



2025 Annual Water Quality Report

**Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa**

Viking Pump, Inc, a division of IDEX Corporation.
A Unit of IDEX Corporation

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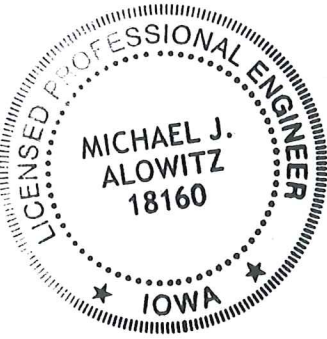
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Executive summary

This *2025 Annual Water Quality Report* (Report) addresses the April 14-17, 2025 (April 2025) and October 4, 7-8, 2025 (October 2025) sampling events at the Viking Pump (Viking) Foundry Sand Landfill in Cedar Falls, Iowa (Landfill). When discussing both the April 2025 and October 2025 sampling events they will be referred to as the 2025 sampling events. This Report also includes a leachate management summary covering December 2024 through October 2025.

This Report requires timely review based on the proposed additional analysis of total organic carbon, polynuclear aromatic hydrocarbons, toluene, ethylbenzene, xylenes, nitrate, nitrite, and sulfate at monitoring wells MW-8 and MW-17R in 2026. No other changes or permit amendments are proposed.

The Landfill continues to accept foundry sand waste such as green sand, isocure chemically bonded sand and no-bake sand. Viking contracted Wapsie Pines to fill the south cell in line with the Draft Operations and Fill Plan, dated August 17, 2024. Following a meeting at the Landfill in October 2023, Wapsie Pines constructed portions of the gravel haul road as described in the Draft Operations and Fill Plan drawings and the road remained effective and in use through 2025.

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Acronyms/Abbreviations

%	Percent
°C	degrees Celsius
AL	Action Level
AMSL	Above Mean Sea Level
Avg.	Average
Ba	Barium
BG	Background
°C	Degrees Celsius
CCF	Centum Cubic Feet (One Hundred Cubic Feet)
cm/s	Centimeter per Second
COD	Chemical Oxygen Demand
DG	Downgradient
USEPA	United States Environmental Protection Agency
FD	Field Duplicate Sample
Fe	Iron
FRZ	Frozen
ft	Feet
GHD	GHD Services Inc.
GPM	Gallons per Minute
GWQA	Groundwater Quality Assessment
HAL	Health Advisory Level
HMSP	Hydrologic Monitoring System Plan
IAC	Iowa Administrative Code
IDNR	Iowa Department of Natural Resources
ICL	Interwell Control Limit
ILCL	Interwell Lower Control Limit
IUCL	Interwell Upper Control Limit
LAL	Lower Action Level
M	Mean
MCL	USEPA Maximum Contaminant Level
mg/L	Milligrams per Liter
MSL	Mean Sea Level
MW	Monitoring Well
N	Nitrogen (e.g., Ammonia (as N)) Normal Sample Result
N/A	Not Applicable
NC	No Change
ND	Non-Detect
NM	Not Measured
NS	Not Sampled
ORP	Oxidation-Reduction Potential

PAH	Polycyclic Aromatic Hydrocarbons
P.E.	Professional Engineer
PL	Prediction Limit
QA/QC	Quality Assurance/Quality Control
RL	Reporting Limit
S.C.	Specific Conductance
SD	Standard Deviation
SDWR	Secondary Drinking Water Regulation
SSD	Statistically Significant Decrease
SSI	Statistically Significant Increase
S.U.	Standard pH Units
SW	Surface Water (e.g., SW-1)
SWFPR	Site-Wide False Positive Rate
SWS	Statewide Standard
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Total Dissolved Solids
TSS	Total Suspended Solids
TOC	Total Organic Carbon
TOX	Total Organic Halogens/Halides
TT	Taste Threshold
U	Not Detected At or Above the Reporting Limit
UAL	Upper Action Level
UG	Upgradient
µg/L	Micrograms per Liter
µS/cm	Micro Siemens per Centimeter
Viking	Viking Pump
VOC	Volatile Organic Compounds

1. Introduction

1.1 Scope and limitations

This report: has been prepared by GHD Services, Inc. (GHD) for Viking Pump, Inc, a division of IDEX Corporation. and may only be used and relied on by Viking Pump, Inc, a division of IDEX Corporation. for the purpose agreed between GHD and Viking Pump, Inc, a division of IDEX Corporation.

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1.2 Background

This Report was prepared by GHD on behalf of IDEX Corporation for the evaluation of groundwater and surface water quality data from the Viking Pump (Viking) Foundry Sand Landfill (Landfill). The Landfill is located in Cedar Falls, Iowa. The site location is identified in Figure 1. This report includes data collected from the Landfill monitoring system since 1995. The Hydrologic Monitoring System Plan (HMSP) was initiated on September 26, 1995, with the issuance of the Sanitary Disposal Project Permit (Permit No. 07-SDP-12-89P-FSL) (Operating Permit). The current HMSP dated June 6, 2024 was included the Permit Renewal Application, submitted in June 2024. The Viking landfill permit was issued on September 24, 2025 and expires on September 24, 2028.

The current monitoring well system monitors the original landfill cell and the lined landfill cell constructed in 2014. The original landfill cell is unlined. In 2014, approximately 1.3 acres of side slope were constructed, and the top was lined to close the unlined portion of the landfill. The monitoring wells installed are intended to monitor groundwater conditions both upgradient and downgradient of the landfill. The current monitoring system locations are depicted on Figure 2.

1.3 Site History

The Landfill has been used as a disposal area for foundry waste generated at the Viking Pump Foundry since construction of the foundry. The site was undeveloped prior to that time. The Landfill operated as an unlined industrial landfill until 2014 when the unlined portion of the landfill was closed and capped. Foundry sand is currently placed in lined areas with leachate collection. The leachate is pumped to the Cedar Falls Wastewater Treatment Facility for treatment and disposal. The cap unlined portion serves as a lined cell to place additional foundry sand. The Landfill has received the foundry waste streams generated at the Viking Pump Foundry, which include:

- Green sand.
- Isocure chemically bonded sand.
- No-bake sand.

The general site geology is sand and clay layers in approximately the first 15 feet overlying a gray glacial till. In the northeast corner of the site, which is partially covered by the landfill, the upper oxidized till layers were removed. A sand layer is found approximately 50 feet below the water table. This sand lens is thickest at the north, thins to the south, and forms a glacial drift aquifer. Soil borings indicate over 100 feet of till is present under the Site.

Surface water from the covered areas of the Landfill flows to the perimeter ditch on the north and then to the northwest of the Landfill into a drainage area off-site. An east surface water ditch directs stormwater to the southern catch basin. Precipitation falling on the open areas of the landfill is collected as leachate. Shallow groundwater historically moves from the east to the west. Monitoring wells to the east of the landfill are located hydraulically upgradient. Monitoring wells located west of the landfill are downgradient.

1.4 Water Monitoring Program

Viking has an established program for monitoring groundwater quality at the landfill. Groundwater is not used for drinking water at the site. Hence, the monitoring program serves to evaluate the general condition of groundwater as a resource.

The monitoring program at the Landfill consists of water table and surface water monitoring systems. The sampling locations are shown in Figure 2. The monitoring systems are typically sampled on a semi-annual basis. Table 1 provides a monitoring program summary. Table 2 describes the monitoring program implementation schedule.

1.4.1 Water Table Monitoring System

A water table monitoring system was established to monitor groundwater upgradient and downgradient of the landfill in both the shallow and deep groundwater zones using a network of monitoring wells.

The water table monitoring system consists of three (3) upgradient monitoring wells (MW-5, MW-14, and MW-16), and nine (9) downgradient monitoring wells (MW-7R, MW-8, MW-11, MW-15, MW-17R, MW-19, MW-20, MW-21, and MW-22). MW-18 was abandoned and sealed in 2022 and is no longer included in the water table monitoring system. Two (2) additional monitoring wells MW-12 and MW-13 are used to gather water levels and are not sampled as part of the groundwater monitoring program for the Landfill.

GHD reviewed the location of MW-12, historical aeriels of the landfill, and the MW-12 log itself to assess the suitability of the monitoring well. The former haul road adjacent to MW-12 was removed during the 2014 construction. The well log indicates specifically that MW-12 is drilled through the road, and it was capped with concrete and the well boring annulus filled with bentonite to the well screen which is at depth between 70-80 feet below ground surface. The likelihood of surface flow/connect to the well screen is relatively small and the well remains appropriate for use.

The locations of monitoring wells are presented on Figure 2.

1.4.2 Surface Water Monitoring System

The surface water monitoring system consists of one (1) surface water monitoring location, SW-1, shown on Figure 2. This location may be dry, and samples are taken when surface water is present.

1.5 Monitoring Well Condition Assessment

The monitoring wells were inspected during the 2025 sampling events. During the 2025 sampling events the wells remained in good condition. Table 3 describes the monitoring well maintenance and performance re-evaluation schedule.

Total well depth was measured during the 2025 sampling events. Results are presented on Tables 3c and 4, respectively. Table 3c includes the original installation depth of each well and measured well depths in feet above mean sea level (AMSL) for comparison. Table 4 includes the original installation depth of each well and measured well depths in feet below top of casing for comparison. Most monitoring wells show little sediment buildup since they

were installed, which suggests the wells are still in good physical condition. The measured total depths are consistent with expected results. In some cases, the recent total depth measurement exceeds the expected value. This is likely due to imprecise measurement at well construction.

1.6 Sampling Protocol Evaluation

The current sampling protocol, outlined in the HMSP, remains effective. Procedures in the sampling protocol, as described in 567-115.20(455B), were followed during the 2025 sampling events. IDNR sampling forms and low-flow sampling forms are provided in Appendix A.

If recent drought conditions persist, some wells, like the surface water monitoring point, may have insufficient water to collect samples under standard purging procedures in the future.

1.7 Analytical Parameters

Samples collected during the 2025 sampling events were analyzed for the parameters presented in Table 2, which include but are not limited to metals like barium and iron, field parameters, and volatile organic compounds (VOCs) like benzene. These are as specified in chapter 115.26(4), paragraphs e and f of the Iowa Administrative Code (IAC) 567 and in the special provisions and amendments of the Operating Permit.

Historically dissolved metals (samples were field filtered) were analyzed in groundwater at the Landfill. In October 2018, the Iowa Department of Natural Resources (IDNR) issued a variance to Viking Pump requiring total metals analysis. Samples are no longer analyzed for dissolved metals.

1.8 Laboratory Analysis

Laboratory analysis of groundwater and surface water samples was conducted by Eurofins, located in Cedar Falls, Iowa. Sample containers for the sampling event were prepared and provided by Eurofins located in Cedar Falls, Iowa. The laboratory reports for the 2025 sampling events are provided in Appendix B.

Analyses were conducted by Eurofins in accordance with the procedures and methods described in EPA Manual SW-846 or otherwise approved by the EPA.

As addressed in the IDNR comment letter dated September 4, 2024 regarding the 2023 Annual Water Quality Report (Document No. 109109), there was concern about temperature blanks received by Eurofins and the impact on the validity of test data. The temperature blank for samples received on October 4, 2023 at the Eurofins laboratory was 15.4 degrees Celsius and the temperature blank for samples received on October 5, 2023 was 11.5 degrees Celsius. The high temperature is due to the proximity of the lab to the Viking Pump Landfill. The temperature blank was placed in the iced cooler and then promptly delivered less than 2 miles to the laboratory. The issue was that the temperature blank did not have enough time to cool rather than be out of compliance because of insufficient ice or extended travel time. Temperature blanks will be placed in coolers earlier to be representative of samples throughout the day.

Following receipt of the final laboratory analytical reports from the fall 2025 sampling event, GHD completed an analytical data quality assessment and verification for the groundwater and field quality assurance samples collected during both monitoring events. Based on these assessments, the data are acceptable for use as reported by the laboratories.

2. Groundwater Flow Conditions

2.1 Horizontal Groundwater Flow

Static water levels at each monitoring well within the monitoring system network were measured during the 2025 sampling events and tabulated in Table 3a. Shallow and deep groundwater contours were prepared for the 2025 sampling events and are presented on Figure 3a and Figure 3b. The shallow and deep groundwater flow directions were consistent with historical patterns during the April 2025 and October 2025 sampling events. The dominant groundwater flow direction is westward for both shallow and deep groundwater with some southwestern and northwestern flow components.

2.2 Vertical Hydraulic Gradients

Water levels measured in monitoring well clusters MW-5/MW-16, MW-7R/MW-15, MW-8/MW-13, MW-17R/MW-12, MW-19/MW-20, and MW-21/MW-22 during the 2025 sampling events were used to calculate vertical hydraulic gradients for the site. The vertical hydraulic gradients were calculated using the following equation:

$$\text{Vertical Hydraulic Gradient} = \frac{\left(\begin{array}{c} \text{Groundwater Elevation} \\ \text{in Deep Well} \end{array} - \begin{array}{c} \text{Groundwater Elevation} \\ \text{in Shallow Well} \end{array} \right)}{\left(\begin{array}{c} \text{Elevation of Middle} \\ \text{of Saturated Zone} \\ \text{of Shallow Well Screen} \end{array} - \begin{array}{c} \text{Elevation of Middle} \\ \text{of Saturated Zone} \\ \text{of Deep Well Screen} \end{array} \right)}$$

During 2025, the vertical hydraulic gradients were downward directed. The calculated vertical hydraulic gradients are presented in Table 3b.

2.3 Water Level and Location Evaluation

As required by Paragraph 567-115.21(2)a of the IAC, an evaluation of the high and low water level elevations of each well and the vertical and horizontal acceptability of each well location was completed. Table 3a shows the elevations of the high and low water levels observed in each well during 2025 sampling events. The elevations of the top and bottom of the well screen are also provided in Table 3a to show where the observed water level was in comparison to the screen. No new historical low or high water level measurements were observed in either sampling event. Water level elevations in the monitoring wells for the April 2025 and October 2025 sampling events were located above the top of the well screen except at MW-5 and MW-8.

2.4 Potential Groundwater Mounding

During landfill cell and partial cover construction in 2014, it was determined that the waste mass contained leachate and released it slowly through the naturally occurring clay. The unlined landfill was closed in 2014, and the active areas for future waste disposal are lined. IDNR approved the removal of the former leachate piezometers when the landfill was capped. Leachate within the closed landfill was dewatered through a drain tile that was installed during construction. The drain tile discharge line was sealed late July 2019 as flows had decreased substantially. The discharge pipe was filled with bentonite, plugged, capped, and sealed.

