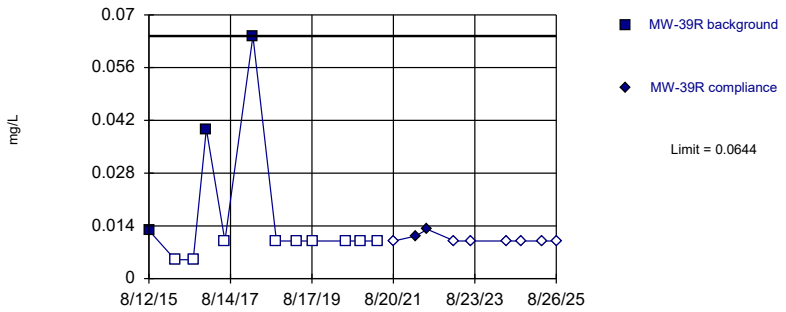
Constituent: Vanadium Analysis Run 2/10/2026 11:21 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 75% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

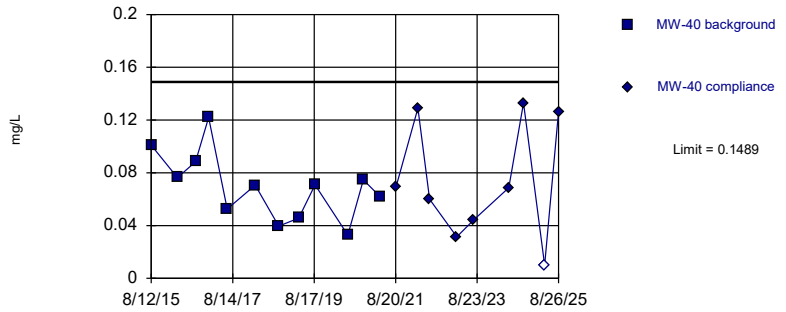
Constituent: Zinc Analysis Run 2/10/2026 11:21 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.06968, Std. Dev.=0.02582, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9673, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

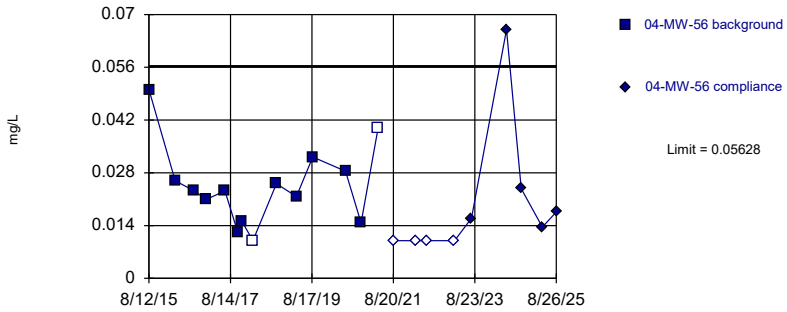
Constituent: Zinc Analysis Run 2/10/2026 11:21 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary: Mean=0.02449, Std. Dev.=0.01089, n=14, 14.29% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.9285, critical = 0.825. Kappa = 2.92 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

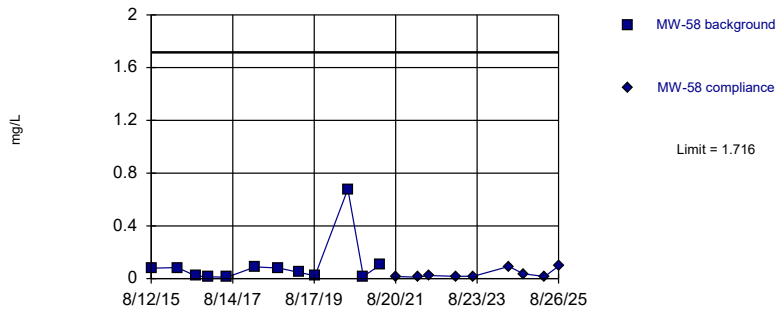
Constituent: Zinc Analysis Run 2/10/2026 11:21 AM View: 2025 AWQR AMD Intrawell PL
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

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Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on natural log transformation): Mean=-3.01, Std. Dev.=1.157, n=12. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8998, critical = 0.805. Kappa = 3.068 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Zinc Analysis Run 2/10/2026 11:21 AM View: 2025 AWQR AMD Intrawell PL

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

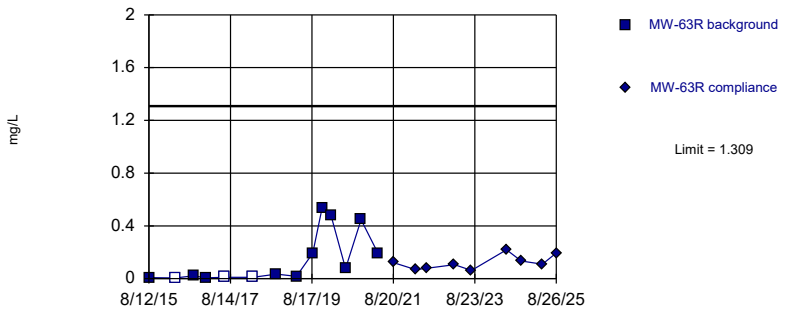
Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Parametric



Background Data Summary (based on cube root transformation) (after Kaplan-Meier Adjustment): Mean=0.4131, Std. Dev.=0.2331, n=14, 21.43% NDs. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8389, critical = 0.825. Kappa = 2.92 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.0002508.

Constituent: Zinc Analysis Run 2/10/2026 11:21 AM View: 2025 AWQR AMD Intrawell PL

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

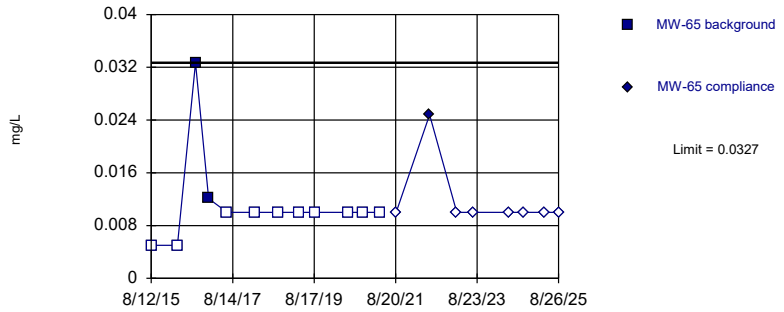
Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Hollow symbols indicate censored values.

Within Limit

Prediction Limit

Intrawell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 12 background values. 83.33% NDs. Well-constituent pair annual alpha = 0.02143. Individual comparison alpha = 0.01077 (1 of 2).

Constituent: Zinc Analysis Run 2/10/2026 11:21 AM View: 2025 AWQR AMD Intrawell PL

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

Interwell Prediction Limit Summary Table and Graphs – Detection & Assessment Monitoring Wells

AM Interwell Prediction Limit

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master Printed 1/29/2026, 1:55 PM

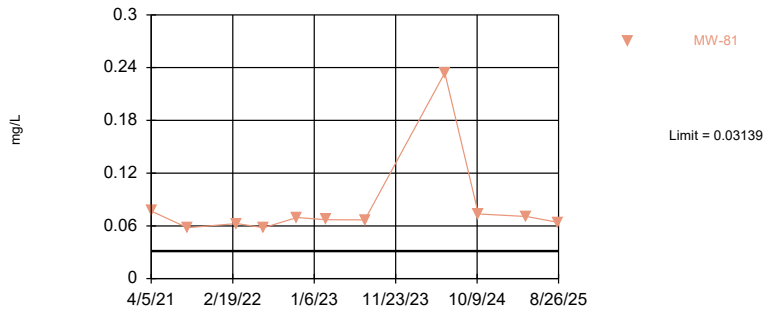
Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	%NDs	Transform	Alpha	Method
Barium (mg/L)	**MW-81**	**0.03139**	**n/a**	**8/26/2025**	**0.0639**	**Yes**	**24**	**MW-53,MW-54**	**0**	**x^3**	**0.0002508**	**Param Inter 1 of 2**

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Exceeds Limit: MW-81

Prediction Limit

Interwell Parametric



Background Data Summary (based on cube transformation): Mean=0.00001086, Std. Dev.=0.000007964, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8891, critical = 0.884. Kappa = 2.521 (c=15, w=14, 1 of 2, event alpha = 0.05132). Report alpha = 0.003506. Individual comparison alpha = 0.0002508. Assumes 13 future values.

Constituent: Barium Analysis Run 1/29/2026 1:51 PM View: 2025 AWQR DM_AM InterwellPL

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC Sanitas Master

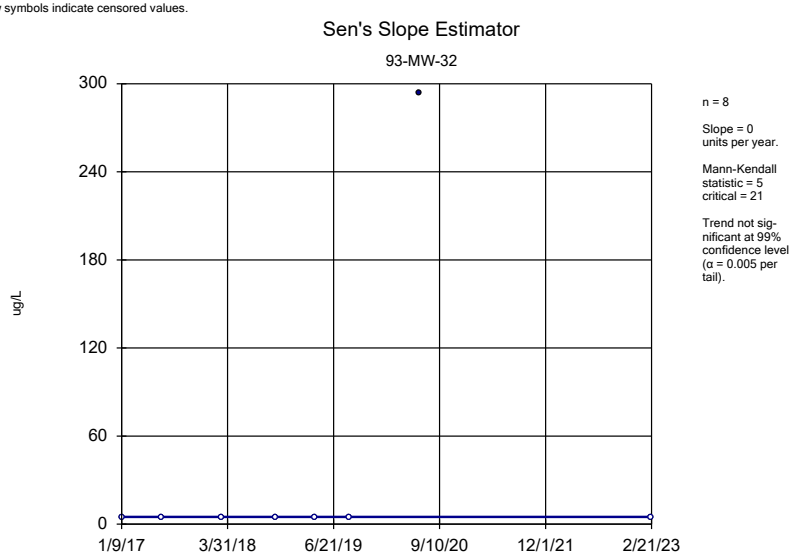
Mann-Kendall/Sen's Slope Trend Test Summary Table and Graphs – Assessment Monitoring Wells

AM Wells Trend Test

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR Printed 1/30/2026, 8:41 AM

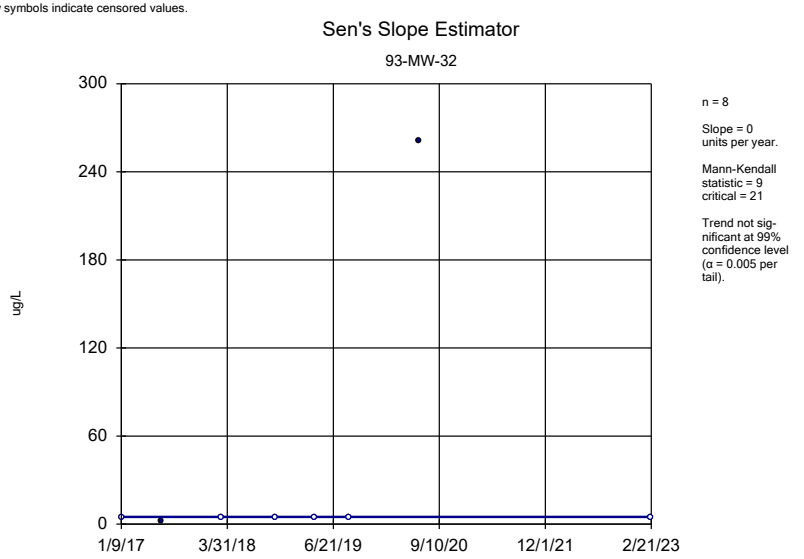
Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Alpha	Method
2-Butanone (ug/L)	93-MW-32	0	5	21	No	8	87.5	0.01	NP
Acetone (ug/L)	93-MW-32	0	9	21	No	8	75	0.01	NP
Antimony (mg/L)	93-MW-32	0	11	21	No	8	87.5	0.01	NP
Arsenic (mg/L)	93-MW-32	0.0002075	3	21	No	8	25	0.01	NP
Barium (mg/L)	93-MW-32	-0.0009478	-2	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-62	-0.001463	-10	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-81	0.001774	4	21	No	8	0	0.01	NP
Cadmium (mg/L)	93-MW-32	0.00009279	8	21	No	8	0	0.01	NP
Cadmium (mg/L)	MW-81	0.00003627	8	21	No	8	12.5	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-81	0.07748	6	21	No	8	0	0.01	NP
Cobalt (mg/L)	93-MW-32	0.001267	2	21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-62	0.000009996	2	21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-81	0.0001137	10	21	No	8	12.5	0.01	NP
Copper (mg/L)	93-MW-32	0	1	21	No	8	75	0.01	NP
Lead (mg/L)	93-MW-32	0.00009778	11	21	No	8	25	0.01	NP
Lead (mg/L)	MW-81	0	1	21	No	8	87.5	0.01	NP
Nickel (mg/L)	93-MW-32	0.007714	12	21	No	8	0	0.01	NP
Nickel (mg/L)	MW-62	-0.0006225	-14	-21	No	8	0	0.01	NP
Nickel (mg/L)	MW-81	0.0007625	12	21	No	8	50	0.01	NP
Selenium (mg/L)	MW-62	0	6	21	No	8	75	0.01	NP
Tetrachloroethene (ug/L)	MW-81	-0.195	-15	-21	No	8	25	0.01	NP
Toluene (ug/L)	93-MW-32	0	3	21	No	8	87.5	0.01	NP
Vanadium (mg/L)	MW-81	0	1	21	No	8	87.5	0.01	NP
Zinc (mg/L)	93-MW-32	0.002987	10	21	No	8	0	0.01	NP
Zinc (mg/L)	MW-81	0	1	21	No	8	87.5	0.01	NP

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Hollow symbols indicate censored values.



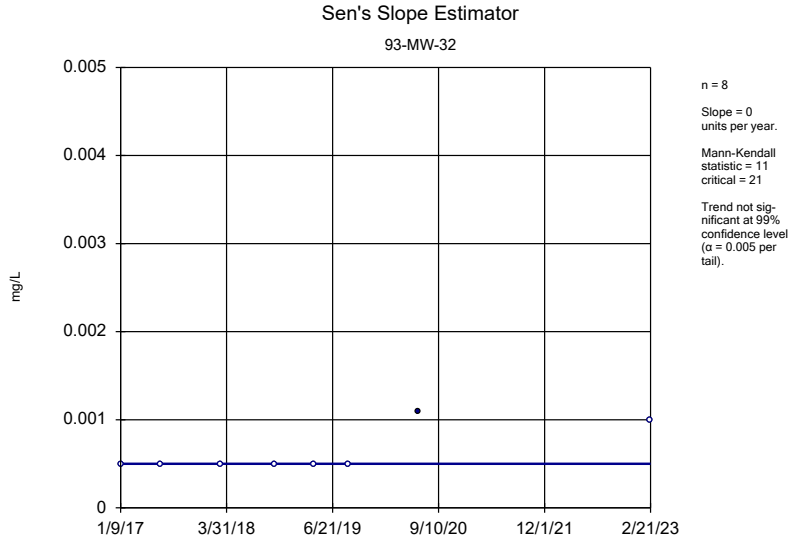
Constituent: 2-Butanone Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.



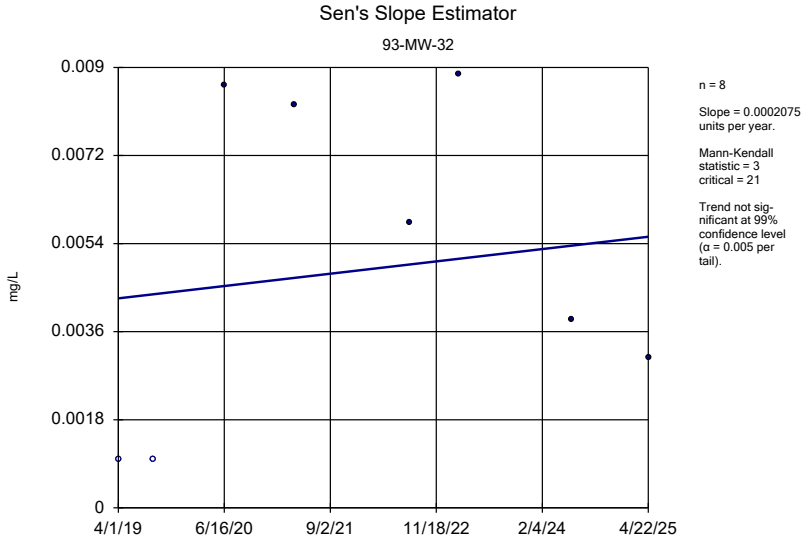
Constituent: Acetone Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.



Constituent: Antimony Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

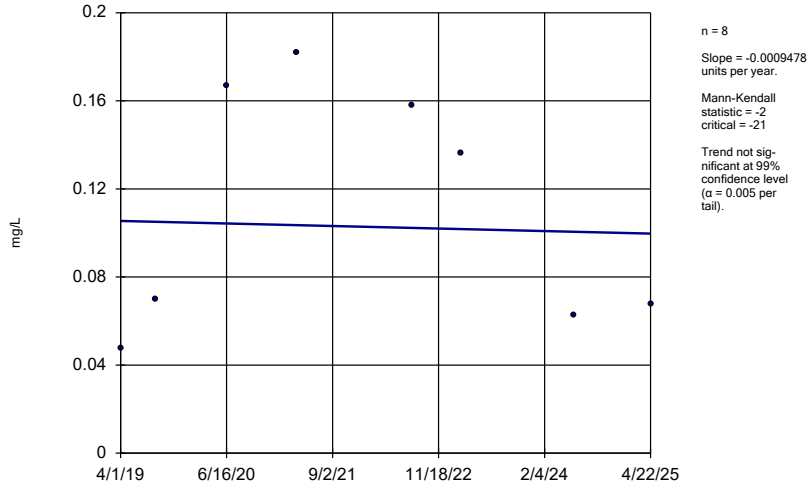


Constituent: Arsenic Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

93-MW-32



n = 8

Slope = -0.0009478 units per year.

Mann-Kendall statistic = -2
critical = -21

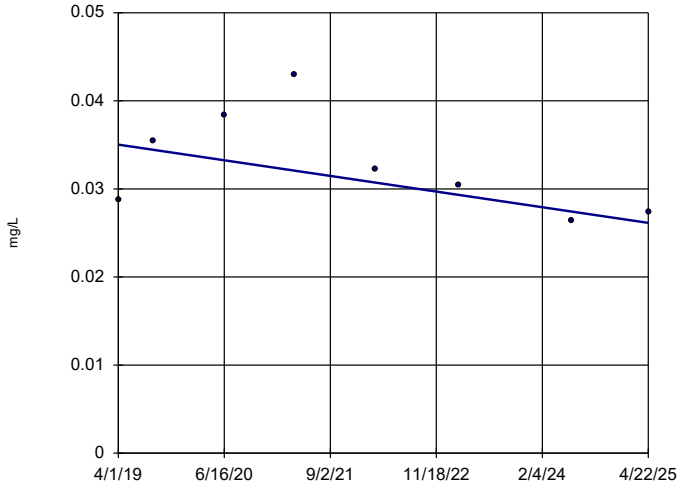
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-62



n = 8

Slope = -0.001463 units per year.

Mann-Kendall statistic = -10
critical = -21

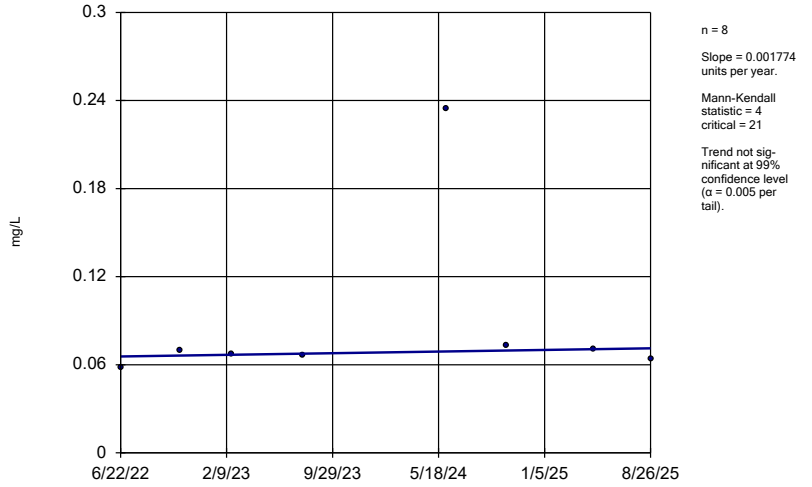
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-81



n = 8

Slope = 0.001774 units per year.

Mann-Kendall statistic = 4
critical = 21

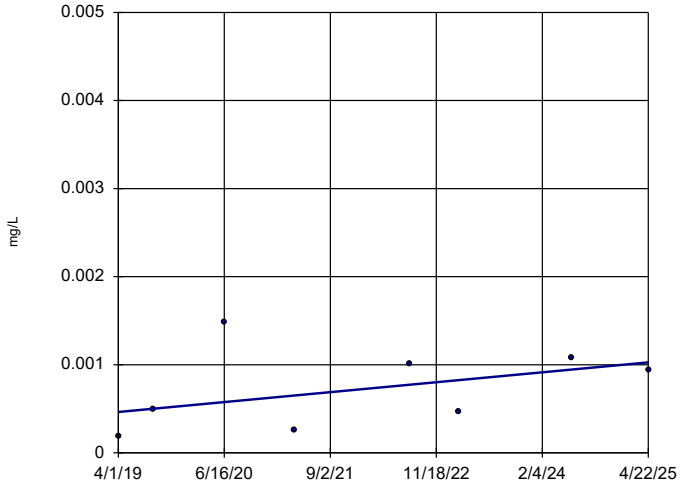
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

93-MW-32



n = 8

Slope = 0.00009279 units per year.

Mann-Kendall statistic = 8
critical = 21

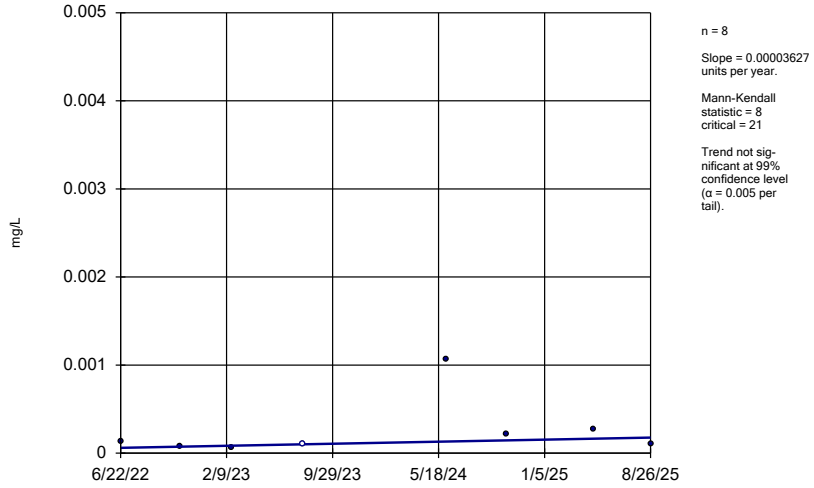
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cadmium Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-81



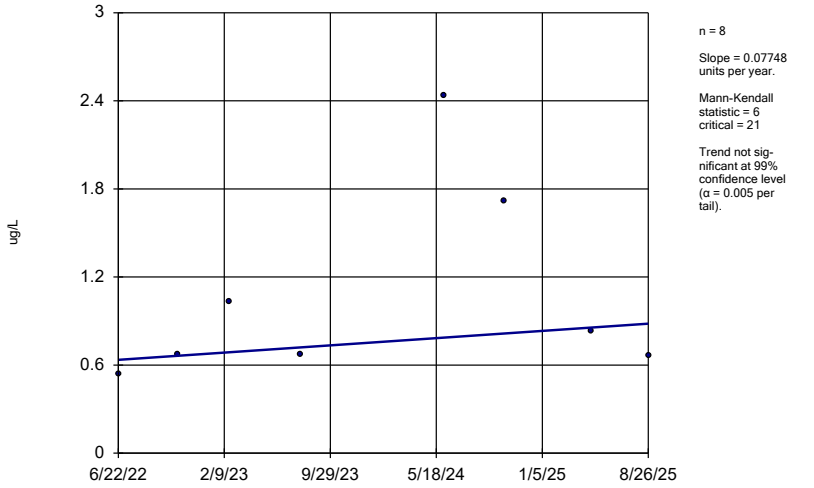
Constituent: Cadmium Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-81



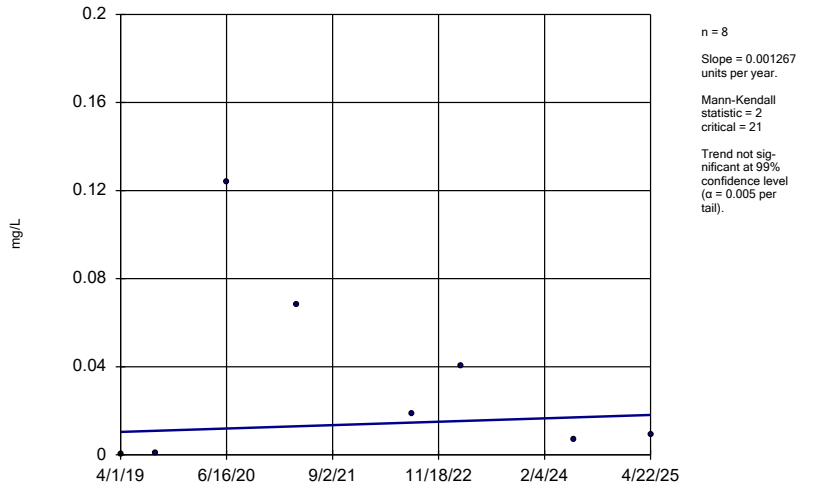
Constituent: cis-1,2-Dichloroethene Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

93-MW-32



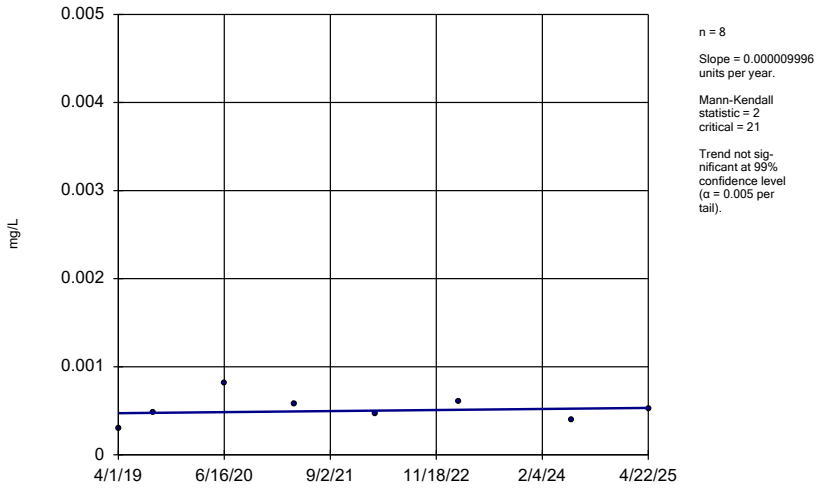
Constituent: Cobalt Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-62



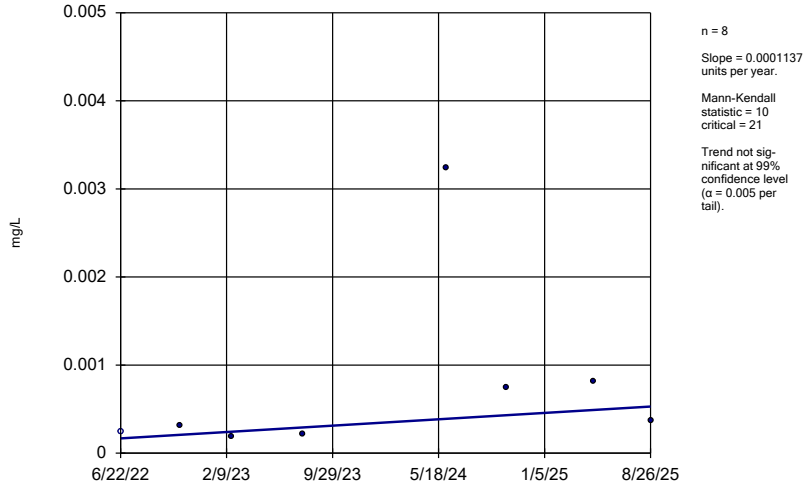
Constituent: Cobalt Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-81

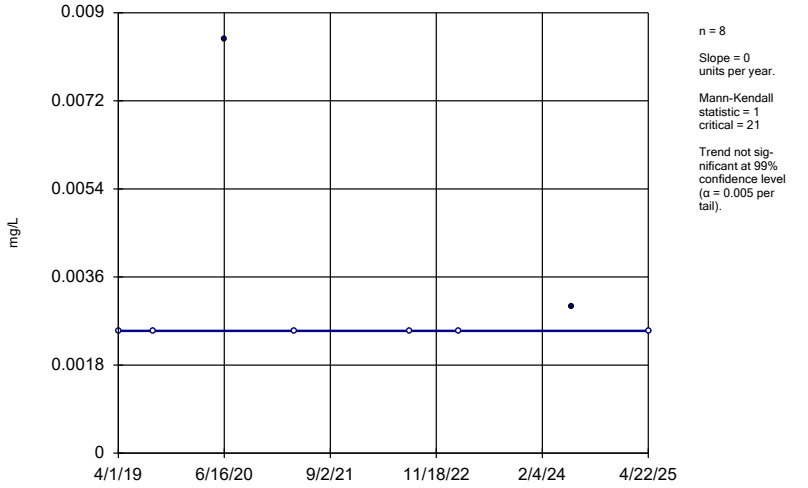


Constituent: Cobalt Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-32

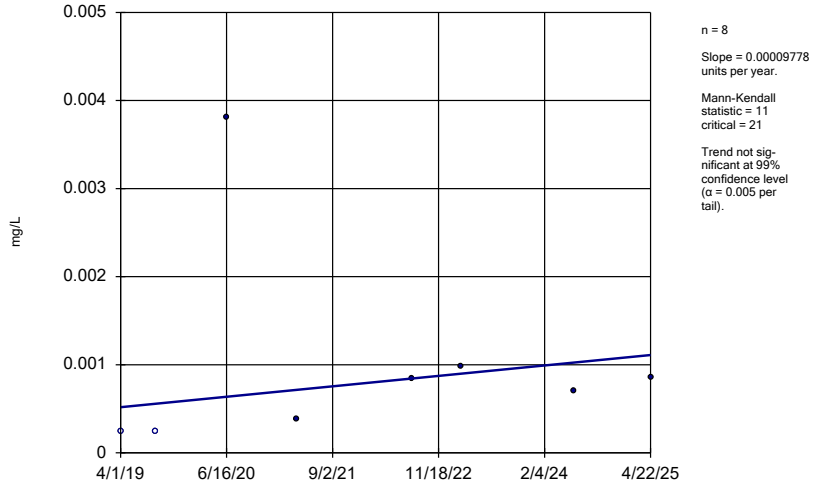


Constituent: Copper Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-32

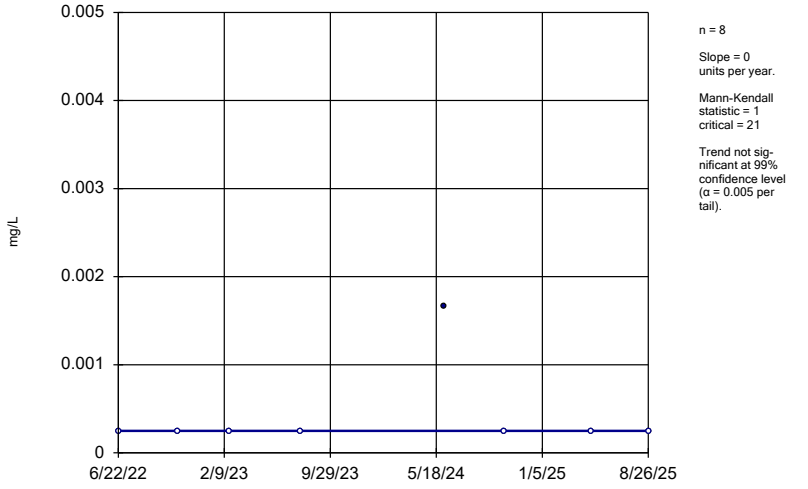


Constituent: Lead Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-81

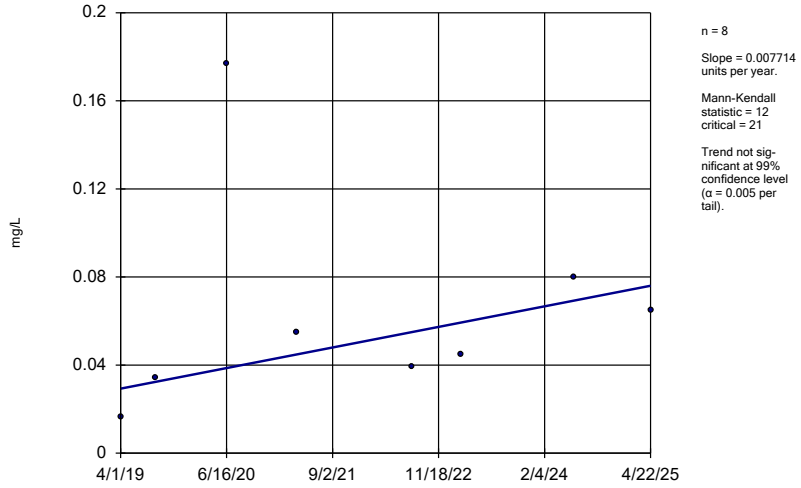


Constituent: Lead Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Sen's Slope Estimator

93-MW-32



n = 8

Slope = 0.007714 units per year.

Mann-Kendall statistic = 12 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

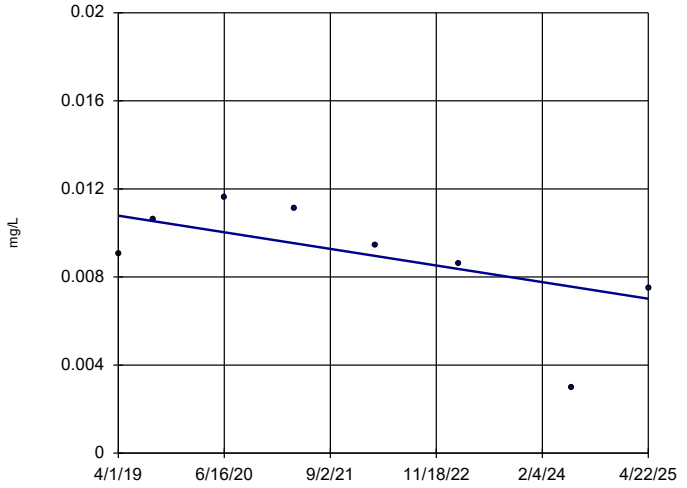
Constituent: Nickel Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-62



n = 8

Slope = -0.0006225 units per year.

Mann-Kendall statistic = -14 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

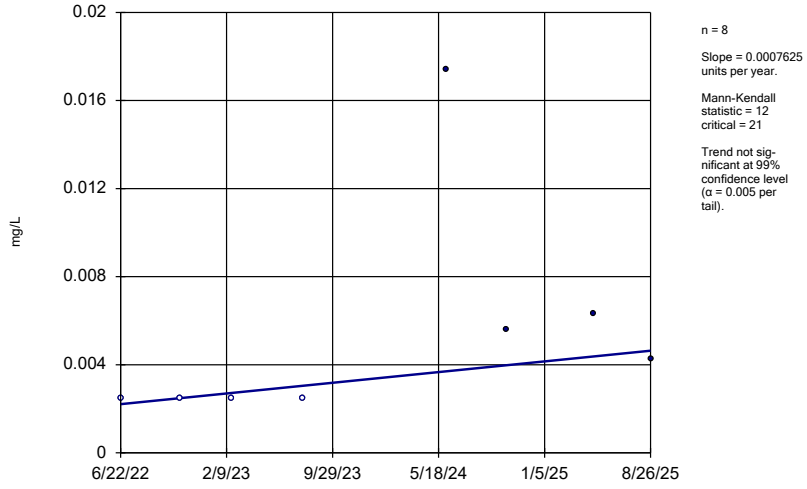
Constituent: Nickel Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-81



n = 8

Slope = 0.0007625 units per year.

Mann-Kendall statistic = 12 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

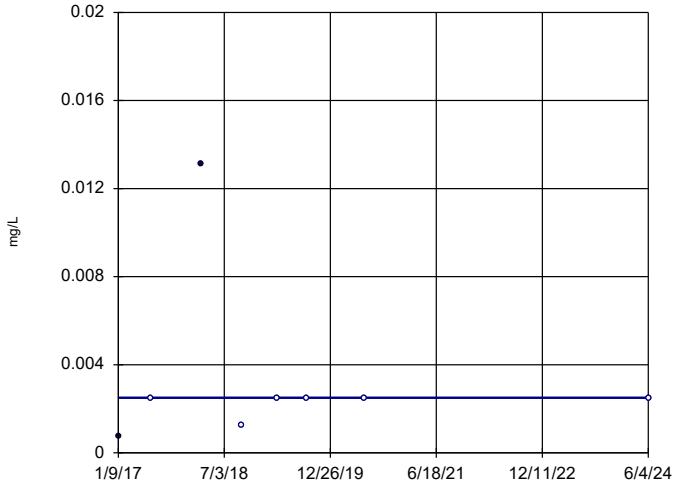
Constituent: Nickel Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-62



n = 8

Slope = 0 units per year.

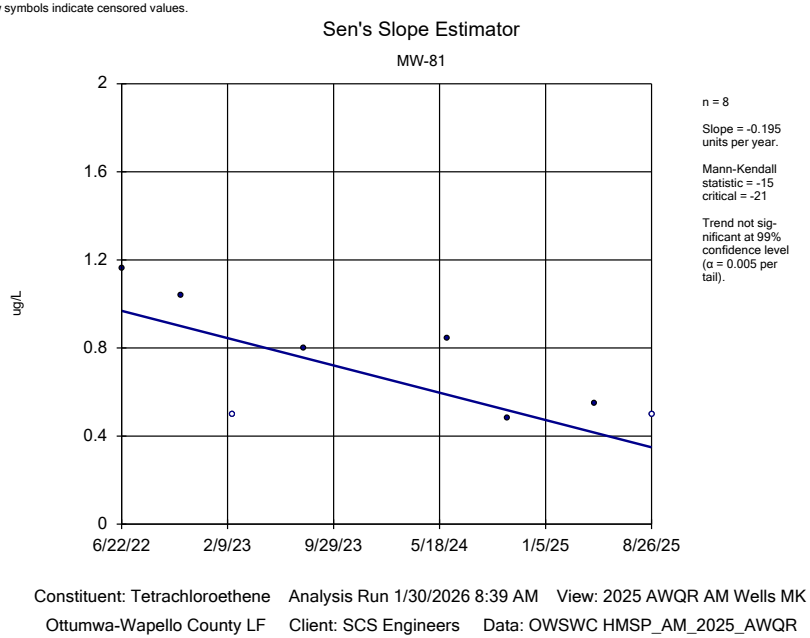
Mann-Kendall statistic = 6 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Selenium Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK

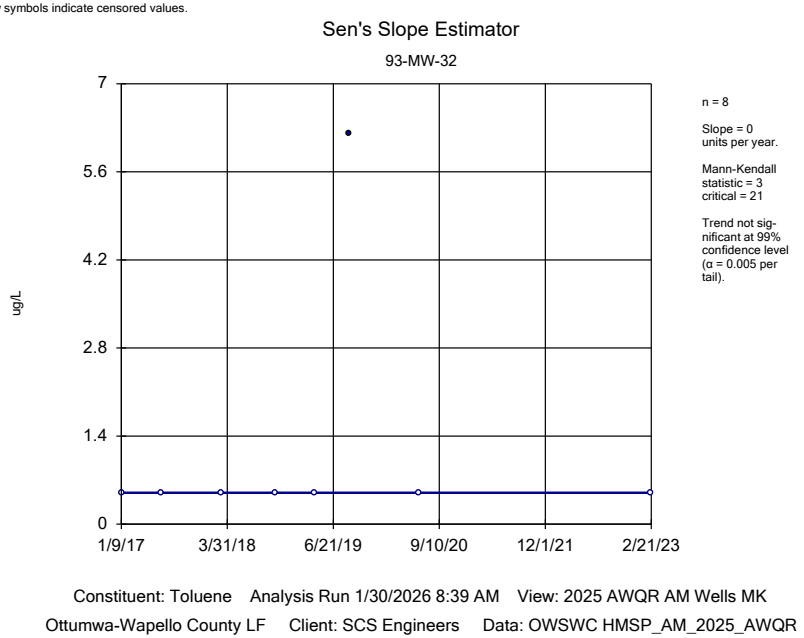
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.



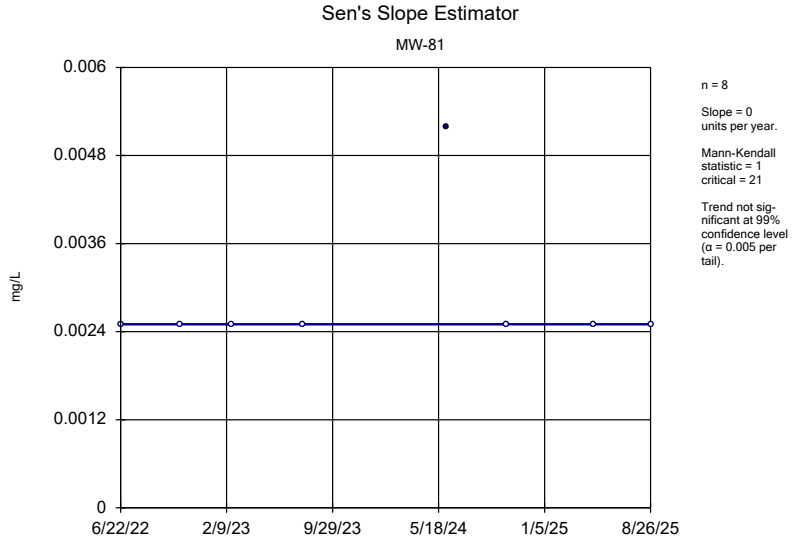
Constituent: Tetrachloroethene Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.