The existing lined footprint head is monitored within the sump as standard practice. Leachate head is recorded daily and reported annually with the leachate volumes supplied in Table 10 and Appendix C. The nature of the foundry sand creates a transmissive waste mass. Although capillary action is possible, most water will percolate through to the leachate collection media and toward the sump. The leachate within the lined landfill is collected and disposed of through the City of Cedar Falls Water Reclamation Facility.

There is no evidence of groundwater mounding occurring in the clay at this site as evidenced by the lack of groundwater contours reflecting mounding and the leachate collection systems and data showing head does not exceed 12 inches.

2.5 Permeability Testing

The most recent in situ hydraulic conductivity tests were conducted in 2024. Table 4 shows the summary of the 2019 and 2024 hydraulic conductivity testing results. Further discussion on the tests and the associated results are presented in the 2024 Annual Quality Report (Document No. 111525). The next hydraulic conductivity test is scheduled for 2029, in accordance with the Viking landfill permit.

3. Analysis of Annual Monitoring Results

Groundwater quality is assessed against two benchmarks. The first is comparison against upgradient conditions represented by Interwell Control Limits (ICLs) per IAC 567.113.10(4)g(3). The second is comparison against IDNR risk-based Action Levels (ALs). The methodology and results of these comparisons are discussed in the following report sections.

3.1 Interwell Control Limits (Upgradient Comparisons)

Requirements for the statistical analysis of groundwater monitoring data are prescribed in IAC 567.113.10(4). Under the regulation, four categories of statistical comparisons are listed (under 113.10(4)g) for the purposes of comparing groundwater quality in downgradient wells against that found in upgradient wells (i.e., *Interwell* comparisons). Chapter 567-113 is not the regulation under which the Landfill is permitted, but IDNR indicated the statistical analysis should be completed in accordance with this regulation. This section of the IAC regulation is based on federal RCRA regulation (40CFR264.97(h)), for which the United States Environmental Protection Agency (USEPA) issued a Unified Guidance document in 2009¹. This Unified Guidance provides more concrete description and interpretation of the regulation, with the focus of providing a statistical framework and tools for conducting monitoring data evaluations.

USEPA (2009) recommends the use of statistical prediction limits (PLs) with resampling for performing interwell comparisons (see Chapters 18 and 19). These values are similar conceptually to the previous IDNR control limit methodology (mean $\pm$ two standard deviations) in that a historical baseline of data from groundwater collected in upgradient wells is utilized to calculate values bounding the statistical tails of the background distribution against which downgradient data may be compared. The statistical PLs provide bounds with specified confidence that the next number of future samples collected from the same population (i.e., consistent with upgradient conditions) are expected to lie within. If a result from downgradient sample lies outside of the PLs and is confirmed by a verification sample, then a statistically significant increase (SSI) is identified.

Interwell Control Limits (ICLs) were calculated applying the methodology presented in Chapter 19 of the Unified Guidance. Specifically, an annual site-wide false positive rate (SWFPR) of 0.10, the default recommendation in the Unified Guidance, was applied utilizing a "1-of-2" Interwell Prediction Limit model. Based on the current monitoring program, the PLs were calculated for a semi-annual monitoring program consisting of ten downgradient wells, and ten constituents of concern (in consideration that groundwater temperature, included in reporting, is not commonly included/counted in statistical testing of groundwater quality).

¹ USEPA, March 2009. Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities – Unified Guidance. Office of Resource Conservation and Recovery, Program Implementation and Information Division, United States Environmental Protection Agency Washington DC. EPA 530-R-09-007

PL calculations were carried out for each constituent of concern by pooling the monitoring data from upgradient wells MW-5, MW-14 and MW-16, following the Unified Guidance. The resulting PLs (designated Control Limits, or ICLs) are presented in Table 5. Some specific items of note during the calculations include the following:

- Field duplicate results were averaged prior to statistical calculations (duplicates are not statistically independent data).
- Data distribution testing was carried out using probability plotting and the statistical goodness-of-fit tests provided in USEPA's ProUCL software². The statistical distributions tested, in priority order, were normal, gamma and lognormal distributions.
- The presence of censored data (non-detects) was assessed, and statistical methodology was adjusted to accommodate these data. Where very high proportions of censored data were present (above 70 percent non-detects and/or fewer than 8 detected results in the pooled upgradient dataset), rank-based (non-parametric) statistical methods were used.
- The presence of statistical outliers was tested for. Four data sets were found to have statistical outliers at a 95 percent confidence level, and these were removed from the prediction level calculations (as a long monitoring history is available with 89 to 180 results available, varying by constituent). These were:
 - Three pH values in upgradient groundwater – two high and one low (9.27, 9.93, and 4.85).
 - Five high iron values (35.6, 23.6, 8.24, 7.15, and 6.19 milligrams per liter [mg/L]).
 - One high chemical oxygen demand (COD) result (78.0 mg/L).
 - Five high chloride values (201, 179, 137, 126, and 117 mg/L).
- Although not identifiable as statistical outliers, the phenolics and total organic halide (TOX) data sets each contained one recent non-detect with an elevated reporting limit. Since both data sets were highly-censored and required non-parametric PL calculations, these two elevated non-detects were excluded from computations since the resulting interwell comparison values would be based on detected concentrations.
- The potential for significant seasonal variation was investigated by comparing the Spring vs. Fall sampling results using box-whisker plots. The only constituent with an identifiable seasonal effect was groundwater temperature (higher in Fall vs. Spring samples), and no further consideration of seasonality was carried through in the prediction limit calculations (i.e., no de-seasonalization of the data was attempted).
- Temporal stationarity, an assumption of the PL calculations, was assessed through trend testing. Specifically, a Regional Kendall trend test was conducted (recognizing that constituent concentrations in the three upgradient wells do vary) for each constituent. Statistically significant increasing trends were identified for specific conductance and iron concentrations and a statistically significant decreasing trend was identified for pH in upgradient groundwater over the entire monitoring period (1995-2025). Therefore, these data sets were trimmed (i.e., excluding older data) to obtain temporally-stable baseline periods. The resulting baseline periods for each background data set are presented in Table 5.
- Following initial ICL calculations for chloride (which utilized a baseline period of 1996-2023), it was identified that current conditions in groundwater from upgradient well MW-5 have exceeded the resulting PL over the past 3 years. This signifies a change in regional upgradient conditions and therefore the baseline period for chloride was further trimmed to represent current upgradient conditions (i.e., a baseline period of 2022-2025).
- Finally, the potential presence of significant spatial variation between the three upgradient wells was graphically assessed using box-whisker plots. The following differences are apparent:
 - Specific conductance in groundwater from MW-14 is higher than the other two upgradient wells.
 - pH at MW-16 is higher than at MW-14 (but not different from MW-5).
 - Barium and COD are lower at MW-14 than at the other two upgradient wells.
 - MW-16 has higher ammonia and lower chloride levels than the other two upgradient wells.

² Current version 5.2, available at <https://www.epa.gov/land-research/proucl-software>

- Although the present analysis utilized the pooled upgradient data sets (pooling the three monitoring wells), the presence of measurable spatial variation is noted, and therefore the use of intrawell comparisons for analysis of the groundwater quality data (appropriate when significant spatial variation is present, per USEPA's Unified Guidance) may be considered in the future if needed.

For pH, both upper and lower PLs were calculated and are listed in Table 5.

The ICLs are also provided in Tables 6, 7 and 9 for reference in evaluating the downgradient groundwater quality. Similarly, they are included on the graphs in Appendix D. Data, outputs and calculations involved in this statistical analysis are included in Appendix E.

As an important application note, the ICLs as calculated are to be applied utilizing a 1-of-2 verification approach. That is, a single result above the PL (or below for pH) is considered as an initial or unconfirmed increase. If the next subsequent sample does not exceed the limit, then no SSI is present. It is only when two successive samples both exceed the control limit (or are below for pH) that an SSI is identified.

3.2 IDNR Action Levels

In order to evaluate the status of water quality at the landfill, a comparison was made to the IDNR ALs established by the IAC 567-133. IDNR ALs are established for specific chemical and exposure numbers, lifetime exposure, cancer risks (for carcinogens), and drinking water exposure over a 70-year period. The following are definitions of various terms used in Rule 567-133.2 455B, 455E), IAC:

- IDNR Action Level (AL) – The IDNR AL for the contaminant is as follows: the United States Environmental Protection Agency (USEPA) Maximum Contaminant Level (MCL), or if none exists, the Health Advisory level (HAL), if one exists; if there is no MCL or HAL, then the Secondary Drinking Water Regulation (SDWR) may be referenced. If there is no MCL, HAL, or SDWR guideline, an AL may be established by the IDNR based on current technical literature and recommended guidelines of the USEPA such as the Iowa Statewide Standard (SWS) and recognized experts on a case-by-case basis. Each type of AL is defined as follows:
 - Maximum Contaminant Level (MCL) – The enforceable MCL is established by the USEPA pursuant to the Safe Drinking Water Act.
 - Health Advisory Level (HAL) – A lifetime HAL for a contaminant is established by the USEPA. HALs represent the concentration of a single contaminant, based on current toxicological information in drinking water, which is not expected to cause adverse health effects over a lifetime of exposure.
 - Secondary Drinking Water Regulation (SDWR) – A SDWR value exists for some contaminants that do not have HALs or MCLs. The number represents the aesthetic qualities of the parameter and is generally not an enforceable limit. These are also established by the USEPA pursuant to the Safe Drinking Water Act.
 - Statewide Standard (SWS) – Where no MCL, HAL, or SDWR value exists, the IDNR-established SWS is used for evaluation.

ALs are identified for each parameter in Table 5.

3.3 Groundwater Quality

Parameters analyzed and evaluated during the 2025 sampling events, the applicable IDNR AL for each, and a brief summary of analytical results for the sampling events is presented in this section. The statistical analyses included in Section 3.1 should be referred to while reviewing the following summaries. A comparison of the most recent constituent results against the ICLs is presented in Table 6. In addition, a summary of the most recent results for individual parameters at monitoring wells or surface water points that had a current or recent exceedance (within the past three years) of either the IDNR AL or the ICL are presented on Table 7. Historical data from 1995 to 2025 are presented on Table 8. A brief summary of both IDNR AL and ICL exceedances within the past three years is presented on Table 9.

At the request of the IDNR, acetone and total suspended solids (TSS) were added to the sampling program. The results of these constituents are included in Table 8 and the analytical results in Appendix B. However, no statistical analyses were performed, and no trend analyses were performed, due to an insufficient amount of data. When there is a sufficient amount of data, control limits will be established, and they will be included in the statistical analysis discussion and monitored as the rest of the parameters of concern are.

3.3.1 Field Parameters

3.3.1.1 pH

The IDNR AL for pH is the final SDWR of 6.5 to 8.5 standard pH units (S.U). The IDNR UAL/LAL for pH were not exceeded at any monitoring well locations during the 2025 sampling events as shown in Table 8.

The Interwell Lower Control Limit (ILCL) for pH is 6.05 s.u. and the Interwell Upper Control Limit (IUCL) for pH is 8.28 s.u. The IUCL or ILCL for pH was not exceeded at any monitoring well locations during the 2025 sampling events.

There was no significant comparison to either the IDNR UAL/LAL or IUCL/ILCL for pH during the 2025 sampling events.

The graph showing historical pH results are presented in Figure D-1 of Appendix D.

3.3.1.2 Specific Conductance

Specific conductance is a qualitative measurement of the components of leachate such as inorganic acids, bases, and salts. Due to the historically elevated salt concentrations, it is to be expected that the specific conductance would be elevated as well.

There is no IDNR AL for specific conductance.

The ICL for specific conductance is 3,076 micro-Siemens per centimeter ($\mu\text{S}/\text{cm}$). The ICL for specific conductance was not exceeded at the other monitoring well locations during the 2025 sampling events.

No significant comparison could be made to the ICL for specific conductance during the 2025 sampling events.

The chart showing historical specific conductance results are presented in Figure D-2 of Appendix D.

3.3.1.3 Temperature

There is no IDNR AL for temperature.

The ICL for temperature is 20.2 degrees Celsius ($^{\circ}\text{C}$). The ICL for temperature was not exceeded at any monitoring well locations during the 2025 sampling events.

There was no significant comparison to the ICL for temperature during the 2025 sampling events.

The chart showing historical temperature measurements are presented in Figure D-3 of Appendix D.

3.3.2 Inorganics

3.3.2.1 Ammonia

The IDNR AL for ammonia nitrogen is the draft lifetime HAL and Taste Threshold of 30 (mg/L). The IDNR AL for ammonia was not exceeded by monitoring well locations during the 2025 sampling events.

The ICL for ammonia is 1.85 mg/L, which was not exceeded at any monitoring well locations during the 2025 sampling events.

There was no significant comparison to either the IDNR AL or ICL for ammonia during the 2025 sampling events.

The chart showing historical ammonia nitrogen concentrations are presented in Figure D-4 of Appendix D.

3.3.2.2 Barium

The IDNR AL for barium is the final MCL of 2.0 mg/L. The IDNR AL for barium was not exceeded at the monitoring well locations during the 2025 sampling events.

The ICL for barium is 0.336 mg/L. The ICL for barium was not exceeded at the monitoring well locations during the 2025 sampling events.

No significant comparison could be made to the ICL for barium during the 2025 sampling events.

The chart showing historical barium results are presented in Figure D-5 of Appendix D.

3.3.2.3 Iron

Beginning with the 2024 sampling events, Eurofins used EPA Method 6020B to analyze for iron in all samples, including groundwater, surface water, and leachate. This method has a lower non-detect reporting limit (RL) of 0.100 mg/L, allowing for better determination of exceedances of the SDWR value (0.3 mg/L) compared to the previous method where the reporting limit was greater than the SDWR value.

The IDNR AL for iron is the SDWR of 0.3 mg/L. The IDNR AL for iron was exceeded by wells MW-17R, MW-20, MW-21, and MW-22 during both of the 2025 sampling events. MW-16 and SW-1 exceedances only occurred in April 2025. MW-5, MW-7R, MW-14, and MW-15 only exceeded the AL during the October 2025 sampling event. The sample results for iron can be found in Table 8.

There were no exceedances if the ICL (16.50 mg/L) for iron during the 2024 sampling events.