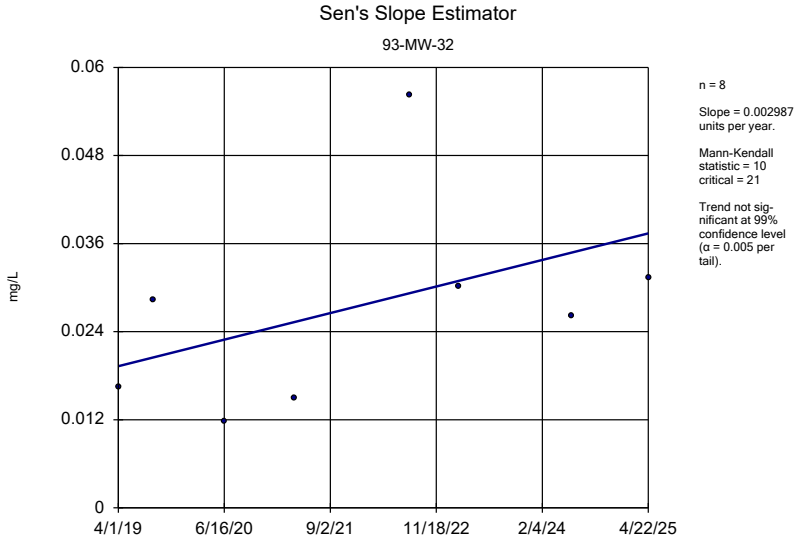
Constituent: Toluene Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.



Constituent: Vanadium Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

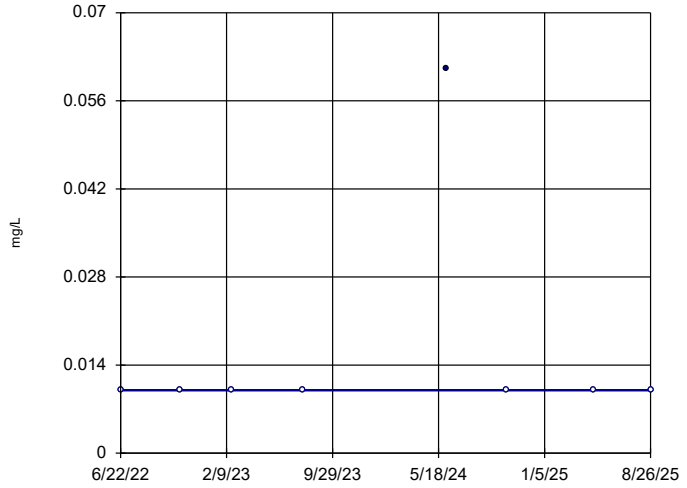


Constituent: Zinc Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-81



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 1 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Zinc Analysis Run 1/30/2026 8:39 AM View: 2025 AWQR AM Wells MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Mann-Kendall/Sen's Slope Trend Test Summary Table and Graphs – AMD Wells Organics and Sulfide

AMD Wells VOC Trend Test

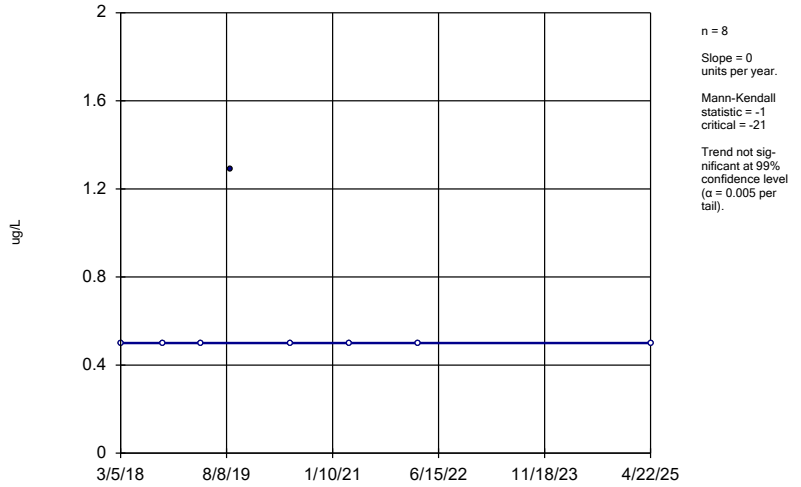
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR Printed 1/30/2026, 10:11 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Alpha	Method
1,1-Dichloroethane (ug/L)	MW-59	0	-1	-21	No	8	87.5	0.01	NP
1,1-Dichloroethane (ug/L)	MW-64	-0.03741	-6	-21	No	8	50	0.01	NP
2-Methylnaphthalene (ug/L)	04-MW-56	-0.004419	-1	-8	No	4	75	0.01	NP
2-Methylnaphthalene (ug/L)	MW-39R	0.008666	1	12	No	5	80	0.01	NP
2-Methylnaphthalene (ug/L)	MW-58	0.026	1	12	No	5	80	0.01	NP
2-Methylnaphthalene (ug/L)	MW-65	0.04641	3	12	No	5	80	0.01	NP
Acetone (ug/L)	MW-40	0	3	21	No	8	75	0.01	NP
Acetone (ug/L)	MW-59	0.6587	11	21	No	8	25	0.01	NP
Benzene (ug/L)	MW-40	-0.08842	-10	-21	No	8	0	0.01	NP
Benzene (ug/L)	MW-59	-0.02036	-2	-21	No	8	12.5	0.01	NP
Benzene (ug/L)	MW-65	0.1594	9	21	No	8	25	0.01	NP
Chloroethane (ug/L)	MW-65	-0.641	-11	-21	No	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-40	-0.1017	-2	-21	No	8	0	0.01	NP
Naphthalene (ug/L)	MW-40	0	3	14	No	6	83.33	0.01	NP
Sulfide (mg/L)	MW-59	0	-5	-21	No	8	87.5	0.01	NP
Vinyl chloride (ug/L)	MW-40	0.04505	8	21	No	8	12.5	0.01	NP

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-59



n = 8

Slope = 0
units per year.

Mann-Kendall
statistic = -1
critical = -21

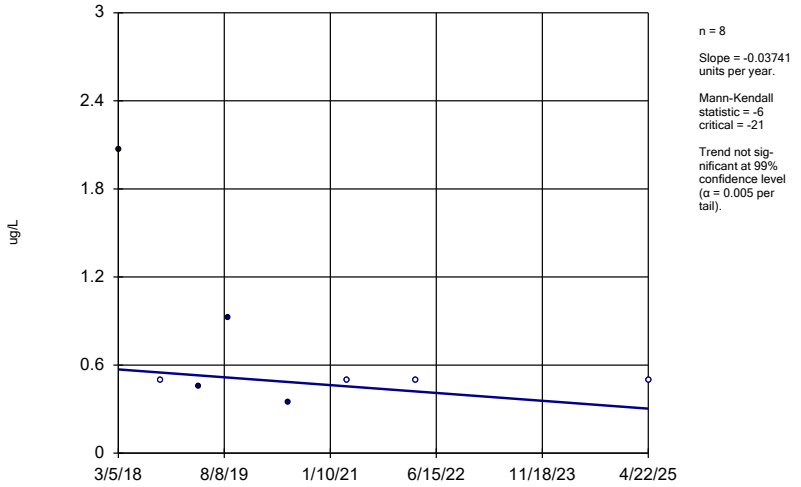
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: 1,1-Dichloroethane Analysis Run 1/30/2026 10:08 AM View: 2025 AWQR AMD Well VOC MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-64



n = 8

Slope = -0.03741
units per year.

Mann-Kendall
statistic = -6
critical = -21

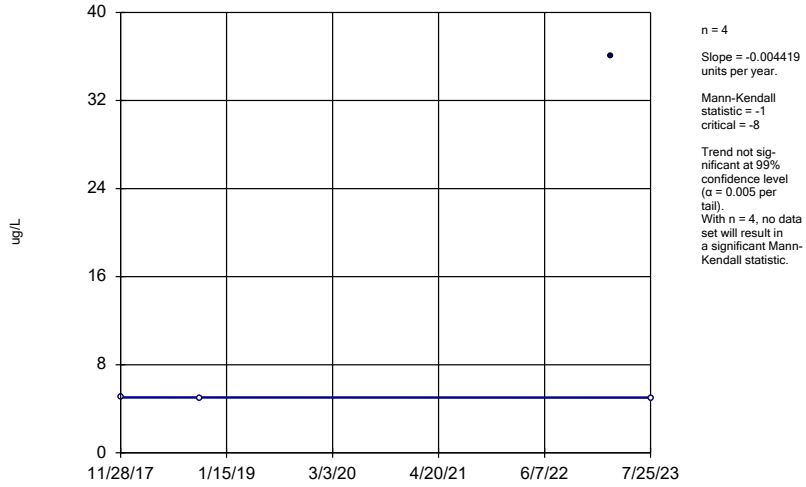
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: 1,1-Dichloroethane Analysis Run 1/30/2026 10:08 AM View: 2025 AWQR AMD Well VOC MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

04-MW-56



n = 4

Slope = -0.004419
units per year.

Mann-Kendall
statistic = -1
critical = -8

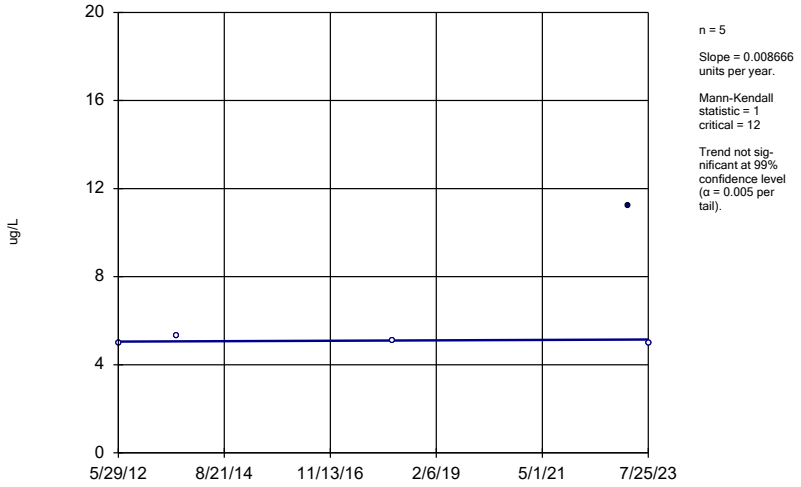
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).
With n = 4, no data
set will result in
a significant Mann-
Kendall statistic.

Constituent: 2-Methylnaphthalene Analysis Run 1/30/2026 10:08 AM View: 2025 AWQR AMD Well VOC
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-39R



n = 5

Slope = 0.008666
units per year.

Mann-Kendall
statistic = 1
critical = 12

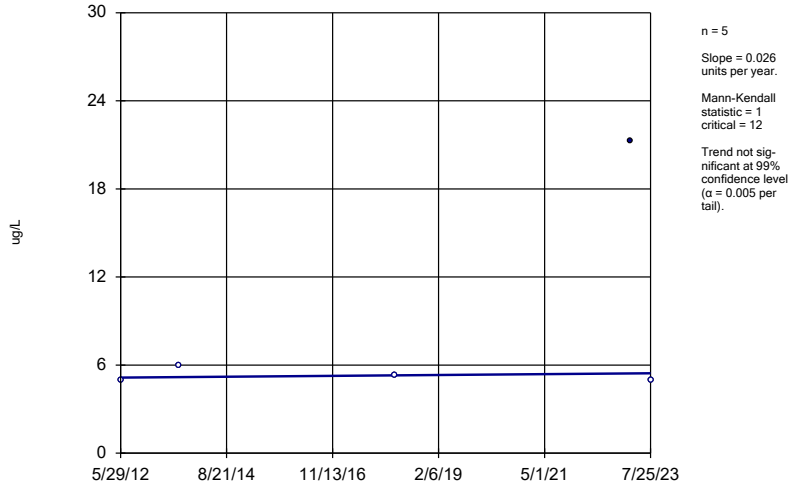
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: 2-Methylnaphthalene Analysis Run 1/30/2026 10:08 AM View: 2025 AWQR AMD Well VOC
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-58

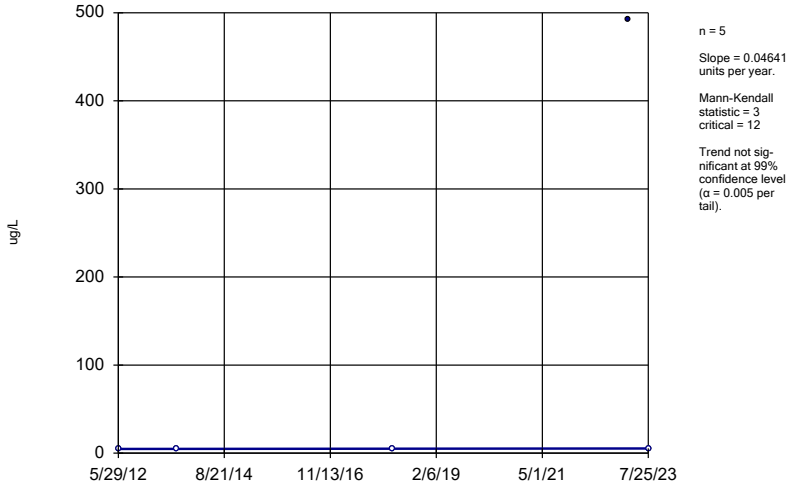


Constituent: 2-Methylnaphthalene Analysis Run 1/30/2026 10:08 AM View: 2025 AWQR AMD Well VOC
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-65

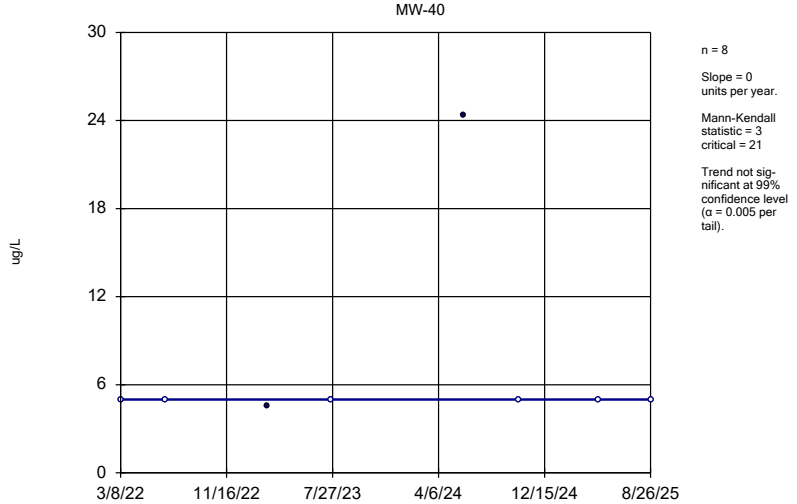


Constituent: 2-Methylnaphthalene Analysis Run 1/30/2026 10:08 AM View: 2025 AWQR AMD Well VOC
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-40

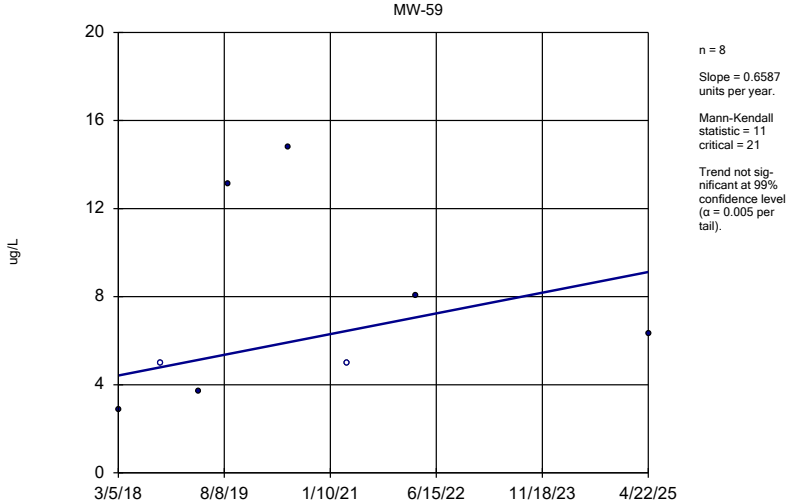


Constituent: Acetone Analysis Run 1/30/2026 10:09 AM View: 2025 AWQR AMD Well VOC MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-59

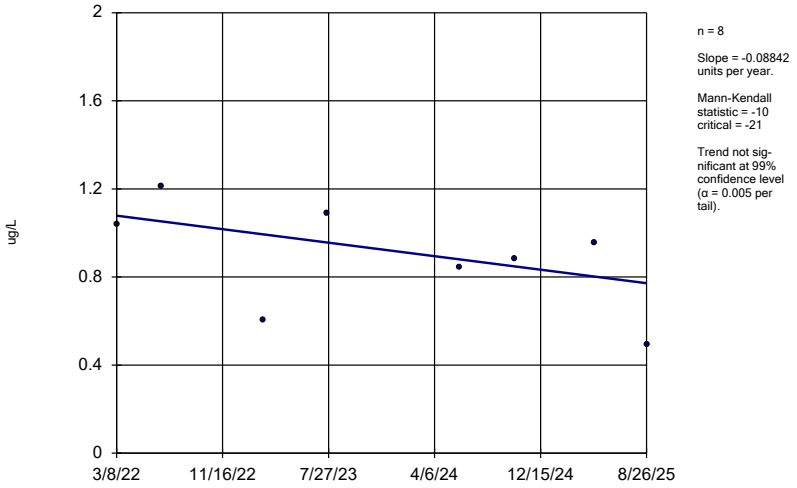


Constituent: Acetone Analysis Run 1/30/2026 10:09 AM View: 2025 AWQR AMD Well VOC MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-40



n = 8

Slope = -0.08842 units per year.

Mann-Kendall statistic = -10 critical = -21

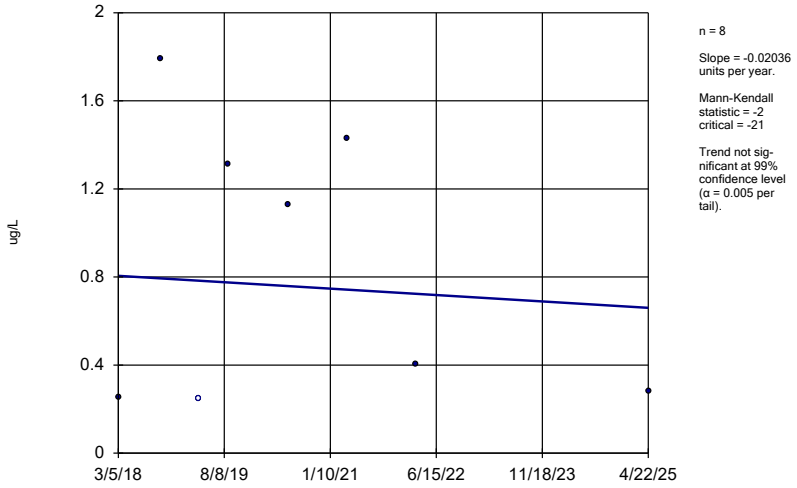
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Benzene Analysis Run 1/30/2026 10:09 AM View: 2025 AWQR AMD Well VOC MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-59



n = 8

Slope = -0.02036 units per year.

Mann-Kendall statistic = -2 critical = -21

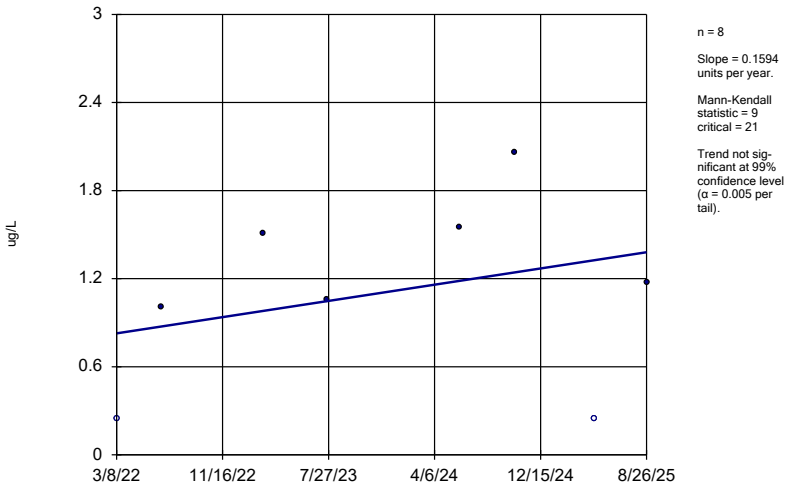
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Benzene Analysis Run 1/30/2026 10:09 AM View: 2025 AWQR AMD Well VOC MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-65



n = 8

Slope = 0.1594 units per year.

Mann-Kendall statistic = 9 critical = 21

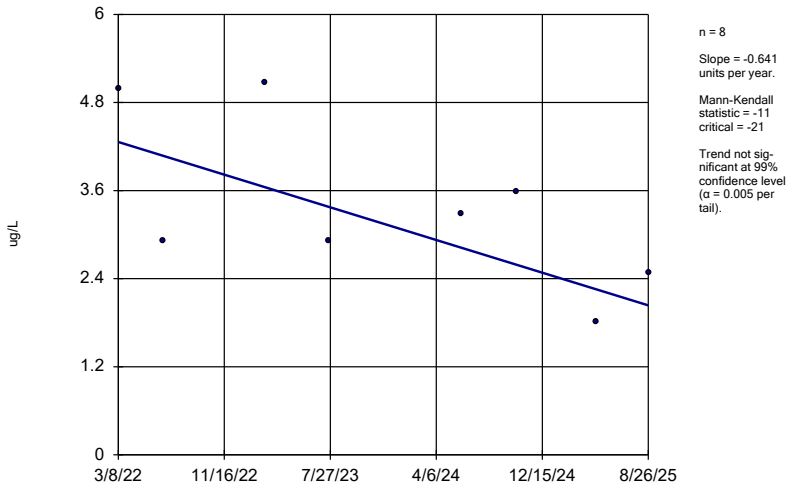
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Benzene Analysis Run 1/30/2026 10:09 AM View: 2025 AWQR AMD Well VOC MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-65



n = 8

Slope = -0.641 units per year.

Mann-Kendall statistic = -11 critical = -21

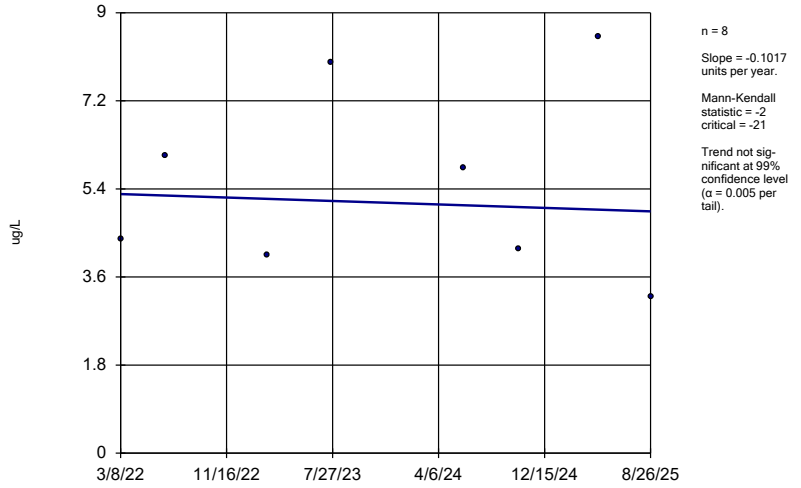
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloroethane Analysis Run 1/30/2026 10:09 AM View: 2025 AWQR AMD Well VOC MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-40



Constituent: cis-1,2-Dichloroethene Analysis Run 1/30/2026 10:09 AM View: 2025 AWQR AMD Well VOC

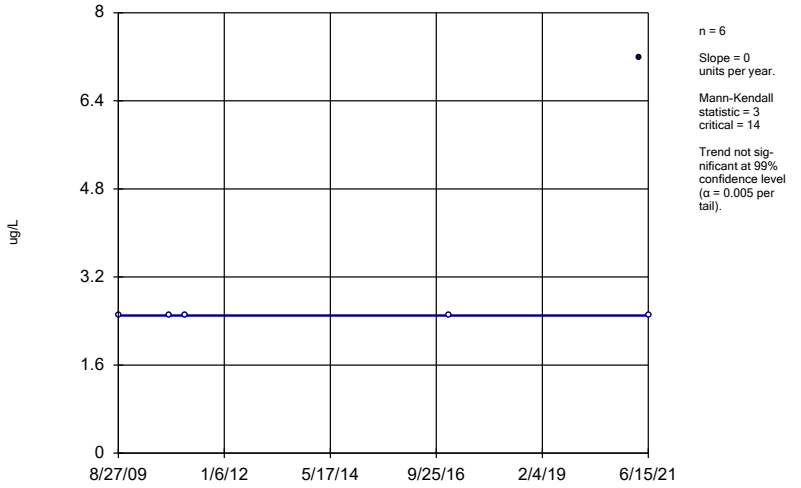
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-40



Constituent: Naphthalene Analysis Run 1/30/2026 10:09 AM View: 2025 AWQR AMD Well VOC MK

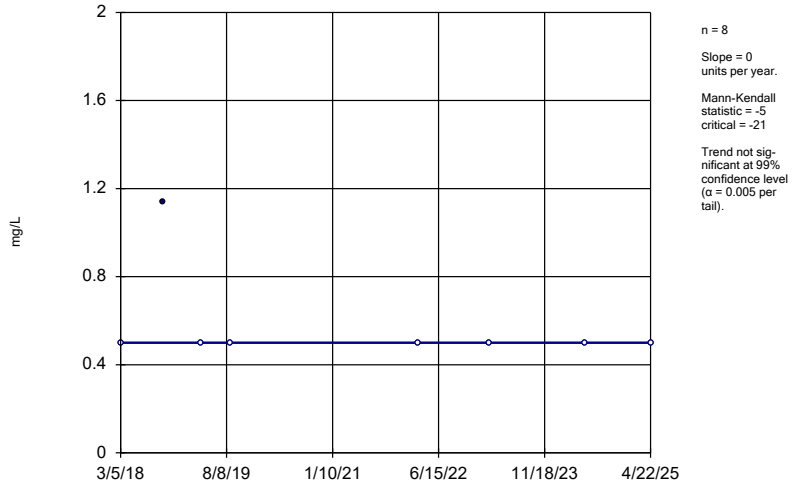
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-59



Constituent: Sulfide Analysis Run 1/30/2026 10:09 AM View: 2025 AWQR AMD Well VOC MK

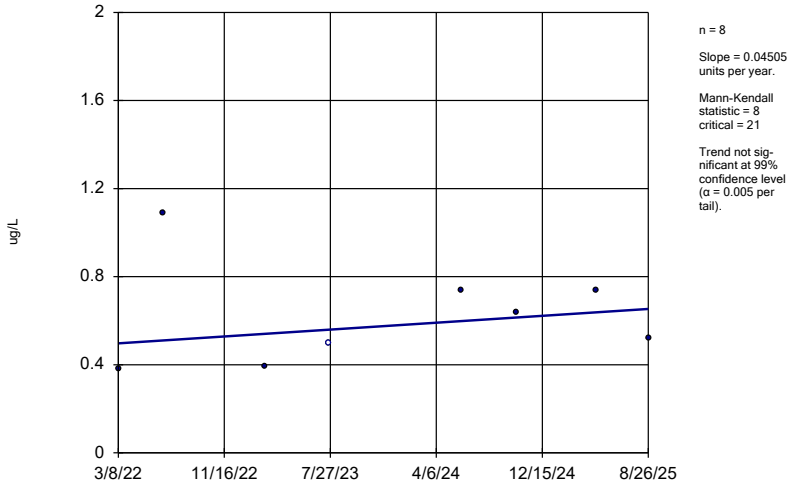
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-40



Constituent: Vinyl chloride Analysis Run 1/30/2026 10:09 AM View: 2025 AWQR AMD Well VOC MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Confidence Interval Summary Table and Graphs – Assessment Monitoring Wells

Confidence Interval

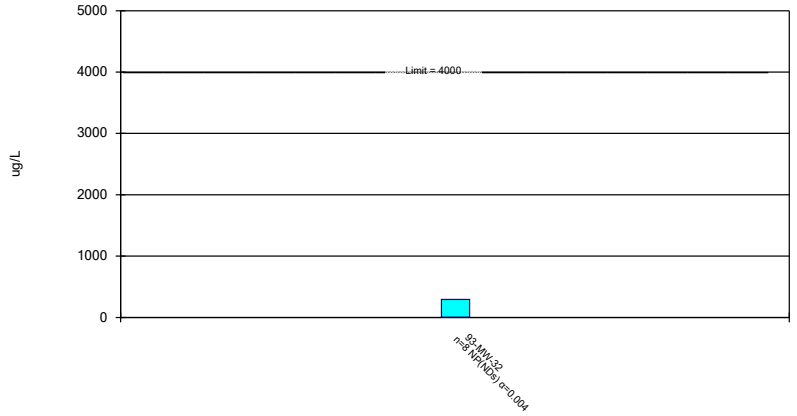
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR Printed 1/30/2026, 9:40 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
2-Butanone (ug/L)	93-MW-32	294	5	4000	No	8	87.5	No	0.004	NP (NDs)
Acetone (ug/L)	93-MW-32	261	1.91	6300	No	8	75	No	0.004	NP (NDs)
Antimony (mg/L)	93-MW-32	0.0011	0.0005	0.006	No	8	87.5	No	0.004	NP (NDs)
Arsenic (mg/L)	93-MW-32	0.008249	0.002371	0.01	No	8	25	No	0.01	Param.
Barium (mg/L)	93-MW-32	0.1693	0.05341	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-62	0.03888	0.02664	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-81	0.234	0.0579	2	No	8	0	No	0.004	NP (normality)
Cadmium (mg/L)	93-MW-32	0.001225	0.0002558	0.005	No	8	0	No	0.01	Param.
Cadmium (mg/L)	MW-81	0.00106	0.000062	0.005	No	8	12.5	No	0.004	NP (normality)
cis-1,2-Dichloroethene (ug/L)	MW-81	1.779	0.3637	70	No	8	0	No	0.01	Param.
Cobalt (mg/L)	93-MW-32	0.07942	0	0.01691	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-62	0.0006821	0.0003557	0.01691	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-81	0.00324	0.000193	0.01691	No	8	12.5	No	0.004	NP (normality)
Copper (mg/L)	93-MW-32	0.00847	0.0025	1.3	No	8	75	No	0.004	NP (NDs)
Lead (mg/L)	93-MW-32	0.00381	0.00025	0.015	No	8	25	No	0.004	NP (normality)
Lead (mg/L)	MW-81	0.00166	0.00025	0.015	No	8	87.5	No	0.004	NP (NDs)
Nickel (mg/L)	93-MW-32	0.1166	0.01137	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-62	0.01176	0.005958	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-81	0.0174	0.0025	0.1	No	8	50	No	0.004	NP (normality)
Selenium (mg/L)	MW-62	0.0131	0.000753	0.05	No	8	75	No	0.004	NP (NDs)
Tetrachloroethene (ug/L)	MW-81	1.022	0.5297	5	No	8	25	No	0.01	Param.
Toluene (ug/L)	93-MW-32	6.22	0.5	1000	No	8	87.5	No	0.004	NP (NDs)
Vanadium (mg/L)	MW-81	0.00519	0.0025	0.035	No	8	87.5	No	0.004	NP (NDs)
Zinc (mg/L)	93-MW-32	0.04176	0.01206	2	No	8	0	No	0.01	Param.
Zinc (mg/L)	MW-81	0.0611	0.01	2	No	8	87.5	No	0.004	NP (NDs)

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Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

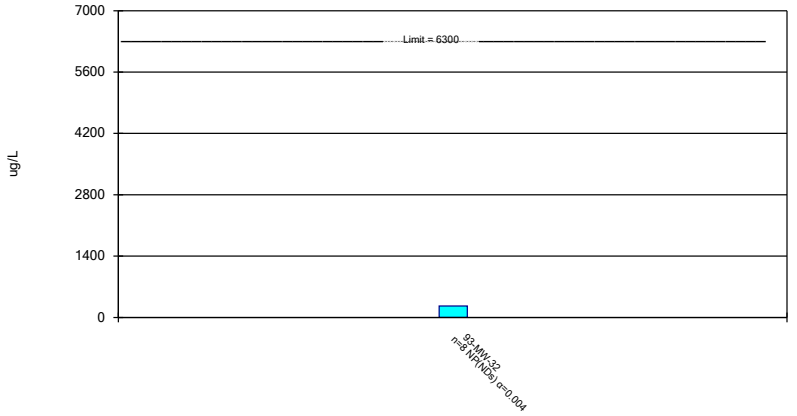


Constituent: 2-Butanone Analysis Run 1/30/2026 9:33 AM View: 2025 AWQR AM Wells CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

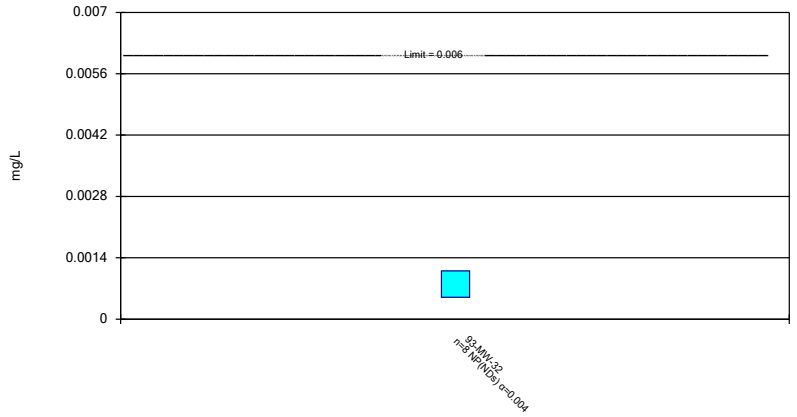


Constituent: Acetone Analysis Run 1/30/2026 9:33 AM View: 2025 AWQR AM Wells CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Non-Parametric Confidence Interval

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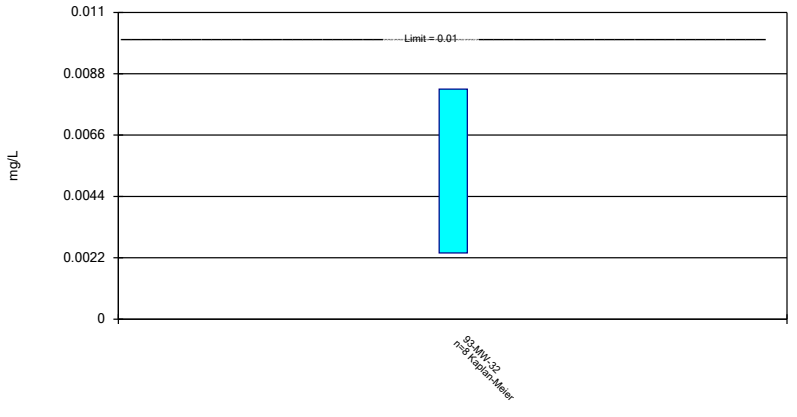


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Parametric Confidence Interval

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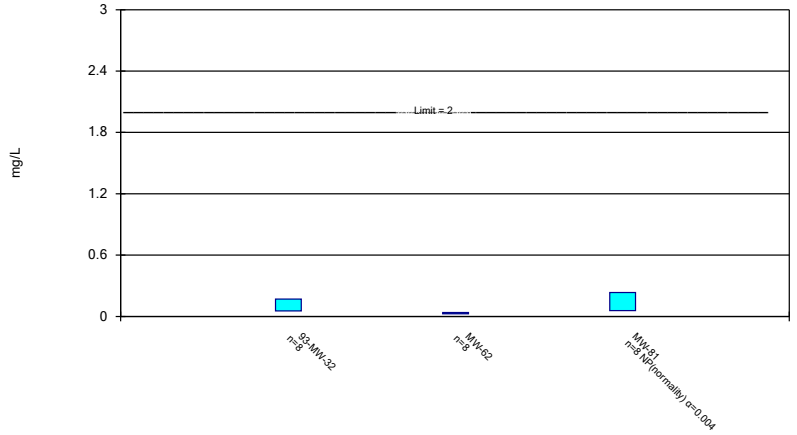


Constituent: Arsenic Analysis Run 1/30/2026 9:33 AM View: 2025 AWQR AM Wells CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Parametric and Non-Parametric (NP) Confidence Interval

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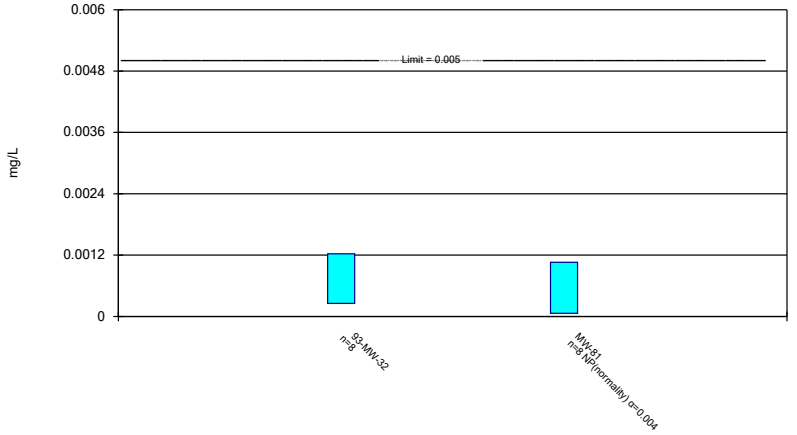


Constituent: Barium Analysis Run 1/30/2026 9:33 AM View: 2025 AWQR AM Wells CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cadmium Analysis Run 1/30/2026 9:33 AM View: 2025 AWQR AM Wells CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Parametric Confidence Interval

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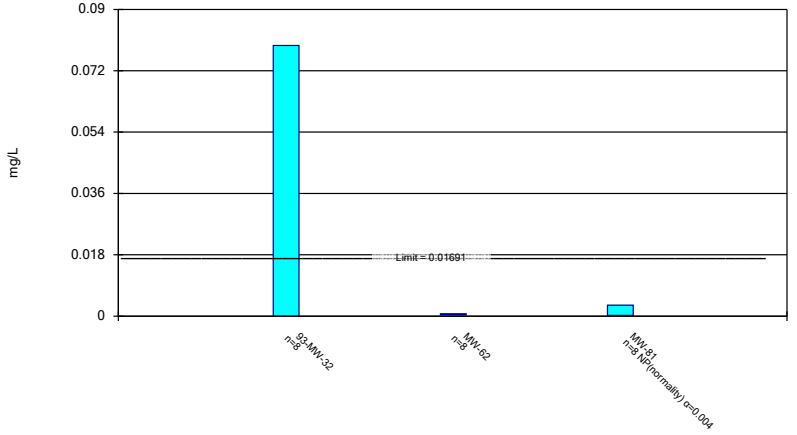


Constituent: cis-1,2-Dichloroethene Analysis Run 1/30/2026 9:33 AM View: 2025 AWQR AM Wells CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.

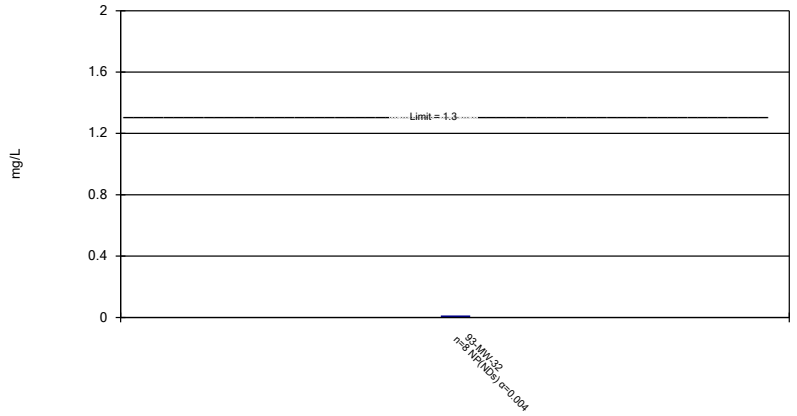


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Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

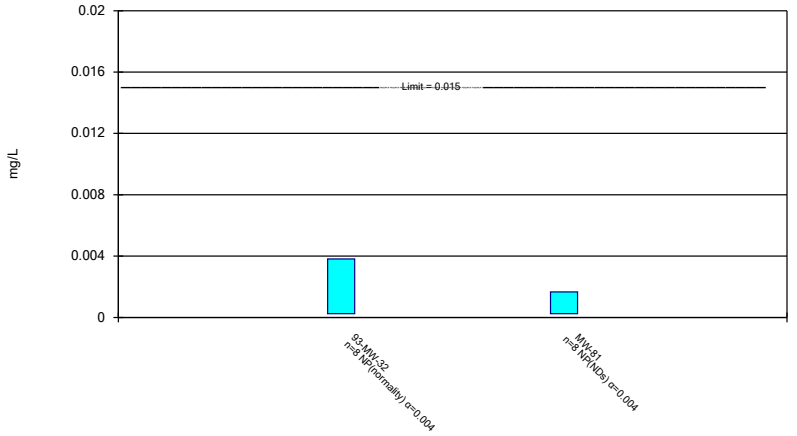


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Non-Parametric Confidence Interval

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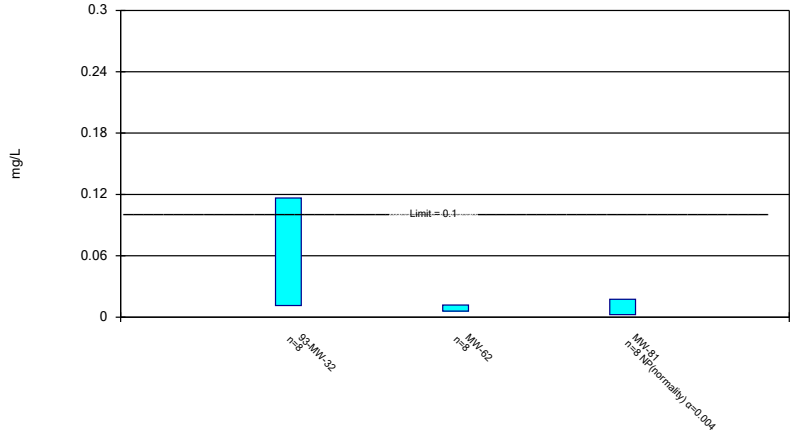


Constituent: Lead Analysis Run 1/30/2026 9:33 AM View: 2025 AWQR AM Wells CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.

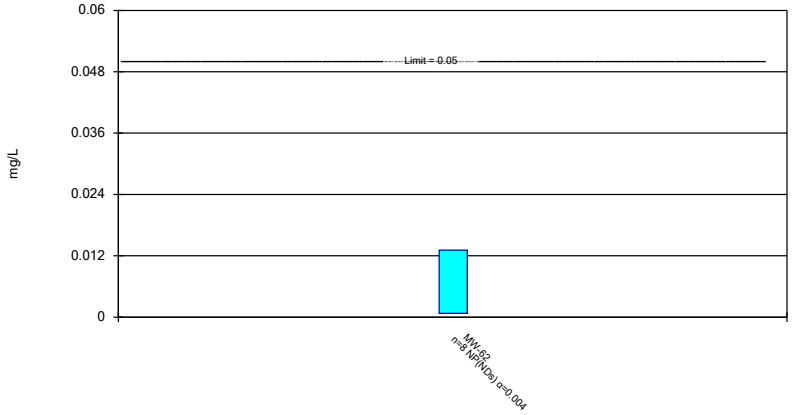


Constituent: Nickel Analysis Run 1/30/2026 9:33 AM View: 2025 AWQR AM Wells CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Non-Parametric Confidence Interval

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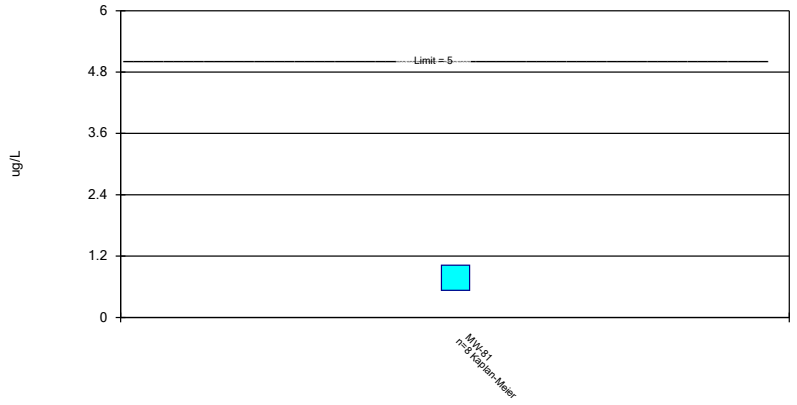


Constituent: Selenium Analysis Run 1/30/2026 9:33 AM View: 2025 AWQR AM Wells CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

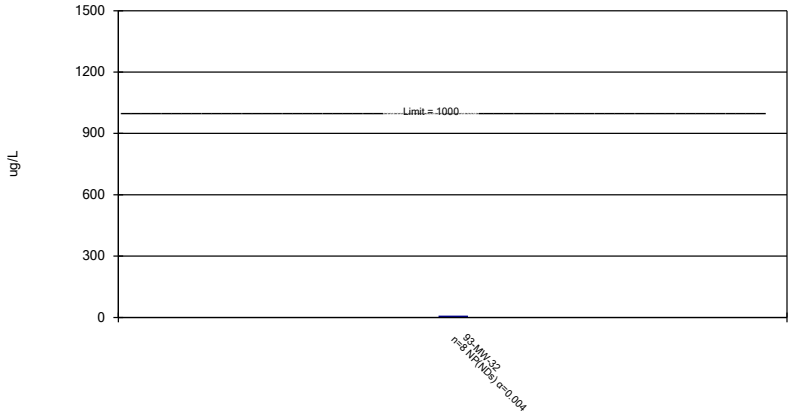


Constituent: Tetrachloroethene Analysis Run 1/30/2026 9:33 AM View: 2025 AWQR AM Wells CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Non-Parametric Confidence Interval

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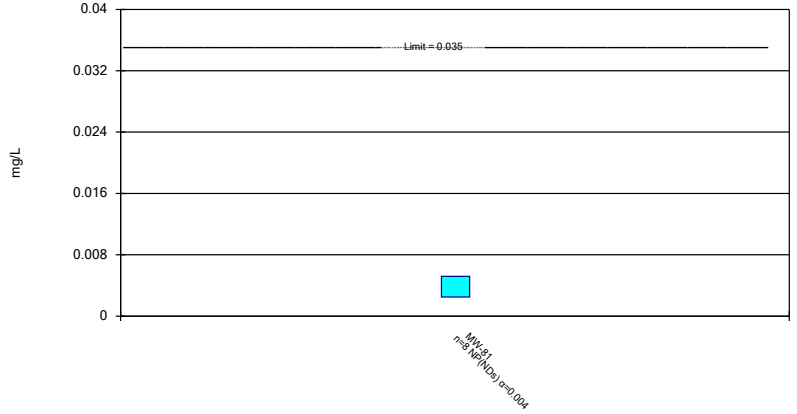


Constituent: Toluene Analysis Run 1/30/2026 9:33 AM View: 2025 AWQR AM Wells CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Non-Parametric Confidence Interval

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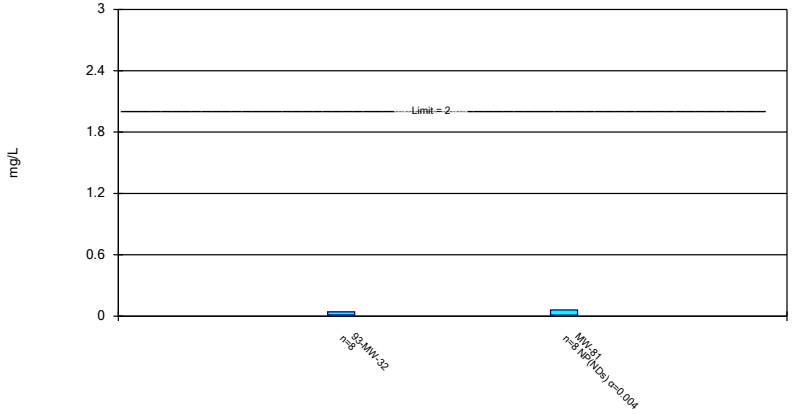


Constituent: Vanadium Analysis Run 1/30/2026 9:33 AM View: 2025 AWQR AM Wells CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Zinc Analysis Run 1/30/2026 9:33 AM View: 2025 AWQR AM Wells CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Confidence Interval Summary Table and Graphs – AMD Wells Organics and Sulfide

AMD Well VOC Confidence Interval

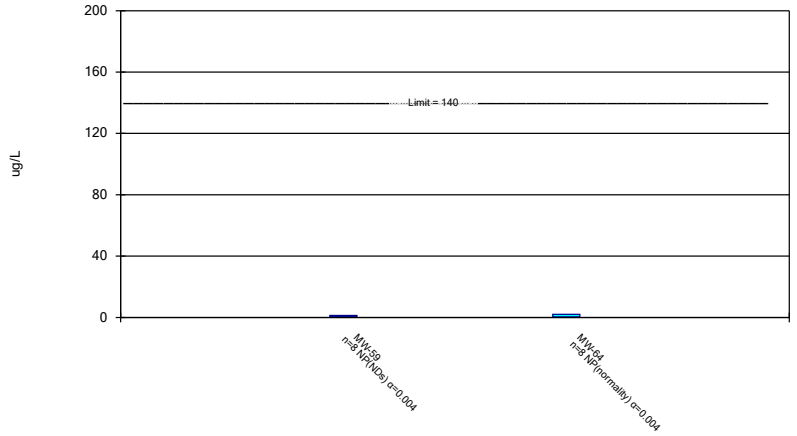
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR Printed 1/30/2026, 10:27 AM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
1,1-Dichloroethane (ug/L)	MW-59	1.29	0.5	140	No	8	87.5	No	0.004	NP (NDs)
1,1-Dichloroethane (ug/L)	MW-64	2.07	0.344	140	No	8	50	No	0.004	NP (normality)
2-Methylnaphthalene (ug/L)	04-MW-56	36	5	28	No	4	75	No	0.0625	NP (NDs)
2-Methylnaphthalene (ug/L)	MW-39R	11.2	5	28	No	5	80	No	0.031	NP (NDs)
2-Methylnaphthalene (ug/L)	MW-58	21.3	5	28	No	5	80	No	0.031	NP (NDs)
2-Methylnaphthalene (ug/L)	MW-65	492	5	28	No	5	80	No	0.031	NP (NDs)
Acetone (ug/L)	MW-40	24.4	4.56	6300	No	8	75	No	0.004	NP (NDs)
Acetone (ug/L)	MW-59	11.86	2.978	6300	No	8	25	No	0.01	Param.
Benzene (ug/L)	MW-40	1.146	0.6345	5	No	8	0	No	0.01	Param.
Benzene (ug/L)	MW-59	1.52	0.1924	5	No	8	12.5	No	0.01	Param.
Benzene (ug/L)	MW-65	1.699	0.6419	5	No	8	25	No	0.01	Param.
Chloroethane (ug/L)	MW-65	4.597	2.171	2800	No	8	0	No	0.01	Param.
cis-1,2-Dichloroethene (ug/L)	MW-40	7.575	3.477	70	No	8	0	No	0.01	Param.
Naphthalene (ug/L)	MW-40	7.18	2.5	100	No	6	83.33	No	0.0155	NP (NDs)
Sulfide (mg/L)	MW-59	1.14	0.5	1	No	8	87.5	No	0.004	NP (NDs)
Vinyl chloride (ug/L)	MW-40	0.8721	0.3775	2	No	8	12.5	No	0.01	Param.

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Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

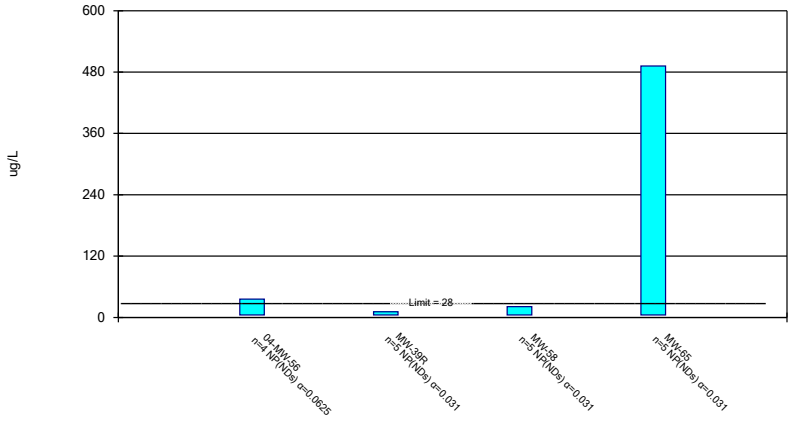


Constituent: 1,1-Dichloroethane Analysis Run 1/30/2026 10:25 AM View: 2025 AWQR AMD well VOC CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Non-Parametric Confidence Interval

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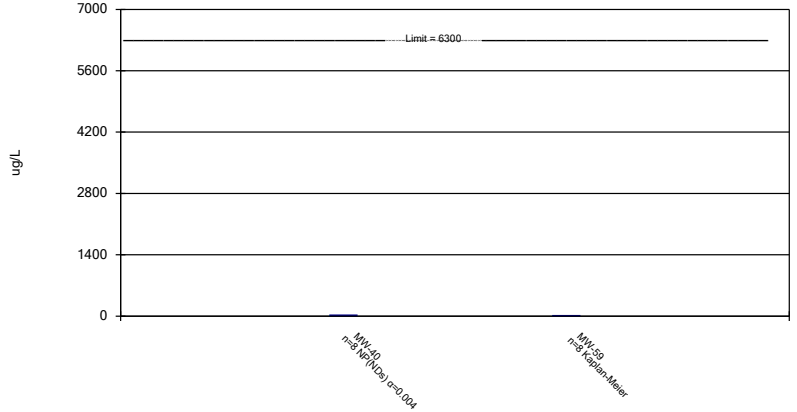


Constituent: 2-Methylnaphthalene Analysis Run 1/30/2026 10:25 AM View: 2025 AWQR AMD well VOC C
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Parametric and Non-Parametric (NP) Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.

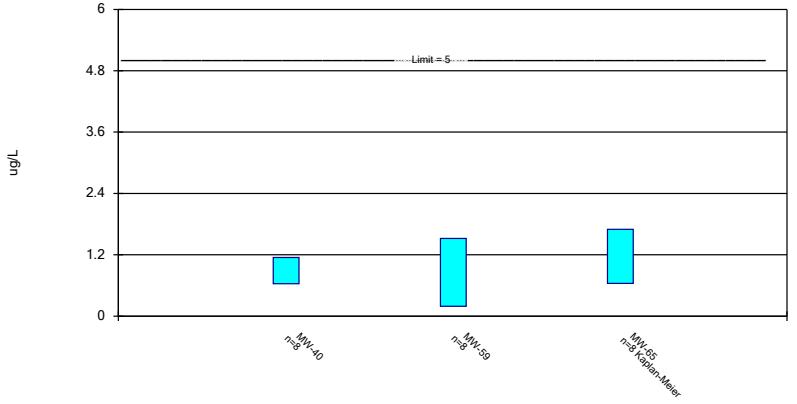


Constituent: Acetone Analysis Run 1/30/2026 10:25 AM View: 2025 AWQR AMD well VOC CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Parametric Confidence Interval

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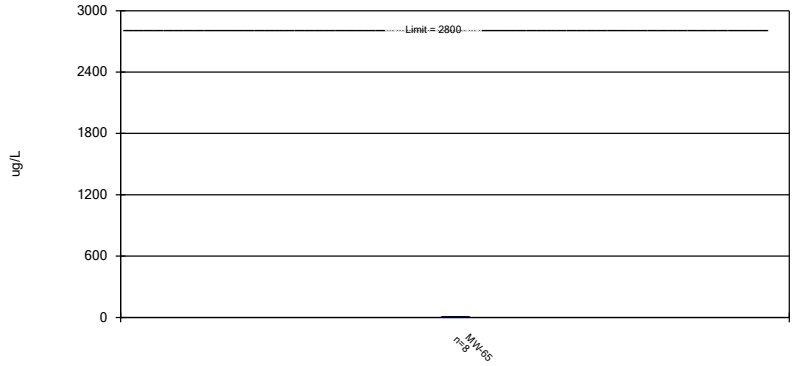


Constituent: Benzene Analysis Run 1/30/2026 10:25 AM View: 2025 AWQR AMD well VOC CI
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.

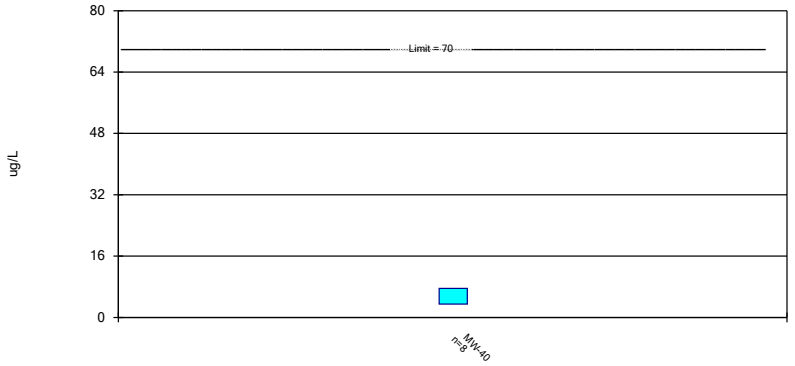


Constituent: Chloroethane Analysis Run 1/30/2026 10:25 AM View: 2025 AWQR AMD well VOC Cl
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Parametric Confidence Interval

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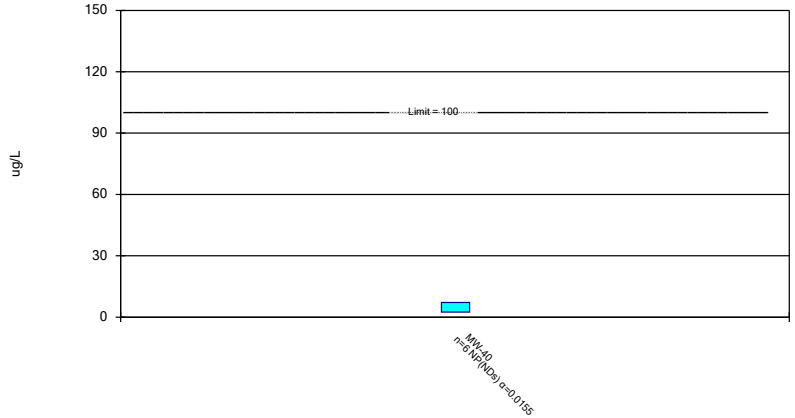


Constituent: cis-1,2-Dichloroethene Analysis Run 1/30/2026 10:25 AM View: 2025 AWQR AMD well VOC
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Non-Parametric Confidence Interval

Compliance Limit is not exceeded.

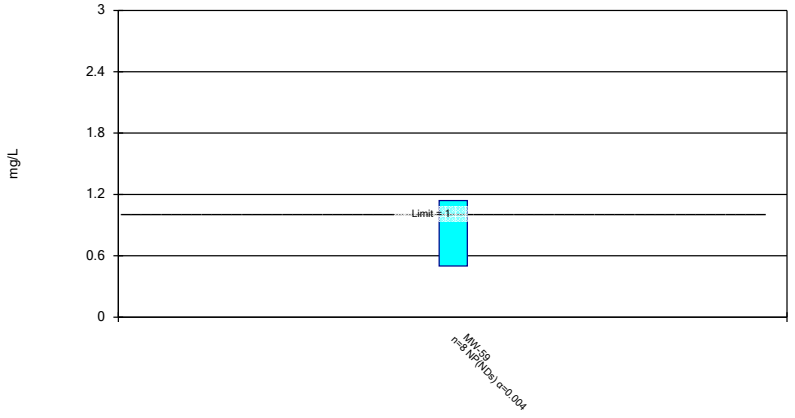


Constituent: Naphthalene Analysis Run 1/30/2026 10:25 AM View: 2025 AWQR AMD well VOC Cl
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Non-Parametric Confidence Interval

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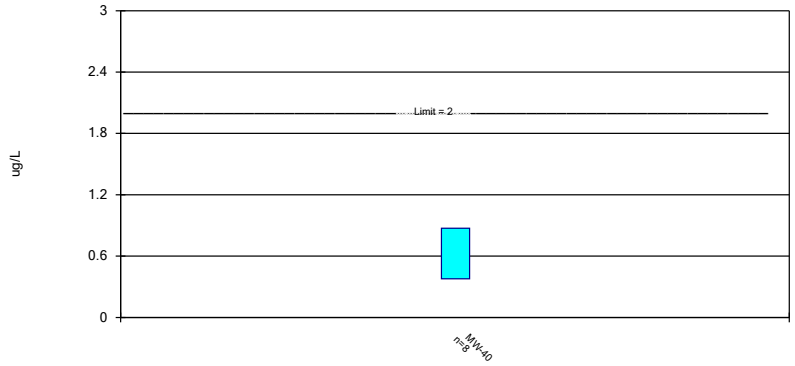


Constituent: Sulfide Analysis Run 1/30/2026 10:25 AM View: 2025 AWQR AMD well VOC Cl
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Vinyl chloride Analysis Run 1/30/2026 10:25 AM View: 2025 AWQR AMD well VOC CI

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Appendix E

2025 Leachate Control System Performance Evaluation Report

2025 LEACHATE CONTROL SYSTEM PERFORMANCE EVALUATION REPORT

FOR

OTTUMWA-WAPELLO COUNTY LANDFILL

WEST MSWLF UNIT

OTTUMWA, IOWA

SUBMITTAL DATE: FEBRUARY 2026

PREPARED FOR:
OTTUMWA-WAPELLO COUNTY SOLID WASTE COMMISSION

PREPARED BY:
SCS ENGINEERS

Table of Contents

Section 1.0 Leachate Control System 1-1

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1.2 Effectiveness of the Leachate Control System 1-1

1.3 Approved Changes to System 1-2

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Figures

Figure 1 Leachate Control System

Attachments

Attachment A Table 12 – DNR Annual Water Quality Report Template

Attachment B Historical Leachate Column Thickness Tables and Graphs

Section 1.0

Leachate Control System

SCS Engineers (SCS), on behalf of the Ottumwa-Wapello County Solid Waste Commission, has prepared this Leachate Control System Performance Evaluation Report (LCSPER) for the West municipal solid waste landfill (MSWLF) unit at the Ottumwa-Wapello County Landfill (Landfill). This LCSPER was prepared to comply with the requirements of Iowa Administrative Code (IAC) 567-113.7(5)"b"(14) and additional Iowa Department of Natural Resources (DNR) requirements specified in the West MSWLF unit's operating permit, most recently renewed on January 25, 2026 (Doc #115849). This LCSPER describes the leachate control system, discusses maintenance activities, provides an evaluation of the effectiveness of the system, and, if necessary, provides recommendations for additional control measures. The reporting period for this LCSPER is from January – December 2025.

1.1 Location of Leachate Control System

The Landfill property is depicted in **Figure 1**, Leachate Control System, and is located along 165th Avenue, approximately 1.5 miles north of State Highway 23 in Wapello County, Iowa. The Landfill property consists of approximately 250 acres and is located within the SE ¼; the E 30 acres of the S ½, S ½, NE ¼; and a portion of the W 10 acres of the S ½, S ½, NE ¼; all in Section 33, T73N, R14W, Wapello County, Iowa, as well as approximately 30 acres in the W ½ of the NE Fractional Quarter of Section 4, T72N, R14W, and Parcel A of the SW ¼ of Section 34, T73N, R14W, all in Wapello County, Iowa.

Leachate underdrains and collection pipes are located above the liners of the south cell, the west cell, the first north cell (built in 2000), the second north cell (built in 2006), the Phases 1A and 1B cell (built in 2009), the Phase 2 cell (built in 2013), and the Phase 3 cell (built in 2019). A toe drain with laterals extending into the waste mass is also present along the east toe of the closed unlined area of the unit. The monitoring system for the West MSWLF unit consists of thirteen leachate piezometers (LPZ-6R2, LPZ-7R2, LPZ-9R, LPZ-10R, LPZ-11, LPZ-12, LPZ-14, LPZ-15, LPZ-16, LPZ-17, LPZ-18, LPZ-19, and LPZ-20). An above-ground direct recirculation line runs from the leachate lagoon to the active area. A leachate extraction well (LEW-1) is located near the location of leachate piezometer LPZ-13R2 in the alternatively-lined north cell. Leachate piezometer LPZ-13R2 is not a functional measurement point and was approved for removal without replacement.

1.2 Effectiveness of the Leachate Control System

Table 12 in **Attachment A** provides monthly leachate column thicknesses for the West MSWLF unit. Leachate level measurements are collected monthly by Landfill staff. SCS reviews the measurements each month to verify that the recorded measurements appear representative. If the measurements do not appear representative, Landfill staff recheck the levels.

Leachate thickness trends are described below, and a historical table and graphs are included in **Attachment B**.

<u>Unlined</u>

LPZ-6R2 – The thickness increased early in the reporting period, followed by a sharp decrease in August 2025, then an increase in September 2025. The October through December 2025 measurements were steady.

LPZ-7R2 – Leachate thickness measurements widely fluctuated between dry for most measurements and greater than 20 feet for two measurements. The measurements are inconsistent

with the majority of the historical record, but consistent with the 2024 measurements. Dry readings were recorded from May through December 2025.

LPZ-9R – Leachate thicknesses were erratic during this reporting period. Although measurements were within the historical range for most of the year, two measurements were above the typical historical range (excluding 2022 and 2024), and two measurements were below the typical historical range (excluding pre-2015 and a single measurement in 2023).

LPZ-10R – The leachate thickness was within the historical range in January 2025, but was then reported as needing maintenance. This piezometer will be investigated to determine if repair is practical.

LPZ-11 – Leachate thicknesses were generally stable, with thicknesses between 3 and 5 feet during this reporting period and within the historical range.

LPZ-12 – Leachate thicknesses remained within the historical range during this reporting period, continuing the trend since 2023 of higher thicknesses early in the year followed by steadily decreasing thicknesses through the end of the year.

LPZ-19 – During this reporting period, leachate thicknesses continued the erratic measurements that began in 2023 after a stable trend in previous years. Multiple measurements were within one foot of the historical low. However, six measurements were above the historical range (excluding November 2023 and all of 2024).

Clay Lined

LPZ-18 – Leachate thicknesses were generally stable at less than 2 feet throughout the reporting period with a thickness range of 0.7 feet and within the historical range.

Composite Lined

LPZ-14 – The piezometer was dry during this reporting period.

LPZ-15 – The piezometer was dry during this reporting period.

LPZ-16 – The piezometer was dry during this reporting period.

LPZ-17 – The piezometer was dry during this reporting period.

LPZ-20 – The piezometer was dry during this reporting period except for a thickness of 0.7 feet in May 2025.

1.3 Changes to System

The pump in the lift station that pumps leachate into the lagoon was replaced during this reporting period.

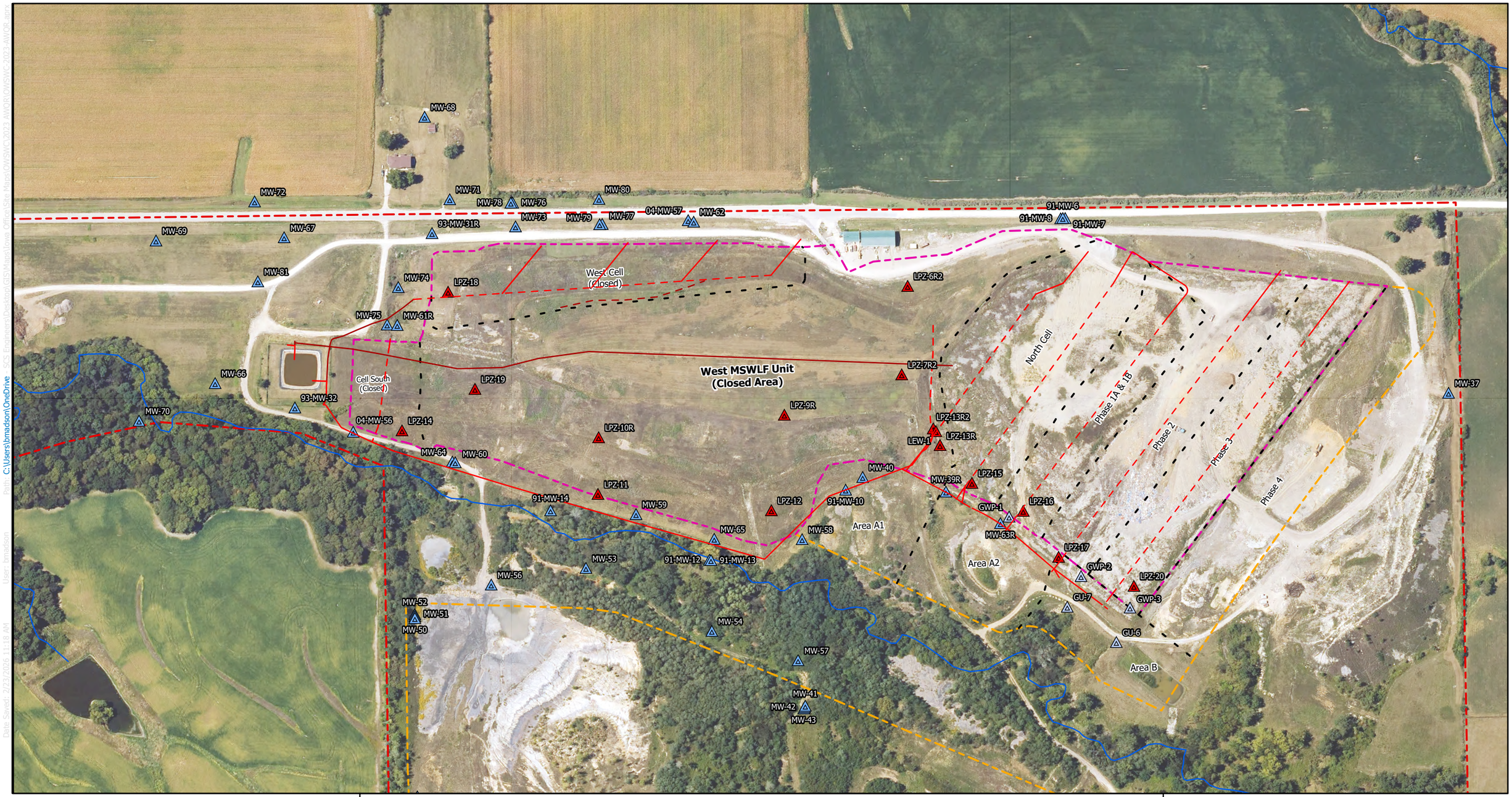
A leachate cleanout on the east side of Phase 3 was replaced during this reporting period.

1.4 Proposed Changes to System

There are no proposed changes to the leachate control system at this time. SCS recommends continuing to perform the following items to maintain the effectiveness of the leachate control system:

- Continue monthly monitoring of the leachate levels as required in the facility permit.
- Maintain good vegetation over the final cover and intermediate cover over the inactive areas.
- Continue operation and maintenance of the leachate control system in accordance with the approved Leachate Control System Plan.

- Continue recording the volume of leachate transported to the City of Ottumwa publicly-owned treatment works (POTW). 240,00 gallons of leachate were hauled for disposal during this reporting period.
- Clean the leachate collection system at least once every three years or more frequently if the leachate head or the volume of leachate collected indicates more frequent cleaning is necessary. Cleaning is scheduled for 2026.



Leachate Control System

Figure 1

Legend

- Leachate Monitoring Point
- Leachate Recirculation Piping - Perforated
- Leachate Recirculation Piping - Solid
- Leachate System Piping - Perforated
- Leachate System Piping - Solid
- Monitoring Well
- Groundwater Underdrain
- Approximate Existing Waste Boundary
- Approximate Future Waste Boundary
- Approximate Location of West Cell Boundary
- Estimated Waste Boundary
- Approximate Property Boundary
- Stream

Ottumwa-Wapello County Landfill
Ottumwa, IA
Project No: 27225312.26
Drawing Date: October 2025

W S N E

0 230 460 920 Feet

SCS ENGINEERS
environmental consultants and contractors

Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, CGIAR, USGS, USDA NAIP, Iowa State University GIS Facility

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Attachment A

Leachate Management Summary

Table 12
Leachate Management Summary
2025 Leachate Control System Performance Evaluation Report
Ottumwa-Wapello County Landfill
Permit No. 90-SDP-01-75P

	Unlined Cells - Column Thickness (ft)							Lined Cells - Column Thickness (ft)						Hauled to	Leachate Used in ADC	Precipitation
Month	LPZ-6R2	LPZ-7R2	LPZ-9R	LPZ-10R	LPZ-11	LPZ-12	LPZ-19	LPZ-14	LPZ-15	LPZ-16	LPZ-17	LPZ-18	LPZ-20	Ottumwa POTW (gal)	Preparation (gal)	(in)
January 2025	10.6	NA	NA	5.8	4.8	5.6	19.7	Dry	Dry	Dry	Dry	1.3	Dry			0.99
February 2025	11.2	NA	6.9	NA	4.7	6.4	17.5	Dry	Dry	Dry	Dry	1.7	Dry			0.36
March 2025	13.2	23.2	10.8	NM	4.9	6.3	9.4	Dry	Dry	Dry	Dry	1.2	Dry			1.47
April 2025	12.4	25.5	14.2	Damaged	4.6	5.7	19.5	Dry	Dry	Dry	Dry	1.1	Dry			1.73
May 2025	12.2	Dry	4.4	Damaged	4.8	5.9	8.2	Dry	Dry	Dry	Dry	1.5	0.7			0.83
June 2025	11.5	Dry	10.9	Damaged	3.8	4.8	7.0	Dry	Dry	Dry	Dry	1.5	Dry	240,000	150,400	3.97
July 2025	12.3	Dry	14.7	Damaged	3.9	4.4	6.7	Dry	Dry	Dry	Dry	1.5	Dry			4.97
August 2025	7.5	Dry	3.8	Damaged	3.9	4.5	16.1	Dry	Dry	Dry	Dry	1.1	Dry			2.16
September 2025	10.3	Dry	7.6	Damaged	3.7	4.4	7.3	Dry	Dry	Dry	Dry	1.4	Dry			0.83
October 2025	8.5	Dry	5.9	Damaged	3.1	3.8	14.7	Dry	Dry	Dry	Dry	1.5	Dry			1.21
November 2025	9.1	Dry	10.2	Damaged	4.5	4.1	15.8	Dry	Dry	Dry	Dry	1.5	Dry			0.55
December 2025	8.5	Dry	5.8	Damaged	4.5	4.8	11.9	Dry	Dry	Dry	Dry	1.2	Dry			1.11
													Reporting Period Total Gallons	240,000	150,400	20.18

Measurements performed by Landfill staff.

NA - Not applicable. Likely anomalous values were not considered in the thickness interpretation.

Comments:

1. Reporting Period: January - December 2025.
2. Recommended Changes to Leachate Control System: No changes recommended.
3. Maintenance Performed on Leachate Control System: The pump in the lift station that pumps leachate into the lagoon was replaced during this reporting period.
4. Last Date of Cleaning and Inspection: August 2017.
5. Date for Next Cleaning and Inspection: Leachate line cleaning and inspection will be performed next in 2026.
6. Volume of Leachate Used in Alternative Daily Cover (ADC) Preparation: 150,400 gallons of leachate were used for preparation of ADC during this reporting period.
7. Volume of Leachate Recirculated: Leachate was not recirculated during this reporting period.
8. Volume of Leachate Treated Off-Site: 240,000 gallons of leachate were hauled to the Ottumwa POTW for disposal during this reporting period.
9. Precipitation data from Iowa State University Iowa Environmental Mesonet (https://mesonet.agron.iastate.edu/ASOS/reports/mon_prec.php) for Ottumwa, Iowa.

Attachment B

Historical Leachate Column Thickness Tables and Graphs

ATTACHMENT B
HISTORICAL LEACHATE COLUMN THICKNESSES
OTTUMWA-WAPELLO COUNTY LANDFILL

Date	Unlined Area of West MSWLF Unit							Lined Area of West MSWLF Unit					
	LPZ-6R2	LPZ-7R2	LPZ-9R	LPZ-10R	LPZ-11	LPZ-12	LPZ-19	LPZ-14	LPZ-15	LPZ-16	LPZ-17	LPZ-18	LPZ-20
Apr-07	NI	NI	NI	NM	NM	NI	NI	NM	NM	NM	NI	NI	NI
Oct-07	NI	NI	NI	NM	NM	NI	NI	NM	0.0	NM	NI	NI	NI
Mar-08	NI	NI	NI	NM	NM	NI	NI	NM	NM	NM	NI	NI	NI
Apr-08	NI	NI	NI	NM	NM	NI	NI	NM	NM	NM	NI	NI	NI
Apr-08	NI	NI	NI	NM	NM	NI	NI	NM	NM	NM	NI	NI	NI
May-08	NI	NI	NI	NM	NM	NI	NI	NM	NM	NM	NI	NI	NI
Jun-08	NI	NI	NI	NM	NM	NI	NI	NM	NM	NM	NI	NI	NI
Jul-08	NI	NI	NI	NM	NM	NI	NI	NM	NM	NM	NI	NI	NI
Aug-08	NI	NI	NI	0.2	NM	NI	NI	NM	0.2	NM	NI	NI	NI
Sep-08	NI	NI	NI	2.8	NM	NI	NI	NM	2.8	NM	NI	NI	NI
Sep-08	NI	NI	NI	Dry	NM	NI	NI	NM	0.0	NM	NI	NI	NI
Oct-08	NI	NI	NI	0.2	NM	NI	NI	NM	0.2	NM	NI	NI	NI
Nov-08	NI	NI	NI	Dry	NM	NM	NI	NM	0.0	NM	NI	NI	NI
Dec-08	NI	NI	NI	Dry	NM	NM	NI	NM	0.0	NM	NI	NI	NI
Jan-09	NI	NI	NI	Dry	NM	NM	NI	NM	0.0	NM	NI	NI	NI
Feb-09	NI	NI	NI	Dry	NM	NM	NI	NM	0.0	NM	NI	NI	NI
Mar-09	NI	NI	NI	Dry	NM	NM	NI	NM	0.0	NM	NI	NI	NI
Apr-09	NI	NI	NI	Dry	NM	5.2	NI	NM	0.0	NM	NI	NI	NI
Apr-09	NI	NI	NI	5.2	NM	NM	NI	NM	5.2	NM	NI	NI	NI
May-09	NI	NI	NI	Dry	Dry	5.0	NI	NM	0.0	NM	NI	NI	NI
Jun-09	NI	NI	NI	Dry	Dry	5.0	NI	NM	0.0	NM	NI	NI	NI
Jul-09	NI	NI	NI	Dry	Dry	4.8	NI	NM	0.0	NM	NI	NI	NI
Aug-09	NI	NI	NI	Dry	Dry	4.6	NI	NM	0.0	NM	NI	NI	NI
Sep-09	NI	NI	NI	Dry	Dry	5.3	NI	NM	0.0	NM	NI	NI	NI
Oct-09	NI	NI	NI	Dry	Dry	5.6	NI	NM	0.0	NM	NI	NI	NI
Oct-09	NI	NI	NI	Dry	Dry	NM	NI	NM	0.0	NM	NI	NI	NI
Oct-09	NI	NI	NI	NM	NM	NM	NI	NM	NM	NM	NI	NI	NI
Nov-09	NI	NI	NI	Dry	Dry	5.6	NI	NM	0.0	NM	NI	NI	NI
Dec-09	NI	NI	NI	Dry	Dry	5.1	NI	NM	0.0	NM	NI	NI	NI
Jan-10	NI	NI	NI	Dry	Dry	8.1	NI	4.4	1.2	0.2	NI	NI	NI
Feb-10	NI	NI	NI	Dry	Dry	8.3	NI	4.2	1.3	0.5	NI	NI	NI
Mar-10	NI	NI	NI	Dry	Dry	8.0	NI	4.3	1.2	Dry	NI	NI	NI
Apr-10	NI	NI	NI	Dry	Dry	8.5	NI	4.4	1.5	Dry	NI	NI	NI
Apr-10	NI	NI	NI	Dry	Dry	5.6	NI	NM	NM	Dry	NI	NI	NI
May-10	NI	NI	NI	Dry	Dry	8.2	NI	4.5	1.3	Dry	NI	NI	NI
Jun-10	NI	NI	NI	Dry	Dry	8.5	NI	4.4	1.5	Dry	NI	NI	NI
Jul-10	NI	NI	NI	Dry	Dry	9.3	NI	4.1	1.7	Dry	NI	NI	NI
Aug-10	NI	NI	NI	Dry	Dry	8.9	NI	3.1	0.7	Dry	NI	NI	NI
Sep-10	NI	NI	NI	Dry	Dry	6.6	NI	4.0	1.9	0.3	NI	NI	NI
Oct-10	NI	NI	NI	Dry	Dry	5.3	NI	4.0	0.4	Dry	NI	NI	NI
Oct-10	NI	8.5	10.6	3.3	Dry	NM	NI	NM	NM	NM	NI	NI	NI
Nov-10	6.7	11.2	11.4	1.8	Dry	4.2	NI	3.8	1.3	Dry	NI	NI	NI
Dec-10	6.6	12.2	10.3	2.1	Dry	4.4	NI	5.5	1.1	Dry	NI	NI	NI
Jan-11	6.0	11.4	9.3	2.2	Dry	6.2	NI	3.9	1.0	Dry	NI	NI	NI
Feb-11	6.7	11.3	9.6	1.9	Dry	8.5	NI	4.1	1.1	Dry	NI	NI	NI
Feb-11	Dry	11.3	10.7	2.3	Dry	7.6	NI	NM	NM	NM	NI	NI	NI
Mar-11	5.8	11.1	6.3	1.8	Dry	6.0	NI	3.5	0.9	0.6	NI	NI	NI
Apr-11	6.5	12.6	9.3	3.0	Dry	5.9	NI	4.5	2.3	NM	NI	NI	NI
May-11	5.6	11.9	4.8	1.7	Dry	6.3	NI	3.5	0.9	0.7	NI	NI	NI
Jun-11	5.9	13.9	8.9	2.3	Dry	8.2	NI	3.2	1.2	0.2	NI	NI	NI
Jul-11	6.5	11.6	8.7	1.9	Dry	8.4	NI	4.1	1.2	Dry	NI	NI	NI
Aug-11	6.4	10.6	10.3	2.1	Dry	8.6	NI	3.1	1.3	Dry	NI	NI	NI
Aug-11	6.3	10.3	4.5	2.2	Dry	4.2	NI	NM	NM	NM	NI	NI	NI
Sep-11	6.1	13.2	6.9	2.0	Dry	5.9	NI	3.1	0.6	1.1	NI	NI	NI
Oct-11	6.6	14.2	8.7	3.6	Dry	6.7	NI	3.4	0.7	2.1	NI	NI	NI
Nov-11	6.5	16.6	9.6	2.6	Dry	6.3	NI	3.9	0.9	Dry	NI	NI	NI
Dec-11	5.6	10.9	4.6	3.0	Dry	6.2	NI	Dry	1.9	Dry	NI	NI	NI
Jan-12	5.3	10.3	3.3	1.7	Dry	6.0	NI	3.4	6.2	0.4	NI	NI	NI
Feb-12	5.5	11.0	4.3	1.8	Dry	5.9	NI	3.2	6.1	0.4	NI	NI	NI
Mar-12	5.5	10.7	6.6	2.6	Dry	7.0	NI	4.4	7.2	0.5	NI	NI	NI
Apr-12	5.7	10.7	6.7	2.5	Dry	6.0	NI	2.6	6.4	0.4	NI	NI	NI
May-12	5.6	9.8	3.1	5.0	Dry	5.7	NI	Dry	0.5	0.4	NI	NI	NI
Jun-12	5.7	10.3	3.7	5.0	Dry	5.7	NI	Dry	0.5	0.4	NI	NI	NI
Jul-12	5.6	10.0	3.2	1.0	Dry	5.3	NI	Dry	0.6	Dry	NI	NI	NI
Aug-12	6.2	10.6	6.3	3.6	Dry	6.6	NI	Dry	0.7	Dry	NI	NI	NI
Sep-12	7.1	10.0	3.6	2.4	Dry	6.7	NI	Dry	1.0	0.3	NI	NI	NI
Oct-12	5.8	9.6	3.7	2.1	Dry	5.7	NI	Dry	6.3	0.7	NI	NI	NI
Nov-12	5.7	16.6	10.3	2.3	Dry	6.9	NI	Dry	5.5	0.4	NI	NI	NI
Dec-12	5.6	10.6	3.4	2.3	Dry	6.3	NI	Dry	7.2	0.5	NI	NI	NI