The SDWR value was exceeded at MW-17R, MW-20, MW-21, and MW-22 during the two most recent sampling events, but the ICL was not. There were no other significant comparisons to either the IDNR AL or ICL for iron during the 2025 sampling events.

The chart showing historical iron results are presented in Figure D-6 of Appendix D.

3.3.3 Organics

3.3.3.1 Benzene

The IDNR AL for benzene is the final lifetime HAL of 3 micrograms per liter (µg/L). The IDNR AL for benzene was not detected and therefore was not exceeded at the monitoring well locations during the 2025 sampling events.

The ICL for benzene is 0.500 U µg/L. The benzene samples results were non-detect (0.500 U µg/L) during the 2025 sampling events, therefore the ICL for benzene was not exceeded at the monitoring well locations during the 2025 sampling events.

No significant comparison could be made to the IDNR AL or ICL for benzene during the 2025 sampling events.

The chart showing historical benzene concentrations are presented in Figure D-7 of Appendix D.

3.3.3.2 Phenol

Phenol is an aromatic, organic compound that migrates readily in groundwater.

The IDNR AL for phenol is the draft lifetime HAL of 2 mg/L. Samples are analyzed for phenol during the spring sampling event of each monitoring year. Historically, samples have been non-detect with few exceptions. The IDNR AL for phenol was not exceeded at the monitoring well locations during the 2025 sampling events.

The ICL for phenol is 0.0519 mg/L. The ICL for phenol was not exceeded at the monitoring well locations during the 2025 sampling events.

No significant comparison could be made to the IDNR AL or ICL for phenol during the 2025 sampling events.

The chart showing historical phenol results are presented in Figure D-8 of Appendix D.

3.3.3.3 Total Organic Halogens

There is no IDNR AL for total organic halogens (TOX). Samples are analyzed for TOX during the spring sampling event of each monitoring year.

Historically, TOX concentrations were elevated and attributed to chloride from the use of salt on gravel roads in the winter. To evaluate this potential influence, the Viking Pump facility changed the de-icing compound used during the 2011/2012 winter to a sand and salt mixture, reducing the amount of sodium chloride put onto the facility roads. Decreased chloride and TOX concentrations were noted during the following years at the monitoring well locations except for MW-18 (plugged and abandoned in 2022). The potential influence of chloride to TOX levels will continue to be evaluated with future sampling events. Viking will continue using the sand/salt de-icing mixture during future winter seasons to minimize the amount of sodium chloride near the monitoring points.

The ICL for TOX is 0.276 mg/L. The ICL for TOX was not exceeded at any monitoring well locations during the 2025 sampling events.

There were no significant comparisons to the ICL for TOX during the 2025 sampling events.

The chart showing historical TOX results are presented in Figure D-9 of Appendix D.

3.3.4 General Chemistry

3.3.4.1 Chloride

The IDNR AL for chloride is 250 mg/L. The IDNR AL was not exceeded at the monitoring well locations during the 2025 sampling events.

The ICL for chloride is 421 mg/L. The ICL for chloride was exceeded at well MW-7R in April 2025. Chloride ICL was not exceeded at any other monitoring well locations during the 2025 sampling events.

There were no significant comparisons to the ICL for chloride during the 2025 sampling events.

The chart showing historical chloride concentrations are presented in Figure D-10 of Appendix D.

Viking changed the de-icing compound used during the 2011/2012 winter to a sand and salt mixture, reducing the amount of sodium chloride put onto the facility roads. The reduction and/or stabilization of concentrations can be seen in the trends for the downgradient wells near the road. Elevated chloride in upgradient background monitoring well MW-5 is not likely due to treatment of facility roads.

3.3.4.2 Chemical Oxygen Demand

COD is a measure of the oxygen equivalent of the organic content of a sample that is susceptible to oxidation by a strong chemical oxidant. There is no IDNR AL for COD.

The ICL for COD is 12.6 mg/L. The ICL for COD was exceeded at MW-7R, MW-16, and SW-1 in April 2025. The ICL for COD was not exceeded at the other monitoring well locations during the 2025 sampling events. The samples collected in April 2025 were analyzed using the laboratory's low-level COD method and therefore has a reporting limit of 5 mg/L. However, the samples collected in October 2025 were not analyzed using the low-level method, resulting in a reporting limit of 25 mg/L. For future sample analyses, the low-level COD analytical method will be requested. The sample results for COD can be found in Table 8.

There were no significant comparisons to the ICL for COD during the 2025 sampling events.

The chart showing historical COD concentrations are presented in Figure D-11 of Appendix D.

3.4 Surface Water Quality

There is only one surface water location (SW-1), which is located downgradient of the Landfill in a drainage ditch that is typically dry. Since no upgradient sampling point exists for surface water, no control limits can be calculated, therefore surface water samples can only be compared to the IDNR ALs.

Surface water samples were collected in April 2025, but not in October 2025 due to dry conditions. The surface water samples exceeded the IDNR AL of 0.3 mg/L for iron in April 2025. The surface water samples did not exceed the IDNR AL for other constituents in April 2025.

Charts showing historical constituent concentrations at SW-1 are presented in Appendix D.

3.5 Leachate Quality

Leachate samples were collected from the landfill leachate sump during the 2025 sampling events. The leachate head and flow volumes are measured and recorded daily. Leachate management is summarized in Table 10. Appendix C presents daily leachate head and flow volumes and measured TSS. There were reportedly issues with the leachate pump controller in September 2025, leading to a delay in data access. The leachate sampling results are summarized in Table 11. Viking collects samples for the parameters per the requirements of the City of Cedar Falls. The leachate lab reports are included in Appendix B.

The results support the conclusion that high chloride concentrations detected at upgradient, downgradient, and background wells are not a result of leaching from the landfill but rather from the use of road salt for de-icing since chloride concentrations detected in the leachate samples are typically lower than the concentrations detected at various monitoring well locations.

There were no detected concentrations of VOCs reported in the leachate samples for 2025. There was a qualifier for the leachate sample in October for hexane, denoting that the Laboratory Control Sample and/or Laboratory Control Sample Duplicate is outside acceptance limits, high biased.

Detected total metals include barium, copper, iron, lead, manganese, molybdenum, and zinc during the 2025 sampling events. Barium has been detected in monitoring wells at low concentrations, often at concentrations one to two orders of magnitude below the IDNR AL. The April and October 2025 leachate samples exceeded the IDNR AL for iron.

The IDNR requests that Viking Pump include annual comparison between groundwater and leachate data collected to ensure parameters detected in groundwater are included in the analysis for leachate samples. Detected constituents from previous leachate samples will be added to the groundwater and surface water monitoring program starting with the spring event in 2026 and continue during semi-annual sampling events. In 2025, neither ammonia or phenols were detected in the spring or fall leachate samples. Nitrate as N was detected in the spring leachate sample at a concentration less than 10% of the drinking water AL. Although detected, given the low concentration, nitrate will not be added to the groundwater sampling protocol in 2026.

4. Groundwater Quality Assessment

The approved Groundwater Quality Assessment (GWQA) for the existing Landfill contained, but is not limited to the following components:

- Chemical leaching test for each sand type to determine parameters for expanded monitoring program.
- Evaluation of expanded monitoring program.
- Installation of additional monitoring wells.
- Sampling of additional monitoring wells.

Details of each component is provided in the following sections.

4.1 Chemical Leaching Tests

Chemical leaching tests of each type of sand disposed within the Landfill were completed in early 2009. Barium and benzene were detected in the toxicity characteristic leaching procedure (TCLP) tests and were recommended for inclusion in the expanded monitoring program. At the direction of the IDNR, monitoring of barium and benzene were added to the semi-annual monitoring program. TCLP analysis was performed on baghouse dust and foundry sand in 2024 and was included in the February 14, 2025 Design and Operations Plan submitted in support of renewal of the Operating Permit (Document No. 112285). The analysis was compared to the leachate parameters detected and the parameters that appeared in either the TCLP results or the leachate were added to the groundwater monitoring program proposed in the Permit Application.

Barium and benzene were analyzed in leachate samples obtained during the 2025 sampling events. Results show that barium and benzene concentrations in leachate are non-detect or well below the IDNR ALs for groundwater.

As discussed in Sections 3.3.2.2 and 3.3.3.1, barium and benzene concentrations at monitoring well and surface water locations are below the IDNR ALs for groundwater. Sampling results show that barium leaching from the various types of sand disposed in the Landfill is not the main source impacting groundwater since the leachate concentrations are typically less than the monitoring well and surface water location concentrations.

Foundry sand additives have not been modified from the permitted waste list. Should new chemical additives or other product be proposed for use, new TCLP tests will be conducted and notification provided to IDNR and should new parameters be detected and not yet included in the leachate parameter testing list, the new parameter will be added.

4.2 Evaluation of Current Monitoring Program

Based on the results of the 2025 sampling events the groundwater quality shows minimal impacts and a reduction of impacts from the Landfill compared to previous years for most parameters. There were no confirmed SSIs above ICLs in during the 2025 monitoring events. Unconfirmed SSIs include chloride at MW-7R; COD at MW-7R, MW-16, and SW-1; phenol at MW-11 and MW-17R. Future monitoring will continue to provide data to evaluate changes in water quality over time. At multiple locations the SDWR limit (based on aesthetics) was exceeded for iron. Historical trends that also show IDNR AL and ICL exceedances are presented in Appendix D.

Since the initial expanded monitoring program sampling events, the wells within the monitoring system network have been sampled annually for the complete parameter list noted above and semi-annually for a partial parameter list as approved by the IDNR. The only change in the monitoring network between 2019 to 2025 was the plugging and abandonment of MW-18 in October 2022.

4.2.1 TSS and Metals Results

IDNR requested evaluation of TSS and consideration of sampling the wells with non-dedicated pumps. Shallow wells are sampled with a peristaltic and dedicated drop tube and deeper wells are sampled with a non-dedicated submersible pump. A Pearson correlation analysis was performed for TSS relative to barium, iron, manganese, molybdenum, and COD. For the spring 2025 data, a statistically significant correlation was identified between TSS and total iron; no statistically significant correlations were identified in the fall 2025 sample results. At this time, the data indicate the sample methods are appropriate and metals analytical data are not significantly correlated to TSS. No change to the sample method is proposed at this time.

4.2.2 COD and Additional Sampling

IDNR requested supplemental sampling activities be addressed due to elevated COD results in groundwater. The laboratory used a standard COD test in October 2025 which resulted in a high reporting limit of 25 mg/L instead of the 5 mg/L reporting limit for low-level COD in Spring 2025. Most historical COD results are below 25 mg/L; but Fall 2024 data includes multiple points above 25 mg/L. All these points saw a significant decrease in spring of 2025 and were below 25 mg/L (reporting limit) in Fall 2025.

It does not appear the COD is particularly a consistent issue, however, results from monitoring wells MW-8 and MW-17R stand out as more frequently elevated above other wells in the last few years of monitoring. Therefore, these locations are proposed for additional monitoring in 2026 to address IDNR's request.

The proposed supplemental sampling plan is to collect samples from MW-8 and MW-17R for standard analysis as identified in Table 2. Additionally spring and fall samples from MW-8 and MW-17R will be analyzed for additional analytes, including total organic carbon (TOC), polycyclic aromatic hydrocarbons (PAHs), toluene, ethylbenzene, xylenes (benzene is already included in Table 2), and inorganic ions (nitrate, nitrite, sulfate). Oxidation-reduction potential (ORP) will be monitored during collection of field parameters.

4.3 Installation and Sampling of Additional Monitoring Wells

No additional monitoring wells are proposed for the site at this time.

4.4 Recommendations

Based upon the results of the monitoring program noted above and the IDNR's review of the 2024 Annual Water Quality Report, the following changes in monitoring schedule is recommended:

- Complete 2026 sampling consistent with Table 2.
- Supplement the Table 2 sampling with analysis of MW-8 and MW-17R groundwater for: TOC, PAHs, toluene, ethylbenzene, xylenes, nitrate, nitrite and sulfate.
- No changes to the monitoring network or sample methods are proposed.

Table 1

**Monitoring Program Summary
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa**

Monitoring Well	Formation	Current Monitoring Program	Change for Next Sampling Event	Control Limit Exceedances within Past 3 Years (Past 6 Sampling Events)	Total # of Samples in each Monitoring Program since January 1, 2018		
					Routine	Supplemental	Remedial Action
MW-5	Shallow	Routine	NC	Temperature	20	0	0
MW-7R	Shallow	Routine	NC	COD	14	0	0
MW-8	Shallow	Routine	NC	COD, pH	14	0	0
MW-11	Shallow	Routine	NC	COD, Temperature	15	0	0
MW-12	Deep	Water Level	NC	N/A	N/A	N/A	N/A
MW-13	Deep	Water Level	NC	N/A	N/A	N/A	N/A
MW-14	Shallow	Routine	NC		17	0	0
MW-15	Deep	Routine	NC	pH	15	0	0
MW-16	Deep	Routine	NC	COD, pH	14	0	0
MW-17R	Shallow	Routine	NC	COD, Temperature	19	0	0
MW-18	Shallow	Removed	N/A	N/A	9	0	0
MW-19	Shallow	Routine	NC		15	0	0
MW-20	Deep	Routine	NC	Ammonia, TOX, pH	16	0	0
MW-21	Shallow	Routine	NC		15	0	0
MW-22	Deep	Routine	NC	COD, pH	17	0	0
Other monitoring points							
SW-1	Surface Water	Routine	NC	COD, pH	8	0	0

Notes:

COD - Chemical Oxygen Demand

MW - Monitoring Well

N - Nitrogen

N/A - Not Applicable

NC - No Change

S.C. - Specific Conductance

SW - Surface Water

TOX - Total Organic Halogens

Table 2
Monitoring Program Implementation Schedule
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