ATTACHMENT B
HISTORICAL LEACHATE COLUMN THICKNESSES
OTTUMWA-WAPELLO COUNTY LANDFILL

Date	Unlined Area of West MSWLF Unit							Lined Area of West MSWLF Unit					
	LPZ-6R2	LPZ-7R2	LPZ-9R	LPZ-10R	LPZ-11	LPZ-12	LPZ-19	LPZ-14	LPZ-15	LPZ-16	LPZ-17	LPZ-18	LPZ-20
Jan-13	8.4	9.5	3.3	1.7	Dry	6.1	NI	Dry	1.3	0.3	NI	NI	NI
Feb-13	NM	9.4	3.3	2.8	Dry	6.3	NI	Dry	1.3	0.5	NI	NI	NI
Mar-13	6.1	11.5	9.2	2.1	Dry	6.2	NI	Dry	1.4	0.3	NI	NI	NI
Apr-13	8.4	9.9	3.4	NM	Dry	6.0	NI	3.4	0.9	0.2	NI	NI	NI
May-13	11.4	11.2	4.3	2.9	Dry	NM	NI	Dry	NM	0.3	NI	NI	NI
Jun-13	11.4	11.2	4.3	2.9	Dry	NM	NI	Dry	NM	0.3	NI	NI	NI
Jul-13	11.8	10.6	3.4	3.6	Dry	5.4	NI	Dry	1.5	1.1	NI	NI	NI
Aug-13	11.2	11.0	4.0	3.2	Dry	5.4	NI	Dry	NM	0.9	NI	NI	NI
Sep-13	9.6	10.5	4.2	NM	Dry	6.9	NI	Dry	NM	Dry	NI	NI	NI
Oct-13	9.3	10.6	4.6	2.8	3.6	6.3	NI	Dry	Dry	0.3	NI	NI	NI
Nov-13	5.9	12.2	9.2	2.2	Dry	5.6	NI	Dry	Dry	Dry	NI	NI	NI
Dec-13	8.3	10.0	3.9	2.4	Dry	6.3	NI	Dry	Dry	Dry	NI	NI	NI
Jan-14	5.7	10.3	9.6	3.0	Dry	6.1	NI	Dry	Dry	Dry	Dry	NI	NI
Feb-14	5.2	11.5	3.2	2.1	3.7	5.2	NI	Dry	Dry	Dry	Dry	NI	NI
Mar-14	7.5	9.9	4.3	2.6	NM	NM	NI	Dry	Dry	Dry	Dry	NI	NI
Apr-14	6.4	NM	4.4	2.2	Dry	7.1	NI	Dry	1.1	0.1	Dry	NI	NI
May-14	10.8	10.5	NM	2.5	Dry	8.0	NI	5.3	1.1	0.4	0.5	NI	NI
Jun-14	11.4	10.9	5.6	2.4	Dry	6.9	NI	5.2	1.1	Dry	Dry	NI	NI
Jul-14	11.4	12.2	5.8	2.5	Dry	7.1	NI	Dry	1.0	Dry	Dry	NI	NI
Aug-14	11.7	10.3	6.7	4.3	Dry	7.7	NI	Dry	Dry	Dry	Dry	NI	NI
Sep-14	7.6	NM	4.6	3.4	NM	7.7	NI	Dry	1.1	Dry	Dry	NI	NI
Oct-14	11.4	10.5	6.6	4.6	4.4	6.8	NI	5.2	1.0	0.4	0.4	NI	NI
Nov-14	10.8	10.2	5.8	2.4	Dry	6.8	NI	Dry	Dry	Dry	Dry	NI	NI
Dec-14	10.2	9.9	10.5	2.9	4.1	2.1	NI	Dry	Dry	Dry	Dry	NI	NI
Jan-15	3.7	9.5	4.7	2.3	Dry	7.7	NI	Dry	Dry	Dry	Dry	NI	NI
Feb-15	11.7	9.9	5.2	2.7	Dry	7.6	NI	Dry	Dry	Dry	Dry	NI	NI
Mar-15	11.1	10.2	5.1	2.9	Dry	6.2	NI	Dry	Dry	Dry	Dry	NI	NI
Apr-15	11.4	9.9	3.7	2.9	Dry	6.3	7.1	Dry	Dry	Dry	Dry	1.5	NI
May-15	10.9	9.9	5.3	6.8	Dry	6.2	7.6	Dry	Dry	Dry	Dry	1.5	NI
Jun-15	11.2	1.8	4.2	3.0	Dry	6.7	7.8	Dry	Dry	Dry	Dry	NM	NI
Jul-15	11.9	10.0	9.5	6.5	Dry	6.9	8.0	Dry	Dry	Dry	0.5	1.5	NI
Aug-15	12.3	10.0	5.5	3.0	Dry	6.5	8.1	4.8	Dry	Dry	Dry	1.5	NI
Sep-15	11.9	10.3	5.4	6.5	Dry	5.2	8.3	Dry	Dry	Dry	0.5	5.5	NI
Oct-15	11.2	9.6	8.4	2.5	3.8	6.1	9.9	4.0	Dry	Dry	Dry	1.5	NI
Nov-15	12.0	9.5	5.0	2.6	3.9	11.9	8.3	5.2	Dry	0.2	Dry	1.4	NI
Dec-15	11.7	9.4	5.5	5.4	4.3	6.5	8.4	Dry	Dry	Dry	Dry	0.5	NI
Jan-16	12.0	10.1	5.6	1.4	Dry	6.1	8.3	Dry	Dry	Dry	Dry	1.5	NI
Feb-16	11.6	9.9	5.1	3.9	Dry	6.2	8.3	Dry	Dry	Dry	Dry	1.5	NI
Mar-16	12.0	10.2	10.3	3.5	Dry	6.3	3.5	Dry	Dry	Dry	Dry	1.6	NI
Apr-16	12.7	10.1	5.0	3.6	Dry	5.7	8.4	Dry	Dry	Dry	Dry	1.7	NI
May-16	12.3	9.0	Dry	4.0	Dry	5.2	8.3	Dry	Dry	Dry	Dry	1.7	NI
Jun-16	12.4	9.3	11.5	4.3	Dry	5.4	8.5	Dry	Dry	Dry	Dry	2.0	NI
Jul-16	11.6	10.0	10.3	Dry	Dry	Dry	8.3	5.0	Dry	Dry	Dry	1.7	NI
Aug-16	11.5	9.8	9.6	Dry	Dry	Dry	8.5	4.8	Dry	Dry	Dry	1.5	NI
Sep-16	11.9	10.3	11.9	4.5	Dry	Dry	9.0	Dry	Dry	Dry	Dry	1.5	NI
Oct-16	11.8	9.7	5.8	4.8	Dry	2.7	9.8	Dry	Dry	Dry	Dry	1.8	NI
Nov-16	11.9	9.7	5.8	5.0	Dry	3.0	9.8	Dry	Dry	Dry	Dry	1.8	NI
Dec-16	11.8	10.1	10.3	5.3	Dry	2.7	10.6	Dry	Dry	Dry	Dry	1.9	NI
Jan-17	12.2	9.9	10.7	5.4	Dry	5.2	9.8	Dry	Dry	Dry	Dry	1.8	NI
Feb-17	6.9	9.9	6.1	3.8	Dry	5.9	10.1	Dry	Dry	Dry	Dry	1.9	NI
Mar-17	11.9	9.9	5.6	3.8	Dry	5.7	9.9	Dry	Dry	Dry	Dry	1.8	NI
Apr-17	12.1	11.1	7.2	4.8	Dry	5.9	10.0	Dry	Dry	Dry	Dry	1.9	NI
May-17	12.0	9.7	6.1	4.6	Dry	5.7	9.6	Dry	Dry	Dry	Dry	1.7	NI
Jun-17	12.2	9.9	10.7	5.6	Dry	5.9	9.9	Dry	Dry	Dry	Dry	1.8	NI
Jul-17	12.2	9.9	11.1	7.2	Dry	5.3	9.8	Dry	Dry	Dry	Dry	1.7	NI
Aug-17	11.9	9.8	10.7	5.6	Dry	4.6	8.4	Dry	Dry	Dry	Dry	1.7	NI
Sep-17	11.7	10.1	10.4	5.8	Dry	2.9	9.9	Dry	Dry	Dry	Dry	2.0	NI
Oct-17	12.2	9.9	9.7	5.4	Dry	4.0	8.0	Dry	Dry	Dry	Dry	2.0	NI
Nov-17	11.8	9.9	5.9	4.4	Dry	4.7	8.6	Dry	Dry	Dry	Dry	1.9	NI
Dec-17	8.1	10.3	5.4	5.7	Dry	4.4	8.3	Dry	Dry	Dry	Dry	1.7	NI
Jan-18	11.6	9.9	10.9	5.1	Dry	3.1	8.2	Dry	Dry	Dry	Dry	1.8	NI
Feb-18	11.7	10.0	12.3	5.1	Dry	3.2	8.3	Dry	Dry	Dry	Dry	1.8	NI
Mar-18	11.6	10.0	10.3	7.0	Dry	3.2	8.2	Dry	Dry	Dry	Dry	1.7	NI
Apr-18	11.8	9.9	12.4	7.6	Dry	3.2	8.3	Dry	Dry	Dry	Dry	2.0	NI
May-18	12.1	10.2	10.9	7.5	Dry	3.2	8.5	Dry	Dry	Dry	Dry	1.8	NI
Jun-18	12.0	10.3	6.1	8.5	Dry	3.2	8.1	Dry	Dry	Dry	Dry	1.9	NI
Jul-18	11.9	10.1	11.8	7.5	Dry	5.5	8.0	Dry	Dry	Dry	Dry	1.9	NI
Aug-18	10.4	10.2	4.3	7.5	Dry	3.4	8.4	Dry	Dry	Dry	Dry	1.4	NI
Sep-18	11.2	10.5	5.7	7.4	Dry	3.9	8.8	Dry	Dry	Dry	Dry	2.1	NI
Oct-18	11.1	10.6	5.6	7.3	Dry	4.1	9.0	Dry	Dry	Dry	Dry	2.1	NI
Nov-18	11.1	10.4	5.6	6.8	Dry	2.9	8.9	Dry	Dry	Dry	Dry	1.9	NI
Dec-18	11.1	10.4	5.4	6.8	Dry	5.6	8.3	Dry	Dry	Dry	Dry	1.8	NI

ATTACHMENT B
HISTORICAL LEACHATE COLUMN THICKNESSES
OTTUMWA-WAPELLO COUNTY LANDFILL

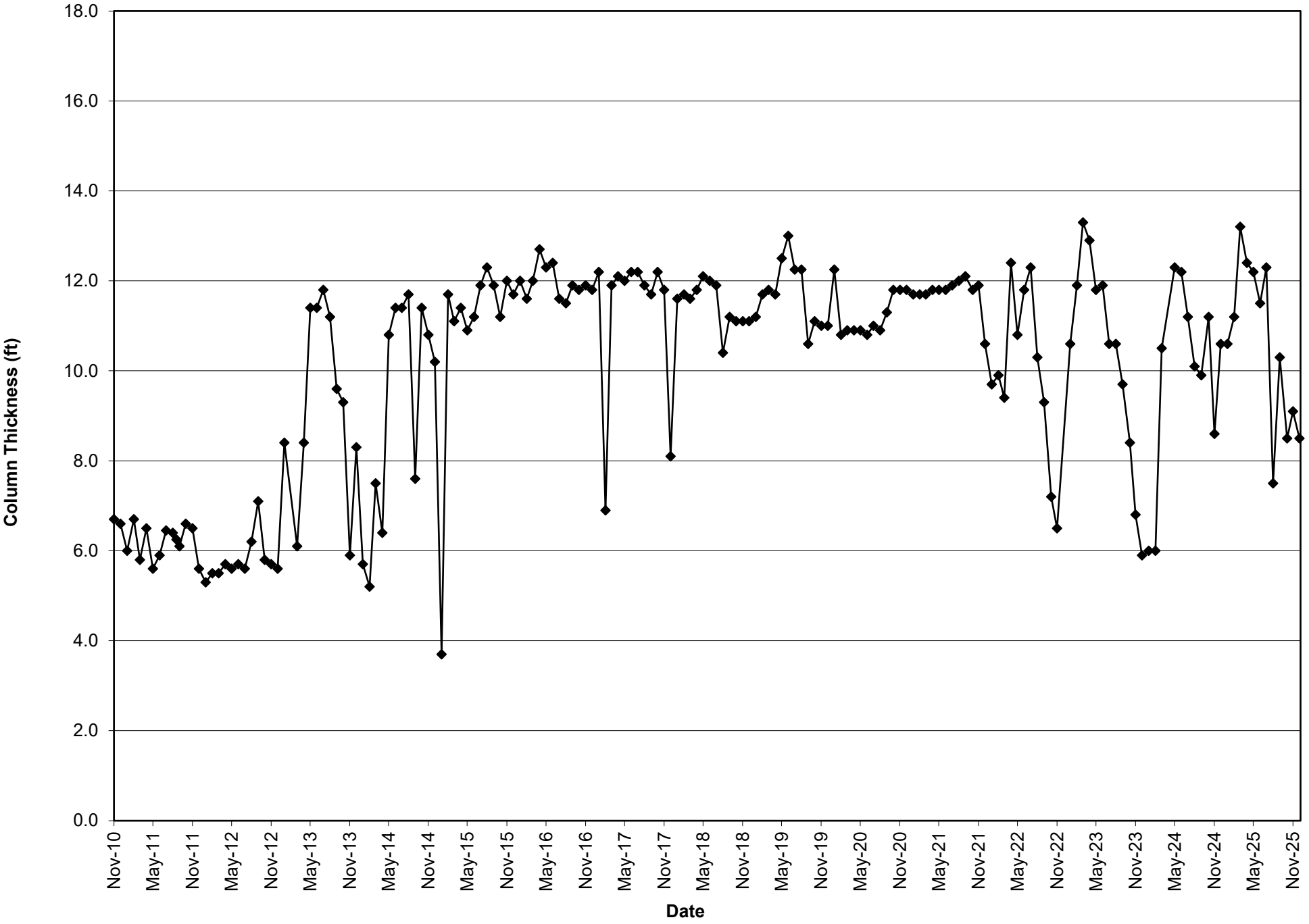
Date	Unlined Area of West MSWLF Unit							Lined Area of West MSWLF Unit					
	LPZ-6R2	LPZ-7R2	LPZ-9R	LPZ-10R	LPZ-11	LPZ-12	LPZ-19	LPZ-14	LPZ-15	LPZ-16	LPZ-17	LPZ-18	LPZ-20
Jan-19	11.2	11.0	5.8	8.0	Dry	Dry	8.3	Dry	Dry	Dry	Dry	1.8	NI
Feb-19	11.7	10.0	10.4	7.1	Dry	8.6	8.3	Dry	Dry	Dry	Dry	1.7	NI
Mar-19	11.8	10.3	10.3	7.2	Dry	8.7	8.3	Dry	Dry	Dry	Dry	1.7	NI
Apr-19	11.7	9.4	9.7	7.2	Dry	8.7	9.3	Dry	Dry	Dry	Dry	1.7	NI
May-19	12.5	9.4	9.7	7.4	Dry	5.3	9.3	Dry	Dry	Dry	Dry	1.8	NI
Jun-19	13.0	11.2	11.0	7.9	Dry	5.2	8.4	Dry	Dry	Dry	Dry	1.8	NI
Jul-19	12.3	10.2	11.0	7.6	Dry	5.4	8.4	Dry	Dry	Dry	Dry	2.0	NI
Aug-19	12.3	10.4	5.7	8.4	Dry	5.7	13.0	Dry	Dry	Dry	Dry	NM	NI
Sep-19	10.6	8.6	5.1	7.1	3.9	4.2	10.9	Dry	Dry	Dry	Dry	1.5	NI
Oct-19	10.7	8.7	5.0	7.5	3.6	5.2	11.0	Dry	Dry	Dry	Dry	1.4	NI
Nov-19	11.0	9.8	10.4	8.0	4.5	Dry	8.4	Dry	Dry	Dry	Dry	1.7	NI
Dec-19	11.0	9.9	10.5	6.9	4.4	Dry	9.4	Dry	Dry	Dry	Dry	1.8	NI
Jan-20	12.3	10.4	5.7	8.4	4.7	Dry	13.0	Dry	Dry	Dry	Dry	NA	NI
Feb-20	10.8	8.9	5.0	7.7	4.2	Dry	11.1	Dry	Dry	Dry	Dry	1.5	NI
Mar-20	10.9	8.9	5.0	7.7	4.2	Dry	11.2	Dry	Dry	Dry	Dry	0.5	NI
Apr-20	10.9	8.8	5.1	8.0	4.9	Dry	11.0	Dry	Dry	Dry	Dry	1.4	NI
May-20	10.9	8.9	5.1	7.5	4.3	4.6	10.9	Dry	Dry	Dry	Dry	1.2	NI
Jun-20	10.8	8.7	4.9	7.4	4.2	4.7	11.0	Dry	Dry	Dry	Dry	1.4	NI
Jul-20	11.0	8.8	5.1	7.4	4.2	4.7	11.2	Dry	Dry	Dry	Dry	1.5	NI
Aug-20	10.9	8.9	5.1	6.6	4.4	4.7	11.6	Dry	Dry	Dry	Dry	1.4	NI
Sep-20	11.3	9.0	5.1	7.4	4.7	4.8	11.4	Dry	Dry	Dry	Dry	1.5	NI
Oct-20	11.8	9.2	5.1	7.6	4.6	5.0	11.0	Dry	Dry	Dry	Dry	1.5	NI
Nov-20	11.8	9.3	5.2	7.7	4.2	5.3	11.1	Dry	Dry	Dry	Dry	1.4	NI
Dec-20	11.8	9.3	5.2	7.7	4.2	5.3	11.2	Dry	Dry	Dry	Dry	1.4	NM
Jan-21	11.7	9.3	5.1	8.0	4.2	Dry	11.3	Dry	Dry	Dry	Dry	1.5	NM
Feb-21	11.7	9.3	5.1	8.0	4.2	Dry	11.3	Dry	Dry	Dry	Dry	1.5	NM
Mar-21	11.7	9.4	5.0	7.9	4.2	Dry	11.2	Dry	Dry	Dry	Dry	1.4	0.8
Apr-21	11.8	9.9	5.2	12.8	4.3	5.9	11.0	Dry	Dry	Dry	Dry	0.4	0.5
May-21	11.8	9.5	5.2	11.9	4.6	5.9	11.1	Dry	Dry	Dry	Dry	NA	0.6
Jun-21	11.8	9.9	6.2	8.0	4.7	Dry	11.1	Dry	Dry	Dry	Dry	0.4	0.6
Jul-21	11.9	9.9	6.3	6.9	4.5	Dry	11.1	Dry	Dry	Dry	Dry	0.5	0.5
Aug-21	12.0	10.0	6.3	7.1	4.2	5.0	11.2	Dry	Dry	Dry	Dry	0.6	0.6
Sep-21	12.1	10.0	6.4	7.0	4.1	4.8	11.2	Dry	Dry	Dry	Dry	0.6	0.6
Oct-21	11.8	9.9	6.8	7.7	4.0	8.2	11.3	Dry	Dry	Dry	Dry	0.1	0.6
Nov-21	11.9	10.0	6.8	6.9	4.4	6.6	11.3	Dry	Dry	Dry	Dry	0.2	0.7
Dec-21	10.6	10.0	6.7	6.4	4.2	5.6	11.4	Dry	Dry	Dry	Dry	Dry	0.5
Jan-22	9.7	10.0	6.8	6.3	4.6	5.7	11.6	Dry	Dry	Dry	Dry	0.1	0.6
Feb-22	9.9	10.3	6.8	6.2	4.7	5.8	11.6	Dry	Dry	Dry	Dry	0.1	0.5
Mar-22	9.4	10.0	6.8	7.3	4.7	5.8	11.7	Dry	Dry	Dry	Dry	0.2	0.7
Apr-22	12.4	9.9	6.8	6.3	4.5	5.7	11.3	Dry	Dry	Dry	Dry	0.1	0.5
May-22	10.8	10.0	6.3	9.7	4.3	5.1	11.6	Dry	Dry	Dry	Dry	0.1	0.5
Jun-22	11.8	10.1	6.9	6.9	4.2	5.3	11.8	Dry	Dry	Dry	Dry	0.3	0.8
Jul-22	12.3	10.0	6.6	7.4	4.0	5.1	11.6	Dry	Dry	Dry	Dry	1.6	0.6
Aug-22	10.3	10.1	6.7	6.5	3.8	4.5	11.7	Dry	Dry	Dry	Dry	1.5	0.7
Sep-22	9.3	Dry	5.8	5.0	2.9	3.8	11.6	Dry	Dry	Dry	Dry	0.4	0.8
Oct-22	7.2	11.2	18.8	5.5	4.8	4.4	9.9	Dry	Dry	Dry	Dry	1.4	1.0
Nov-22	6.5	22.2	16.7	6.7	4.8	4.4	10.8	Dry	Dry	Dry	Dry	3.6	0.6
Dec-22	NM	Dry	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM	NM
Jan-23	10.6	Dry	5.8	10.8	4.3	8.1	11.5	Dry	Dry	Dry	Dry	1.7	Dry
Feb-23	11.9	Dry	6.1	3.6	4.4	7.4	10.3	Dry	Dry	Dry	Dry	1.4	0.5
Mar-23	13.3	Dry	7.3	3.7	4.4	8.3	12.6	Dry	Dry	Dry	Dry	2.0	0.7
Apr-23	12.9	9.8	7.1	12.9	4.1	8.3	10.1	Dry	Dry	Dry	Dry	1.6	0.6
May-23	11.8	9.5	5.9	4.3	Dry	5.6	7.5	Dry	Dry	Dry	Dry	1.8	0.9
Jun-23	11.9	Dry	5.6	7.3	3.8	5.0	8.1	Dry	Dry	Dry	Dry	1.6	2.0
Jul-23	10.6	Dry	2.9	6.4	3.7	4.9	7.3	Dry	Dry	Dry	Dry	1.5	1.3
Aug-23	10.6	10.4	6.8	12.7	3.9	4.5	11.8	Dry	Dry	Dry	Dry	1.7	1.6
Sep-23	9.7	Dry	7.5	6.4	3.7	3.9	NM	Dry	Dry	Dry	Dry	1.4	2.1
Oct-23	8.4	Dry	5.5	6.5	3.4	3.9	9.4	Dry	Dry	Dry	Dry	1.6	Dry
Nov-23	6.8	11.0	6.4	6.1	4.0	3.7	24.6	Dry	Dry	Dry	Dry	1.4	0.5
Dec-23	5.9	Dry	10.6	5.1	3.9	4.0	7.3	NM	NM	NM	NM	1.0	0.5
Jan-24	6.0	Dry	6.3	5.3	4.2	3.2	7.3	Dry	Dry	Dry	Dry	1.2	0.4
Feb-24	6.0	Dry	8.1	6.5	5.1	6.1	26.6	Dry	Dry	Dry	Dry	1.1	0.7
Mar-24	10.5	Dry	10.0	7.2	3.4	6.0	26.9	Dry	Dry	Dry	Dry	1.3	Dry
Apr-24	NA	21.8	21.7	8.5	5.7	5.3	26.0	Dry	Dry	Dry	Dry	1.5	Dry
May-24	12.3	Dry	19.8	8.7	5.2	5.2	10.7	Dry	Dry	Dry	Dry	9.4	Dry
Jun-24	12.2	Dry	22.4	6.1	4.4	5.9	24.9	Dry	Dry	Dry	Dry	1.3	Dry
Jul-24	11.2	Dry	5.3	6.3	4.2	4.3	8.8	Dry	Dry	Dry	Dry	6.3	Dry
Aug-24	10.1	Dry	5.8	7.0	5.0	4.0	14.1	Dry	Dry	Dry	Dry	1.7	Dry
Sep-24	9.9	Dry	5.6	7.3	NA	4.0	21.3	Dry	Dry	Dry	Dry	1.6	Dry
Oct-24	11.2	Dry	17.3	4.6	5.0	4.0	NA	Dry	Dry	Dry	Dry	1.3	Dry
Nov-24	8.6	24.0	19.1	7.2	4.5	3.7	6.8	Dry	Dry	Dry	Dry	NA	Dry
Dec-24	10.6	21.6	17.7	6.6	4.3	3.8	7.7	Dry	Dry	Dry	Dry	1.6	Dry

ATTACHMENT B
HISTORICAL LEACHATE COLUMN THICKNESSES
OTTUMWA-WAPELLO COUNTY LANDFILL

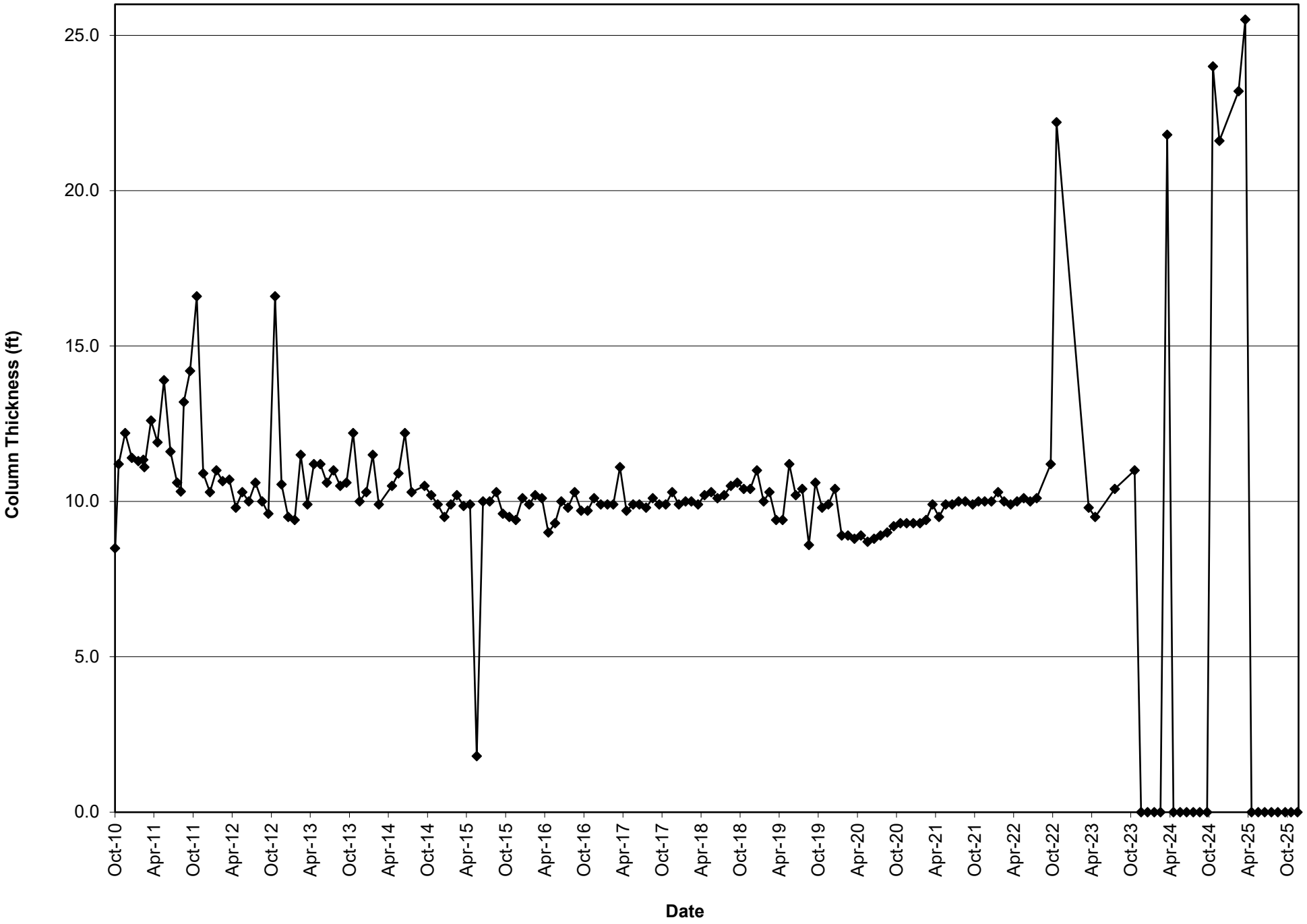
Date	Unlined Area of West MSWLF Unit							Lined Area of West MSWLF Unit					
	LPZ-6R2	LPZ-7R2	LPZ-9R	LPZ-10R	LPZ-11	LPZ-12	LPZ-19	LPZ-14	LPZ-15	LPZ-16	LPZ-17	LPZ-18	LPZ-20
Jan-25	10.6	NA	NA	5.8	4.8	5.6	19.7	Dry	Dry	Dry	Dry	1.3	Dry
Feb-25	11.2	NA	6.9	NA	4.7	6.4	17.5	Dry	Dry	Dry	Dry	1.7	Dry
Mar-25	13.2	23.2	10.8	NM	4.9	6.3	9.4	Dry	Dry	Dry	Dry	1.2	Dry
Apr-25	12.4	25.5	14.2	Damaged	4.6	5.7	19.5	Dry	Dry	Dry	Dry	1.1	Dry
May-25	12.2	Dry	4.4	Damaged	4.8	5.9	8.2	Dry	Dry	Dry	Dry	1.5	0.7
Jun-25	11.5	Dry	10.9	Damaged	3.8	4.8	7.0	Dry	Dry	Dry	Dry	1.5	Dry
Jul-25	12.3	Dry	14.7	Damaged	3.9	4.4	6.7	Dry	Dry	Dry	Dry	1.5	Dry
Aug-25	7.5	Dry	3.8	Damaged	3.9	4.5	16.1	Dry	Dry	Dry	Dry	1.1	Dry
Sep-25	10.3	Dry	7.6	Damaged	3.7	4.4	7.3	Dry	Dry	Dry	Dry	1.4	Dry
Oct-25	8.5	Dry	5.9	Damaged	3.1	3.8	14.7	Dry	Dry	Dry	Dry	1.5	Dry
Nov-25	9.1	Dry	10.2	Damaged	4.5	4.1	15.8	Dry	Dry	Dry	Dry	1.5	Dry
Dec-25	8.5	Dry	5.8	Damaged	4.5	4.8	11.9	Dry	Dry	Dry	Dry	1.2	Dry

Notes:
NI = Not Installed, NM = Not Measured, NA = Not Available
Levels measured by landfill staff

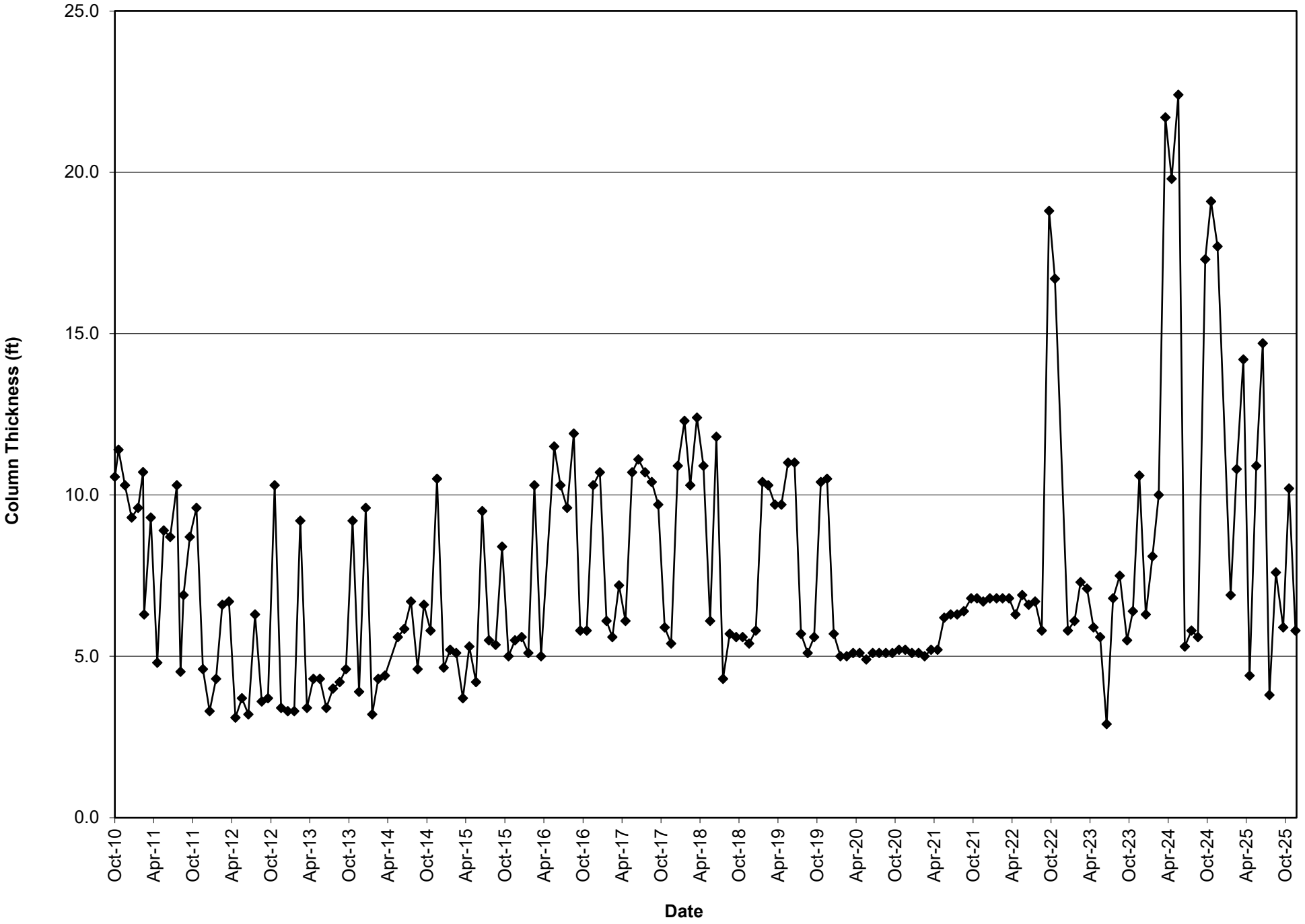
LPZ-6R2 Historical Leachate Column Thickness



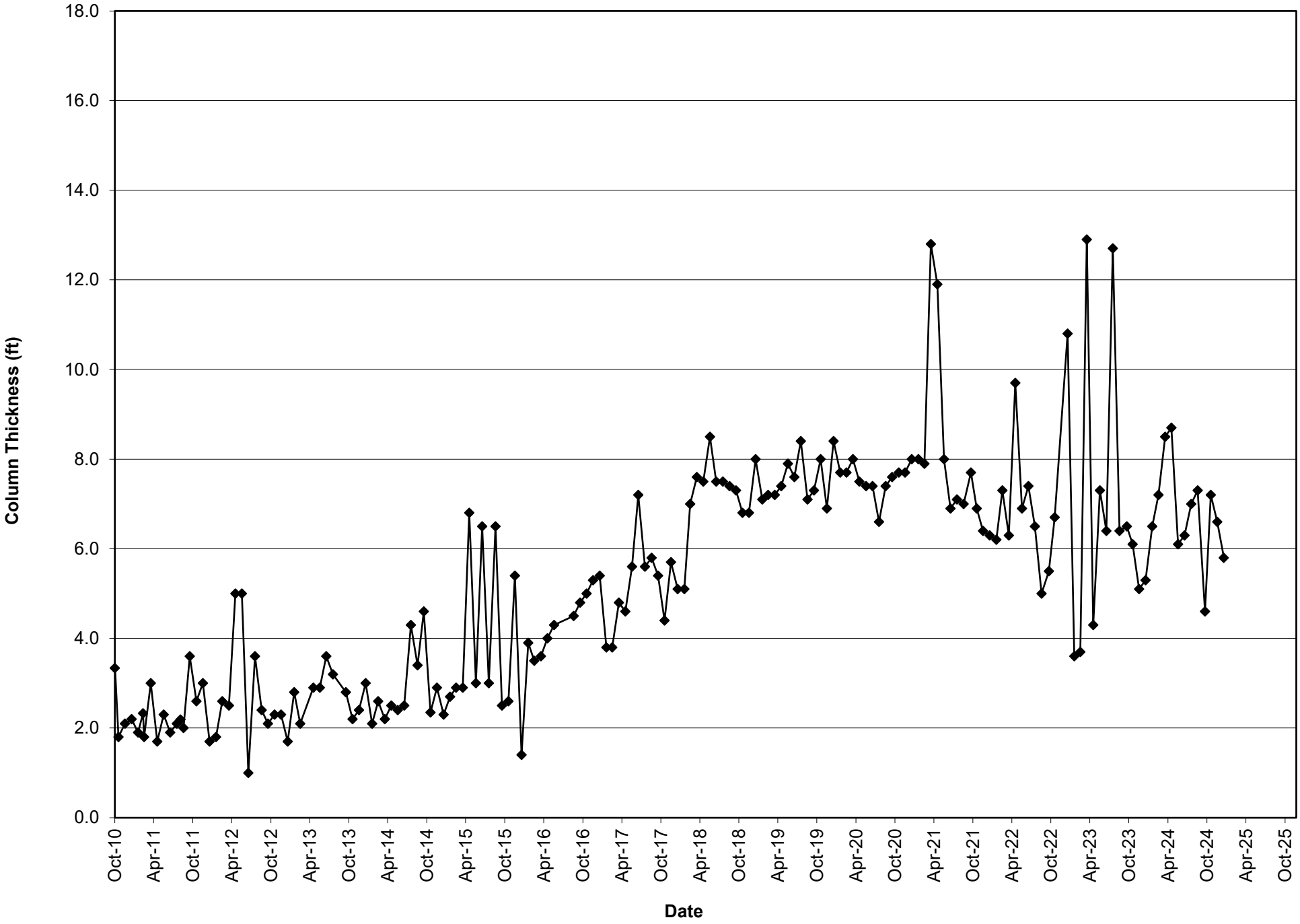
LPZ-7R2 Historical Leachate Column Thickness



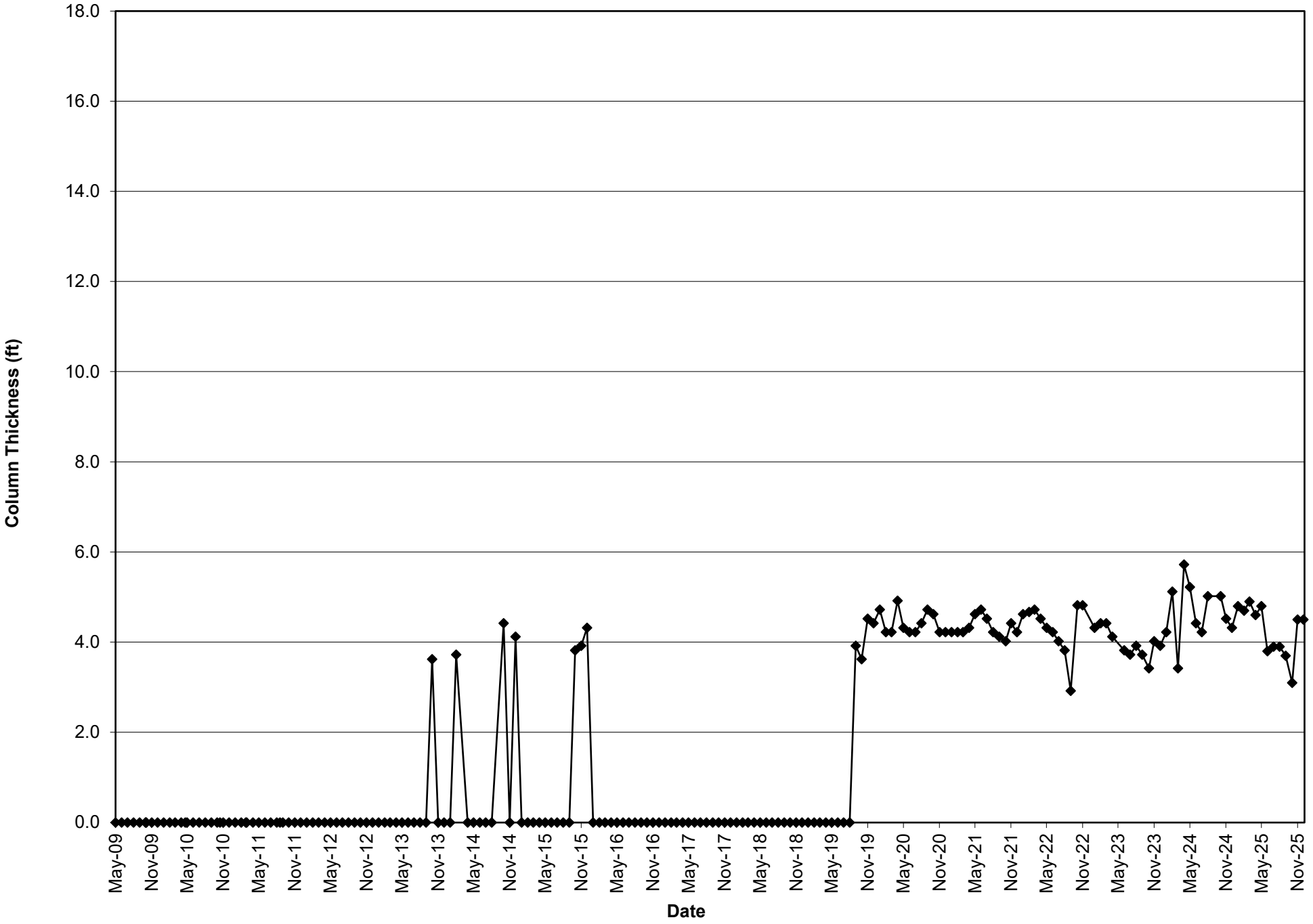
LPZ-9R Historical Leachate Column Thickness



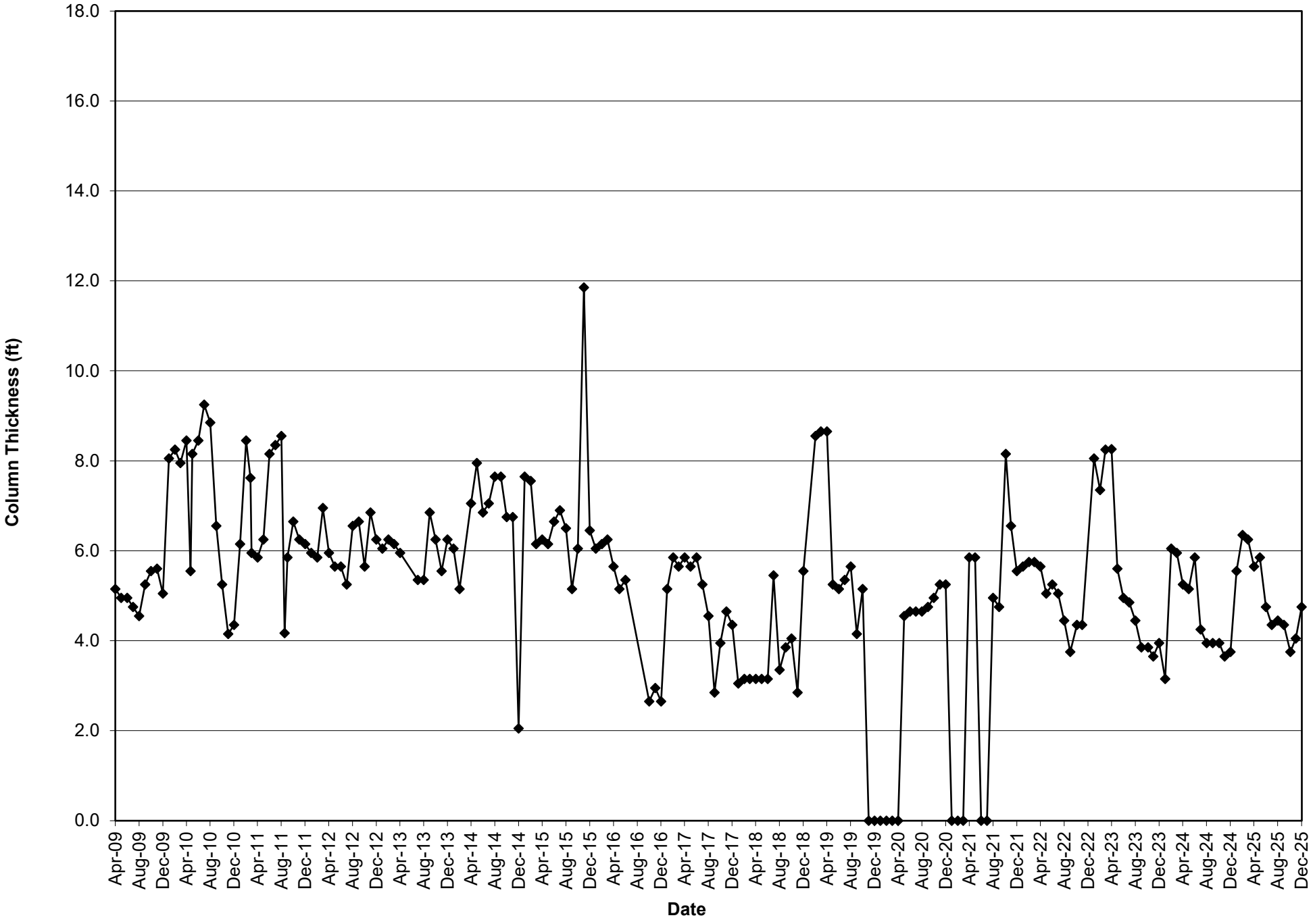
LPZ-10R Historical Leachate Column Thickness



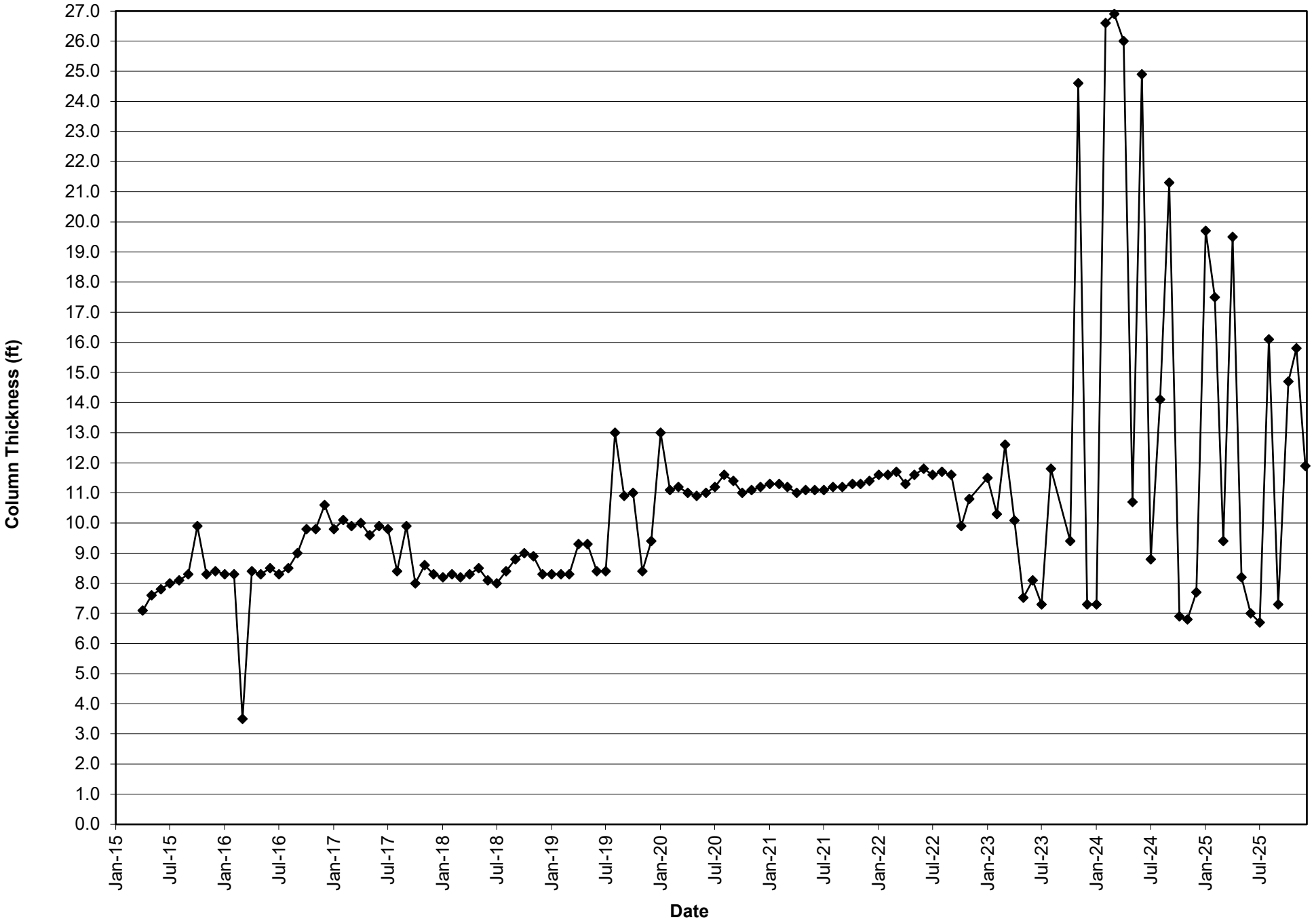
LPZ-11 Historical Leachate Column Thickness



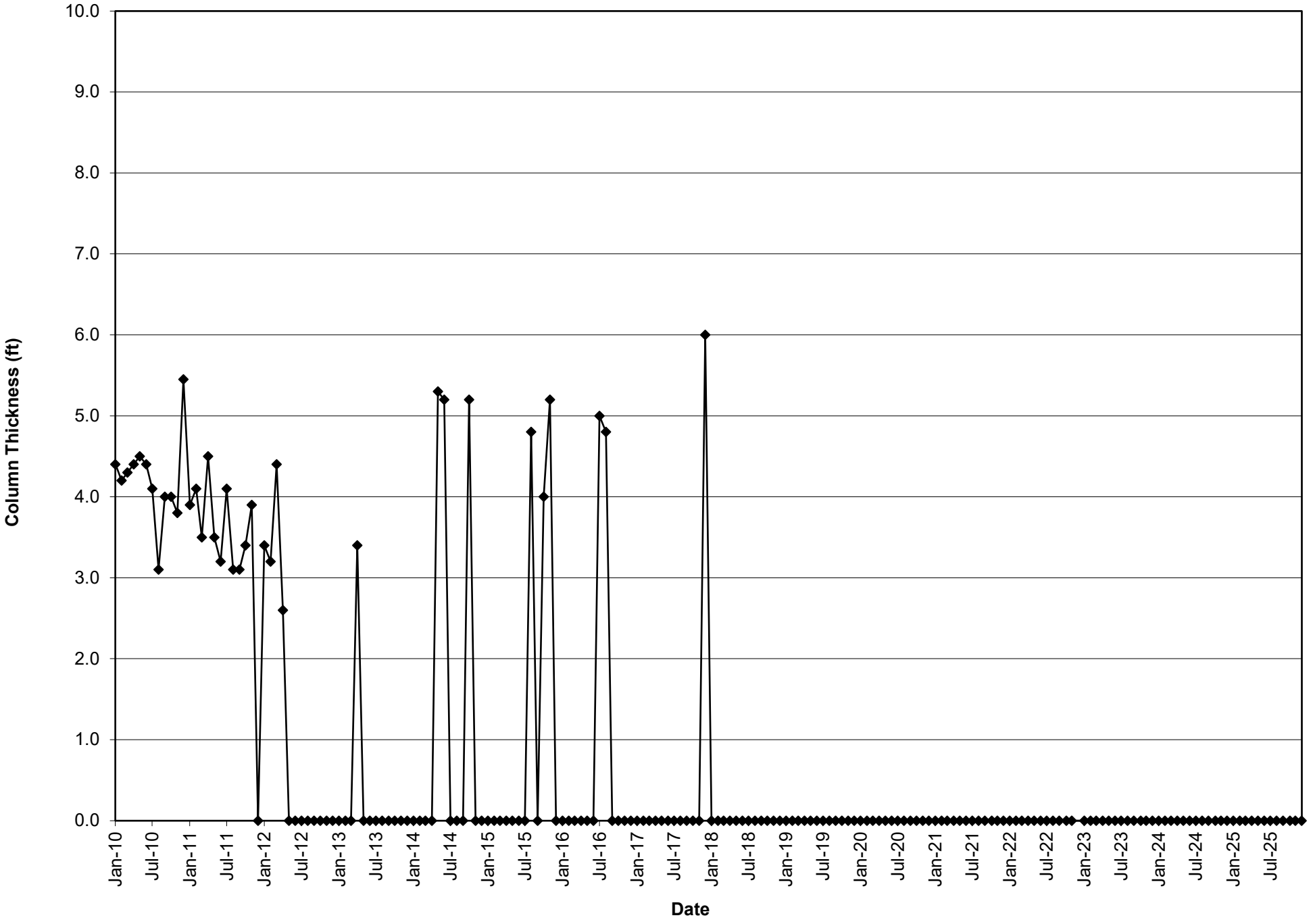
LPZ-12 Historical Leachate Column Thickness



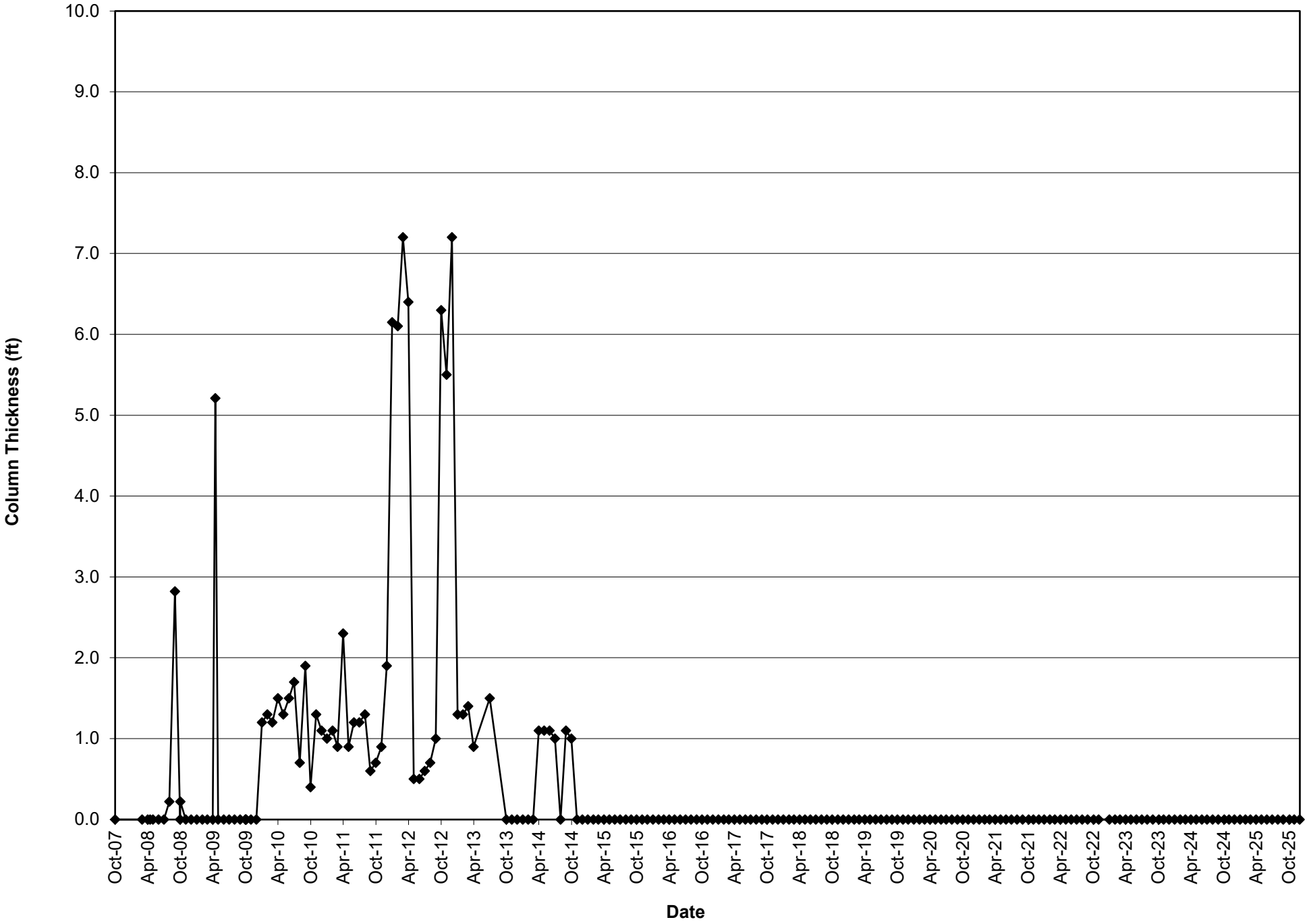
LPZ-19 Historical Leachate Column Thickness



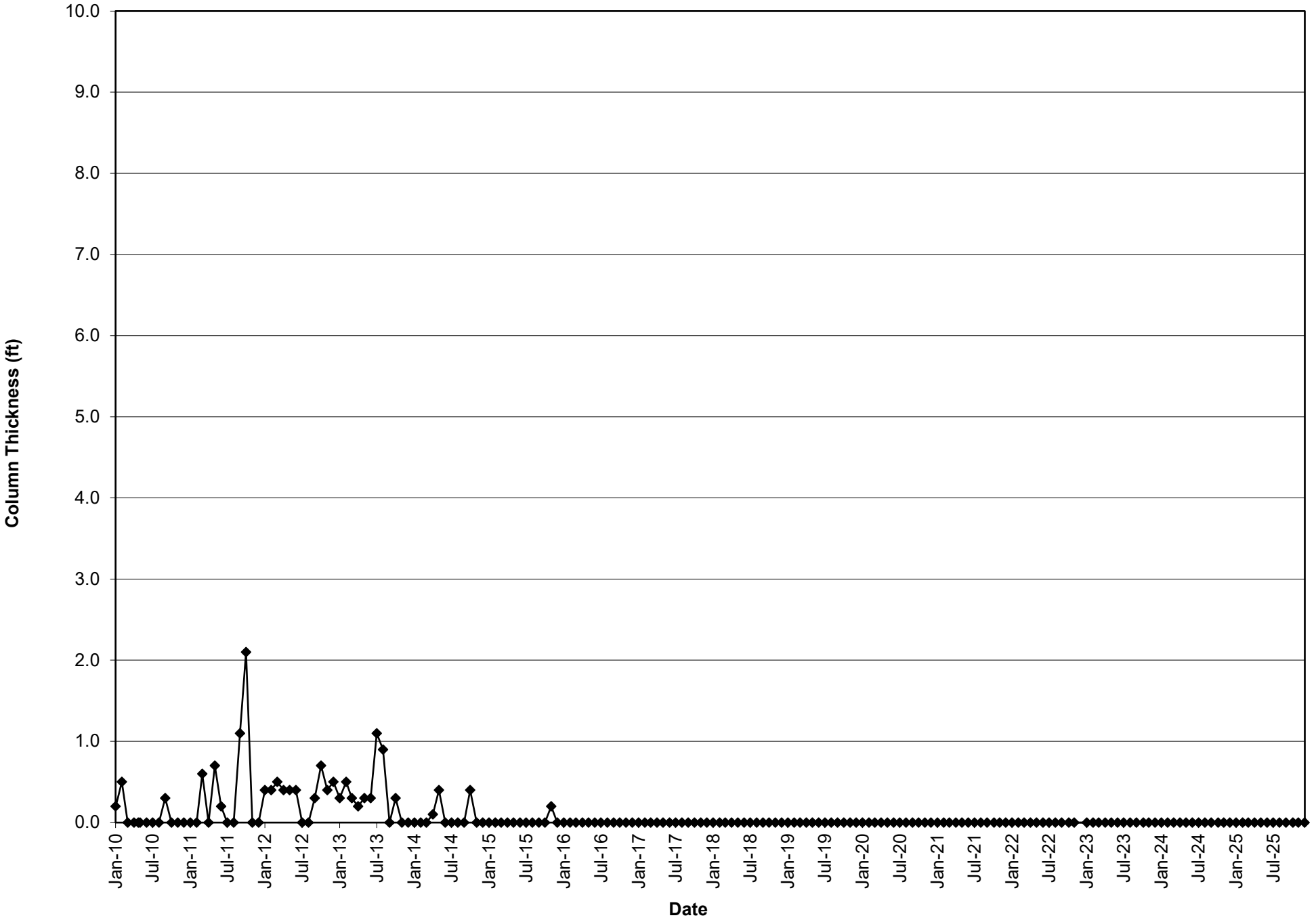
LPZ-14 Historical Leachate Column Thickness



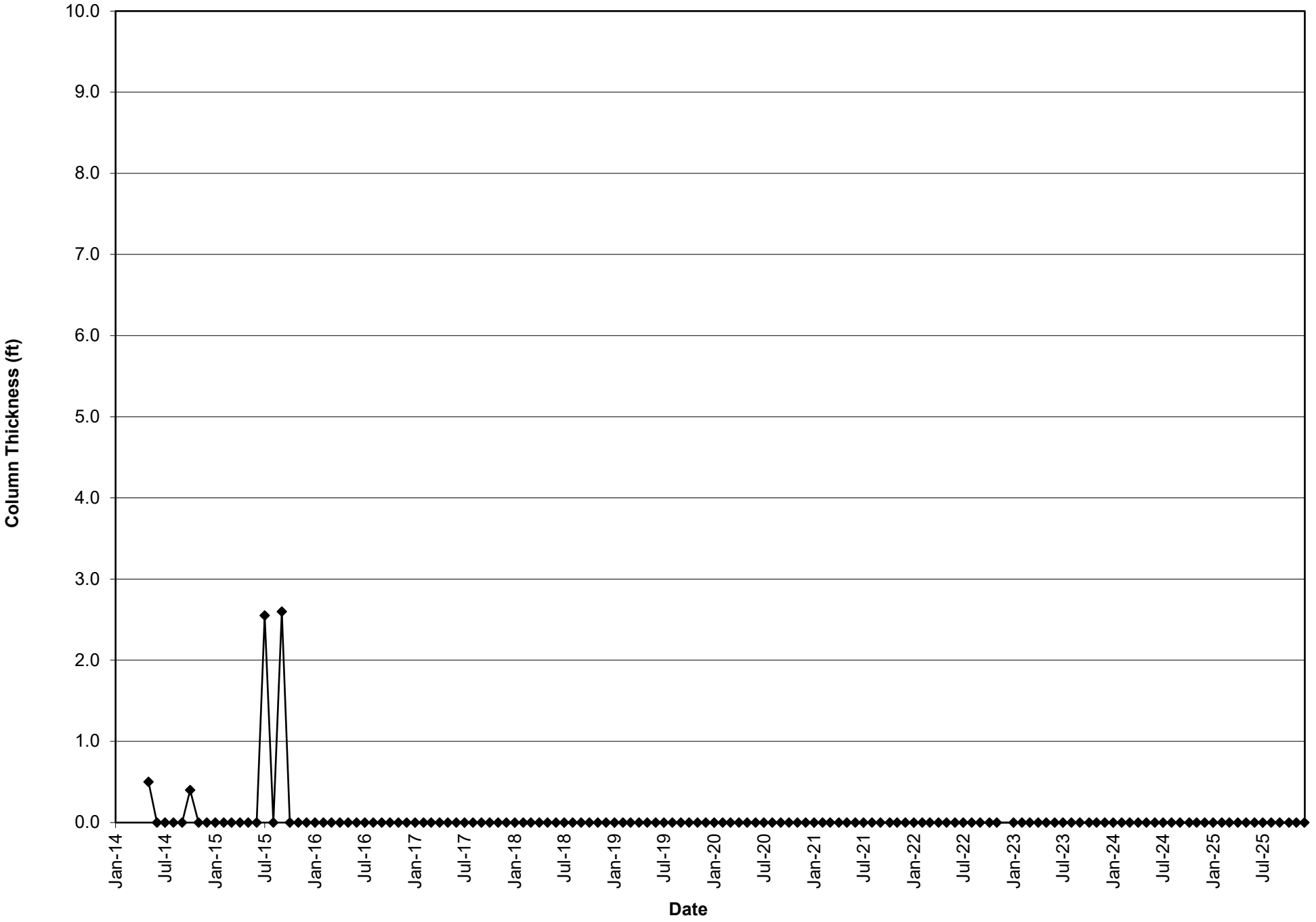
LPZ-15 Historical Leachate Column Thickness



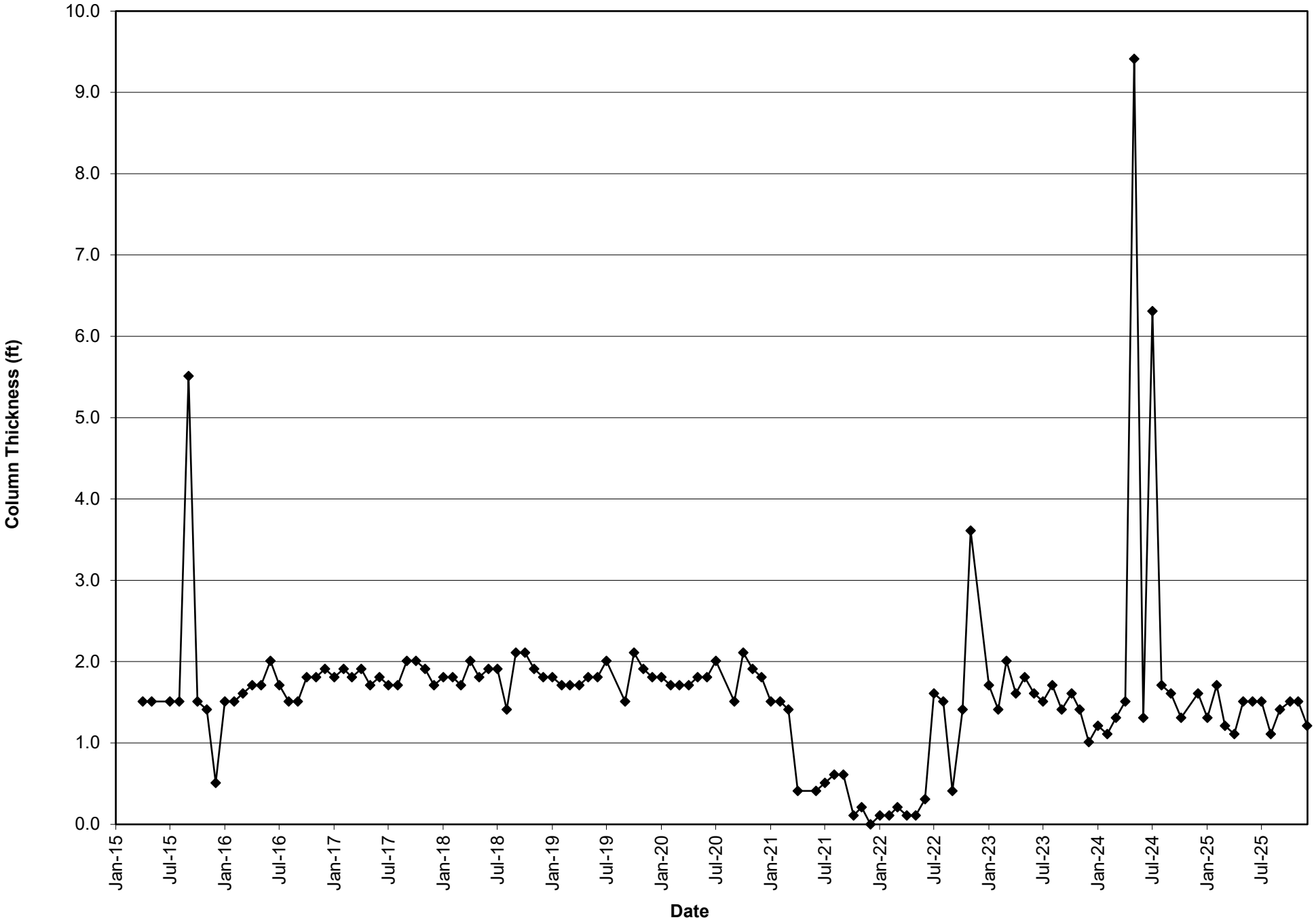
LPZ-16 Historical Leachate Column Thickness



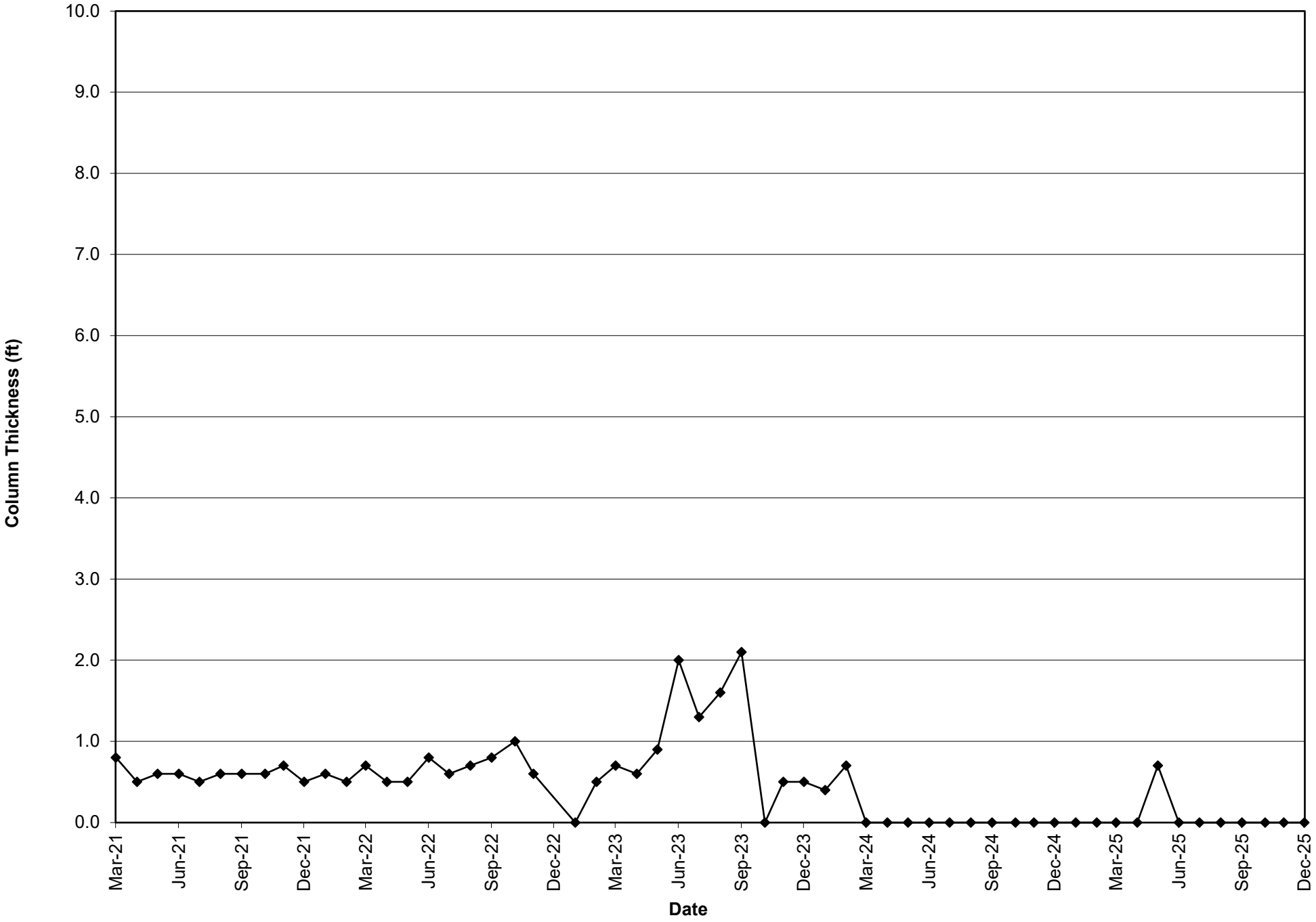
LPZ-17 Historical Leachate Column Thickness



LPZ-18 Historical Leachate Column Thickness



LPZ-20 Historical Leachate Column Thickness



Appendix F

2025 Landfill Gas Annual Report

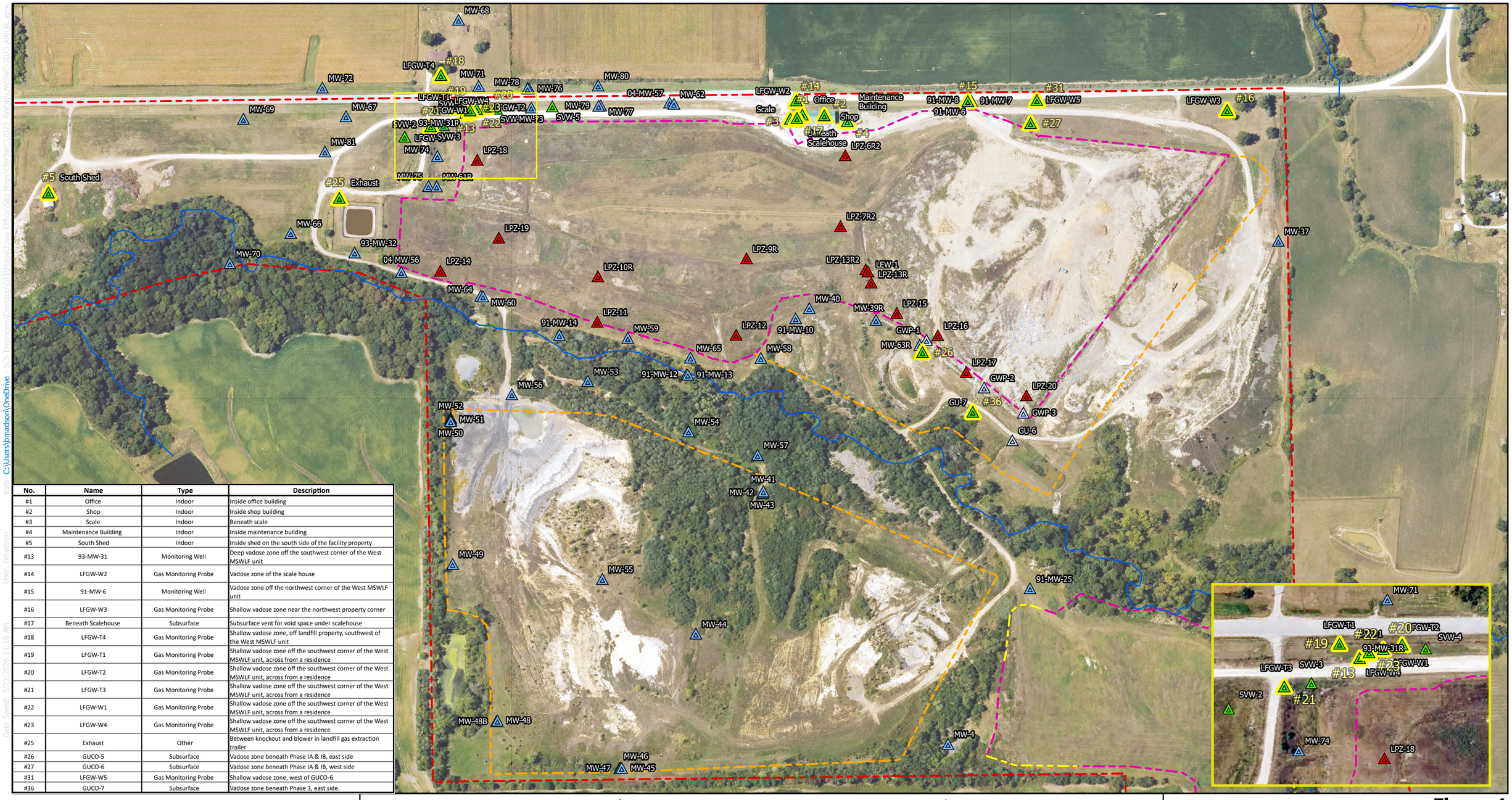
Table 13
Gas Monitoring Summary
2025 Gas Monitoring Report
Ottumwa-Wapello County Landfill
West MSWLF Unit Permit No. 90-SDP-01-75P

Monitoring Points				Methane Results (% LEL)							
Name		Type	Description	2/27/2025	S (Y/N)	4/22/2025	S (Y/N)	8/26/2025	S (Y/N)	11/25/2025	S (Y/N)
#1	Office	Indoor	Inside office building	0%		0%		0%		0%	
#2	Shop	Indoor	Inside shop building	0%		0%		0%		0%	
#3	Scale	Indoor	Beneath scale	0%		0%		0%		0%	
#4	Maintenance Building	Indoor	Inside maintenance building	0%		0%		0%		0%	
#5	South Shed	Indoor	Inside shed on the south side of the facility property	0%		0%		5%		2%	
#13	93-MW-31R	Monitoring Well	Deep vadose zone off the southwest corner of the West MSWLF unit	0%	N	0%	N	4%	N	1%	N
#14	LFGW-W2	Gas Monitoring Probe	Vadose zone of the scale house	0%	N	0%	N	0%	N	0%	N
#15	91-MW-6	Monitoring Well	Vadose zone off the northwest corner of the West MSWLF unit	0%	Y	0%	Y	4%	Y	0%	Y
#16	LFGW-W3	Gas Monitoring Probe	Shallow vadose zone near the northwest property corner	2%	N	0%	N	3%	N	0%	N
#17	Beneath Scalehouse	Subsurface	Subsurface vent for void space under scalehouse	0%		0%		0%		0%	
#18	LFGW-T4	Gas Monitoring Probe	Shallow vadose zone, off landfill property, southwest of the West MSWLF unit	0%	N	0%	N	1%	N	0%	N
#19	LFGW-T1	Gas Monitoring Probe	Shallow vadose zone off the southwest corner of the West MSWLF unit, across from a residence	0%	N	0%	N	5%	N	1%	N
#20	LFGW-T2	Gas Monitoring Probe	Shallow vadose zone off the southwest corner of the West MSWLF unit, across from a residence	1%	N	0%	N	4%	N	1%	N
#21	LFGW-T3	Gas Monitoring Probe	Shallow vadose zone off the southwest corner of the West MSWLF unit, across from a residence	0%	N	0%	N	5%	N	1%	N
#22	LFGW-W1	Gas Monitoring Probe	Shallow vadose zone off the southwest corner of the West MSWLF unit, across from a residence	8%	N	0%	N	6%	N	4%	N
#23	LFGW-W4	Gas Monitoring Probe	Shallow vadose zone off the southwest corner of the West MSWLF unit, across from a residence	20%	N	0%	N	4%	N	>100%*	
#25	Exhaust	Other	Between knockout and blower in landfill gas extraction trailer	0%		0%		5%		2%	
#26	GUCO-5	Subsurface	Vadose zone beneath Phase IA & IB, east side	0%		1%		12%		0%	
#27	GUCO-6	Subsurface	Vadose zone beneath Phase IA & IB, west side	0%		0%		4%		0%	
#31	LFGW-W5	Gas Monitoring Probe	Shallow vadose zone, west of GUCO-6	0%	N	0%	N	4%	N	0%	N
#36	GUCO-7	Subsurface	Vadose zone beneath Phase 3, east side.	0%		0%		3%		0%	
#37	Gas Vent 1	Vent	Furthest North	>100%		18%		>100%		>100%	
#38	Gas Vent 2	Vent	2nd from North	10%		34%		8%		16%	
#39	Gas Vent 3	Vent	South of #38	70%		7%		>100%		>100%	
#40	Gas Vent 4	Vent	East of #39	15%		5%		1%		>100%	
#41	Gas Vent 5	Vent	Furthest East	>100%		54%		>100%		>100%	

S(Y/N) - Was screen submerged, yes or no or blank is non-applicable.

No action level exceedances occurred during this reporting period.

Monitoring points LFGW-T1, LFGW-T2, and LFGW-T3, located north of LFGW-W4 near the facility border, had methane concentrations of 1% LEL during the November 2025 monitoring event, indicating the action level and the facility boundary was not exceeded.



No.	Name	Type	Description
#1	Office	Indoor	Inside office building
#2	Shop	Indoor	Inside shop building
#3	Scale	Indoor	Beneath scale
#4	Maintenance Building	Indoor	Inside maintenance building
#5	South Shed	Indoor	Inside shed on the south side of the facility property
#13	93-MW-31	Monitoring Well	Deep vadose zone off the southwest corner of the West MSWLF unit
#14	LFGW-W2	Gas Monitoring Probe	Vadose zone of the scale house
#15	91-MW-6	Monitoring Well	Vadose zone off the northwest corner of the West MSWLF unit
#16	LFGW-W3	Gas Monitoring Probe	Shallow vadose zone near the northwest property corner
#17	Beneath Scalehouse	Subsurface	Subsurface vent for void space under scalehouse
#18	LFGW-T4	Gas Monitoring Probe	Shallow vadose zone, off landfill property, southwest of the West MSWLF unit
#19	LFGW-T1	Gas Monitoring Probe	Shallow vadose zone off the southwest corner of the West MSWLF unit, across from a residence
#20	LFGW-T2	Gas Monitoring Probe	Shallow vadose zone off the southwest corner of the West MSWLF unit, across from a residence
#21	LFGW-T3	Gas Monitoring Probe	Shallow vadose zone off the southwest corner of the West MSWLF unit, across from a residence
#22	LFGW-W1	Gas Monitoring Probe	Shallow vadose zone off the southwest corner of the West MSWLF unit, across from a residence
#23	LFGW-W4	Gas Monitoring Probe	Shallow vadose zone off the southwest corner of the West MSWLF unit, across from a residence
#25	Exhaust	Other	Between knockout and blower in landfill gas extraction trailer
#26	GUCO-5	Subsurface	Vadose zone beneath Phase IA & IB, east side
#27	GUCO-6	Subsurface	Vadose zone beneath Phase IA & IB, west side
#31	LFGW-W5	Gas Monitoring Probe	Shallow vadose zone, west of GUCO-6
#36	GUCO-7	Subsurface	Vadose zone beneath Phase 3, east side.