							Upcoming Sampling Dates and Constituents	
Monitoring Well	March-2023	October-2023	April-2024	October-2024	April-2025	October-2025	April-2026	October-2026
MW-5	List A, List B, List C	List A, List C	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D
MW-7R	List A, List B, List C	List A, List C	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D
MW-8	List A, List B, List C	List A, List C	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D
MW-11	List A, List B, List C	List A, List C	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D
MW-12	N/A - Water Level Only	N/A - Water Level Only	N/A - Water Level Only	N/A - Water Level Only	N/A - Water Level Only	N/A - Water Level Only	N/A - Water Level Only	N/A - Water Level Only
MW-13	N/A - Water Level Only	N/A - Water Level Only	N/A - Water Level Only	N/A - Water Level Only	N/A - Water Level Only	N/A - Water Level Only	N/A - Water Level Only	N/A - Water Level Only
MW-14	List A, List B, List C	List A, List C	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D
MW-15	List A, List B, List C	List A, List C	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D
MW-16	List A, List B, List C	List A, List C	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D
MW-17R	List A, List B, List C	List A, List C	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D
MW-18	N/A - well removed	N/A - well removed	N/A - well removed	N/A - well removed	N/A - well removed	N/A - well removed	N/A - well removed	N/A - well removed
MW-19	List A, List B, List C	List A, List C	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D
MW-20	List A, List B, List C	List A, List C	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D
MW-21	List A, List B, List C	List A, List C	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D
MW-22	List A, List B, List C	List A, List C	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D	List A, List B, List C, List D	List A, List C, List D
SW-1	List A, List B, List C	List A, List C DRY	List A, List B, List C, List D	List A, List C, List D DRY	List A, List B, List C, List D	List A, List C, List D DRY	List A, List B, List C, List D	List A, List C, List D

Notes:

List A - Semi-Annual Parameters¹: Chloride, COD, Ammonia (as N), Iron (Total, formerly Dissolved), and Field Parameters¹: pH, Specific Conductance, Temperature

List B - Annual Parameters²: Phenols, TOX

List C - Groundwater Quality Assessment Plan Parameters³: Barium (Total, formerly Dissolved), Benzene

List D - Hydrologic Monitoring System Plan Parameters⁴: Acetone, Copper, Lead, Manganese, Molybdenum, and TSS as requested by IDNR

¹ As specified by Iowa Administrative Code 567-115.26(4)e

² As specified by Iowa Administrative Code 567-115.26(4)f

³ As specified by Amendment #2 to permit number 07-SDP-12-89P

⁴ As specified by 2024 Renewal Application permit number 07-SDP-12-89P

COD - Chemical Oxygen Demand

MW - Monitoring Well

N - Nitrogern

N/A - Not Applicable

SW - Surface Water

TOX - Total Organic Halogens

TSS - Total Suspended Solids

Table 3

Monitoring Well Maintenance and Performance Reevaluation Schedule
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Compliance with:	Monitoring Calendar Years							
	2019	2020	2021	2022	2023	2024	2025	2026
567 IAC 115.21(2) a. high and low water levels (semi-annual)	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled
567 IAC 115.21(2) b. changes in the hydrologic setting and resultant flow paths (semi-annual)	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled
567 IAC 115.21(2) c. well depths (annual)	Completed	Completed	Completed	Completed	Completed	Completed	Completed	Scheduled
567 IAC 115.21(2) d. in-situ permeability tests (quinquennial)	Completed					Completed		

Table 3a

Recorded High and Low Water Level Elevations
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Monitoring Well	High Water Level (feet AMSL)	Low Water Level (feet AMSL)	Bottom and Top of Well Screen (feet AMSL)
MW-5	940.84	937.24	933.58 - 941.58
MW-7R	926.98	925.62	911.34 - 921.34
MW-8	928.10	924.68	918.26 - 928.26
MW-11	928.94	926.77	904.41 - 909.41
MW-12	890.58	889.64	848.17 - 858.17
MW-13	912.09	910.94	863.36 - 873.36
MW-14	939.31	935.46	925.14 - 935.14
MW-15	908.71	908.26	865.64 - 875.64
MW-16	913.07	911.48	865.66 - 875.66
MW-17R	928.82	926.02	920.72 - 925.72
MW-19	929.74	927.41	906.41 - 916.41
MW-20	906.85	904.63	859.52 - 869.52
MW-21	925.26	922.7	869.52 - 915.17
MW-22	901.66	900.31	854.12 - 864.12

Notes:

BOLD - Record High or Low Water Level

Red Font Color - Water level is below the top of the screen

AMSL - Above Mean Sea Level

Table 3b

Vertical Hydraulic Gradients
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Well Cluster Shallow/Deep	April 14, 2025	October 7, 2025	Average Gradient
MW-5/MW-16	-0.41	-0.39	-0.40
MW-7R/MW-15	-0.40	-0.38	-0.39
MW-8/MW-13	-0.29	-0.24	-0.26
MW-17R/MW-12	-0.54	-0.51	-0.53
MW-19/MW-20	-0.34	-0.37	-0.36
MW-21/MW-22	-0.70	-0.70	-0.70

Notes:

Positive hydraulic gradient indicates upward-directed flow

Negative hydraulic gradient indicates downward-directed flow

MW - Monitoring Well

Table 3c
Groundwater Elevations and Monitoring Well Depths
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Monitoring Well	Top of Casing Elevation (ft AMSL)	Original Installation Bottom of Well Elevation (ft AMSL)	Groundwater Elevation April 14, 2025 (ft AMSL)	Measured Bottom of Well Elevation April 14, 2025 (ft AMSL)	Groundwater Elevation October 7, 2025 (ft AMSL)	Measured Bottom of Well Elevation October 7, 2025 (ft AMSL)
MW-5	949.34	933.58	940.84	934.15	939.28	934.22
MW-7R	932.77	911.34	926.98	913.03	925.73	913.71
MW-8	939.91	918.26	927.57	918.27	925.08	918.40
MW-11	934.96	904.41	928.75	904.97	927.20	905.12
MW-12	934.65	848.17	890.58	847.69	890.37	846.10
MW-13	939.60	863.36	911.72	863.79	912.09	864.05
MW-14	944.12	925.14	938.68	924.94	935.89	925.00
MW-15	928.92	865.64	908.71	865.77	908.26	864.85
MW-16	948.42	865.66	913.07	865.84	912.99	865.96
MW-17R	933.82	920.72	928.47	920.88	926.43	920.94
MW-19	934.26	906.41	927.75	906.59	929.53	906.92
MW-20	934.16	859.34	906.85	858.90	905.55	858.91
MW-21	931.97	905.17	925.05	905.08	924.42	905.30
MW-22	931.77	854.12	901.66	853.67	901.14	853.63

Notes:

AMSL - Above Mean Sea Level

ft - Feet

Table 4

Monitoring Well Maintenance and Performance Summary
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Monitoring Well	Top of Casing	Top of Screen	Total Depth		Date of Measurements		Maximum Depth Discrepancy (ft)	Baseline Permeability (cm/s) (date)	2019 Permeability (cm/s) (date)	2024 Permeability	
					4/14/2025	10/7/2025				(cm/s) (date)	% Change from 2019 to 2024
MW-5	949.34	941.58	15.76	Groundwater Level (ft)	8.50	10.06	0.64	6.327E-04 4/27/2011	5.655E-04 10/8/2019	1.406E-03 4/4/2024	149%
				Groundwater Elevation (Ft MSL	940.84	939.28					
				Measured Well Depth (ft)	15.19	15.12					
				Submerged screen	No	No					
MW-7R	932.77	921.34	21.43	Groundwater Level (ft)	5.79	7.04	2.37	6.534E-05 4/27/2011	8.828E-04 10/7/2019	7.127E-05 4/4/2024	-92%
				Groundwater Elevation (Ft MSL	926.98	925.73					
				Measured Well Depth (ft)	19.74	19.06					
				Submerged screen	Yes	Yes					
MW-8	939.91	928.26	21.65	Groundwater Level (ft)	12.34	21.64	0.14	1.732E-03 4/27/2011	7.961E-03 10/7/2019	1.199E-03 4/4/2024	-85%
				Groundwater Elevation (Ft MSL	927.57	918.27					
				Measured Well Depth (ft)	21.64	21.51					
				Submerged screen	No	No					
MW-11	934.96	909.41	30.55	Groundwater Level (ft)	6.21	7.76	0.71	1.224E-03 4/27/2011	6.913E-03 10/7/2019	7.064E-04 4/4/2024	-90%
				Groundwater Elevation (Ft MSL	928.75	927.20					
				Measured Well Depth (ft)	29.99	29.84					
				Submerged screen	Yes	Yes					
MW-12	934.65	858.17	86.48	Groundwater Level (ft)	44.07	44.28	-0.48	NM --	NM --	NM --	NM
				Groundwater Elevation (Ft MSL	890.58	890.37					
				Measured Well Depth (ft)	86.96	88.55					
				Submerged screen	Yes	Yes					
MW-13	939.60	873.36	76.24	Groundwater Level (ft)	27.88	27.51	0.69	NM --	NM --	NM --	NM
				Groundwater Elevation (Ft MSL	911.72	912.09					
				Measured Well Depth (ft)	75.81	75.55					
				Submerged screen	Yes	Yes					
MW-14	944.12	935.14	18.98	Groundwater Level (ft)	5.44	8.23	-0.20	1.970E-06 4/27/2011	6.692E-06 10/7/2019	1.730E-06 10/8/2024	-74%
				Groundwater Elevation (Ft MSL	938.68	935.89					
				Measured Well Depth (ft)	19.18	19.12					
				Submerged screen	Yes	Yes					
MW-15	928.92	875.64	63.28	Groundwater Level (ft)	20.21	20.66	0.13	3.584E-04 4/27/2011	8.290E-04 10/16/2019	4.521E-06 10/7/2024	-99%
				Groundwater Elevation (Ft MSL	908.71	908.26					
				Measured Well Depth (ft)	63.15	64.07					
				Submerged screen	Yes	Yes					
MW-16	948.42	875.66	82.76	Groundwater Level (ft)	35.35	35.43	0.30	9.344E-07 10/9/2019	9.344E-07 10/9/2019	3.843E-07 10/8/2024	-59%
				Groundwater Elevation (Ft MSL	913.07	912.99					
				Measured Well Depth (ft)	82.58	82.46					
				Submerged screen	Yes	Yes					
MW-17R	933.82	925.72	13.10	Groundwater Level (ft)	5.35	7.39	0.22	8.169E-04 4/27/2011	2.786E-03 10/7/2019	3.768E-04 4/4/2024	-86%
				Groundwater Elevation (Ft MSL	928.47	926.43					
				Measured Well Depth (ft)	12.94	12.88					
				Submerged screen	Yes	Yes					
MW-19	934.26	916.41	27.85	Groundwater Level (ft)	6.51	4.73	0.51	2.267E-03 10/7/2019	2.267E-03 10/7/2019	2.371E-04 4/4/2024	-90%
				Groundwater Elevation (Ft MSL	927.75	929.53					
				Measured Well Depth (ft)	27.67	27.34					
				Submerged screen	Yes	Yes					
MW-20	934.16	869.52	74.82	Groundwater Level (ft)	27.31	28.61	-0.43	1.519E-06 10/8/2019	1.519E-06 10/8/2019	6.477E-07 10/8/2024	-57%
				Groundwater Elevation (Ft MSL	906.85	905.55					
				Measured Well Depth (ft)	75.26	75.25					
				Submerged screen	Yes	Yes					
MW-21	931.97	915.17	26.80	Groundwater Level (ft)	6.92	7.55	-0.09	1.055E-02 10/8/2019	1.055E-02 10/8/2019	1.533E-03 4/4/2024	-85%
				Groundwater Elevation (Ft MSL	925.05	924.42					
				Measured Well Depth (ft)	26.89	26.67					
				Submerged screen	Yes	Yes					
MW-22	931.77	864.12	77.65	Groundwater Level (ft)	30.11	30.63	-0.45	2.012E-06 10/9/2019	2.012E-06 10/9/2019	2.245E-06 10/7/2024	12%
				Groundwater Elevation (Ft MSL	901.66	901.14					
				Measured Well Depth (ft)	78.10	78.14					
				Submerged screen	Yes	Yes					

Notes:
- All tests are rising head (slug-out) using the Bouwer-Rice Solution and Unconfined Aquifer Model.
- All 2019 tests utilized a disposable bailer to induce displacement.
- Many deeper well tests during 2019 (MW-15, -16, and -20) should be considered estimated values as water levels in this aquifer were either rebounding from recent sampling and/or increasing due to recent precipitation.
- All 2024 tests results were originally reported in ft/min and converted to cm/s for this table.
- 2024 permeability is the average of the rising and falling permeability results; a full table was provided in Appendix D of 2024 AWQR.
% - Percent
cm/s - Centimeters per Second
ft - feet
MSL - Mean Sea Level
NA - Not Applicable
NM - Not Measured

Table 5
Control Limit Summary
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Interwell Control Limit (Upgradient wells MW-5, MW-14, and MW-16)

Constituent	Units	Baseline Period	Samples	Detections	Maximum Observed	Statistical PL Method	Control Limit	Action Level	Source
Inorganics									
Ammonia (as Nitrogen)	mg/L	1995-2025	186	61	2.2	KM Normal UPL	1.85	30	HAL & TT
Barium (Ba)	mg/L	2010-2025	97	97	0.344	Gamma UPL	0.336	2	EPA MCL
Iron (Fe)	mg/L	2010-2025	95	55	8.24	KM Log UPL	16.10	0.3	SDWR
Organics									
Benzene	µg/l	2010-2025	97	0	1.00 U	Reporting Limit	0.500 U	3	HAL
Phenol	mg/L	1995-2025	111	5	0.0519	Nonparametric	0.0519	2	HAL
Total Organic Halogens (TOX)	mg/L	1995-2025	98	17	0.276	Nonparametric	0.276	N/A	--
General Chemistry									
Chloride	mg/L	2022-2025	24	16	201	KM Log UPL	421	250	IDNR AL
Chemical Oxygen Demand (COD)	mg/L	1995-2025	185	69	25	KM Log UPL	12.6	N/A	--
Field Parameters									
pH (Upper Control)	S.U.	2010-2025	96	96	8.70	Normal UPL	8.26	8.5	SDWR
pH (Lower Control)	S.U.	2010-2025	96	96	6.15 (min)	Normal LPL	6.07	6.5	SDWR
Specific Conductance	µS/cm	2016-2025	57	57	2490	Gamma UPL	3076	N/A	--
Temperature	°C	1995-2025	183	183	24	Normal UPL	20.2	N/A	--

Units:
°C - Degress Celsius
mg/L - Milligrams per Liter
S.U. - Standard pH Units
µg/L - Micrograms per Liter
µS/cm - MicroSiemens per Centimeter

Notes:
EPA - United States Environmental Protection Agency
HAL - Health Action Level
IDNR - Iowa Department of Natural Resources
MCL - Maximum Contaminant Level
N/A - Not Applicable
SDWR - Secondary Drinking Water Regulation
TT - Taste Threshold