SCS ENGINEERS
environmental consultants and contractors

Methane Monitoring Network

Legend

- Methane Monitoring Point
- Monitoring Well
- Groundwater Underdrain
- Leachate Monitoring Point
- Landfill Gas Well
- Approximate Existing Waste Boundary
- Approximate Future Waste Boundary
- Estimated Waste Boundary
- Approximate Property Boundary
- Stream

Ottumwa-Wapello County Landfill
Ottumwa, IA
Project No: 27225312.26
Drawing Date: October 2025

Figure 1

Overview Map Scale

0 80 160 320 Feet

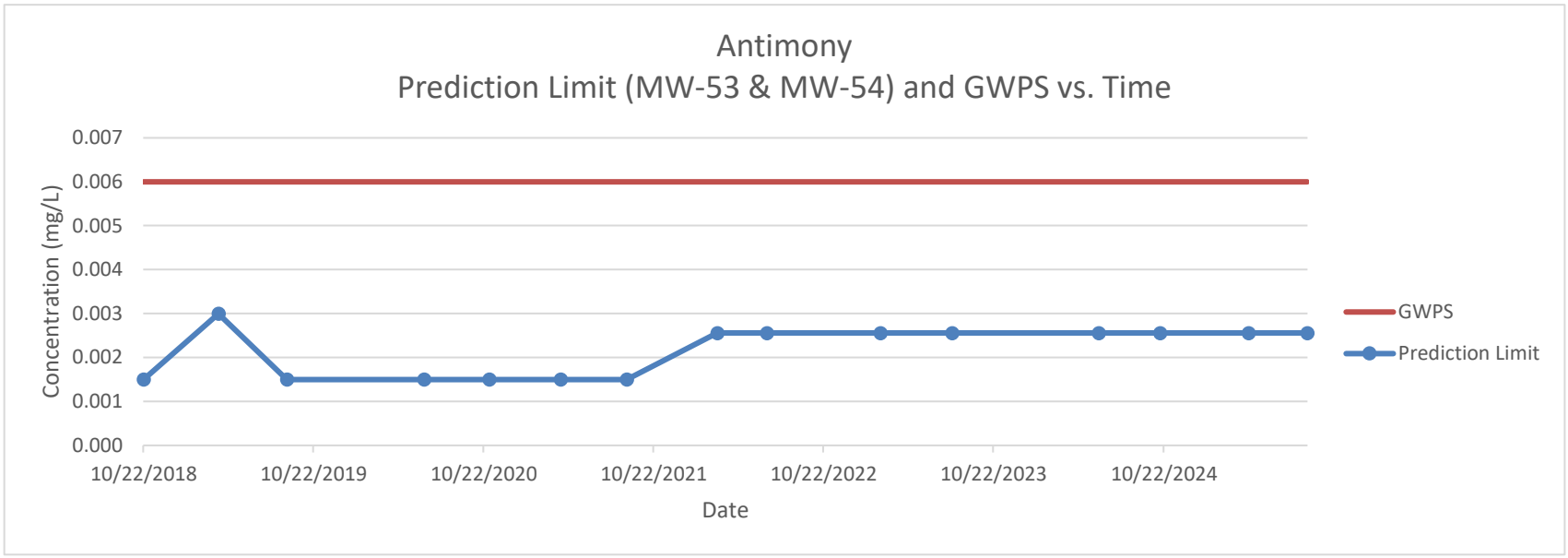
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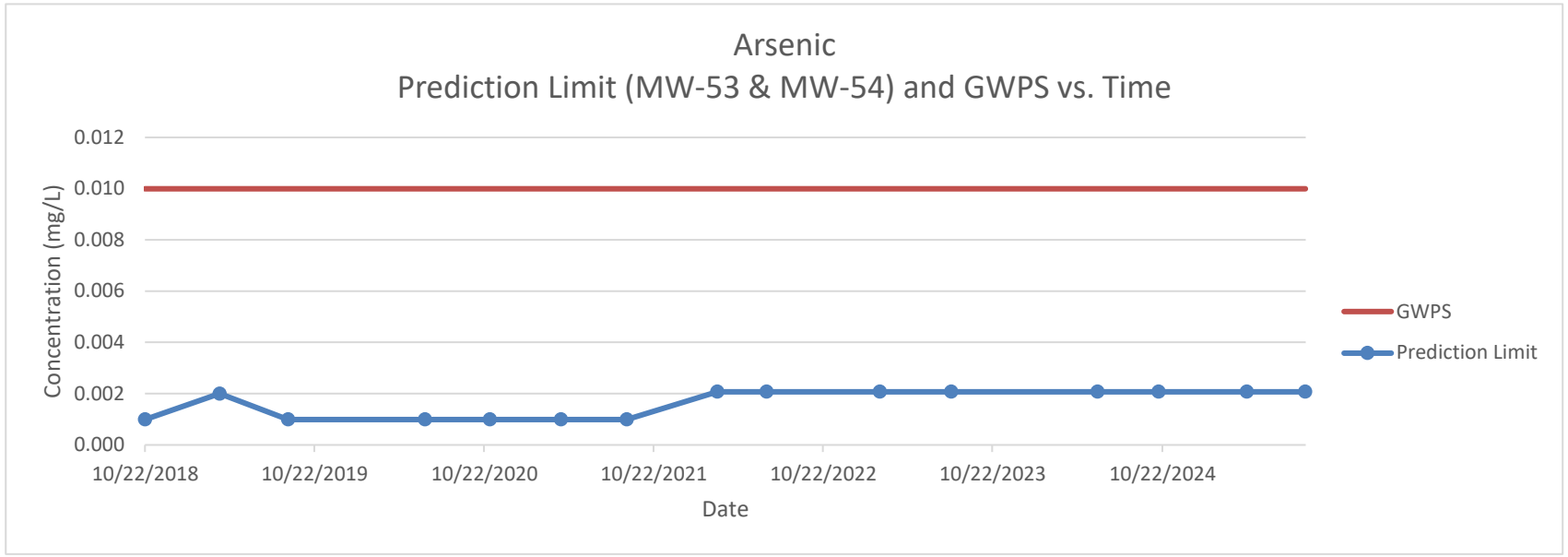
Sources: Esri, TomTom, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community, Esri, CGIAR, USGS, USDA NAIP, Iowa State University GIS Facility

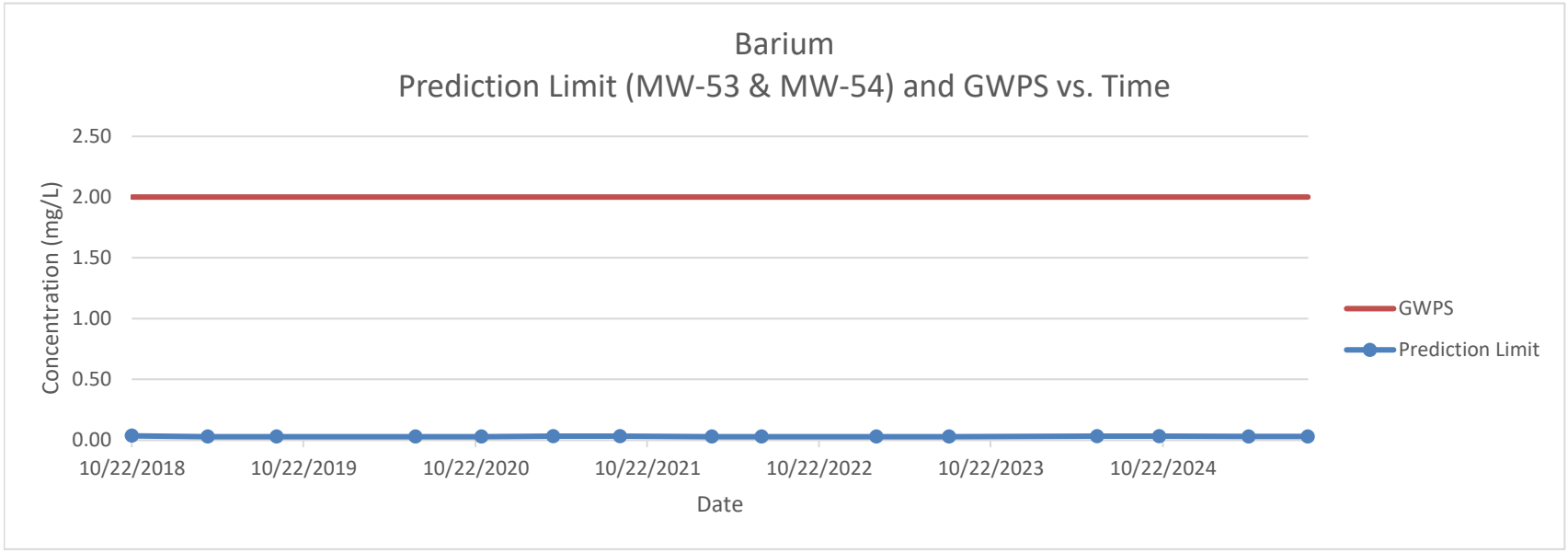
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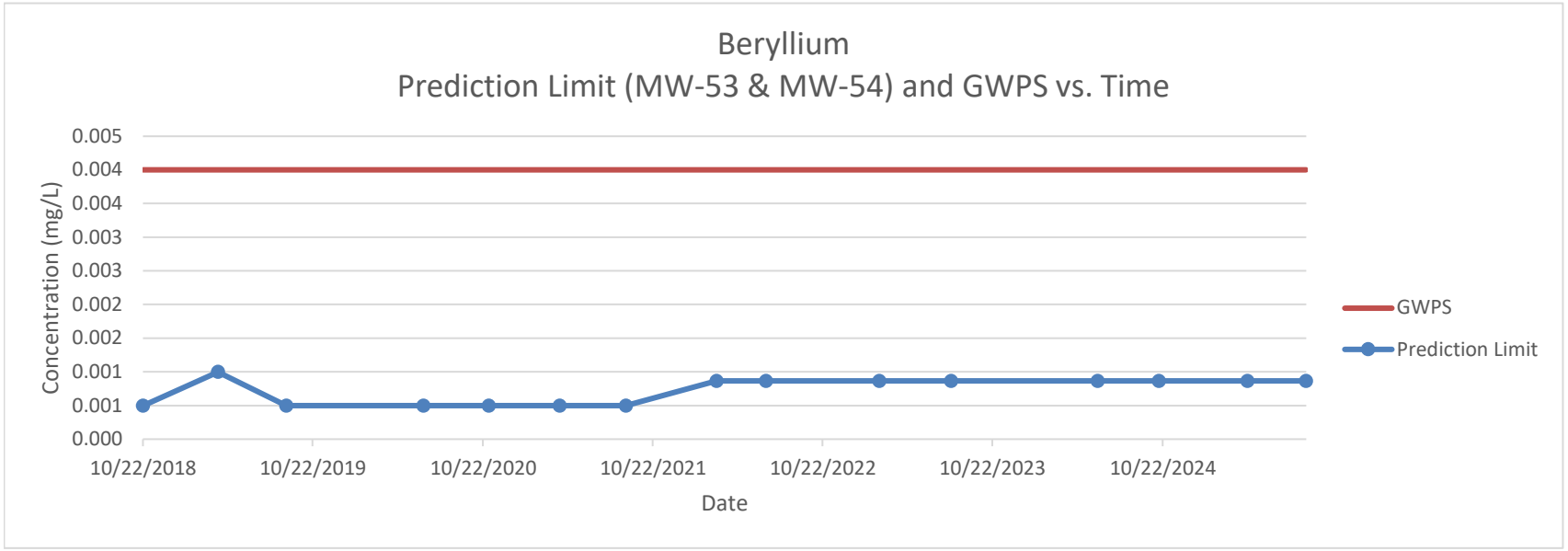
Appendix G

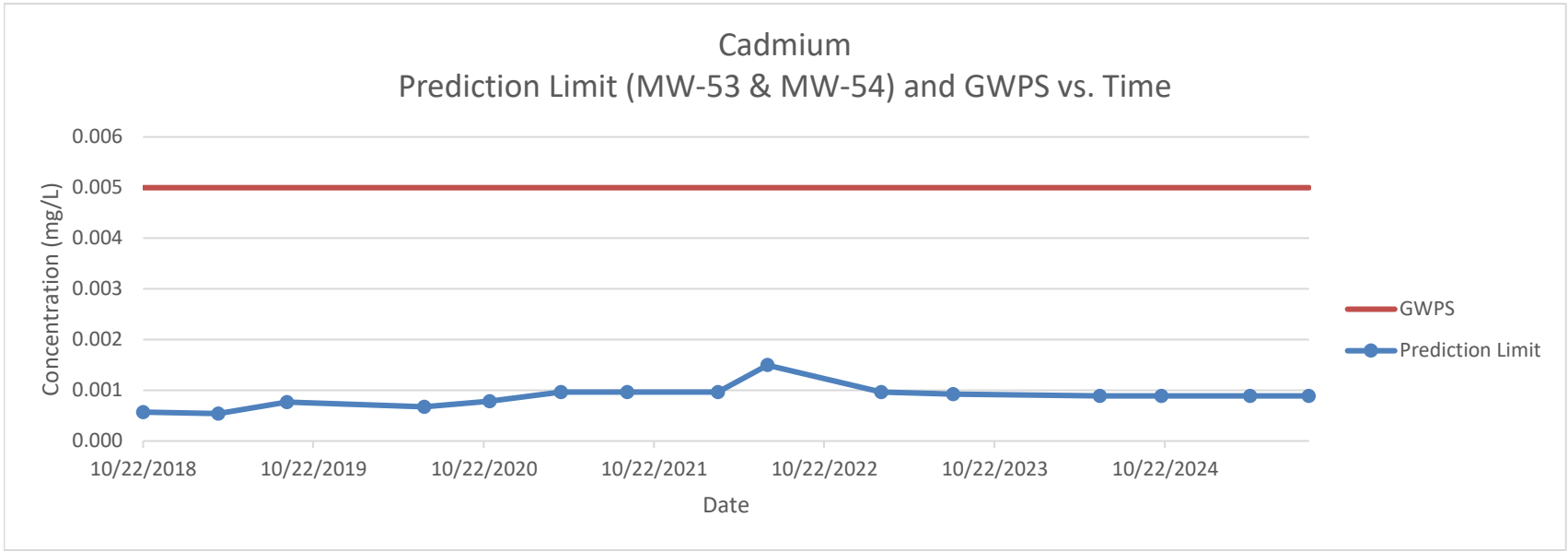
Standards History Graphs

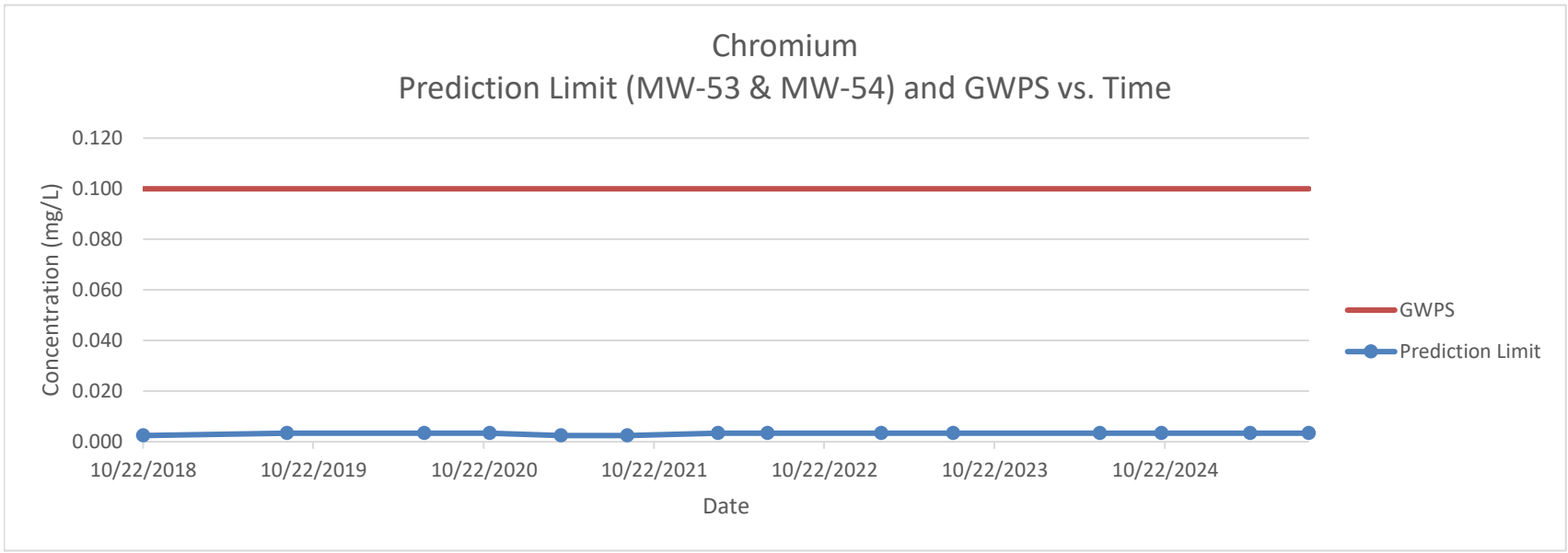

Antimony
Prediction Limit (MW-53 & MW-54) and GWPS vs. Time
Concentration (mg/L)
0.007
0.006
0.005
0.004
0.003
0.002
0.001
0.000
10/22/2018
10/22/2019
10/22/2020
10/22/2021
10/22/2022
10/22/2023
10/22/2024
Date
GWPS
Prediction Limit

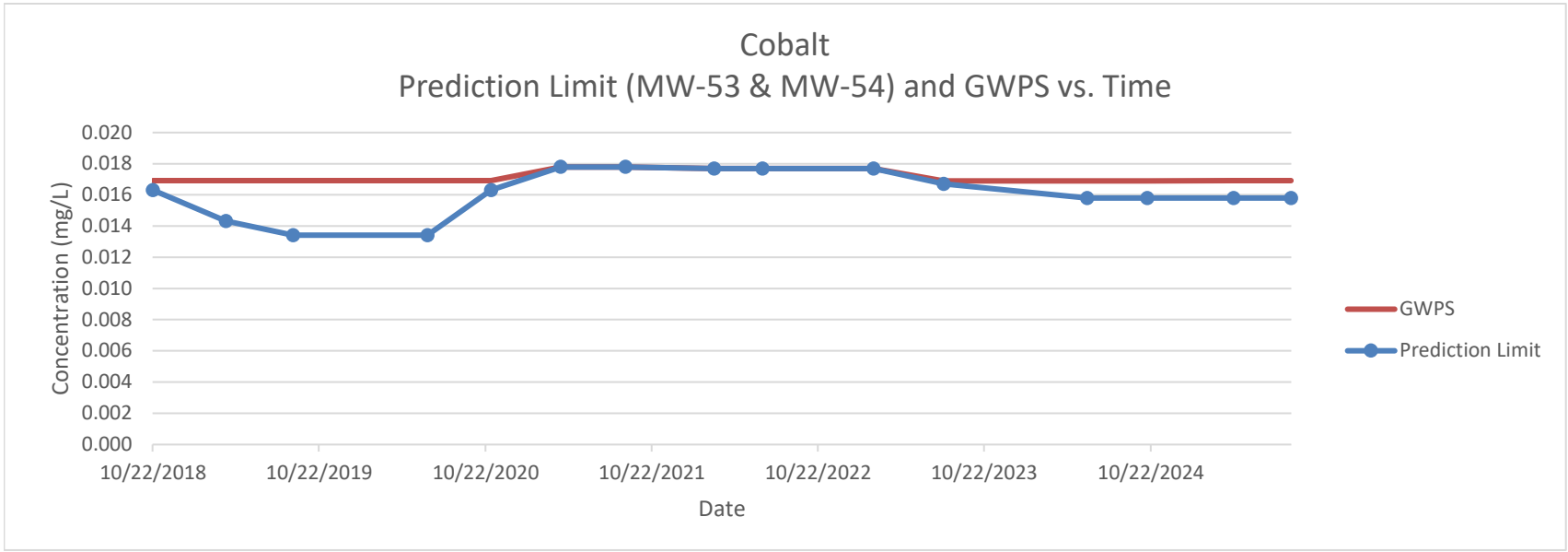

Arsenic
Prediction Limit (MW-53 & MW-54) and GWPS vs. Time
Concentration (mg/L)
0.012
0.010
0.008
0.006
0.004
0.002
0.000
10/22/2018
10/22/2019
10/22/2020
10/22/2021
10/22/2022
10/22/2023
10/22/2024
Date
GWPS
Prediction Limit

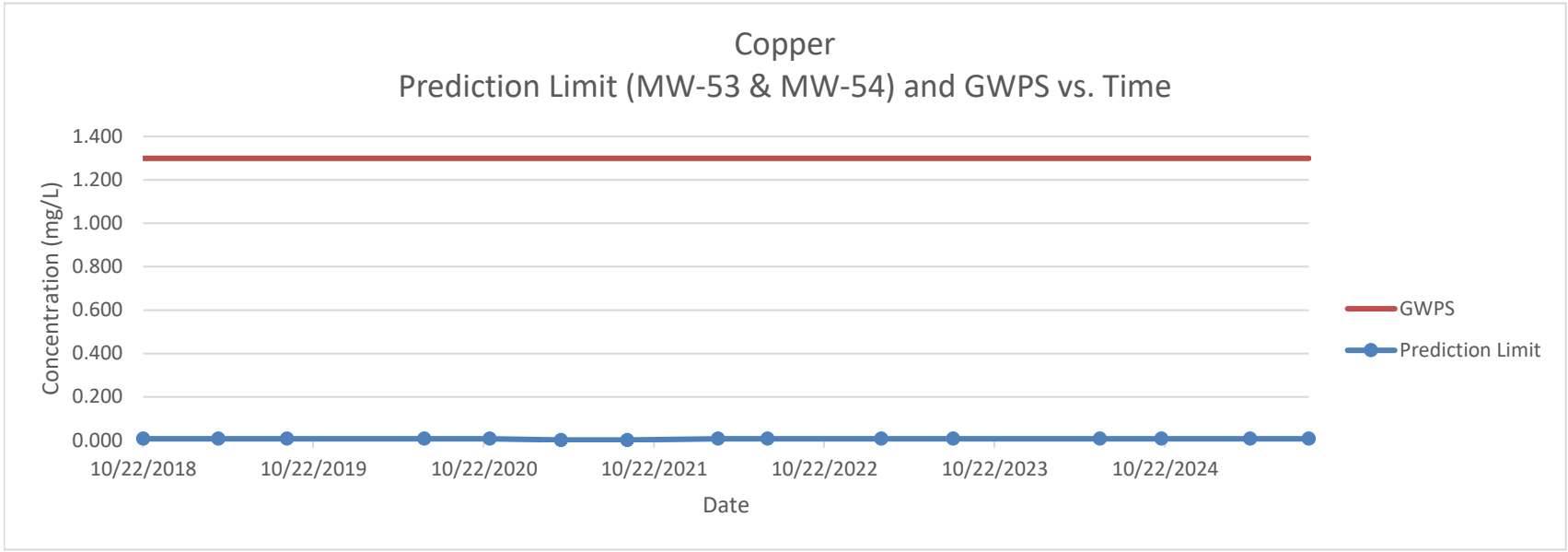

Barium
Prediction Limit (MW-53 & MW-54) and GWPS vs. Time
Concentration (mg/L)
2.50
2.00
1.50
1.00
0.50
0.00
10/22/2018
10/22/2019
10/22/2020
10/22/2021
10/22/2022
10/22/2023
10/22/2024
Date
GWPS
Prediction Limit

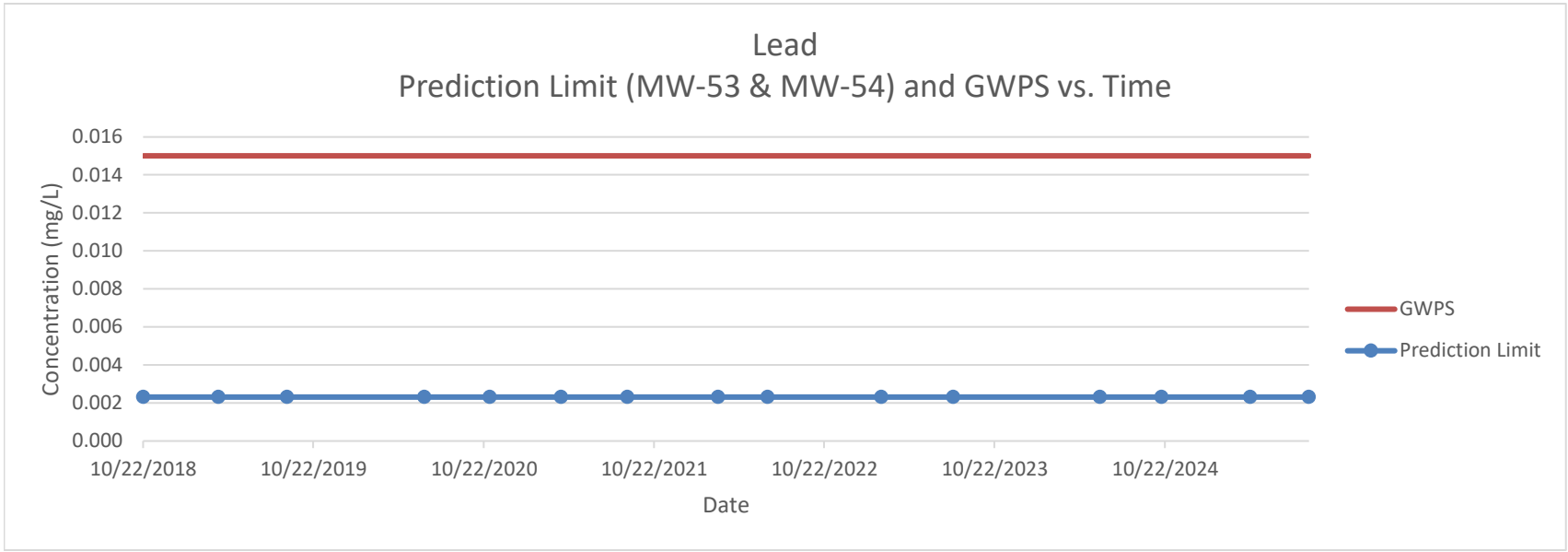

Beryllium
Prediction Limit (MW-53 & MW-54) and GWPS vs. Time
Concentration (mg/L)
0.005
0.004
0.004
0.003
0.003
0.002
0.002
0.001
0.001
0.000
10/22/2018
10/22/2019
10/22/2020
10/22/2021
10/22/2022
10/22/2023
10/22/2024
Date
GWPS
Prediction Limit

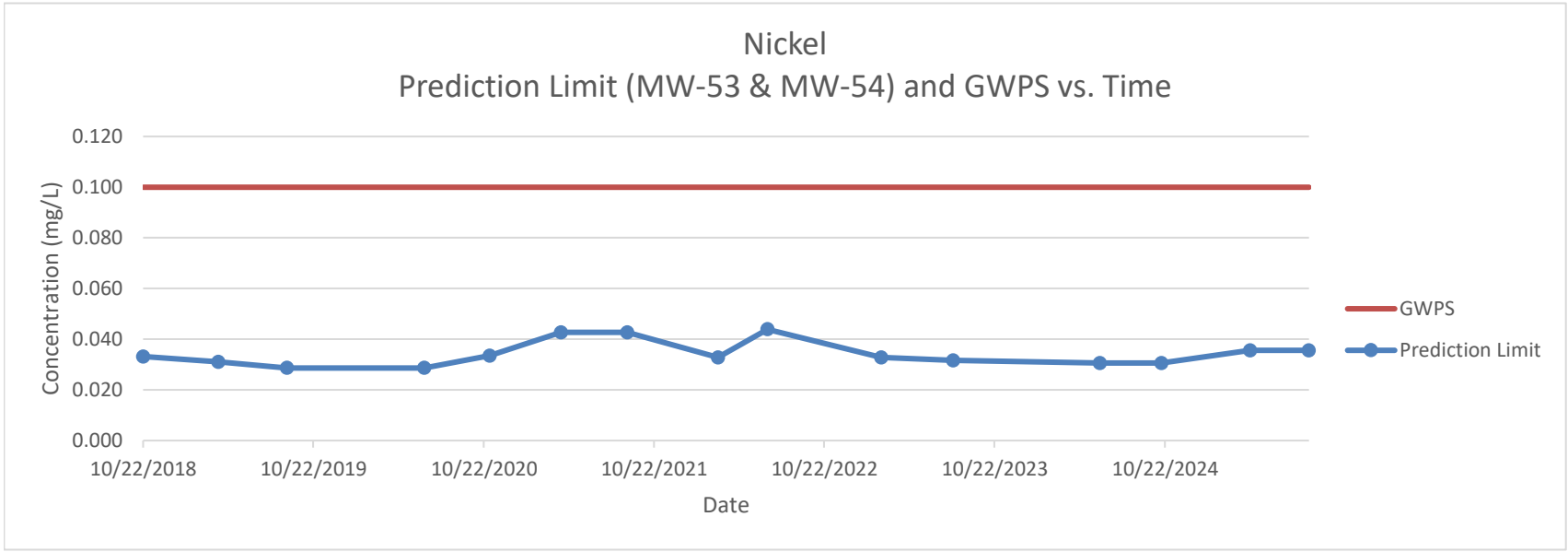

Cadmium
Prediction Limit (MW-53 & MW-54) and GWPS vs. Time
Concentration (mg/L)
0.006
0.005
0.004
0.003
0.002
0.001
0.000
10/22/2018
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10/22/2021
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10/22/2023
10/22/2024
Date
GWPS
Prediction Limit

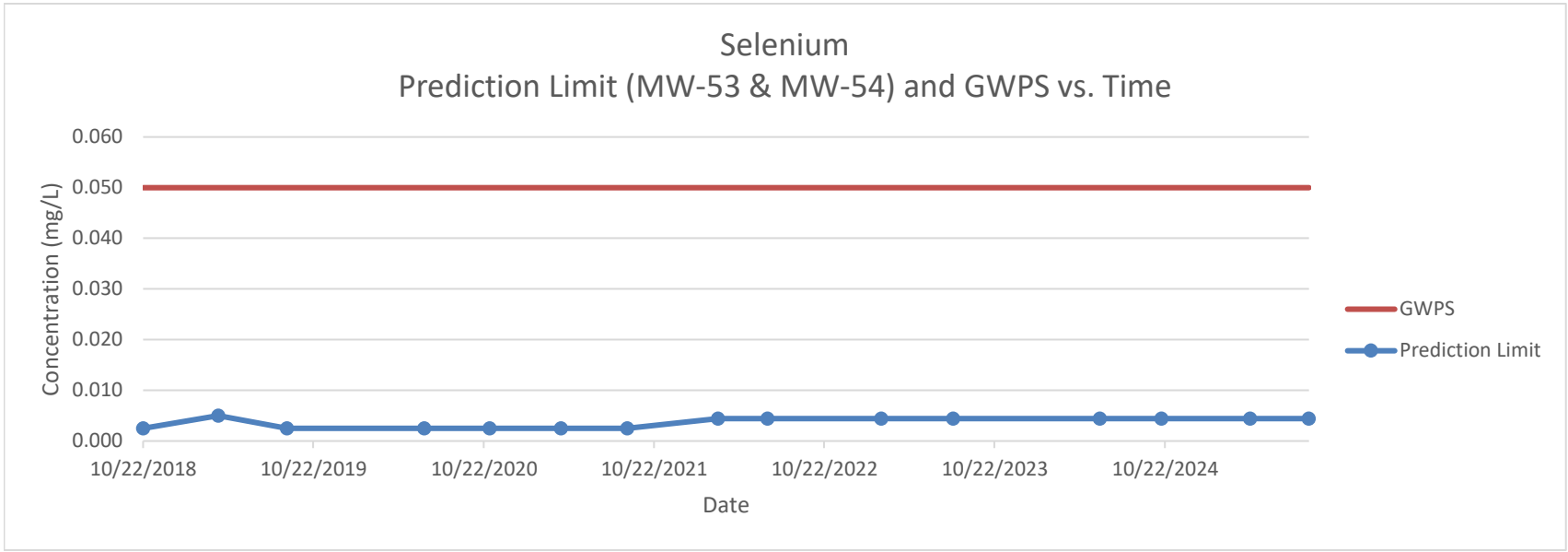

Chromium
Prediction Limit (MW-53 & MW-54) and GWPS vs. Time
Concentration (mg/L)
0.120
0.100
0.080
0.060
0.040
0.020
0.000
10/22/2018
10/22/2019
10/22/2020
10/22/2021
10/22/2022
10/22/2023
10/22/2024
Date
GWPS
Prediction Limit

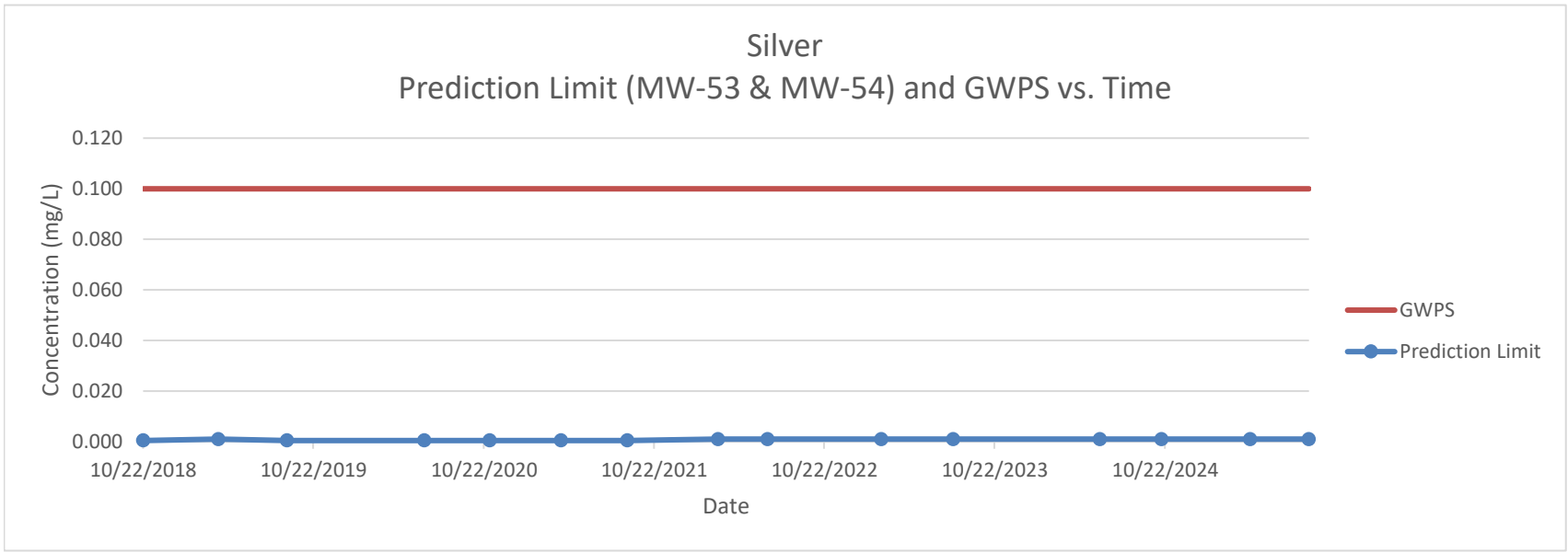

Cobalt
Prediction Limit (MW-53 & MW-54) and GWPS vs. Time
Concentration (mg/L)
0.020
0.018
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
10/22/2018
10/22/2019
10/22/2020
10/22/2021
10/22/2022
10/22/2023
10/22/2024
Date
GWPS
Prediction Limit

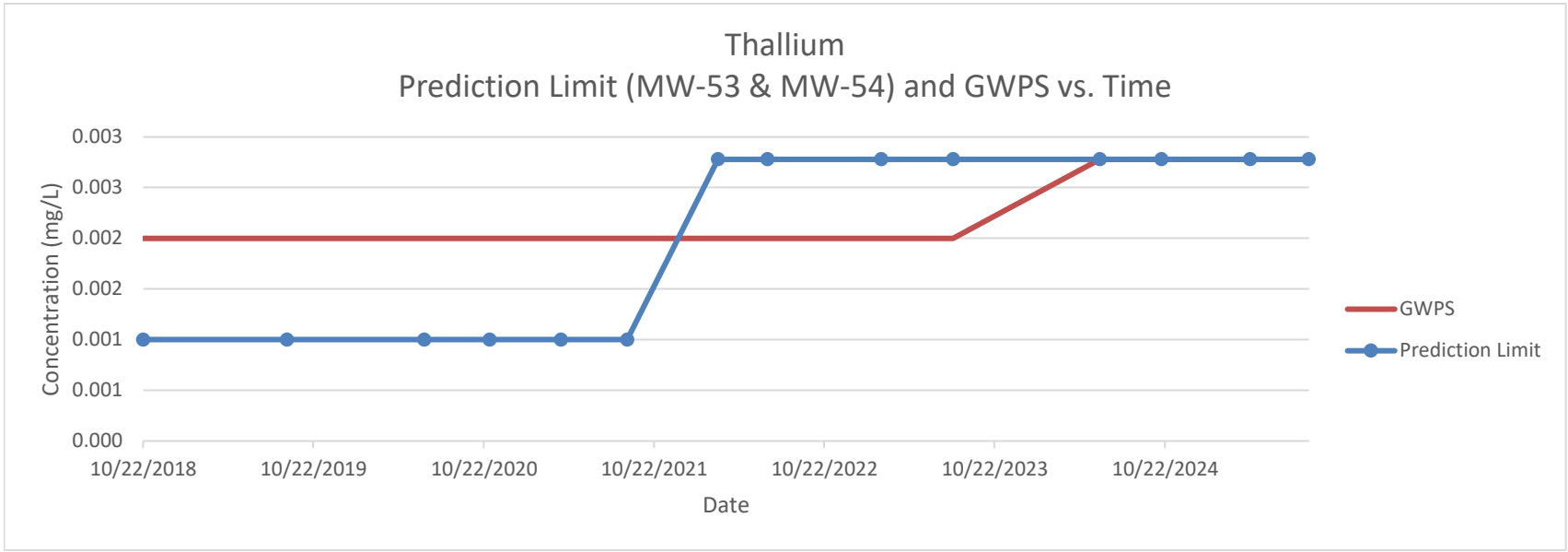

Copper
Prediction Limit (MW-53 & MW-54) and GWPS vs. Time
Concentration (mg/L)
1.400
1.200
1.000
0.800
0.600
0.400
0.200
0.000
10/22/2018
10/22/2019
10/22/2020
10/22/2021
10/22/2022
10/22/2023
10/22/2024
Date
GWPS
Prediction Limit

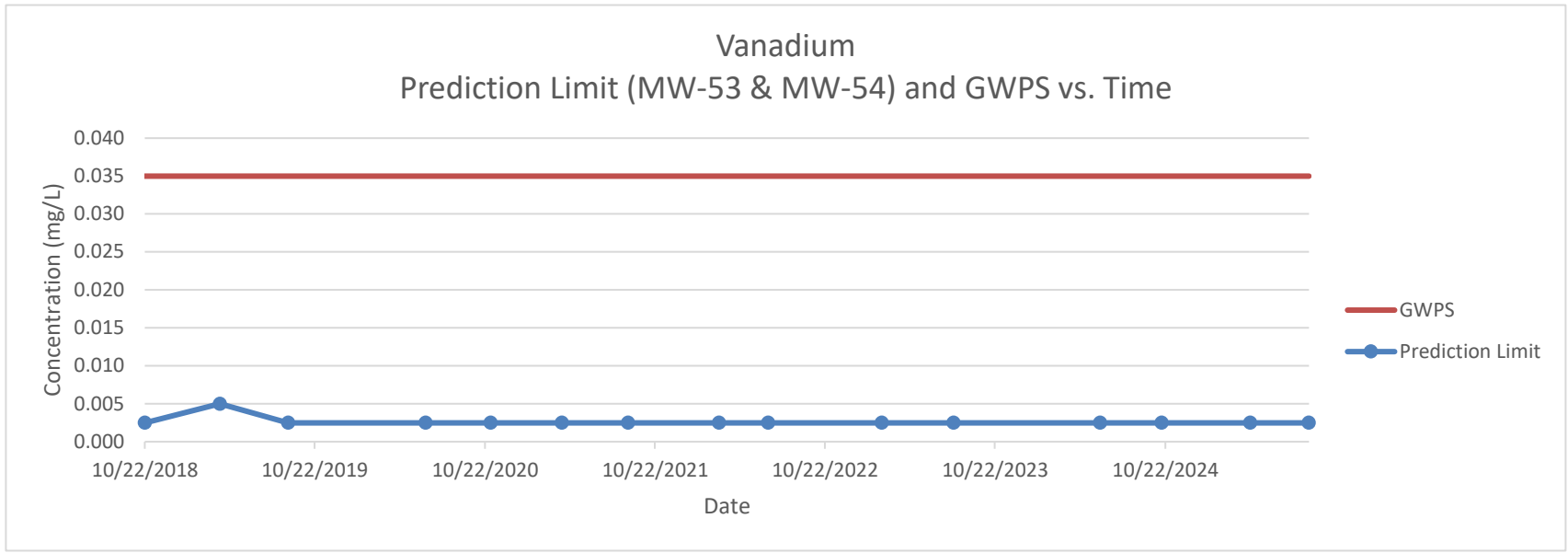

Lead
Prediction Limit (MW-53 & MW-54) and GWPS vs. Time
Concentration (mg/L)
0.016
0.014
0.012
0.010
0.008
0.006
0.004
0.002
0.000
10/22/2018
10/22/2019
10/22/2020
10/22/2021
10/22/2022
10/22/2023
10/22/2024
Date
GWPS
Prediction Limit

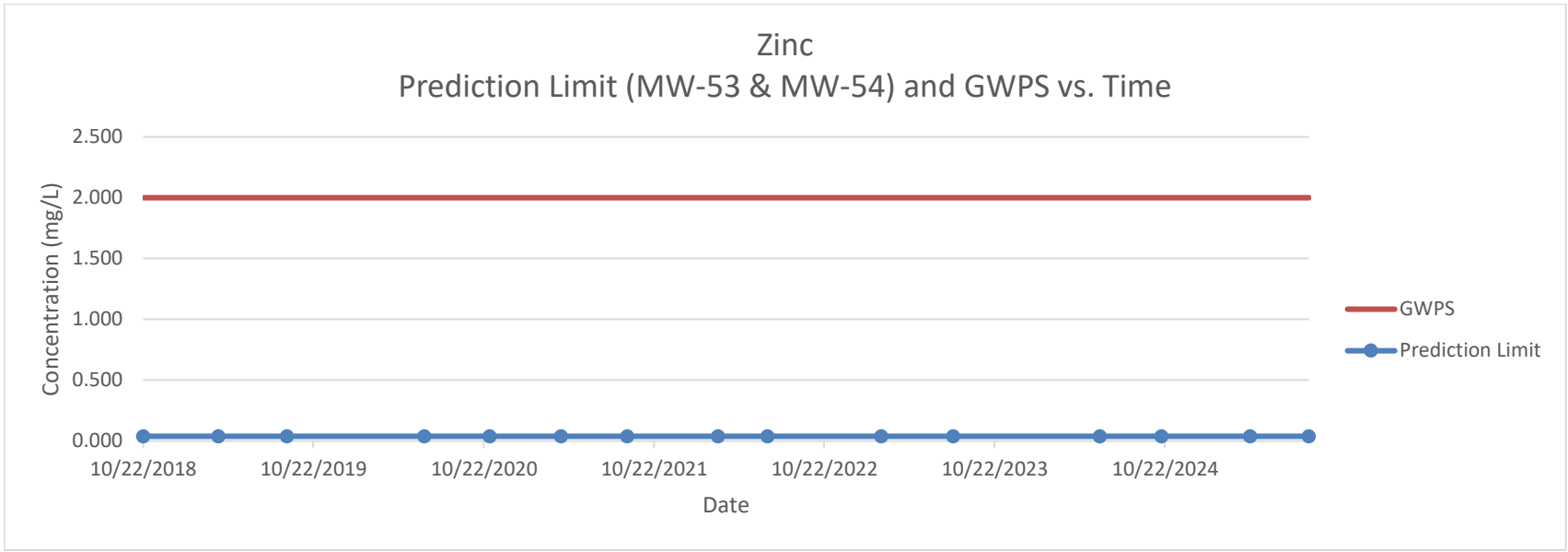

Nickel
Prediction Limit (MW-53 & MW-54) and GWPS vs. Time
Concentration (mg/L)
0.120
0.100
0.080
0.060
0.040
0.020
0.000
10/22/2018
10/22/2019
10/22/2020
10/22/2021
10/22/2022
10/22/2023
10/22/2024
Date
GWPS
Prediction Limit


Selenium
Prediction Limit (MW-53 & MW-54) and GWPS vs. Time
Concentration (mg/L)
0.060
0.050
0.040
0.030
0.020
0.010
0.000
10/22/2018
10/22/2019
10/22/2020
10/22/2021
10/22/2022
10/22/2023
10/22/2024
Date
GWPS
Prediction Limit


Silver
Prediction Limit (MW-53 & MW-54) and GWPS vs. Time
Concentration (mg/L)
0.120
0.100
0.080
0.060
0.040
0.020
0.000
10/22/2018
10/22/2019
10/22/2020
10/22/2021
10/22/2022
10/22/2023
10/22/2024
Date
GWPS
Prediction Limit


Thallium
Prediction Limit (MW-53 & MW-54) and GWPS vs. Time
Concentration (mg/L)
0.003
0.003
0.002
0.002
0.001
0.001
0.000
10/22/2018
10/22/2019
10/22/2020
10/22/2021
10/22/2022
10/22/2023
10/22/2024
Date
GWPS
Prediction Limit


Vanadium
Prediction Limit (MW-53 & MW-54) and GWPS vs. Time
Concentration (mg/L)
0.040
0.035
0.030
0.025
0.020
0.015
0.010
0.005
0.000
10/22/2018
10/22/2019
10/22/2020
10/22/2021
10/22/2022
10/22/2023
10/22/2024
Date
GWPS
Prediction Limit


Zinc
Prediction Limit (MW-53 & MW-54) and GWPS vs. Time
Concentration (mg/L)
2.500
2.000
1.500
1.000
0.500
0.000
10/22/2018
10/22/2019
10/22/2020
10/22/2021
10/22/2022
10/22/2023
10/22/2024
Date
GWPS
Prediction Limit

Appendix H

Source Well Mann-Kendall Trending Summary (α=0.01)

Source Trend Test

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR Printed 1/30/2026, 11:22 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Alpha	Method
1,1-Dichloroethane (ug/L)	93-MW-31R	-0.1039	-18	-21	No	8	62.5	0.01	NP
1,1-Dichloroethane (ug/L)	MW-73	-0.05116	-10	-21	No	8	0	0.01	NP
1,1-Dichloroethane (ug/L)	MW-79	0.6815	18	21	No	8	0	0.01	NP
1,2-Dichloropropane (ug/L)	MW-73	-0.01794	-4	-21	No	8	0	0.01	NP
1,4-Dichlorobenzene (ug/L)	MW-79	0.1574	16	21	No	8	12.5	0.01	NP
Arsenic (mg/L)	93-MW-31R	0.0001858	2	21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-61R	0.0004356	10	21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-73	0.0001031	4	21	No	8	0	0.01	NP
Barium (mg/L)	93-MW-31R	-0.007995	-8	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-61R	0.00115	8	21	No	8	0	0.01	NP
Barium (mg/L)	MW-73	0.009137	9	21	No	8	0	0.01	NP
Barium (mg/L)	MW-79	0.009013	10	21	No	8	0	0.01	NP
Benzene (ug/L)	93-MW-31R	0	-9	-21	No	8	75	0.01	NP
Benzene (ug/L)	MW-73	-0.04006	-12	-21	No	8	12.5	0.01	NP
Benzene (ug/L)	MW-79	-0.003674	-3	-21	No	8	37.5	0.01	NP
Beryllium (mg/L)	MW-61R	0.00001215	6	21	No	8	62.5	0.01	NP
Beryllium (mg/L)	MW-79	0	7	21	No	8	87.5	0.01	NP
Cadmium (mg/L)	93-MW-31R	-0.0001638	-12	-21	No	8	0	0.01	NP
Cadmium (mg/L)	MW-61R	0.0001528	13	21	No	8	25	0.01	NP
Cadmium (mg/L)	MW-73	-0.002044	0	21	No	8	0	0.01	NP
Cadmium (mg/L)	MW-79	0.003497	10	21	No	8	0	0.01	NP
Carbon disulfide (ug/L)	MW-79	0	-7	-21	No	8	75	0.01	NP
Chromium (mg/L)	93-MW-31R	0	5	21	No	8	87.5	0.01	NP
Chromium (mg/L)	MW-61R	0	4	21	No	8	50	0.01	NP
Chromium (mg/L)	MW-73	0	-2	-21	No	8	75	0.01	NP
cis-1,2-Dichloroethene (ug/L)	93-MW-31R	-4.129	-21	-21	No	8	37.5	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-61R	2.239	12	21	No	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-73	0.8424	4	21	No	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-79	8.043	15	21	No	8	0	0.01	NP
Cobalt (mg/L)	93-MW-31R	-0.003105	-20	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-61R	0.001078	11	21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-73	-0.001182	-6	-21	No	8	0	0.01	NP
Cobalt (mg/L)	**MW-79**	**0.0006871**	**22**	**21**	**Yes**	**8**	**0**	**0.01**	**NP**
Copper (mg/L)	MW-61R	0.003355	13	21	No	8	12.5	0.01	NP
Copper (mg/L)	MW-73	0.001039	12	21	No	8	12.5	0.01	NP
Copper (mg/L)	MW-79	0.0002251	18	21	No	8	50	0.01	NP
Lead (mg/L)	93-MW-31R	0.0004099	15	21	No	8	25	0.01	NP
Lead (mg/L)	MW-61R	0.001295	15	21	No	8	25	0.01	NP
Lead (mg/L)	MW-73	0.0003009	7	21	No	8	37.5	0.01	NP
Lead (mg/L)	MW-79	0.0003006	13	21	No	8	37.5	0.01	NP
Nickel (mg/L)	93-MW-31R	-0.003809	-19	-21	No	8	25	0.01	NP
Nickel (mg/L)	**MW-61R**	**0.008441**	**27**	**21**	**Yes**	**8**	**0**	**0.01**	**NP**
Nickel (mg/L)	MW-73	0.000666	8	21	No	8	0	0.01	NP
Nickel (mg/L)	MW-79	0.005179	19	21	No	8	0	0.01	NP
Selenium (mg/L)	MW-61R	0	4	21	No	8	50	0.01	NP
Tetrachloroethene (ug/L)	**MW-73**	**-0.5813**	**-24**	**-21**	**Yes**	**8**	**0**	**0.01**	**NP**
Thallium (mg/L)	MW-73	0	1	21	No	8	87.5	0.01	NP
Thallium (mg/L)	MW-79	0	5	21	No	8	87.5	0.01	NP
Trichloroethene (ug/L)	**MW-73**	**-0.7861**	**-28**	**-21**	**Yes**	**8**	**0**	**0.01**	**NP**
Vanadium (mg/L)	93-MW-31R	0	-2	-21	No	8	50	0.01	NP

Source Trend Test

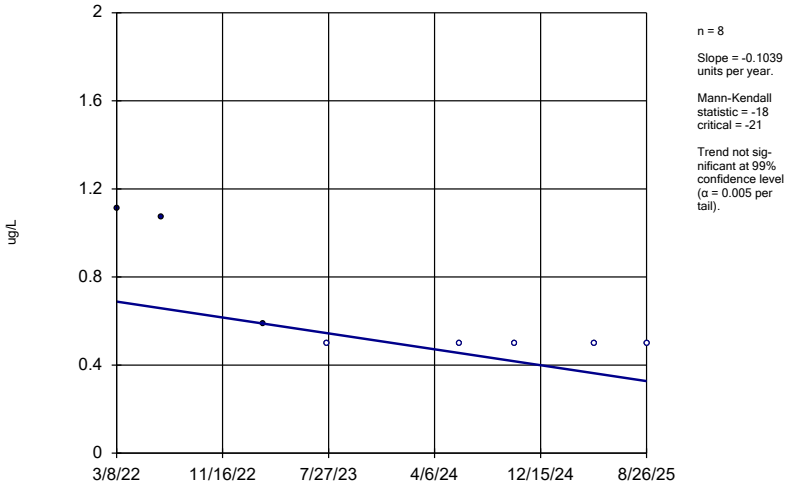
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR Printed 1/30/2026, 11:22 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Alpha	Method
Vanadium (mg/L)	MW-61R	0.0007382	7	21	No	8	37.5	0.01	NP
Vanadium (mg/L)	MW-73	0	1	21	No	8	87.5	0.01	NP
Vinyl chloride (ug/L)	93-MW-31R	0	-8	-21	No	8	62.5	0.01	NP
Vinyl chloride (ug/L)	MW-73	-0.4584	-12	-21	No	8	0	0.01	NP
Vinyl chloride (ug/L)	MW-79	1.211	20	21	No	8	0	0.01	NP
Zinc (mg/L)	93-MW-31R	0	6	21	No	8	62.5	0.01	NP
Zinc (mg/L)	MW-61R	0.007698	14	21	No	8	0	0.01	NP
Zinc (mg/L)	MW-73	-0.01964	-4	-21	No	8	0	0.01	NP
Zinc (mg/L)	MW-79	0.03033	14	21	No	8	12.5	0.01	NP

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Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-31R



n = 8

Slope = -0.1039 units per year.

Mann-Kendall statistic = -18
critical = -21

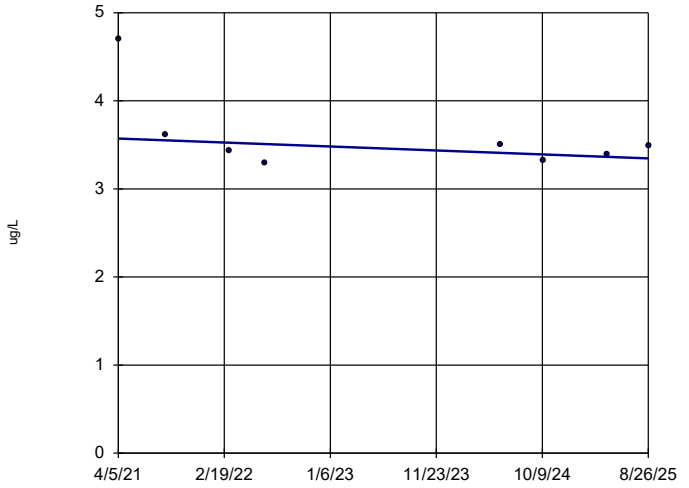
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: 1,1-Dichloroethane Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-73



n = 8

Slope = -0.05116 units per year.

Mann-Kendall statistic = -10
critical = -21

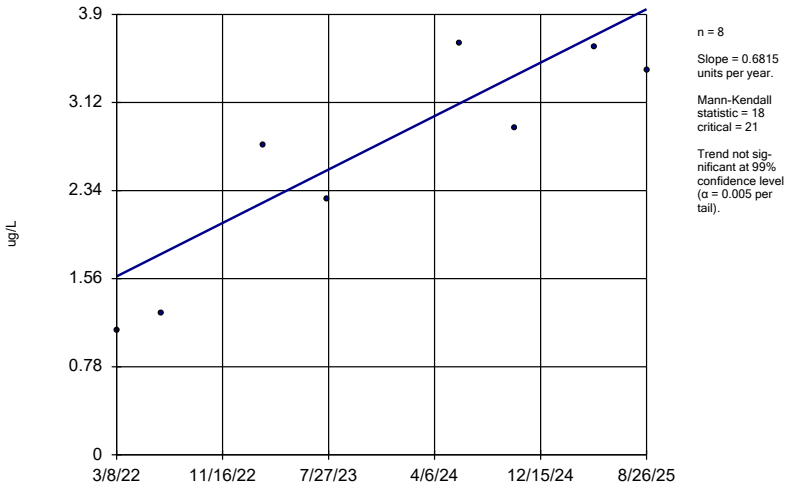
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: 1,1-Dichloroethane Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-79



n = 8

Slope = 0.6815 units per year.

Mann-Kendall statistic = 18
critical = 21

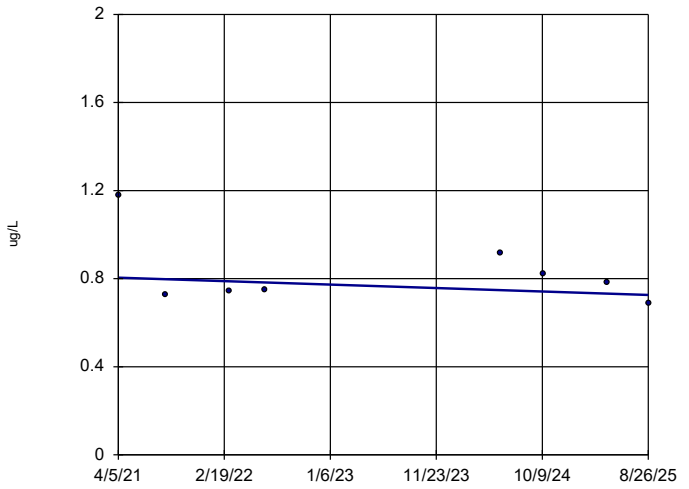
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: 1,1-Dichloroethane Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-73



n = 8

Slope = -0.01794 units per year.

Mann-Kendall statistic = -4
critical = -21

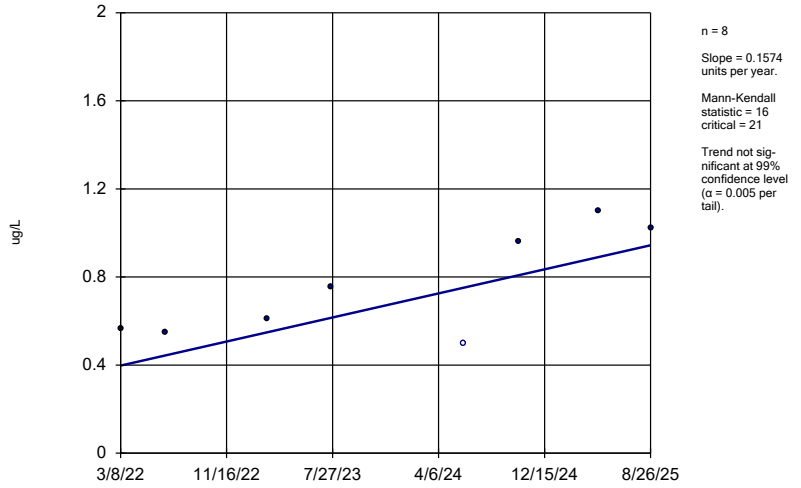
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: 1,2-Dichloropropane Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-79



n = 8

Slope = 0.1574 units per year.

Mann-Kendall statistic = 16 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

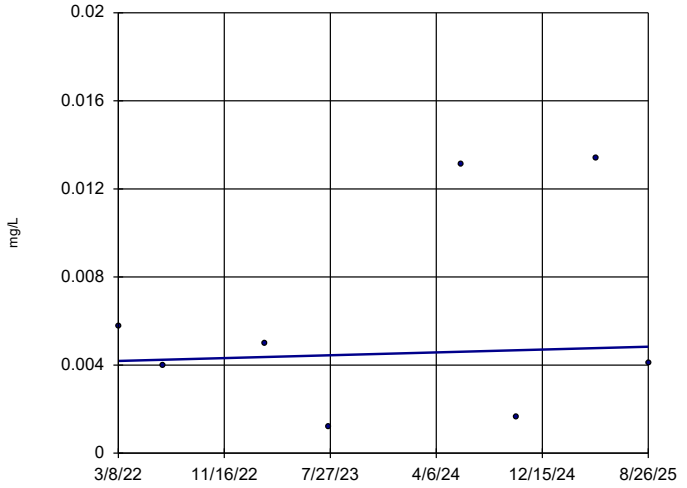
Constituent: 1,4-Dichlorobenzene Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

93-MW-31R



n = 8

Slope = 0.0001858 units per year.

Mann-Kendall statistic = 2 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

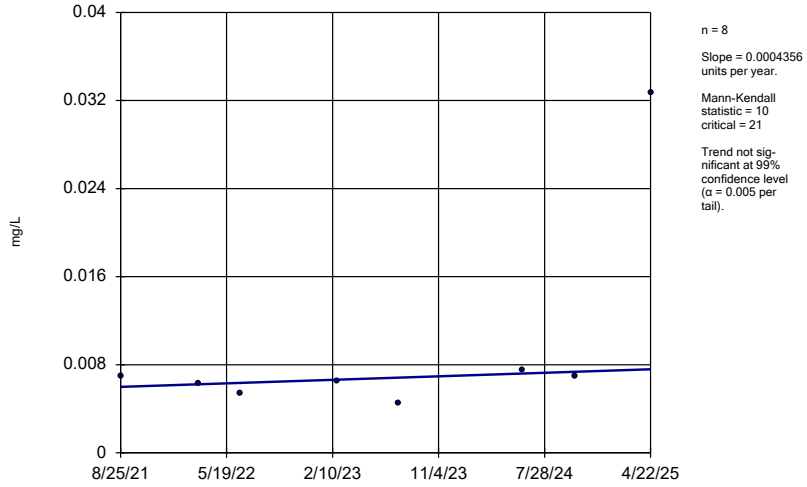
Constituent: Arsenic Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-61R



n = 8

Slope = 0.0004356 units per year.

Mann-Kendall statistic = 10 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

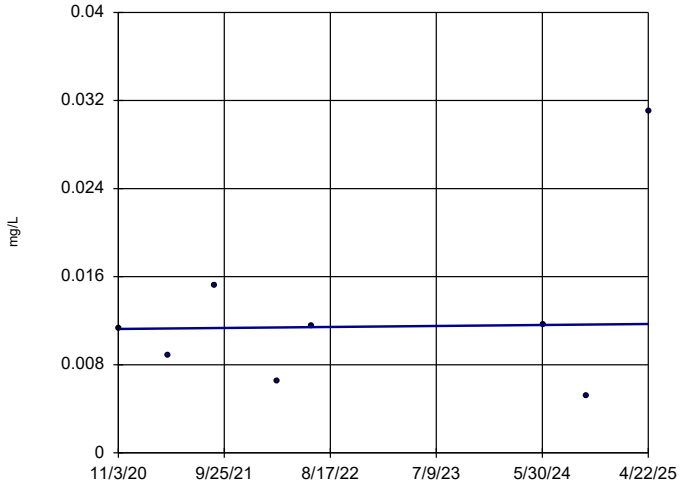
Constituent: Arsenic Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-73



n = 8

Slope = 0.0001031 units per year.

Mann-Kendall statistic = 4 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

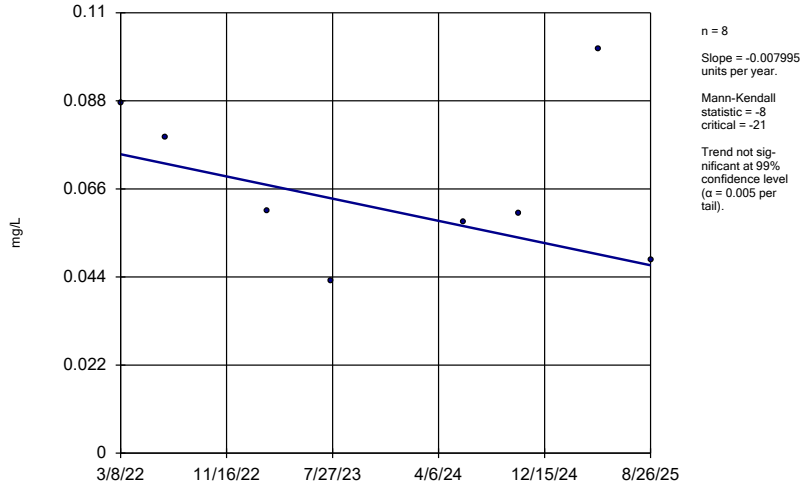
Constituent: Arsenic Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

93-MW-31R



n = 8

Slope = -0.007995 units per year.

Mann-Kendall statistic = -8
critical = -21

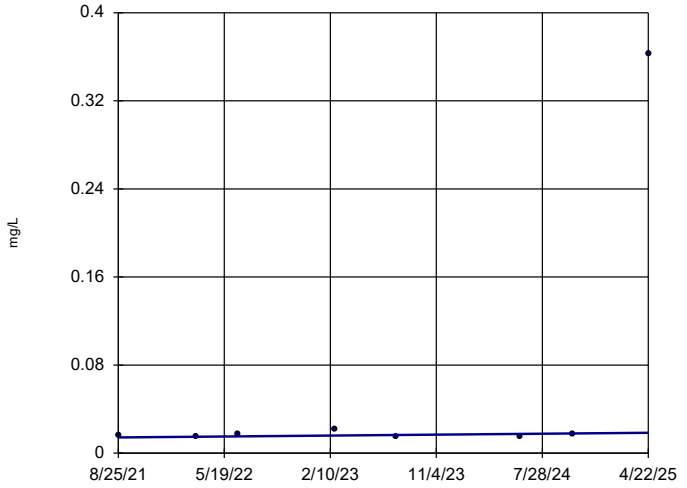
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-61R



n = 8

Slope = 0.00115 units per year.

Mann-Kendall statistic = 8
critical = 21

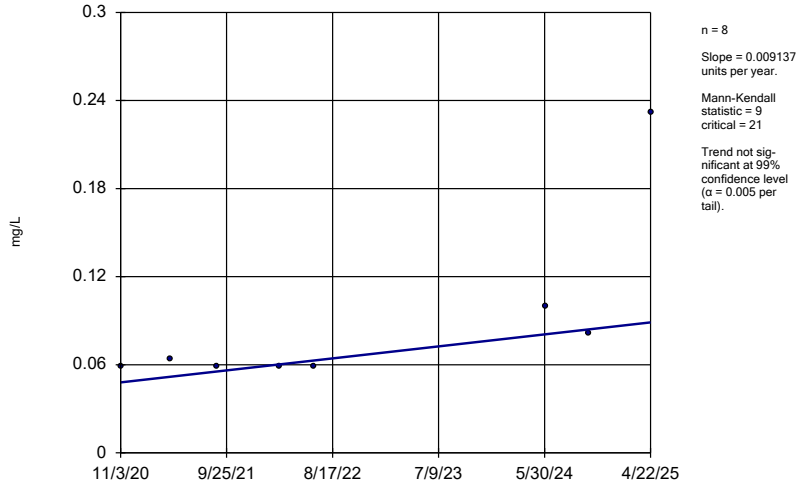
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-73



n = 8

Slope = 0.009137 units per year.

Mann-Kendall statistic = 9
critical = 21

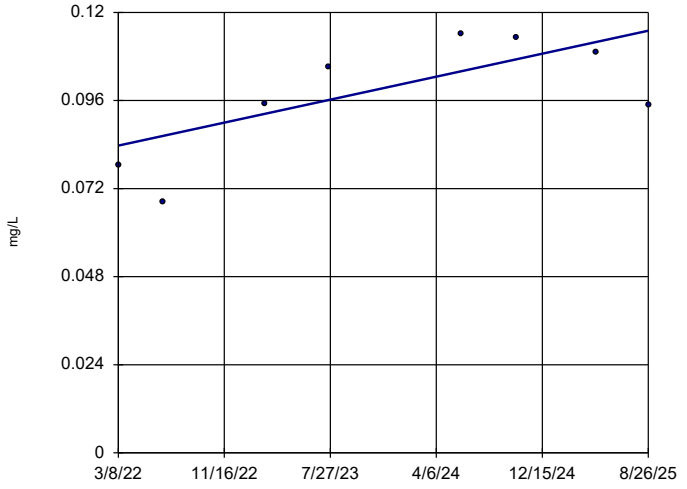
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-79



n = 8

Slope = 0.009013 units per year.

Mann-Kendall statistic = 10
critical = 21

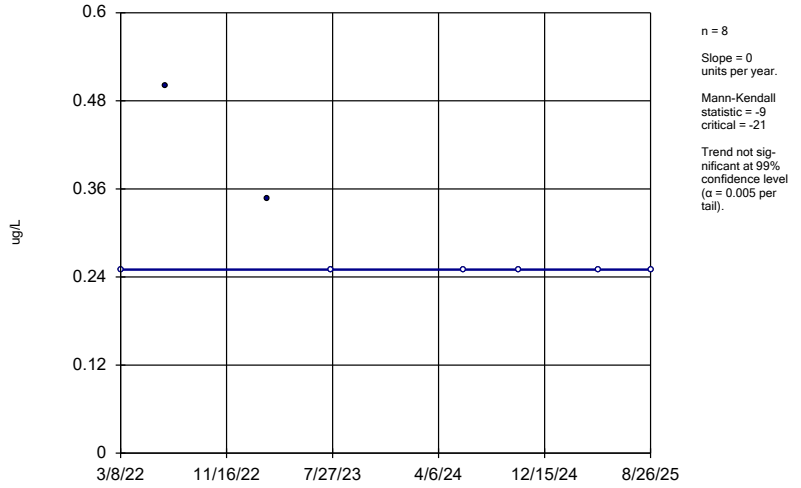
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-31R



n = 8

Slope = 0
units per year.

Mann-Kendall
statistic = -9
critical = -21

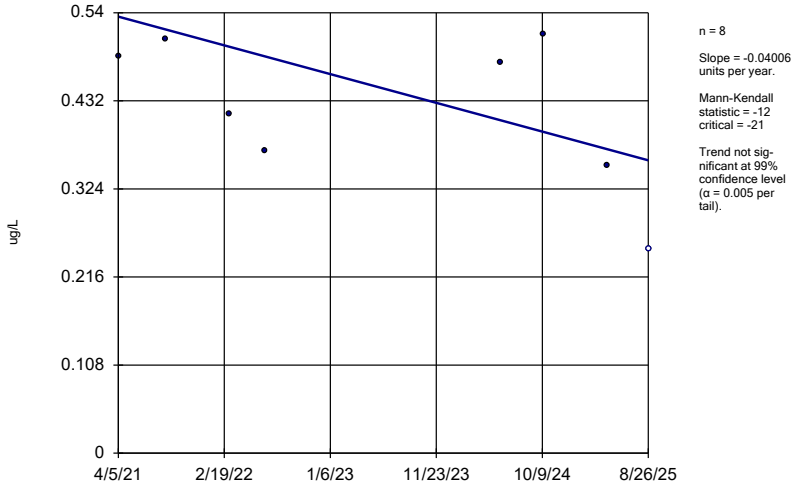
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Benzene Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-73



n = 8

Slope = -0.04006
units per year.

Mann-Kendall
statistic = -12
critical = -21

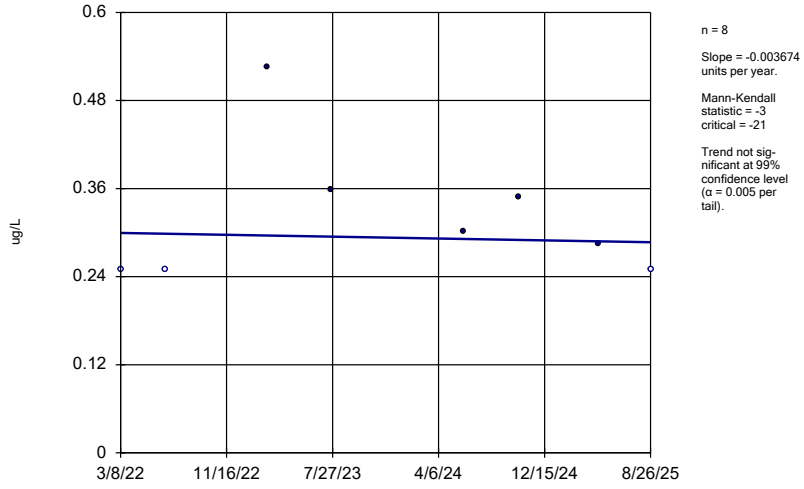
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Benzene Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-79



n = 8

Slope = -0.003674
units per year.

Mann-Kendall
statistic = -3
critical = -21

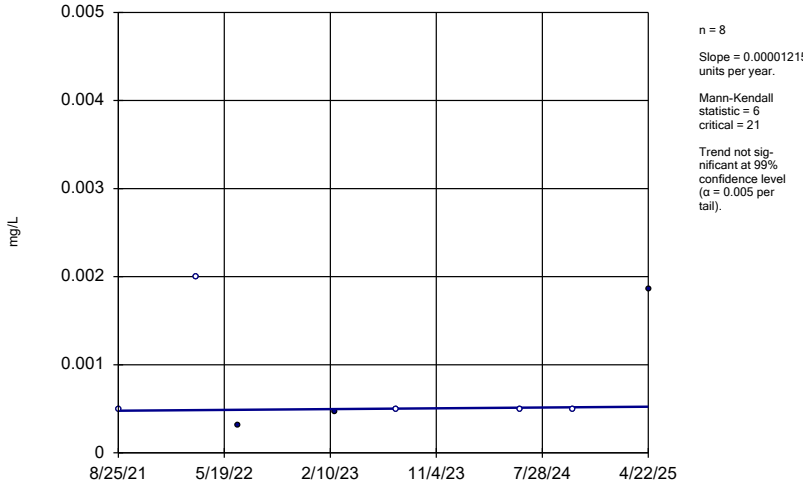
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Benzene Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-61R



n = 8

Slope = 0.00001215
units per year.

Mann-Kendall
statistic = 6
critical = 21

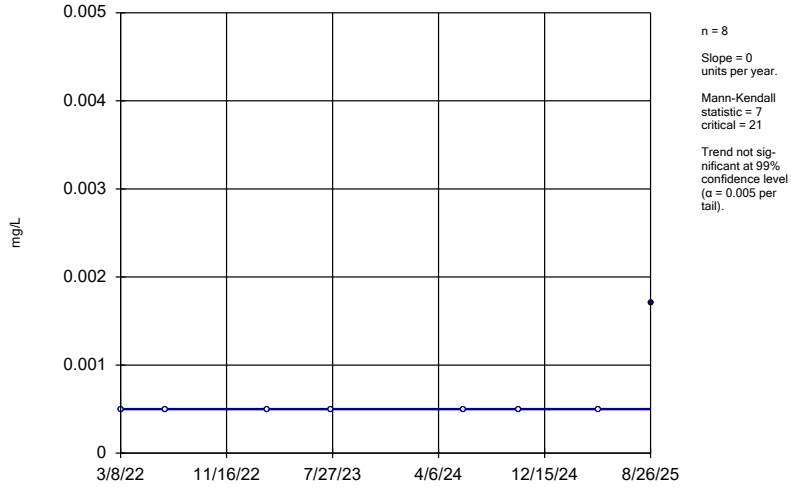
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Beryllium Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-79

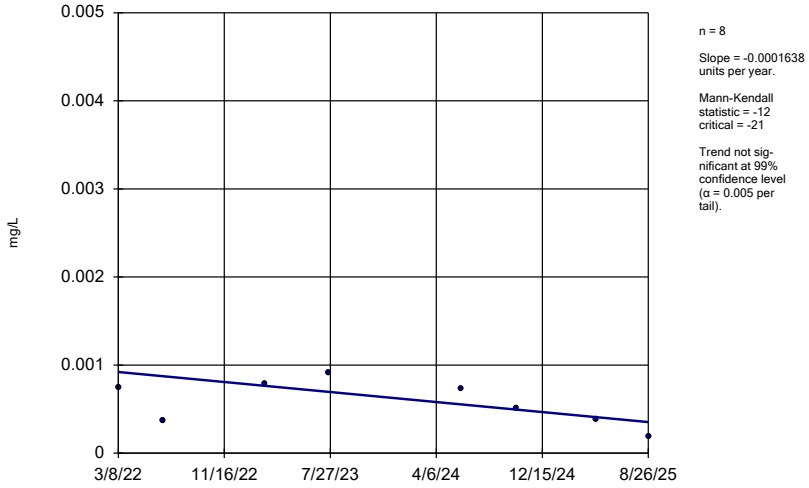


Constituent: Beryllium Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Sen's Slope Estimator

93-MW-31R

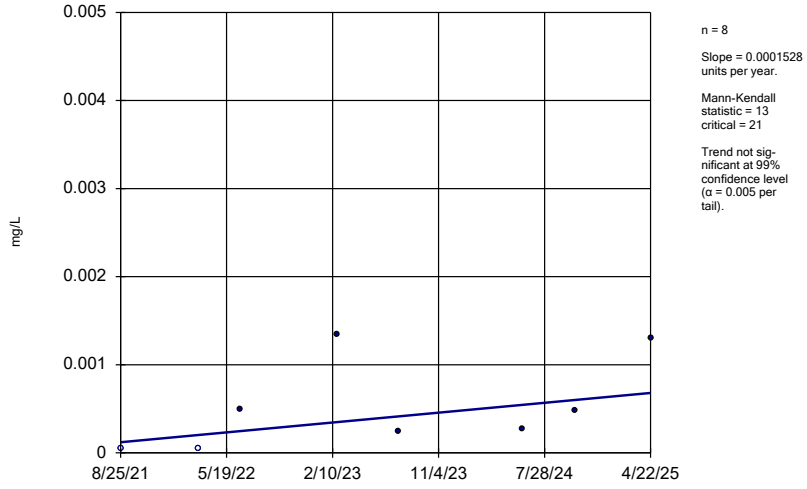


Constituent: Cadmium Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-61R

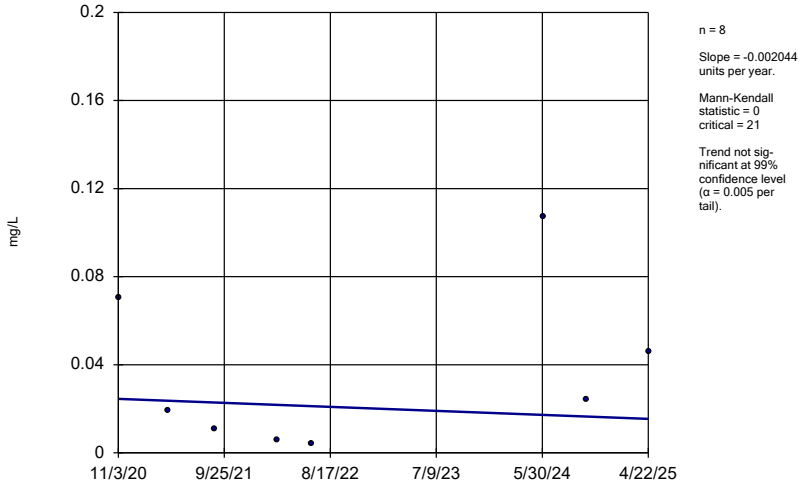


Constituent: Cadmium Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-73

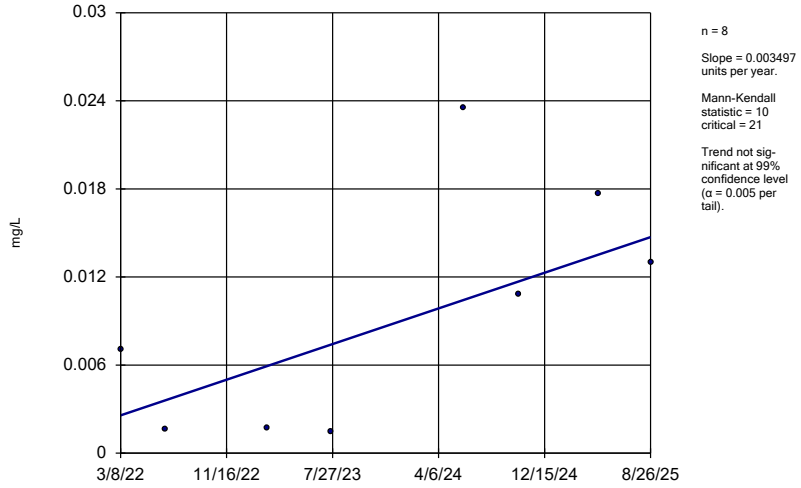


Constituent: Cadmium Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-79



Constituent: Cadmium Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

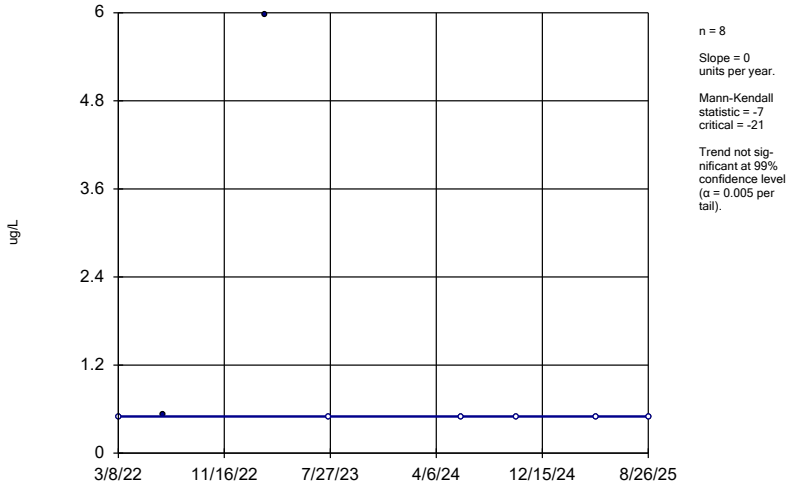
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-79



Constituent: Carbon disulfide Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

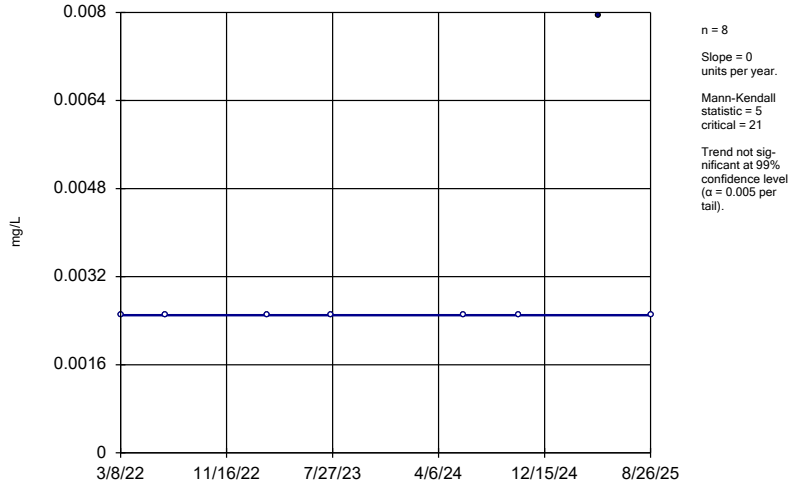
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-31R



Constituent: Chromium Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

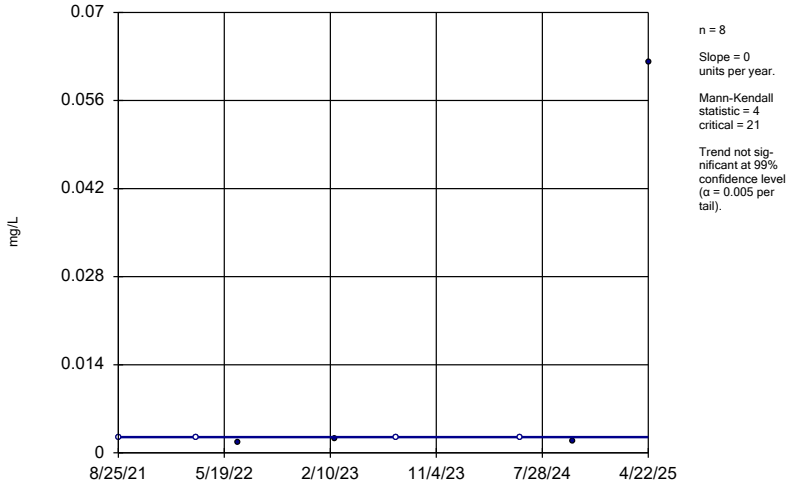
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-61R



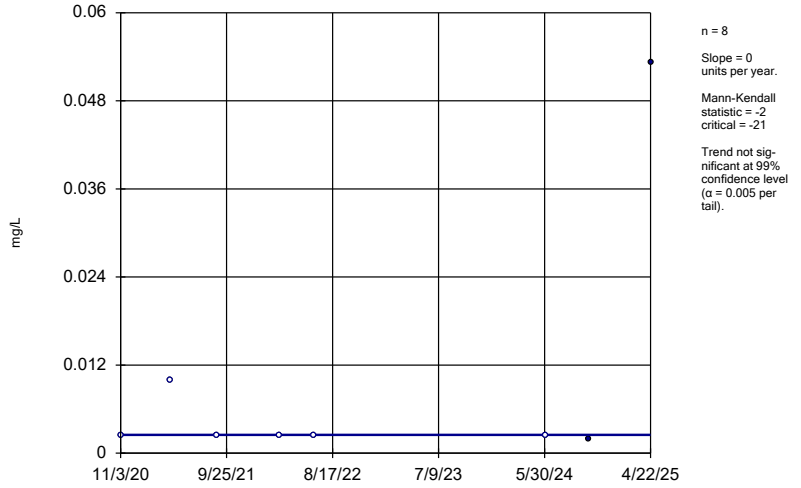
Constituent: Chromium Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-73

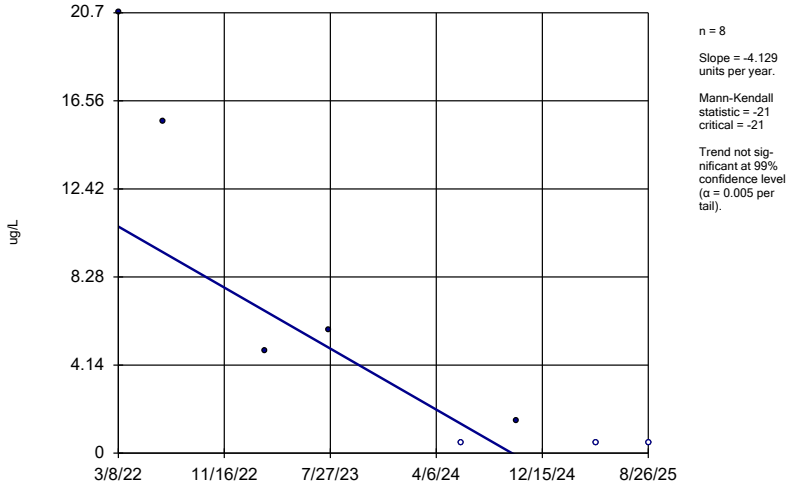


Constituent: Chromium Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-31R

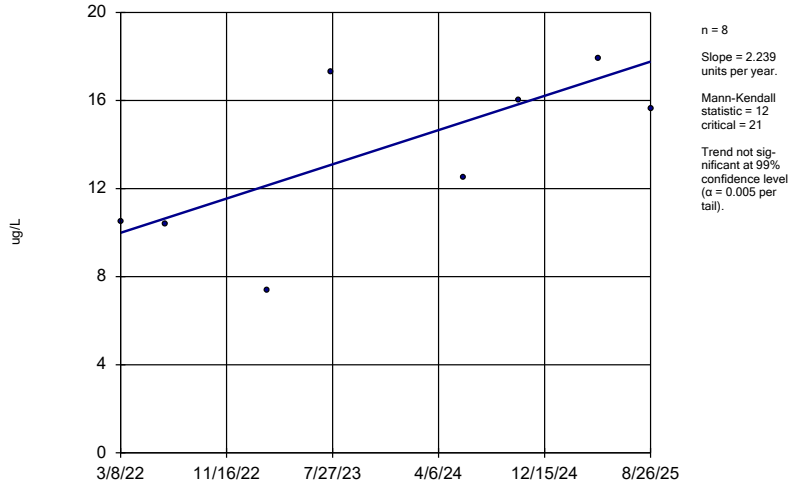


Constituent: cis-1,2-Dichloroethene Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-61R

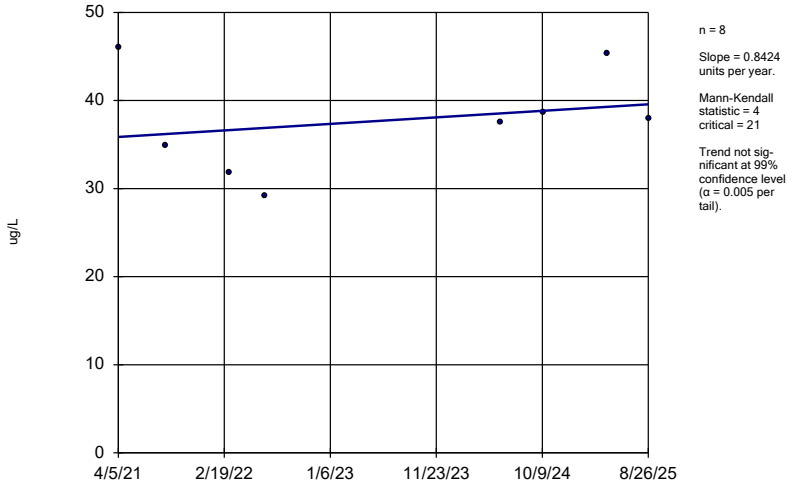


Constituent: cis-1,2-Dichloroethene Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-73

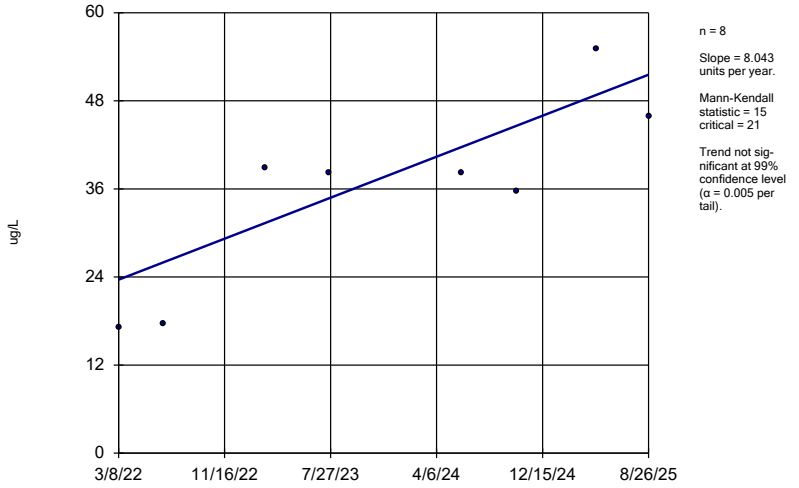


Constituent: cis-1,2-Dichloroethene Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-79



n = 8

Slope = 8.043 units per year.