Statistical Methods:
PL - Prediction Limit: 1-of-2 Interwell Prediction Limit (10 COCs, Semi-Annual Sampling, 10 Downgradient wells), per IAC 567.113.10(4)g(3) and described in Chapter 19 of EPA's *Unified Guidance* (2009).
UPL - Upper Prediction Limit
LPL - Lower Prediction Limit
Normal - Prediction limit based on normal data distribution
Gamma - Prediction limit based on gamma data distribution
Log - Prediction limit based on lognormal data distribution
KM - Kaplan-Meier Method used to accommodate censored values (non-detects)
Nonparametric - Rank-based prediction limit used due to severe data censoring
Reporting Limit - Current reporting limit used due to no detected values

Table 6

Summary of Well/Detected Constituent Pairs With No Immediately Preceding Control Limit Exceedances
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Well	Constituent	Units	Most Recent Result	Interwell Control Limit
MW-5	Ammonia (as N)	mg/L	0.500 UJ	1.85
	Barium	mg/L	0.125	0.336
	Iron	mg/L	1.65	16.1
	Benzene	µg/L	0.500 U	0.500 U
	Phenol	mg/L	N/A (Spring only)	0.0519
	TOX	mg/L	N/A (Spring only)	0.276
	Chloride	mg/L	126	421
	COD	mg/L	25.0 U	12.6
	pH	S.U.	6.74	6.07-8.26
	Specific Conductance	µS/cm	1450	3076
	Temperature	°C	16.22	20.2
MW-7R	Ammonia (as N)	mg/L	0.500 UJ	1.85
	Barium	mg/L	0.0742	0.336
	Iron	mg/L	0.923	16.1
	Benzene	µg/L	0.500 U	0.500 U
	Phenol	mg/L	N/A (Spring only)	0.0519
	TOX	mg/L	N/A (Spring only)	0.276
	Chloride	mg/L	141	421
	COD	mg/L	25.0 U	12.6
	pH	S.U.	6.75	6.07-8.26
	Specific Conductance	µS/cm	1557	3076
	Temperature	°C	17.34	20.2
MW-8	Ammonia (as N)	mg/L	0.500 UJ	1.85
	Barium	mg/L	0.106	0.336
	Iron	mg/L	0.100 U	16.1
	Benzene	µg/L	0.500 U	0.500 U
	Phenol	mg/L	N/A (Spring only)	0.0519
	TOX	mg/L	N/A (Spring only)	0.276
	Chloride	mg/L	5.00 U	421
	COD	mg/L	25.0 U	12.6
	pH	S.U.	6.53	6.07-8.26
	Specific Conductance	µS/cm	854	3076
	Temperature	°C	14.84	20.2
MW-11	Ammonia (as N)	mg/L	0.500 UJ	1.85
	Barium	mg/L	0.158	0.336
	Iron	mg/L	0.100 U	16.1
	Benzene	µg/L	0.500 U	0.500 U
	Phenol	mg/L	N/A (Spring only)	0.0519
	TOX	mg/L	N/A (Spring only)	0.276
	Chloride	mg/L	5.00 U	421
	COD	mg/L	25.0 U	12.6
	pH	S.U.	7.06	6.07-8.26
	Specific Conductance	µS/cm	717.8	3076
	Temperature	°C	15.81	20.2

Table 6

Summary of Well/Detected Constituent Pairs With No Immediately Preceding Control Limit Exceedances
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Well	Constituent	Units	Most Recent Result	Interwell Control Limit
MW-14	Ammonia (as N)	mg/L	0.500 UJ	1.85
	Barium	mg/L	0.0225	0.336
	Iron	mg/L	0.419	16.1
	Benzene	µg/L	0.500 U	0.500 U
	Phenol	mg/L	N/A (Spring only)	0.0519
	TOX	mg/L	N/A (Spring only)	0.276
	Chloride	mg/L	7.37	421
	COD	mg/L	25.0 U	12.6
	pH	S.U.	6.76	6.07-8.26
	Specific Conductance	µS/cm	2435	3076
	Temperature	°C	14.93	20.2
MW-15	Ammonia (as N)	mg/L	1.45 J-/1.50	1.85
	Barium	mg/L	0.0592/0.0575	0.336
	Iron	mg/L	1.02/0.998	16.1
	Benzene	µg/L	0.500 U/0.500 U	0.500 U
	Phenol	mg/L	N/A (Spring only)	0.0519
	TOX	mg/L	N/A (Spring only)	0.276
	Chloride	mg/L	7.39/7.81	421
	COD	mg/L	25.0 U/25.0 U	12.6
	pH	S.U.	7.305/7.305	6.07-8.26
	Specific Conductance	µS/cm	799.9/799.9	3076
	Temperature	°C	13.87/13.87	20.2
MW-16	Ammonia (as N)	mg/L	1.38 J-	1.85
	Barium	mg/L	0.124	0.336
	Iron	mg/L	0.281	16.1
	Benzene	µg/L	0.500 U	0.500 U
	Phenol	mg/L	N/A (Spring only)	0.0519
	TOX	mg/L	--	0.276
	Chloride	mg/L	5.00 U	421
	COD	mg/L	25.0 U	12.6
	pH	S.U.	7.27	6.07-8.26
	Specific Conductance	µS/cm	732.2	3076
	Temperature	°C	14.22	20.2
MW-17R	Ammonia (as N)	mg/L	0.739	1.85
	Barium	mg/L	0.0994	0.336
	Iron	mg/L	8.48	16.1
	Benzene	µg/L	0.500 U	0.500 U
	Phenol	mg/L	N/A (Spring only)	0.0519
	TOX	mg/L	N/A (Spring only)	0.276
	Chloride	mg/L	38.0	421
	COD	mg/L	25.0 U	12.6
	pH	S.U.	6.81	6.07-8.26
	Specific Conductance	µS/cm	1271	3076
	Temperature	°C	19.15	20.2

Table 6

Summary of Well/Detected Constituent Pairs With No Immediately Preceding Control Limit Exceedances
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Well	Constituent	Units	Most Recent Result	Interwell Control Limit
MW-19	Ammonia (as N)	mg/L	0.500 U/0.500 U	1.85
	Barium	mg/L	0.175/0.170	0.336
	Iron	mg/L	0.121/0.106	16.1
	Benzene	µg/L	0.500 U/0.500 U	0.500 U
	Phenol	mg/L	N/A (Spring only)	0.0519
	TOX	mg/L	N/A (Spring only)	0.276
	Chloride	mg/L	5.00 U/5.00 U	421
	COD	mg/L	25.0 U/25.0 U	12.6
	pH	S.U.	7.068/7.068	6.07-8.26
	Specific Conductance	µS/cm	644/644	3076
	Temperature	°C	15.17/15.17	20.2
MW-20	Ammonia (as N)	mg/L	1.27	1.85
	Barium	mg/L	0.113	0.336
	Iron	mg/L	6.58	16.1
	Benzene	µg/L	0.500 U	0.500 U
	Phenol	mg/L	N/A (Spring only)	0.0519
	TOX	mg/L	N/A (Spring only)	0.276
	Chloride	mg/L	5.00 U	421
	COD	mg/L	25.0 U	12.6
	pH	S.U.	7.22	6.07-8.26
	Specific Conductance	µS/cm	1049	3076
	Temperature	°C	14.27	20.2
MW-21	Ammonia (as N)	mg/L	0.500 U	1.85
	Barium	mg/L	0.167	0.336
	Iron	mg/L	1.84	16.1
	Benzene	µg/L	0.500 U	0.500 U
	Phenol	mg/L	N/A (Spring only)	0.0519
	TOX	mg/L	N/A (Spring only)	0.276
	Chloride	mg/L	68.9	421
	COD	mg/L	25.0 U	12.6
	pH	S.U.	7.08	6.07-8.26
	Specific Conductance	µS/cm	708.6	3076
	Temperature	°C	16.38	20.2
MW-22	Ammonia (as N)	mg/L	1.60	1.85
	Barium	mg/L	0.0827	0.336
	Iron	mg/L	1.41	16.1
	Benzene	µg/L	0.500 U	0.500 U
	Phenol	mg/L	N/A (Spring only)	0.0519
	TOX	mg/L	N/A (Spring only)	0.276
	Chloride	mg/L	5.00 U	421
	COD	mg/L	25.0 U	12.6
	pH	S.U.	7.30	6.07-8.26
	Specific Conductance	µS/cm	761	3076
	Temperature	°C	13.96	20.2

Table 6

Summary of Well/Detected Constituent Pairs With No Immediately Preceding Control Limit Exceedances
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Well	Constituent	Units	Most Recent Result	Interwell Control Limit
SW-1	Ammonia (as N)	mg/L	N/A (Spring only)	1.85
	Barium	mg/L	N/A (Spring only)	0.336
	Iron	mg/L	N/A (Spring only)	16.1
	Benzene	µg/L	N/A (Spring only)	0.500 U
	Phenol	mg/L	N/A (Spring only)	0.0519
	TOX	mg/L	N/A (Spring only)	0.276
	Chloride	mg/L	N/A (Spring only)	421
	COD	mg/L	N/A (Spring only)	12.6
	pH	S.U.	N/A	6.07-8.26
	Specific Conductance	µS/cm	N/A	3076
	Temperature	°C	N/A	20.2

Units:

°C - Degrees Celsius

mg/L - Milligrams per Liter

S.U. - Standard pH Units

Notes:

MW - Monitoring Well

SW - Surface Water

COD - Chemical Oxygen Demand

N/A - Not Applicable

Table 7

Summary of Recent (Past 3 Years) Comparisons to Interwell Control Limits and Action Levels
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Well	Constituent	Units	Most Recent Result (Oct 2025)	Previous Result (April 2025)	Current Interwell Control Limit	Interwell Comparison Conclusion	Action Level/Statewide Standard	Action Level Comparison Conclusion	Comments
MW-5	Iron	mg/L	1.65	0.130	16.1	Not significant	0.3	Unconfirmed	Exceeded Action Level only on 4/4/2022, 10/3/2022, and 10/8/2024. Unconfirmed increase.
	pH	S.U.	6.74	7.20	6.07-8.26	Not significant	6.5-8.5	Not Significant	Outside Interwell Control Limits and Action Levels on 4/4/2022. Outside only Action Level on 10/3/2023, 4/2/2024, and 10/8/2024.
	Temperature	°C	16.22	8.41	20.2	Not significant	N/A	Not Significant	Exceeded Interwell Control Limit on 10/8/2024. Unconfirmed increase.
MW-7R	Iron	mg/L	0.923	0.100 U	16.1	Not significant	0.3	Confirmed Exceeds	Exceeded Action Level on every event in past 3 years.
	COD	mg/L	25.0 U	16.9	12.6	Inconclusive	N/A	Unconfirmed	Exceeded Interwell Control Limit on 10/3/2022, 10/7/2024, and 4/15/2025. Unconfirmed increase. Inconclusive comparison due to reporting limit.
	pH	S.U.	6.75	7.00	6.07-8.26	Not significant	6.5-8.5	Not Significant	Outside Action Level on 4/4/2024.
	TOX	mg/L	--	0.06 U	0.276	Not significant	N/A	N/A	Exceeded Interwell Control Limit on 4/4/2022.
MW-8	COD	mg/L	25.0 U	10.4	12.6	Inconclusive	N/A	N/A	Exceeded Interwell Control Limit on 10/3/2023 & 4/3/2024. Inconclusive comparison due to reporting limit.
	Iron	mg/L	0.100 U	0.100 U	16.1	Not significant	0.3	Not Significant	Inconclusive comparison due to reporting limits on 4/4/2022, 3/29/2023, and 10/3/2023.
	pH	mg/L	6.53	7.02	6.07-8.26	Not significant	6.5-8.5	Not Significant	Outside of Interwell Control Limits only on 4/4/2022 and 3/29/2023. Outside Interwell Control Limits and Action Levels on 4/3/2024.
MW-11	Iron	mg/L	0.100 U	0.100 U/0.100 U	16.1	Not significant	0.3	Not Significant	Exceeded Action Level only on 4/5/2022.
	COD	mg/L	25.0 U	12.1/12.8	12.6	Inconclusive	N/A	N/A	Exceeded Interwell Control Limit on 4/4/2024 and 10/8/2024. Inconclusive comparison due to reporting limit.
	pH	S.U.	7.06	7.33/7.33	6.07-8.26	Not significant	6.5-8.5	Not Significant	Outside of Interwell Control Limits and Action Levels on 4/5/2022. Outside Action Levels on 10/8/2024.
	Temperature	°C	15.81	12.20/12.20	20.2	Not significant	N/A	N/A	Exceeded Interwell Control Limit on 10/3/2023.
MW-14	Iron	mg/L	0.419	0.100 U	16.1	Not significant	0.3	Unconfirmed	Inconclusive comparison due to reporting limits on 4/4/2022, 3/29/2023, and 10/3/2023. Unconfirmed increase.
	pH	S.U.	6.76	7.05	6.07-8.26	Not significant	6.5-8.5	Not Significant	Outside Action Levels only on 10/4/2023 and 4/2/2024.
MW-15	Iron	mg/L	1.02/0.998	0.100 U	16.1	Not significant	0.3	Unconfirmed	Exceeded Action Level only during all events in past 3 years. Unconfirmed increase.
	pH	S.U.	7.305/7.305	7.22	6.07-8.26	Not significant	6.5-8.5	Not Significant	Outside Interwell Control Limits and Action Levels on 4/4/2022.
MW-16	Barium	mg/L	0.124	0.141	0.336	Not significant	2	Not Significant	Exceeded Interwell Control Limit on 10/3/2022.
	COD	mg/L	25.0 U	16.0	12.6	Inconclusive	N/A	N/A	Exceeded Interwell Control Limit on 10/4/2023 and 4/3/2024. Inconclusive comparison due to reporting limit.
	Iron	mg/L	0.281	0.850	16.1	Not significant	0.3	Unconfirmed	Exceeded Action Level on 4/4/2022, 3/29/2023, 10/4/2023, 4/3/2024, and 4/16/2025. Exceeded Interwell Control Limit and Action Level on 10/3/2022.
	pH	S.U.	7.27	7.79	6.07-8.26	Not significant	6.5-8.5	Not Significant	Outside of Interwell Control Limits and Action Levels on 4/4/2022 and 3/29/2023. Outside Interwell Control Limits only on 10/3/2022. Outside Action Levels only on 4/3/2024.
MW-17R	Iron	mg/L	8.48	10.0	16.1	Not significant	0.3	Confirmed Exceeds	Exceeded Interwell Control Limit during all events in past 3 years. Additionally exceeded Action Level on 10/4/2022.
	COD	mg/L	25.0 U	11.1	12.6	Inconclusive	N/A	N/A	Exceeded Interwell Control Limit on 10/3/2023 (one of two field duplicates), 4/4/2024, and 10/8/2024. Inconclusive comparison due to reporting limit.
	pH	S.U.	6.81	7.22	6.07-8.26	Not significant	6.5-8.5	Not Significant	Outside of Interwell Control Limits and Action Levels on 4/5/2022. Outside Action Levels only on 4/4/2024 and 10/8/2024.
	Temperature	°C	19.15	8.70	20.2	Not significant	N/A	N/A	Exceeded Interwell Control Limit on 10/3/2023.
MW-18	Chloride	mg/L	NS	NS	421	N/A	250	N/A	Exceeded Interwell Control Limit and Action Level on 4/6/2022 and 10/3/2022 - Removed from monitoring program on 10/5/2022.
	COD	mg/L	NS	NS	12.6	N/A	N/A	N/A	Exceeded Interwell Control Limit on 4/6/2022 and 10/3/2022 - Removed from monitoring program on 10/5/2022.
	Iron	mg/L	NS	NS	16.1	N/A	0.3	N/A	Inconclusive comparison on 10/3/2022 due to reporting limit - Removed from monitoring program on 10/5/2022.
	Specific Conductance	µS/cm	NS	NS	3076	N/A	N/A	N/A	Exceeded Interwell Control Limit on 4/6/2022 and 10/3/2022 - Removed from monitoring program on 10/5/2022.
MW-19	Iron	mg/L	0.121/0.106	0.100 U	16.1	Not significant	0.3	Not Significant	Exceeded Action Level only on 10/4/2022, 3/28/2023, and 4/4/2024.
	pH	S.U.	7.068/7.068	7.24	6.07-8.26	Not significant	6.5-8.5	Not Significant	Outside of Interwell Control Limits only on 4/5/2022. Outside of Action Levels on 4/4/2024.
MW-20	Iron	mg/L	6.58	10.8	16.1	Not significant	0.3	Confirmed Exceeds	Exceeded Action Level only during all events in past 3 years, except non-detect on 3/28/2023.
	Ammonia (as N)	mg/L	1.27	1.47 J	1.85	Not significant	30	Not Significant	Exceeded Interwell Control Limit on 10/5/2023 and 4/4/2024.
	pH	S.U.	7.22	7.26	6.07-8.26	Unconfirmed	6.5-8.5	Not Significant	Outside only Action Levels on 4/4/2024. Outside Action Levels and Interwell Control Limits on 10/8/2024. Unconfirmed decrease.
	TOX	mg/L	NS	0.06 U	0.276	Not significant	N/A	N/A	Exceeded Interwell Control Limit on 3/28/2023.
MW-21	Iron	mg/L	1.84	3.18	16.1	Not significant	0.3	Confirmed Exceeds	Exceeded Action Level only during all events in past 3 years.
	pH	S.U.	7.08	7.22	6.07-8.26	Not significant	6.5-8.5	Not Significant	Outside of Action Levels only on 10/8/2024. Outside of Interwell Control Limits and Action Levels on 4/5/2022.
MW-22	Iron	mg/L	1.41	2.49/0.100 U	16.1	Not significant	0.3	Confirmed Exceeds	Exceeded Action Level only during all events in past 3 years.
	COD	mg/L	25.0 U	7.14/6.15	12.6	Inconclusive	N/A	N/A	Exceeded Interwell Control Limit on 4/3/2024 and 10/8/2024. Inconclusive comparison due to reporting limit.
	pH	S.U.	7.30	7.31/7.31	6.07-8.26	Not significant	6.5-8.5	Not Significant	Outside of Interwell Control Limits and Action Limits on 4/5/2022 and 4/3/2024. Outside Action Levels only on 10/5/2023 and 10/8/2024.
SW-1	COD	mg/L	DRY	27.3	12.6	Unconfirmed	N/A	N/A	Exceeded Interwell Control Limit on 4/6/2022 and 4/1/2024.
	pH	S.U.	DRY	--	6.07-8.26	N/A	6.5-8.5	N/A	Outside of Interwell Control Limits and Action Limits on 4/1/2024.

Units:
 °C - Degress Celsius
 mg/L - Milligrams per Liter
 S.U. - Standard pH Units
 µg/L - Micrograms per Liter
 µS/cm - MicroSiemens per Centimeter

Abbreviations:
 COD - Chemical Oxygen Demand
 MW - Monitoring Well
 N - Nitrogen
 SW - Surface Water
 TOX - Total Organic Halogens
 NS - Not Sampled
 -- - Not Analyzed

Notes:
 N/A - Not Applicable
 U - Not Detected above the Reporting Limit
 Confirmed SSI / Confirmed Exceeds - Indicates that two most recent samples exceed (or are outside of for pH) the Interwell Control Limits and/or Action Levels, respectively.
 Unconfirmed - Indicates only the most recent sample is above/outside limits, and requires a subsequent sample for confirmation.
 Inconclusive - The reporting limit is above the Interwell Control Limit/Action Level, and therefore no meaningful comparison to the Interwell Control Limit/Action Level can be made.

Table 8

Analytical Data Summary
 2025 Annual Water Quality Report
 Viking Pump Foundry Sand Landfill
 Permit No. 07-SDP-12-89P-FSL
 Cedar Falls, Iowa

Constituent (CAS #)	Sample Date	Units	MW-5 BG/UG	MW-14 BG/UG	MW-16 BG/UG	MW-7R DG	MW-8 DG	MW-11 DG	MW-15 DG	MW-17R DG	MW-18 DG	MW-19 DG	MW-20 DG	MW-21 DG	MW-22 DG	SW-1 SW
Benzene (71-43-2) MCL = 5 IDNR AL = 3 Interwell CL = 0.500 U	3/25/2010	µg/L		1.00 U		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U/1.00 U						1.00 U
	3/30/2010	µg/L	1.00 U		1.00 U											
	4/22/2010	µg/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U/1.00 U						1.00 U
	10/16/2010	µg/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U/1.00 U	1.00 U	1.00 U				1.00 U
	4/28/2011	µg/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U				1.00 U
	10/18/2011	µg/L	1.00 U		1.00 U											1.00 U
	10/19/2011	µg/L		1.00 U		1.00 U	1.00 U/1.00 U	1.00 U	1.00 U	1.00 U						1.00 U
	4/25/2012	µg/L	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U/1.00 U	1.00 U	1.00 U	1.00 U					1.00 U
	10/9/2012	µg/L								1.00 U/1.00 U	1.00 U					
	10/10/2012	µg/L		1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U							
	4/16/2013	µg/L	0.500 U	0.500 U			0.500 U				0.500 U					0.500 U
	4/17/2013	µg/L			0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U/0.500 U						
	10/29/2013	µg/L		0.500 U/0.500 U		0.500 U	0.500 U		0.500 U	0.500 U	0.500 U					
	10/30/2013	µg/L			0.500 U			0.500 U				0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	4/14/2014	µg/L	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U/0.500 U	0.500 U	0.500 U	0.500 U	0.500 U					0.500 U
	4/15/2014	µg/L										0.500 U/0.500 U		0.500 U	0.500 U	
	10/7/2014	µg/L				0.500 U/0.500 U										
	10/8/2014	µg/L		0.500 U		0.500 U		0.500 U	0.500 U	0.500 U	0.500 U					
	10/9/2014	µg/L	0.500 U		0.500 U							0.500 U/0.500 U	0.500 U	0.500 U	0.500 U	
	4/16/2015	µg/L		0.500 U/0.500 U		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U					
	4/17/2015	µg/L	0.500 U		0.500 U							0.500 U/0.500 U	0.500 U	0.500 U	0.500 U	
	10/14/2015	µg/L		0.500 U		0.500 U	0.500 U/0.500 U		0.500 U							
	10/15/2015	µg/L						0.500 U/0.500 U		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	
	10/16/2015	µg/L	0.500 U		0.500 U		0.500 U							0.500 U		
	3/16/2016	µg/L		0.500 U/0.500 U			0.500 U									
	3/17/2016	µg/L	0.500 U		0.500 U/0.500 U	0.500 U		0.500 U	0.500 U	0.500 U	0.500 U					0.500 U
	3/18/2016	µg/L										0.500 U	0.500 U	0.500 U	0.500 U	
	9/27/2016	µg/L		0.500 U/0.500 U		0.500 U	0.500 U		0.500 U		0.500 U					
	9/28/2016	µg/L						0.500 U		0.500 U/0.500 U		0.500 U	0.500 U	0.500 U	0.500 U	
	9/29/2016	µg/L	0.500 U		0.500 U											
	3/7/2017	µg/L		0.500 U/0.500 U			0.500 U									
	3/8/2017	µg/L	0.500 U		0.500 U	0.500 U			0.500 U/0.500 U	0.500 U	0.500 U					
	3/9/2017	µg/L						0.500 U				0.500 U	0.500 U	0.500 U	0.500 U	
	10/4/2017	µg/L	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U/0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U				
	10/5/2017	µg/L											0.500 U	0.500 U	0.500 U/0.500 U	
	3/12/2018	µg/L	0.500 U	0.500 U	0.500 U		0.500 U/0.500 U					0.500 U	0.500 U			
	3/13/2018	µg/L				0.500 U		0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U			
	3/14/2018	µg/L												0.500 U	0.500 U/0.500 U	
	10/8/2018	µg/L								0.500 U	0.500 U					0.500 U
	10/9/2018	µg/L	0.500 U	0.500 U/0.500 U	0.500 U		0.500 U	0.500 U								
	10/10/2018	µg/L				0.500 U			0.500 U/0.500 U			0.500 U	0.500 U	0.500 U	0.500 U	
	3/25/2019	µg/L	0.500 U/0.500 U	0.500 U	0.500 U		0.500 U		0.500 U	0.500 U						
	3/26/2019	µg/L				0.500 U		0.500 U				0.500 U	0.500 U			0.500 U/0.500 U
	3/27/2019	µg/L												0.500 U	0.500 U	
	10/3/2019	µg/L	0.500 U/0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U					0.500 U
	10/4/2019	µg/L								0.500 U		0.500 U	0.500 U/0.500 U	0.500 U	0.500 U	
	3/17/2020	µg/L	0.500 U/0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U							
	3/18/2020	µg/L						0.500 U		0.500 U/0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	10/4/2020	µg/L	0.500 U	0.500 U	0.500 U/0.500 U		0.500 U									
	10/5/2020	µg/L				0.500 U		0.500 U	0.500 U/0.500 U	0.500 U	0.500 U	0.500 U	0.500 U			
	10/6/2020	µg/L												0.500 U	0.500 U	
	03/29/2021	µg/L						0.500 U		0.500 U	0.500 U	0.500 U	6.320	0.500 U/0.500 U	2.380	
	03/30/2021	µg/L	0.500 U	0.500 U/0.500 U	0.500 U	0.500 U	0.500 U		0.500 U							0.500 U
	10/05/2021	µg/L	0.500 U/0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U		0.500 U					
	10/06/2021	µg/L						0.500 U		0.500 U/0.500 U		0.500 U	0.500 U	0.500 U		
	10/8/2021	µg/L													0.500 U	
	4/4/2022	µg/L	0.500 U/0.500 U	0.500 U	0.500 U	0.500 U	0.500 U		0.500 U							
	4/5/2022	µg/L						0.500 U		0.500 U/0.500 U		0.500 U	0.500 U	0.500 U	0.500 U	