Mann-Kendall statistic = 15 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

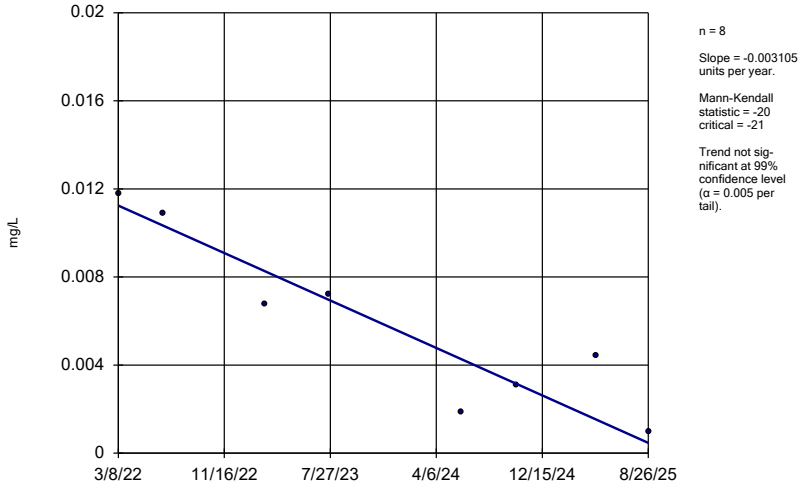
Constituent: cis-1,2-Dichloroethene Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

93-MW-31R



n = 8

Slope = -0.003105 units per year.

Mann-Kendall statistic = -20 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

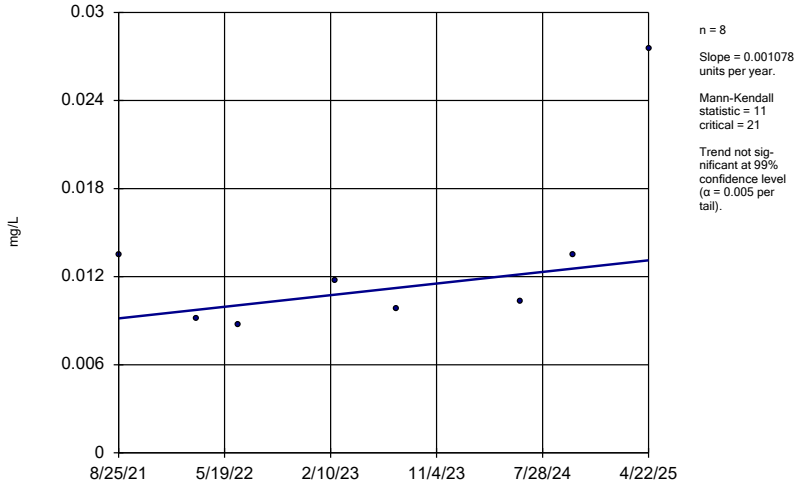
Constituent: Cobalt Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-61R



n = 8

Slope = 0.001078 units per year.

Mann-Kendall statistic = 11 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

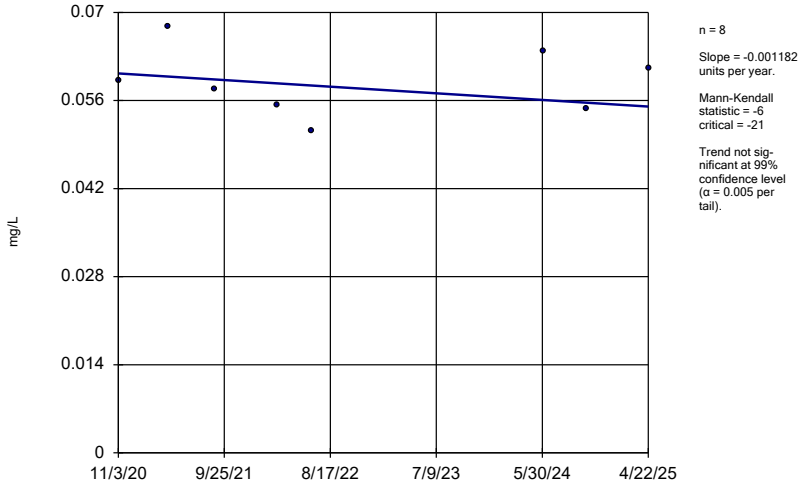
Constituent: Cobalt Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-73



n = 8

Slope = -0.001182 units per year.

Mann-Kendall statistic = -6 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

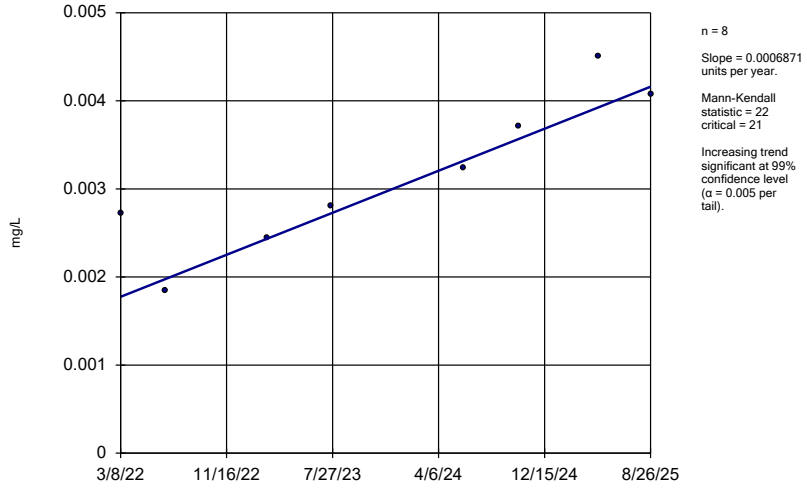
Constituent: Cobalt Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-79



n = 8

Slope = 0.0006871 units per year.

Mann-Kendall statistic = 22 critical = 21

Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

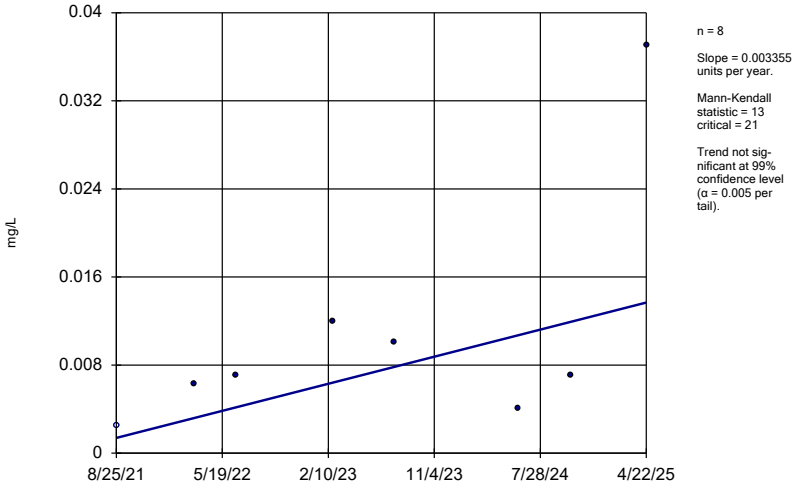
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-61R



n = 8

Slope = 0.003355 units per year.

Mann-Kendall statistic = 13 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Copper Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

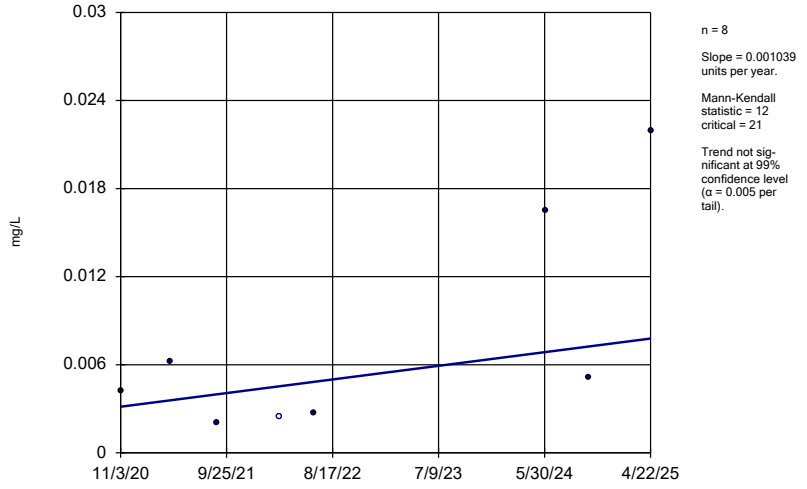
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-73



n = 8

Slope = 0.001039 units per year.

Mann-Kendall statistic = 12 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Copper Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

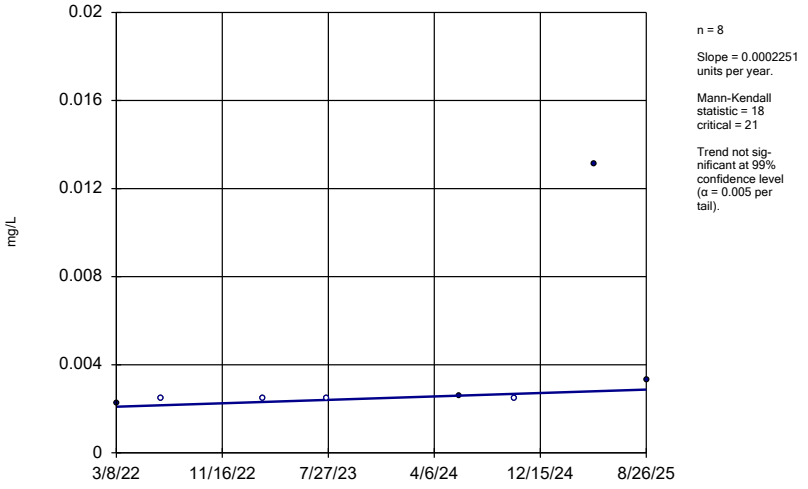
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-79



n = 8

Slope = 0.0002251 units per year.

Mann-Kendall statistic = 18 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

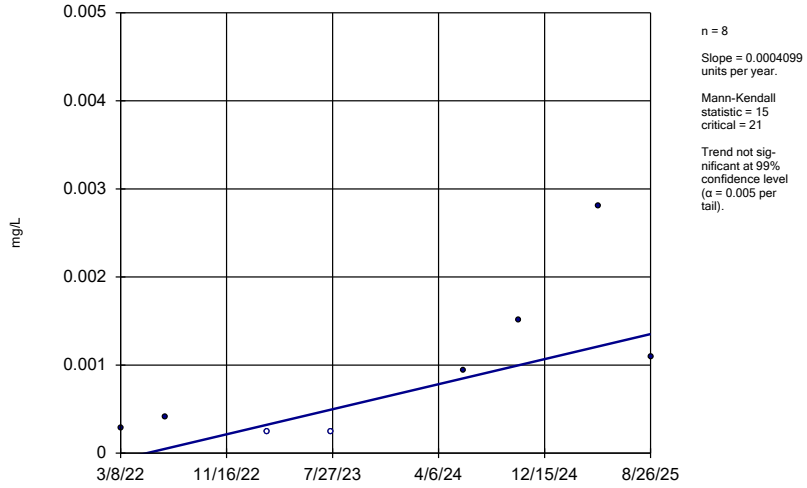
Constituent: Copper Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-31R



n = 8

Slope = 0.0004099 units per year.

Mann-Kendall statistic = 15
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

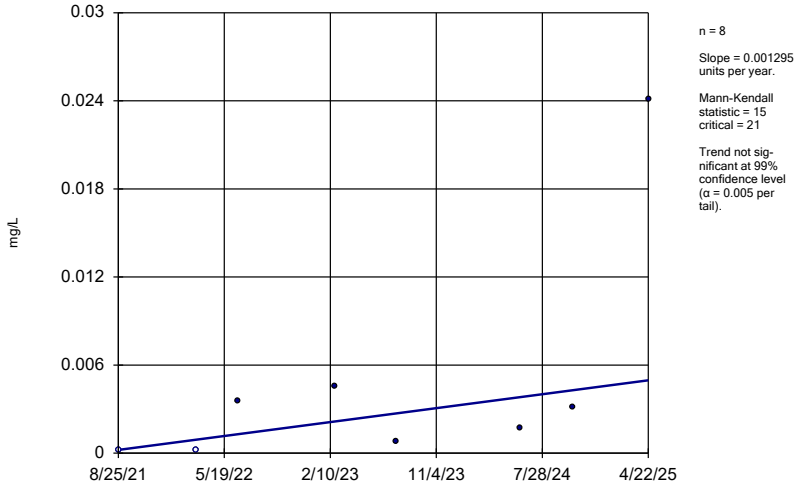
Constituent: Lead Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-61R



n = 8

Slope = 0.001295 units per year.

Mann-Kendall statistic = 15
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

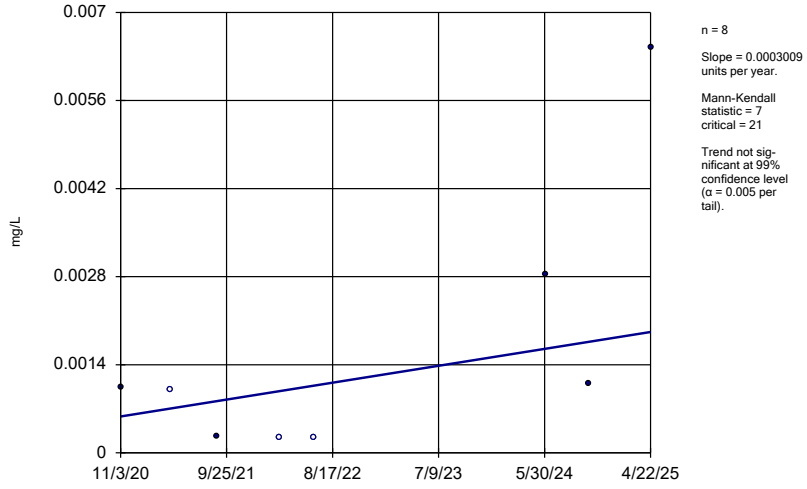
Constituent: Lead Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-73



n = 8

Slope = 0.0003009 units per year.

Mann-Kendall statistic = 7
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

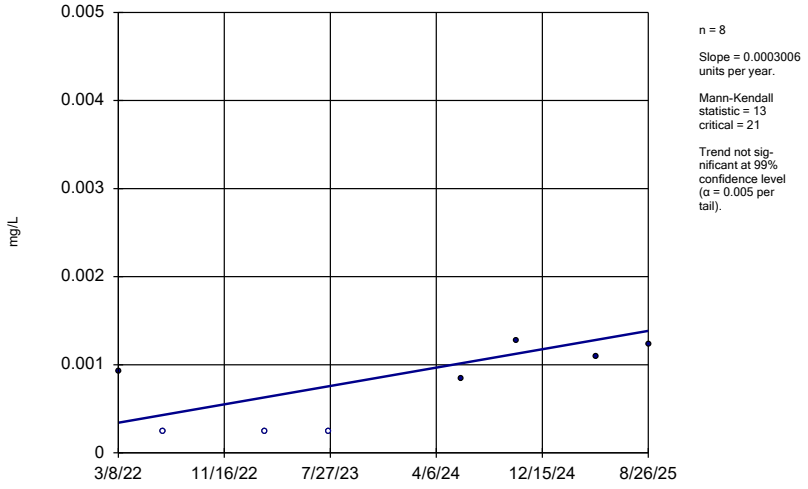
Constituent: Lead Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-79



n = 8

Slope = 0.0003006 units per year.

Mann-Kendall statistic = 13
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

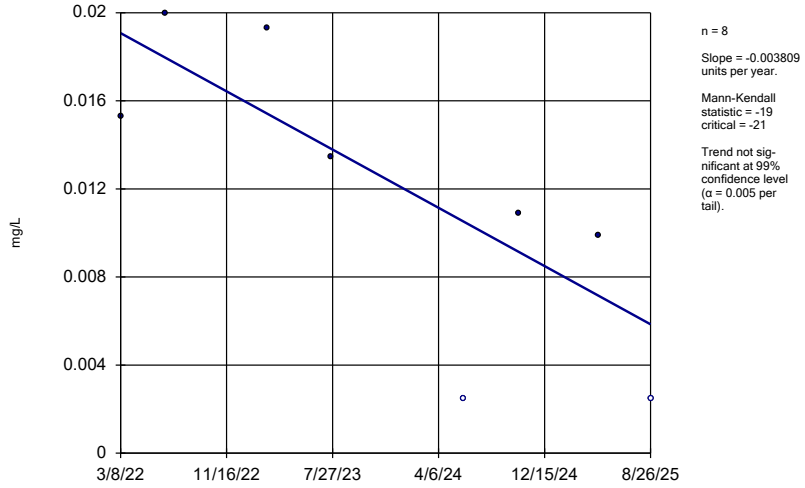
Constituent: Lead Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-31R



n = 8

Slope = -0.003809 units per year.

Mann-Kendall statistic = -19
critical = -21

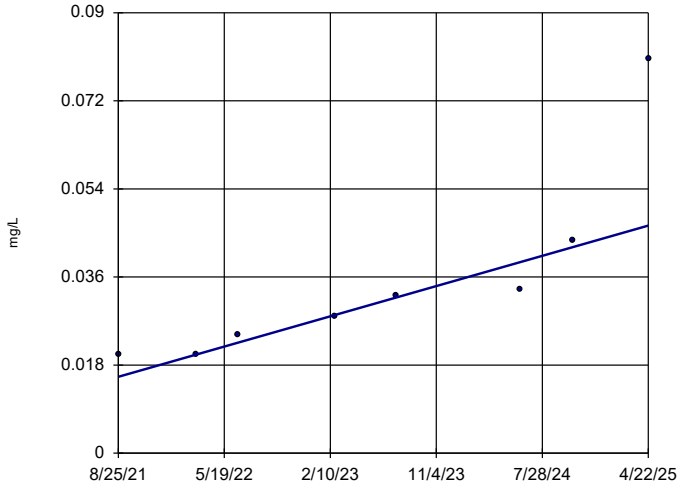
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-61R



n = 8

Slope = 0.008441 units per year.

Mann-Kendall statistic = 27
critical = 21

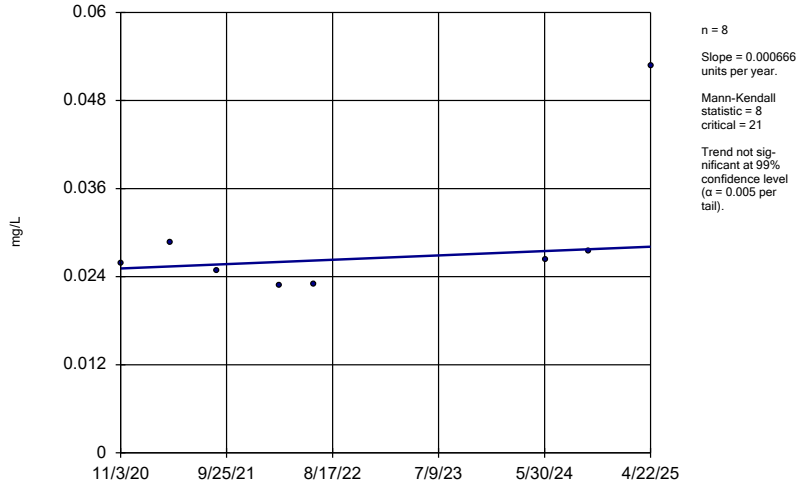
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-73



n = 8

Slope = 0.000666 units per year.

Mann-Kendall statistic = 8
critical = 21

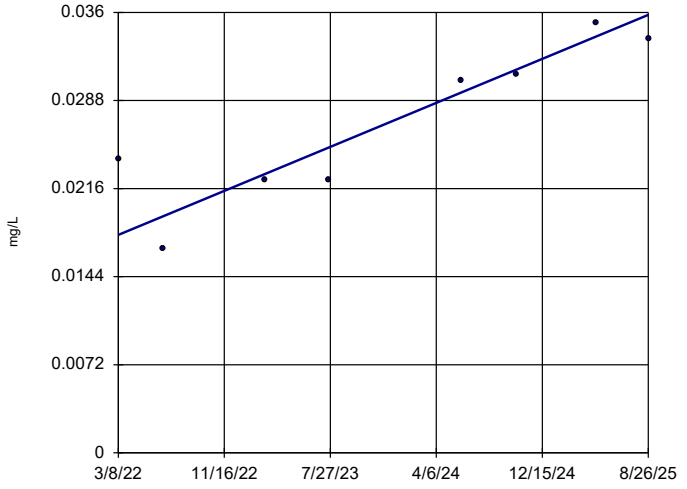
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-79



n = 8

Slope = 0.005179 units per year.

Mann-Kendall statistic = 19
critical = 21

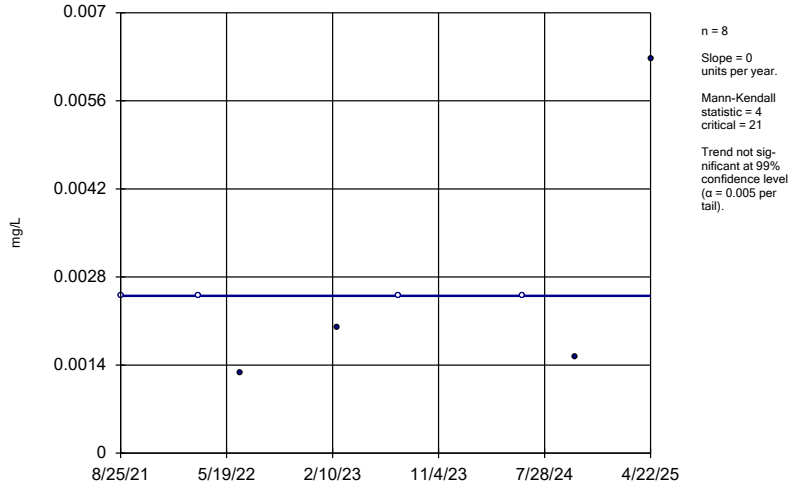
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-61R

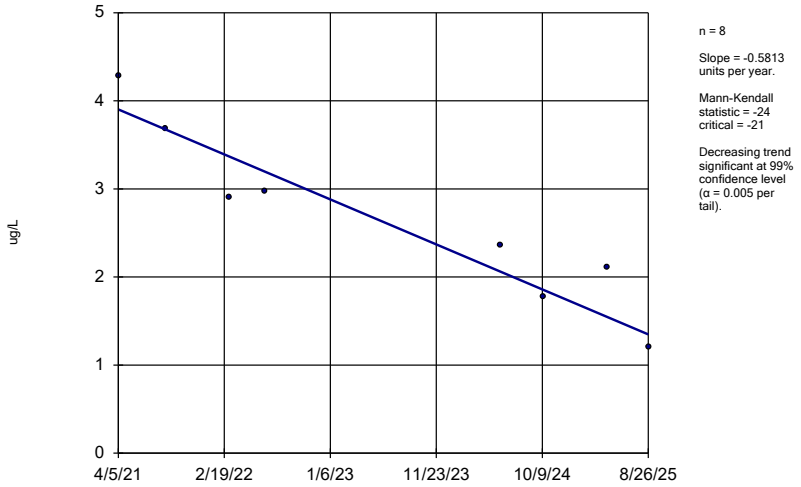


Constituent: Selenium Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-73

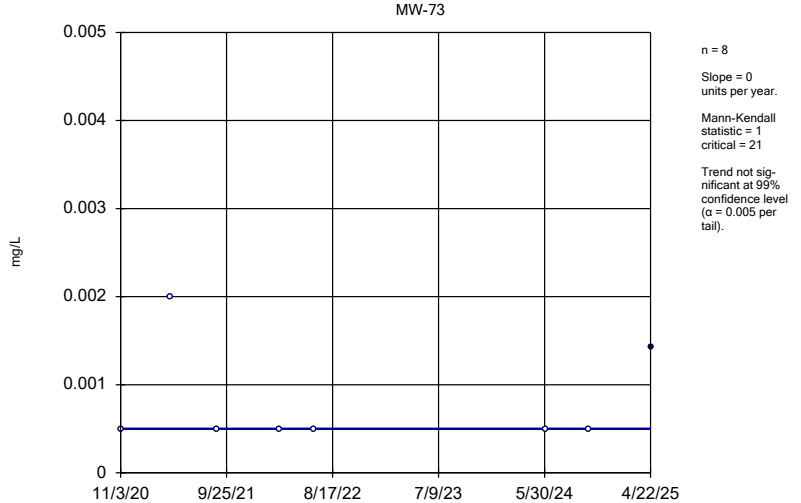


Constituent: Tetrachloroethene Analysis Run 1/30/2026 11:19 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-73

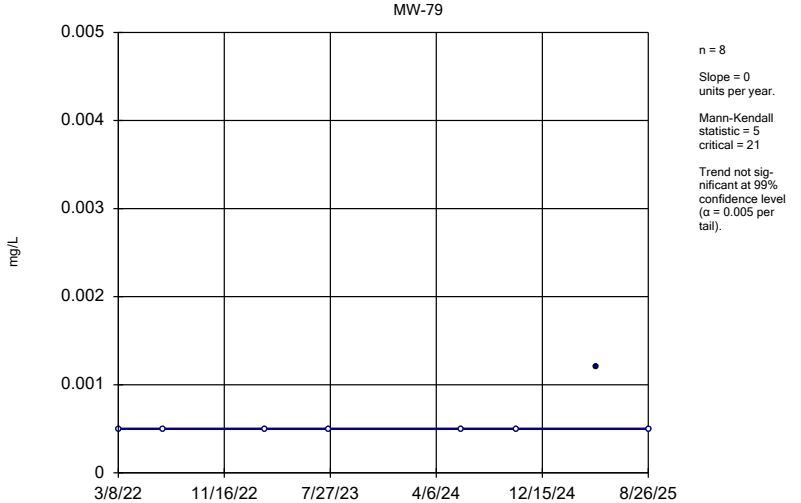


Constituent: Thallium Analysis Run 1/30/2026 11:20 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Sanitas™ v.10.1.03a Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-79

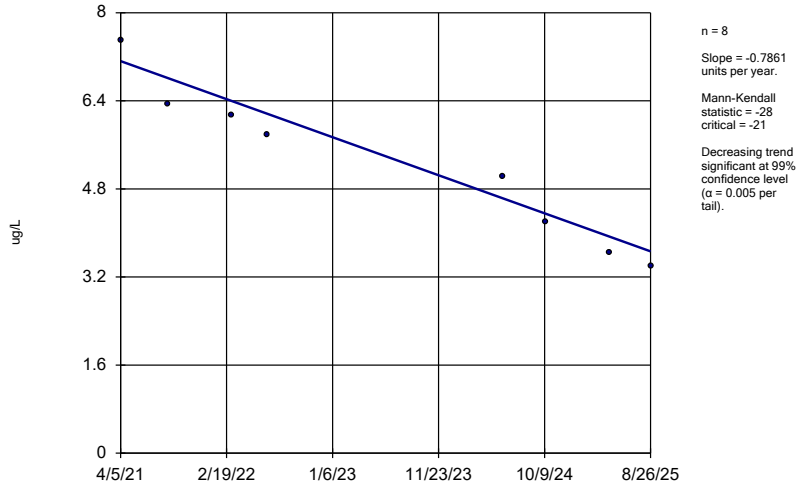


Constituent: Thallium Analysis Run 1/30/2026 11:20 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-73



n = 8

Slope = -0.7861 units per year.

Mann-Kendall statistic = -28 critical = -21

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Trichloroethene Analysis Run 1/30/2026 11:20 AM View: 2025 AWQR MK

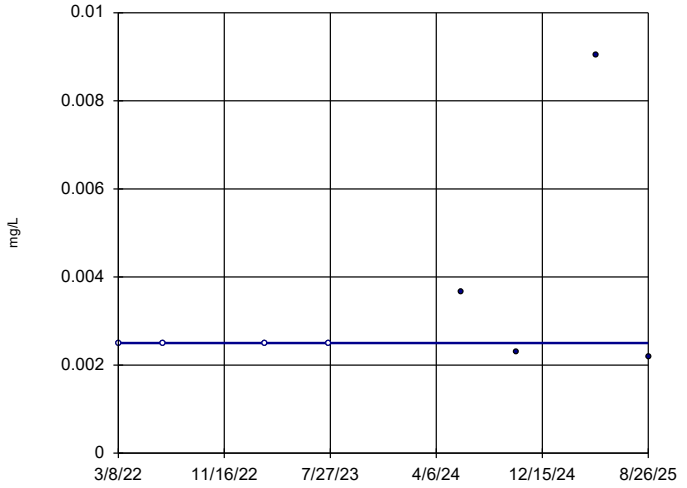
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-31R



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = -2 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Vanadium Analysis Run 1/30/2026 11:20 AM View: 2025 AWQR MK

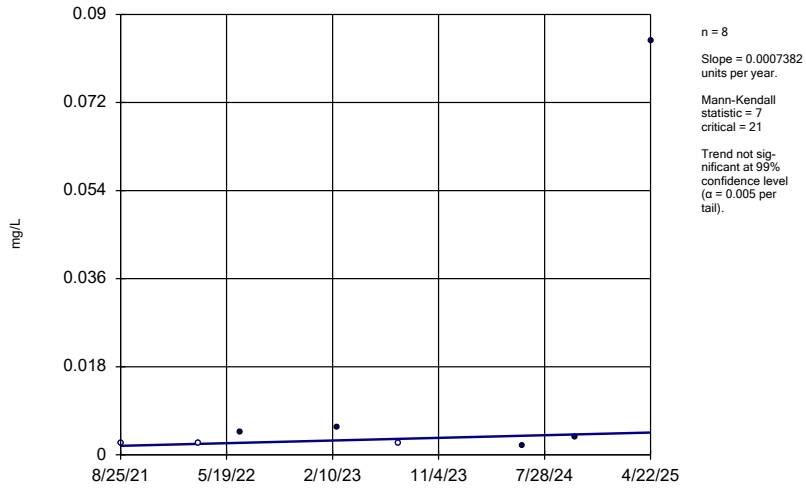
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-61R



n = 8

Slope = 0.0007382 units per year.

Mann-Kendall statistic = 7 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Vanadium Analysis Run 1/30/2026 11:20 AM View: 2025 AWQR MK

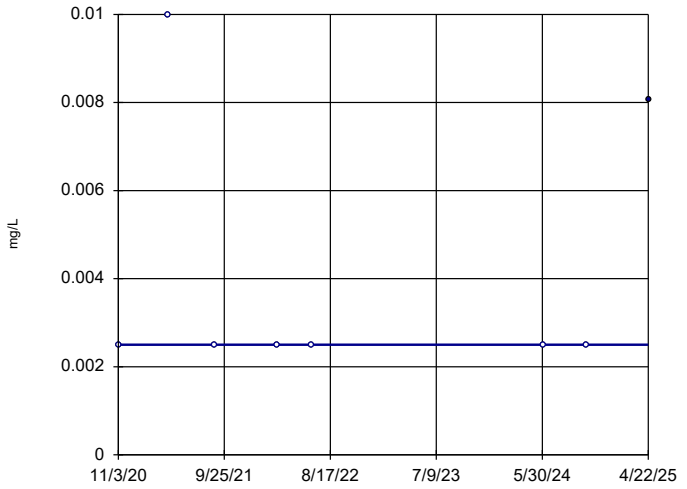
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-73



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 1 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

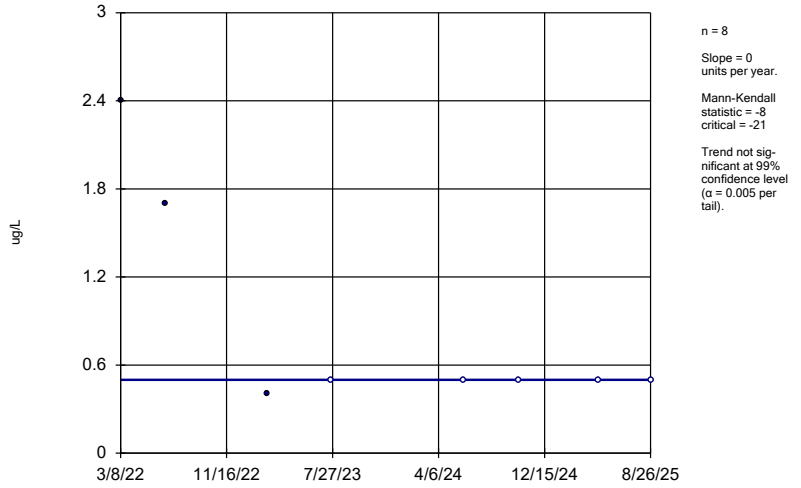
Constituent: Vanadium Analysis Run 1/30/2026 11:20 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-31R



n = 8

Slope = 0
units per year.

Mann-Kendall
statistic = -8
critical = -21

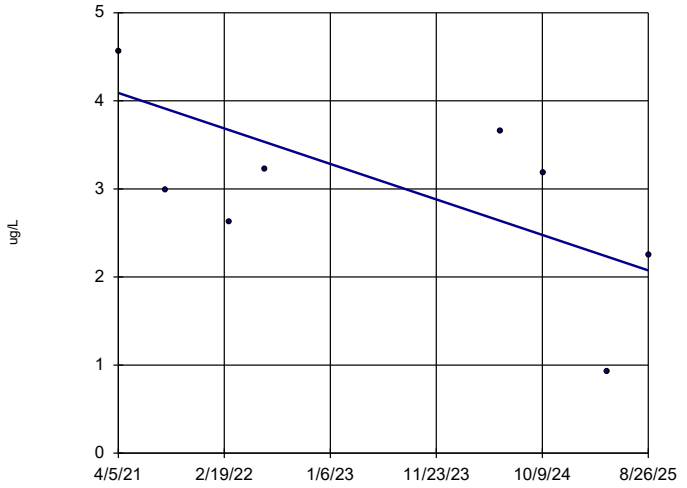
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Vinyl chloride Analysis Run 1/30/2026 11:20 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-73



n = 8

Slope = -0.4584
units per year.

Mann-Kendall
statistic = -12
critical = -21

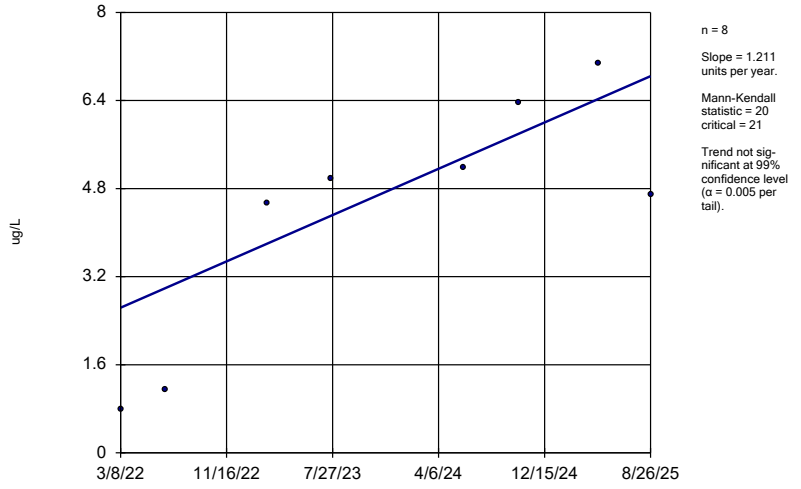
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Vinyl chloride Analysis Run 1/30/2026 11:20 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-79



n = 8

Slope = 1.211
units per year.

Mann-Kendall
statistic = 20
critical = 21

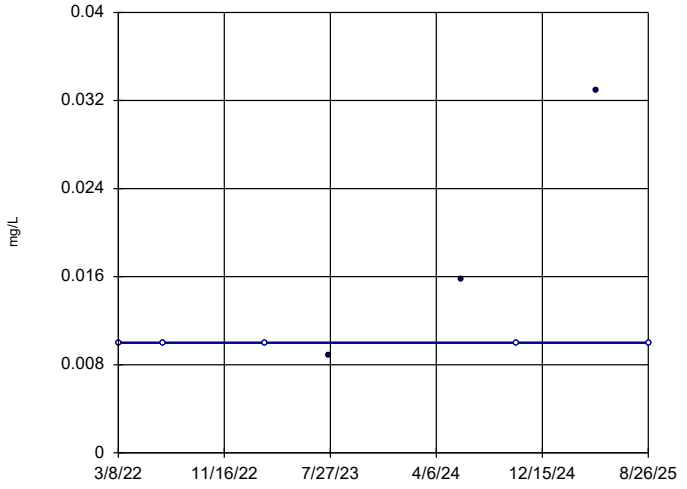
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Vinyl chloride Analysis Run 1/30/2026 11:20 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

93-MW-31R



n = 8

Slope = 0
units per year.

Mann-Kendall
statistic = 6
critical = 21

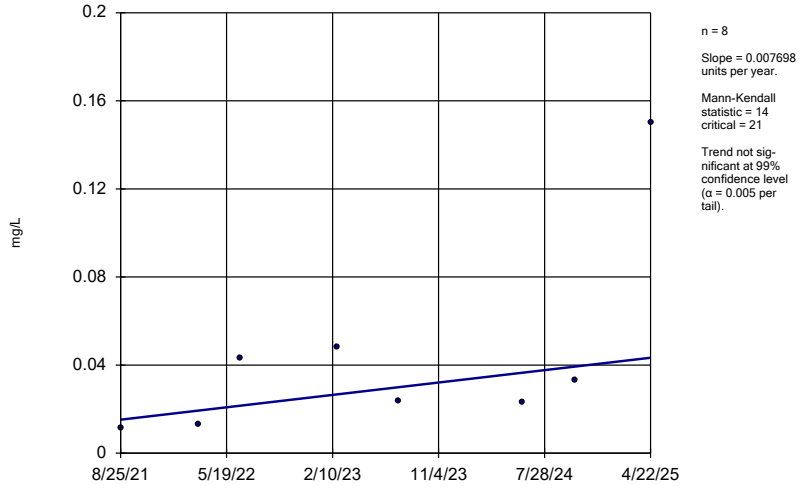
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Zinc Analysis Run 1/30/2026 11:20 AM View: 2025 AWQR MK
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-61R



n = 8

Slope = 0.007698 units per year.

Mann-Kendall statistic = 14
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

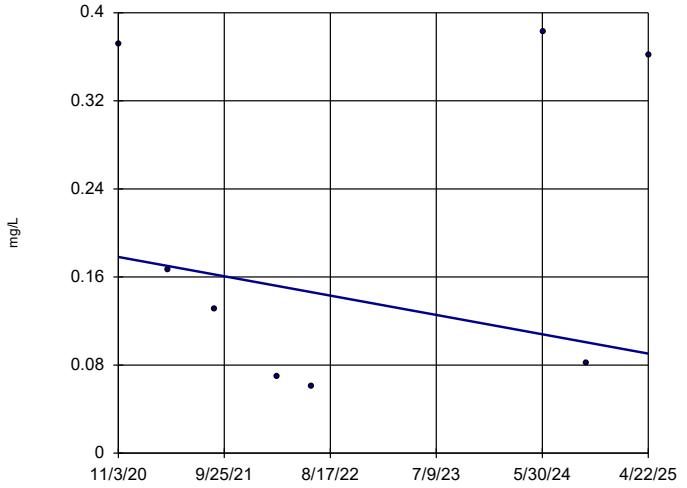
Constituent: Zinc Analysis Run 1/30/2026 11:20 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Sen's Slope Estimator

MW-73



n = 8

Slope = -0.01964 units per year.

Mann-Kendall statistic = -4
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Zinc Analysis Run 1/30/2026 11:20 AM View: 2025 AWQR MK

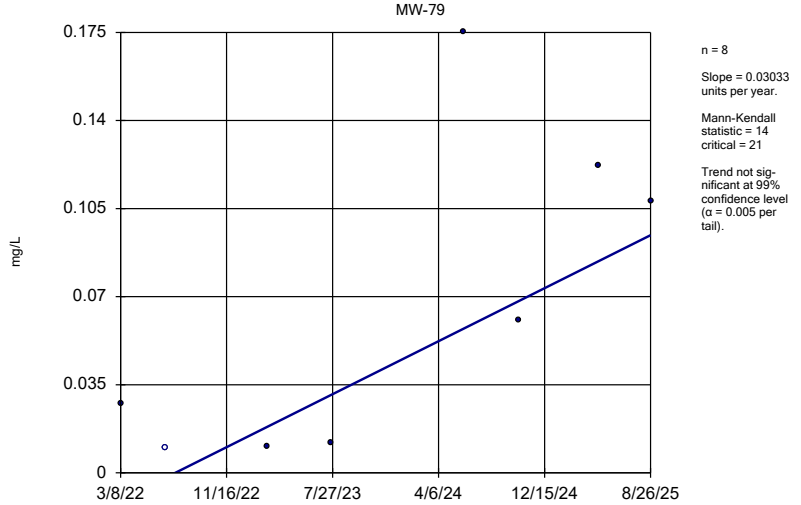
Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

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Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-79



n = 8

Slope = 0.03033 units per year.

Mann-Kendall statistic = 14
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Zinc Analysis Run 1/30/2026 11:20 AM View: 2025 AWQR MK

Ottumwa-Wapello County LF Client: SCS Engineers Data: OWSWC HMSP_AM_2025_AWQR

Appendix I

Acid Mine Drainage Mann-Kendall Trending Summary (α=0.2)

Monitoring Well	Constituent Name	Calculated Statistic		
		Decreasing Trend	Stable Trend	Increasing Trend
MW-39R	Alkalinity, Total [CaCO3]		8	
	Bicarbonate		12	
	Iron			16
	Manganese		-6	
	Sulfate		-6	
MW-40	Alkalinity, Total [CaCO3]		0	
	Aluminum		6	
	Bicarbonate		10	
	Iron		12	
	Manganese		8	
	Sulfate		6	
04-MW-56	Alkalinity, Total [CaCO3]		8	
	Bicarbonate			14
	Iron		-12	
	Manganese	-16		
	Sulfate		-4	
MW-58	Alkalinity, Total [CaCO3]		-2	
	Aluminum		1	
	Bicarbonate		-10	
	Iron		-8	
	Manganese	-19		
	Sulfate	-16		
MW-59	Alkalinity, Total [CaCO3]	-14		
	Bicarbonate	-14		
	Iron		-2	
	Manganese		8	
	Sulfate		11	
MW-63R	Alkalinity, Total [CaCO3]		-2	
	Aluminum		-2	
	Bicarbonate		2	
	Iron		0	
	Manganese		-6	
	Sulfate		-5	
MW-64	Alkalinity, Total [CaCO3]	-28		
	Bicarbonate	-14		
	Iron	-22		
	Manganese	-26		
	Sulfate			14
MW-65	Alkalinity, Total [CaCO3]			22
	Bicarbonate			22
	Iron			14
	Manganese		12	
	Sulfate	-14		