Table 8

Analytical Data Summary
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Constituent (CAS #)	Sample Date	Units	MW-5 BG/UG	MW-14 BG/UG	MW-16 BG/UG	MW-7R DG	MW-8 DG	MW-11 DG	MW-15 DG	MW-17R DG	MW-18 DG	MW-19 DG	MW-20 DG	MW-21 DG	MW-22 DG	SW-1 SW
Benzene (71-43-2) MCL = 5 IDNR AL = 3 Interwell CL = 0.500 U	4/6/2022	ug/L									0.500 U					0.500 U
	10/3/2022	ug/L	0.500 U/0.500 U	0.500 U	0.500 U	0.500 U	0.500 U				0.500 U					
	10/4/2022	ug/L						0.500 U	0.500 U	0.500 U		0.500 U	0.500 U/0.500 U	0.500 U	0.500 U	
	3/27/2023	ug/L	0.500 U					0.500 U		0.500 U/0.500 U						
	3/28/2023	ug/L				0.500 U			0.500 U			0.500 U	0.500 U	0.500 U	0.500 U	0.500 U
	3/29/2023	ug/L		0.500 U/0.500 U	0.500 U		0.500 U						0.500 U	0.500 U	0.500 U	
	10/3/2023	ug/L	0.500 U				0.500 U	0.500 U	0.500 U	0.500 U/0.500 U		0.500 U				
	10/4/2023	ug/L		0.500 U	0.500 U	0.500 U								0.500 U		
	10/5/2023	ug/L											0.500 U		0.500 U/0.500 U	
	4/1/2024	ug/L														0.500 U
	4/2/2024	ug/L	0.500 U	0.500 U/0.500 U			0.500 U									
	4/3/2024	ug/L			0.500 U									0.500 U	0.500 U	
	4/4/2024	ug/L				0.500 U		0.500 U	0.500 U	0.500 U		0.500 U	0.500 U/0.500 U			
	10/7/2024	ug/L				0.500 U	0.500 U		0.500 U							
	10/8/2024	ug/L	0.500 U		0.500 U			0.500 U		0.500 U			0.500 U	0.500 U/0.500 U	0.500 U	
	10/9/2024	ug/L		0.500 U								0.500 U/0.500 U				
Chloride (7647-14-5) MCL = N/A IDNR AL = 250 Interwell CL = 421	04/16/2025	ug/L	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U/0.500 U	0.500 U	0.500 U		0.500 U/0.500 U	0.500 U	0.500 U	0.500 U/0.500 U	0.500 U
	10/08/2025	ug/L	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U/0.500 U	0.500 U		0.500 U/0.500 U	0.500 U	0.500 U	0.500 U	#N/A
	7/1/1995	mg/L	6.7	6.7	5.00 U	27.0	29.0	5.3	5.00 U							
	8/1/1995	mg/L	5.00 U	6.0	6.0	26.0	32.0	5.00 U	5.00 U	130.0						47.0
	11/1/1995	mg/L	5.8	7.7	5.00 U	26.0	73.0	5.8	5.00 U	130.0						
	2/1/1996	mg/L	7.7	7.7	5.00 U		73.0	5.00 U		160.0						
	5/1/1996	mg/L	5.00 U	8.3	5.00 U	30.0	74.0	5.4	5.00 U	170.0						16.0
	11/1/1996	mg/L	6.3	8.1	5.00 U	5.00 U	56.0	5.00 U	33.0	120.0						34.0
	4/1/1997	mg/L	5.00 U	9.4	5.00 U	31.0	26.0	5.5	7.6	18.0						28.0
	11/1/1997	mg/L	5.8	8.7	5.00 U	32.0	50.0	5.00 U	5.00 U							35.0
	5/1/1998	mg/L	6.0	11.7	5.00 U	32.8	33.3	7.7	5.00 U	52.1						
	11/1/1998	mg/L	8.5	8.4	5.00 U	33.0	51.0	5.5	5.00 U	69.0						20.0
	5/1/1999	mg/L	6.2	9.3	5.00 U	39.0	67.0	5.00 U	5.00 U	61.0						5.3
	11/1/1999	mg/L	5.1	8.8	5.00 U	36.0	93.0	5.00 U	5.00 U	55.0						
	5/1/2000	mg/L	5.2	9.4	5.00 U	35.7	89.8	5.00 U	5.00 U	49.9						
	12/1/2000	mg/L	5.9	8.2	5.00 U	29.7	89.4	5.00 U	5.00 U	35.4						
	6/1/2001	mg/L	7.4	8.6	5.00 U	31.4	88.0	5.00 U	5.00 U	18.9						
	11/1/2001	mg/L	5.00 U	8.6	6.7	30.2	92.5	5.00 U	5.00 U	20.2						21.9
	5/2/2002	mg/L	11.8	8.7	5.00 U	29.7	89.0	5.00 U	5.00 U	24.7						
	11/2/2002	mg/L	6.1	7.9	5.00 U	22.2	86.0	5.00 U	5.00 U	20.6						
	5/3/2003	mg/L	6.5	10.2	5.00 U	29.8	101.0	5.6	5.00 U	35.8						9.9
	11/3/2003	mg/L		8.6	5.00 U	23.4	67.8	5.00 U	6.2	42.2						10.9
	5/1/2004	mg/L	5.1	9.6	5.00 U	25.2	103.0	6.4	7.5	32.1						8.1
	12/1/2004	mg/L		7.9	5.00 U	22.3	84.1	6.3	6.0	19.9						
	5/5/2005	mg/L	12.0	8.4	5.00 U	24.0	98.0	5.00 U	7.6	40.0						
	11/5/2005	mg/L		8.6	5.00 U		67.6	5.1	18.7							
	5/6/2006	mg/L	27.0	8.2	5.00 U	52.7	74.2	5.9	9.9	163.0						17.7
	10/6/2006	mg/L		8.2	5.00 U	41.2	46.6	5.7	12.1	77.8						
	4/7/2007	mg/L	33.8	7.9	5.00 U	218.0	4.2	5.2	13.3	123.0						25.1
	10/7/2007	mg/L	10.2	7.8	5.00 U	179.0	54.2	5.00 U	7.5	85.1						24.4
	4/1/2008	mg/L	11.9	7.6	5.00 U	179.0	49.9	6.5	13.3	172.0						44.6
	10/1/2008	mg/L	26.1	6.9	5.00 U	91.0	52.8	5.00 U	7.8	132.0						
	10/29/2009	mg/L	12.1	6.7	5.00 U	102.0	35.8	70.9	21.2	245/257						16.3
	3/25/2010	mg/L		6.8		239.0	38.4	46.6	5.00 U	1620/1630						49.2
	3/30/2010	mg/L	8.5		5.00 U											
	4/22/2010	mg/L	10.6	7.1	5.00 U	212.0	31.7	40.8	5.5	1690/1780						39.8
	10/16/2010	mg/L	6.8	6.6	5.00 U	161.0	38.1	31.1/31.1	8.6	374.0						128.0
	4/28/2011	mg/L	5.5	7.1	5.00 U	150.0	31.8	14.5	36.7	415.0	368.0					36.1
	10/18/2011	mg/L	13.2		5.00 U						339.0					
	10/19/2011	mg/L		7.6		98.3	31.0/31.8	15.8	11.3	381.0						92.8
	4/25/2012	mg/L	5.6	6.6	5.00 U	106.0	32.4	11.4/11.4	8.9	233.0	321.0					40.8
	10/9/2012	mg/L								189/185	300.0					
	10/19/2012	mg/L		7.4	5.00 U	73.4	22.7	11.7	6.2							
	4/16/2013	mg/L	5.00 U	7.6			30.8				292.0					39.7

Table 8

Analytical Data Summary
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Constituent (CAS #)	Sample Date	Units	MW-5 BG/UG	MW-14 BG/UG	MW-16 BG/UG	MW-7R DG	MW-8 DG	MW-11 DG	MW-15 DG	MW-17R DG	MW-18 DG	MW-19 DG	MW-20 DG	MW-21 DG	MW-22 DG	SW-1 SW
Chloride (7647-14-5) MCL = N/A IDNR AL = 250 Interwell CL = 421	4/17/2013	mg/L			5.00 U	207.0		10.9	7.9	245/271						
	10/29/2013	mg/L		7.89/7.89		173.0	27.7		6.1	224.0	289.0					
	10/30/2013	mg/L			5.00 U			10.1				5.00 U	5.00 U	643.0	6.8	96.7
	4/14/2014	mg/L	24.4	7.5	5.00 U	216.0	28.4/29.7	7.0	5.7	1190.0	268.0					63.9
	4/15/2014	mg/L										5.00 U/5.00 U		635.0	7.3	
	10/7/2014	mg/L					23/22.3									
	10/8/2014	mg/L		7.2		233.0		7.8	5.1	1200.0	301.0					
	10/9/2014	mg/L	46.2		5.00 U							5.00 U/5.00 U	5.00 U	546.0	5.00 U	
	4/16/2015	mg/L		7.61/7.55		273.0	28.5	6.5	5.00 U	694.0	314.0					
	4/17/2015	mg/L	54.5		5.00 U							5.00 U/5.00 U	5.00 U	332.0	5.00 U	
	10/14/2015	mg/L		11.8		234.0	28.5/28.1		5.00 U							
	10/15/2015	mg/L						6.39/6.72		635.0	330.0	5.00 U	5.00 U		5.00 U	
	10/16/2015	mg/L	61.6		7.5									180.0		
	3/16/2016	mg/L		7.97/8.11			36.3									
	3/17/2016	mg/L	16.1		5.00 U/5.00 U	166.0		7.0	5.00 U	425.0	392.0					74.4
	3/18/2016	mg/L										5.00 U	5.00 U	150.0	5.00 U	
	9/27/2016	mg/L		8.79/8.2		120.0	20.1		5.5		477.0					
	9/28/2016	mg/L						7.5		335/341		5.00 U	5.00 U	108.0	5.00 U	
	9/29/2016	mg/L	22.1		5.00 U											
	3/7/2017	mg/L		8.26/8.26			10.3									
	3/8/2017	mg/L	16.6		5.00 U	202.0			5.00 U/5.00 U	363.0	446.0					
	3/9/2017	mg/L						6.5				5.00 U	5.00 U	105.0	5.00 U	
	10/4/2017	mg/L	23.4	6.9	5.00 U	208.0	13.3/13.1	5.9	5.00 U	279.0	470.0	5.00 U				
	10/5/2017	mg/L											5.00 U	46.9	5.00 U/5.00 U	
	3/12/2018	mg/L	20.9	8.8	5.00 U		10.7/9.97									
	3/13/2018	mg/L				158.0		6.8	5.00 U	242.0	235.0	5.00 U	5.00 U	102.0	5.00 U/5.00 U	
	3/14/2018	mg/L														
	10/8/2018	mg/L								167.0	419.0					11.8
	10/9/2018	mg/L	5.00 U	8.91/8.95	5.00 U		5.00 U	5.9								
	10/10/2018	mg/L				147.0			5.00 U/5.00 U			5.00 U	7.4	71.8	5.00 U	
	3/25/2019	mg/L	6.87/6.28	8.8	5.00 U		5.00 U		5.00 U	113.0						
	3/26/2019	mg/L				68.5		5.3				5.00 U	5.00 U	94.1	5.00 U	24.4/24.7
	3/27/2019	mg/L														
	10/3/2019	mg/L	5.00 U/5.00 U	8.5	5.00 U	91.1	5.00 U	6.0	5.00 U		565.0					15.3
	10/4/2019	mg/L								126.0		5.00 U	5.00 U/5.00 U	88.4	5.00 U	
	3/17/2020	mg/L	5.00 U/5.00 U	8.8	5.00 U	106.0	5.00 U		5.00 U							
	3/18/2020	mg/L						5.6		133/134	551.0	5.00 U	5.00 U	82.4	5.00 U	31.8
	10/4/2020	mg/L	5.00 U	7.7	5.00 U/5.00 U		5.00 U									
	10/5/2020	mg/L				168.0		5.00 U	5.00 U/5.00 U	105.0	662.0	5.00 U	5.00 U			
	10/6/2020	mg/L														
	03/29/2021	mg/L						6.49		87.6	580	5.00 U	5.00 U	72.9	5.00 U	
	03/30/2021	mg/L	6.65	11.4/10.4	5.00 U	76.2	5.00 U		9.20					75.4/80.5	5.00 U	
	10/05/2021	mg/L	11.0/11.7	8.63	5.00 U	137	5.86		7.65		107					42.4
	10/06/2021	mg/L						5.52		108/110		5.00 U	5.00 U	66.2		
	10/08/2021	mg/L													5.00 U	
	4/4/2022	mg/L	30.2/29.2	9.34	5.00 U	101.0	6.41		9.27							
	4/5/2022	mg/L						5.38		91.7/95.3		5.00 U	5.00 U	89.3	5.00 U	
	4/6/2022	mg/L									629					43.3
	10/3/2022	mg/L	49.4/43.6	8.68	5.00 U	82.9	5.27				631.0					
	10/4/2022	mg/L						5.37	6.32	72.8		5.00 U	5.00 U/5.00 U	71.2	5.00 U	
	3/27/2023	mg/L	71.9					6.02		69.8/69.5						
	3/28/2023	mg/L				157.0			9.4			69.5	5.00 U	5.00 U	5.00 U	43.8
	3/29/2023	mg/L		9.69/9.7	5.00 U		7.6									
	10/3/2023	mg/L	117.0				24.0	17.90	16.5	87.6/88.1		14.1				
	10/4/2023	mg/L		8.5	5.00 U	95.0								71.3		
	10/5/2023	mg/L											5.00 U		5.00 U/5.00 U	
	4/1/2024	mg/L														45.1
	4/2/2024	mg/L		9.32/8.66												

Table 8

Analytical Data Summary
 2025 Annual Water Quality Report
 Viking Pump Foundry Sand Landfill
 Permit No. 07-SDP-12-89P-FSL
 Cedar Falls, Iowa

Constituent (CAS #)	Sample Date	Units	MW-5 BG/UG	MW-14 BG/UG	MW-16 BG/UG	MW-7R DG	MW-8 DG	MW-11 DG	MW-15 DG	MW-17R DG	MW-18 DG	MW-19 DG	MW-20 DG	MW-21 DG	MW-22 DG	SW-1 SW
Chloride (7647-14-5) MCL = N/A IDNR AL = 250 Interwell CL = 421	4/3/2024	mg/L	137		5.00 U		5.50							75.7	5.00 U	
	4/4/2024	mg/L				169		5.92	5.92	60.2		5.00 U	5.00 U/5.00 U			
	10/7/2024	mg/L				61.1	5.00 U		6.85							
	10/8/2024	mg/L	201		5.00 U			5.39		42.3			5.00 U	65.9/67.3	5.00 U	
	10/9/2024	mg/L		9.78								5.00 U/5.00 U				
	04/16/2025	ug/L	179	8.59	5.00 U	606	7.96	6.02/5.60	14.5	41.0		5.00 U	5.00 U	65.9	5.00 U/5.00 U	69.9
Barium (Dissolved/ Total) (7440-39-3) MCL = 2 IDNR AL = 2 Interwell CL = 0.336	10/08/2025	ug/L	126	7.37	5.00 U	141	5.00 U	5.00 U	7.39/7.81	38.0		5.00 U/5.00 U	5.00 U	68.9	5.00 U	
	3/25/2010	mg/L		0.0136		0.1120	0.0730	0.1110	0.0591	0.331/0.325						0.0592
	3/30/2010	mg/L	0.1460		0.1400											
	4/22/2010	mg/L	0.1550	0.0157	0.1380	0.0937	0.0756	0.1180	0.0596	0.361/0.372						0.0695
	10/16/2010	mg/L	0.1690	0.0252	0.1390	0.0879	0.0929	0.139/0.137	0.0616	0.1240						0.0837
	4/28/2011	mg/L	0.1370	0.0205	0.1320	0.0735	0.0890	0.1200	0.0583	0.1310						0.0595
	10/18/2011	mg/L	0.1280		0.1700						0.1200					
	10/19/2011	mg/L		0.0231		0.0684	0.0929/0.0917	0.1390	0.0622	0.0606						0.0606
	4/25/2012	mg/L	0.1620	0.1580	0.1770	0.0552	0.0940	0.157/0.0100 U	0.0654	0.1130	0.0948					0.0759
	10/9/2012	mg/L								0.127/0.13	0.1120					
	10/10/2012	mg/L		0.0255	0.1650	0.0586	0.1220	0.1670	0.0648							
	4/16/2013	mg/L	0.1320	0.0210		0.1150					0.1100					0.0558
	4/17/2013	mg/L			0.1750	0.0894		0.1700	0.0691	0.163/0.161						
	10/29/2013	mg/L		0.0256/0.025		0.0844	0.1260		0.0702	0.1480	0.1090					
	10/30/2013	mg/L			0.1530			0.1740				0.2020	0.1730	0.3130	0.0873	0.0639
	4/14/2014	mg/L	0.0878	0.0205	0.1580	0.0659	0.108/0.106	0.1780	0.0640	0.3160	0.0986			0.3000	0.0880	0.0412
	4/15/2014	mg/L										0.182/0.185				
	10/7/2014	mg/L					0.106/0.107									
	10/8/2014	mg/L		0.0217		0.0783		0.1740	0.0631	0.2920	0.1060					
	10/9/2014	mg/L	0.1490		0.1410							0.182/0.213	0.1760	0.1870	0.1050	
	4/16/2015	mg/L		0.026/0.0382		0.0731	0.0998	0.1770	0.0649	0.1900	0.1030					
	4/17/2015	mg/L	0.0894		0.2560							0.177/0.182	0.1390	0.2280	0.2000	
	10/14/2015	mg/L		0.0256		0.1000	0.12/0.12		0.0638							
	10/15/2015	mg/L						0.224/0.181		0.2150	0.1220	0.1860	0.1320		0.0929	
	10/16/2015	mg/L	0.1480		0.2300									0.1600		
	3/16/2016	mg/L		0.0213/0.0219			0.1160									
	3/17/2016	mg/L	0.0858		0.142/0.139	0.0450		0.1660	0.0610	0.1410	0.1090					0.0699
	3/18/2016	mg/L										0.1650	0.1120	0.1450	0.0853	
	9/27/2016	mg/L		0.0247/0.0255		0.0708	0.1260		0.0620		0.1220					
	9/28/2016	mg/L						0.1630		0.138/0.141		0.1700	0.1040	0.1380	0.1170	
	9/29/2016	mg/L	0.1340		0.2200											
	3/7/2017	mg/L		0.0272/0.0313			0.1250									
	3/8/2017	mg/L	0.1200		0.1410	0.0632			0.0657/0.0663	0.0603	0.1230					
	3/9/2017	mg/L						0.1740				0.1680	0.1120	0.1760	0.0981	
	10/4/2017	mg/L	0.0967	0.0294	0.1340	0.1060	0.108/0.108	0.1630	0.0645	0.1260	0.1300	0.1870				
	10/5/2017	mg/L											0.1710	0.1580	0.0972/0.098	
	3/12/2018	mg/L	0.0836	0.1500	0.2210		0.0993/0.0985									
	3/13/2018	mg/L				0.0650		0.1630	0.0642	0.1570	0.1260	0.1660	0.1140			
	3/14/2018	mg/L												0.1820	0.117/0.116	
	10/8/2018	mg/L								0.0826	0.1090					0.0689
	10/9/2018	mg/L	0.1150	0.0477/0.0554	0.1530		0.0809	0.1630								
	10/10/2018	mg/L				0.0826			0.07/0.0677			0.1800	0.1640	0.1650	0.1190	
	3/25/2019	mg/L	0.0793/0.0783	0.0862	0.1290		0.0322		0.0657	0.0535						
	3/26/2019	mg/L				0.0535		0.1570				0.1520	0.0990			0.0636/0.0627
	3/27/2019	mg/L												0.1790	0.1310	
	10/3/2019	mg/L	0.163/0.158	0.0289	0.1360	0.0858	0.0913	0.1660	0.0643		0.1440					0.0878
	10/4/2019	mg/L								0.0858		0.1710	0.178/0.244	0.1850	0.1580	
	3/17/2020	mg/L	0.111/0.11	0.0639	0.3370	0.0773	0.0785		0.0722	0.099/0.161	0.1370	0.1600	0.1220	0.1880	0.1650	0.0621
	3/18/2020	mg/L						0.1650								
	10/4/2020	mg/L	0.0984	0.0243	0.144/0.143		0.1110									
	10/5/2020	mg/L				0.1250		0.1860	0.0708/0.0714	0.0981	0.1620	0.1790	0.1390			
	10/6/2020	mg/L												0.1870	0.1340	
	03/29/2021	mg/L						0.158		0.0801	0.136	0.184	0.376	0.186/0.182	0.102	
	03/30/2021	mg/L	0.1240	0.0141/0.0136	0.140	0.0528	0.0683		0.0617							0.0713

Table 8

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Viking Pump Foundry Sand Landfill
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Constituent (CAS #)	Sample Date	Units	MW-5 BG/UG	MW-14 BG/UG	MW-16 BG/UG	MW-7R DG	MW-8 DG	MW-11 DG	MW-15 DG	MW-17R DG	MW-18 DG	MW-19 DG	MW-20 DG	MW-21 DG	MW-22 DG	SW-1 SW
Barium (Dissolved/ Total) (7440-39-3) MCL = 2 IDNR AL = 2 Interwell CL = 0.336	10/05/2021	mg/L	0.120/0.125	0.127	0.153	0.117	0.107		0.0659		0.163					
	10/06/2021	mg/L						0.2090		0.176/0.135		0.1910	0.1080	0.189		
	10/08/2021	mg/L													0.151	
	4/4/2022	mg/L	0.0888/0.0828	0.0242	0.1300	0.0441	0.0701		0.0635							
	4/5/2022	mg/L						0.1670		0.0886/0.0920		0.1560	0.1060	0.180	0.097	
	4/6/2022	mg/L									0.1380 0.1410					0.0703
	10/3/2022	mg/L	0.153/0.153	0.0194	0.3440	0.0569	0.0771									
	10/4/2022	mg/L						0.139	0.0615	0.1090		0.159	0.0877/0.0885	0.174	0.0804	
	3/27/2023	mg/L	0.1380					0.167		0.0922/0.0934						
	3/28/2023	mg/L				0.0416			0.0665			0.165	0.093	0.191	0.0992	0.0641
	3/29/2023	mg/L		0.0260/0.0223	0.1310		0.0736									
	10/3/2023	mg/L	0.2440				0.1250	0.195	0.0786	0.139/0.142		0.223				
	10/4/2023	mg/L		0.0246	0.2060	0.1100								0.210		
	10/5/2023	mg/L											0.130		0.114/0.119	
	4/1/2024	mg/L														0.0715
	4/2/2024	mg/L	0.0822	0.0154/0.0153												
	4/3/2024	mg/L			0.132		0.0928							0.168	0.0916	
	4/4/2024	mg/L				0.0506		0.160	0.0617	0.0912		0.156	0.0910/0.0864			
	10/7/2024	mg/L				0.0642	0.103		0.0553							
	10/8/2024	mg/L	0.121		0.131			0.147		0.094				0.101	0.163/0.161	0.081
	10/9/2024	mg/L		0.023								0.179/0.183				
Iron (Dissolved/ Total) (7439-89-6) IDNR AL = 0.3 Interwell CL = 16.1	04/16/2025	mg/L	0.0864	0.0192	0.141	0.141	0.0881	0.161/0.160	0.0636	0.0931		0.159	0.119	0.174	0.0925/0.0939	0.105
	10/08/2025	mg/L	0.125	0.0225	0.124	0.0742	0.106	0.158	0.0592/0.0575	0.0994		0.175/0.178	0.113	0.167	0.0827	
	7/1/1995	mg/L	0.100 U	0.100 U	1.30	1.60	0.100 U	0.100 U	1.60							
	8/1/1995	mg/L	0.100 U	0.100 U	0.100 U	0.69	0.100 U	0.14	2.10							
	11/1/1995	mg/L	0.100 U	0.100 U	0.100 U	0.49	0.100 U	0.13	2.70							
	2/1/1996	mg/L	0.100 U	0.100 U	0.16		0.100 U	0.100 U	0.20							
	5/1/1996	mg/L								0.10						0.100 U
	11/1/1996	mg/L	0.100 U	0.100 U	0.100 U	2.25	0.100 U	0.100 U	0.27							0.13
	4/1/1997	mg/L	0.100 U	0.100 U	0.100 U	0.68	0.100 U	0.100 U	2.80	0.21						0.100 U
	11/1/1997	mg/L	0.100 U	0.17	0.21	0.29	0.100 U	0.100 U	2.10							0.100 U
	5/1/1998	mg/L	0.100 U	0.100 U	0.100 U	1.70	0.100 U	0.100 U	1.20	1.60						
	11/1/1998	mg/L	0.100 U	0.100 U	0.54	0.43	0.100 U	0.100 U	2.00	0.58						0.100 U
	5/1/1999	mg/L	0.100 U	0.100 U	0.100 U	1.20	0.100 U	0.100 U	0.88	1.60						0.100 U
	11/1/1999	mg/L	0.100 U	3.20	0.100 U	0.500 U	0.100 U	0.100 U	0.78							
	5/1/2000	mg/L	0.100 U	0.100 U	0.100 U	1.20	0.100 U	0.100 U	1.00	0.15						
	12/1/2000	mg/L	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	1.90	1.40						
	6/1/2001	mg/L	0.100 U	0.100 U	0.17	1.00	0.100 U	0.100 U	0.86	2.10						
	11/1/2001	mg/L	0.100 U	0.100 U	0.100 U	0.75	0.100 U	0.100 U	1.20	0.10						0.100 U
	5/2/2002	mg/L	0.100 U	0.100 U	0.100 U	0.99	0.100 U	0.100 U	0.48	0.60						
	11/2/2002	mg/L	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.17	0.61	2.50						
	5/3/2003	mg/L	0.100 U	0.100 U	0.100 U	2.20	0.100 U	0.100 U	0.36	6.70						0.100 U
	11/3/2003	mg/L	0.100 U	0.100 U	0.100 U	0.23	0.26	0.100 U	0.100 U	0.76						0.100 U
	5/1/2004	mg/L	0.100 U	0.100 U	0.100 U	1.10	0.100 U	0.100 U	0.100 U	2.20						0.100 U
	12/1/2004	mg/L	0.100 U	0.100 U	0.100 U	0.24	0.100 U	0.100 U	0.100 U	3.70						
	5/5/2005	mg/L	0.100 U	0.100 U	0.100 U	1.50	0.29	0.100 U	0.100 U	3.40						
	11/5/2005	mg/L	0.100 U	0.100 U	0.23		0.16	0.100 U	0.100 U							
	5/6/2006	mg/L		0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	4.47						0.100 U
	10/6/2006	mg/L	1.51	0.100 U	0.100 U	0.37	0.16	0.100 U	0.100 U	4.49						
	4/7/2007	mg/L	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	1.18	5.64						0.100 U
	10/7/2007	mg/L	0.31	0.100 U	0.100 U	0.11	0.16	0.100 U	0.19	3.31						0.100 U
	4/1/2008	mg/L	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.38	1.18	6.38						0.27
	10/1/2008	mg/L	1.13	0.100 U	0.100 U	0.11	0.29	0.100 U	0.13	4.85						
	10/29/2009	mg/L	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U	0.10	6.31/5.96						7.69
	3/25/2010	mg/L		0.100 U		0.58	0.100 U	0.100 U	0.100 U	28.5/28.1						0.100 U
	3/30/2010	mg/L	0.99		0.100 U											
	4/22/2010	mg/L	1.03	0.100 U		0.100 U	0.100 U	0.100 U	0.100 U	28.3/27.9						0.100 U
	10/16/2010	mg/L	1.15	0.100 U	0.51	0.15	0.100 U	0.100 U/0.100 U	0.100 U	6.43						3.79
	4/28/2011	mg/L	0.28	0.100 U		0.18	0.14	0.100 U		9.92			0.100 U 0.100 U			0.100 U
	10/18/2011	mg/L	1.61		1.77											

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 Cedar Falls, Iowa

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Iron (Dissolved/ Total) (7439-89-6) IDNR AL = 0.3 Interwell CL = 16.1	10/19/2011	mg/L		0.100 U		0.15	0.100 U/0.100 U	0.100 U	0.29	8.41						0.100 U
	4/25/2012	mg/L	0.80	0.100 U	1.10	0.17	0.100 U	0.100 U/0.100 U	0.48	7.08	0.10					0.100 U
	10/9/2012	mg/L								2.68/2.44	0.20					
	10/10/2012	mg/L		0.100 U	0.11	0.76	0.18	0.100 U	0.33							
	4/16/2013	mg/L	0.100 U	0.100 U			0.100 U				0.17					0.100 U
	4/17/2013	mg/L			0.100 U	0.100 U		0.100 U	0.75	11.7/11.6						
	10/29/2013	mg/L		0.100 U/0.100 U		0.32	0.100 U		0.43	1.98	0.13					
	10/30/2013	mg/L			0.13			0.100 U				0.100 U	0.100 U	3.90	0.87	0.53
	4/14/2014	mg/L	0.100 U	0.100 U	0.100 U	0.100 U	0.100 U/0.100 U	0.100 U	0.57	17.30	0.15					0.22
	4/15/2014	mg/L						0.100 U/0.100 U				0.100 U/0.100 U		3.38	1.19	
	10/7/2014	mg/L						0.100 U/0.100 U								
	10/8/2014	mg/L		0.100 U		0.100 U		0.100 U	0.62	19.60	0.14					
	10/9/2014	mg/L	2.63		0.100 U							0.100 U/0.100 U	0.29	3.12	1.39	
	4/16/2015	mg/L		0.100 U/0.3		0.100 U	0.100 U	0.12	0.73	10.90	0.11					
	4/17/2015	mg/L	0.39		0.100 U							0.100 U/0.100 U	0.24	2.45	15.70	
	10/14/2015	mg/L		0.100 U		0.100 U	0.100 U/0.100 U		0.94							
	10/15/2015	mg/L						0.100 U/0.100 U		4.02	0.23	0.100 U	0.21		0.85	
	10/16/2015	mg/L	4.89		8.24									1.53		
	3/16/2016	mg/L		0.100 U/0.100 U			0.100 U									
	3/17/2016	mg/L	0.100 U		0.101/0.100 U	0.34		0.100 U	0.72	11.60	0.100 U					0.20
	3/18/2016	mg/L										0.100 U	0.53	1.56	1.21	
	9/27/2016	mg/L		0.100 U/0.100 U		0.74	0.100 U		0.85		0.28					
	9/28/2016	mg/L						0.100 U		9.28/9.27		0.100 U	0.37	2.02	9.15	
	9/29/2016	mg/L	0.91													
	3/7/2017	mg/L		0.500 U/0.500 U			0.500 U									
	3/8/2017	mg/L	0.68		0.500 U	0.500 U			0.846/0.841	10.80	0.500 U					
	3/9/2017	mg/L						0.500 U				0.500 U	1.71	1.40	2.35	
	10/4/2017	mg/L	1.62	0.500 U	0.69	7.78	0.500 U/0.500 U	0.500 U	0.72	6.80	0.165 J	0.74				
	10/5/2017	mg/L											27.60	1.86	2.13/2.72	
	3/12/2018	mg/L	1.54	1.54	7.15		0.500 U/0.500 U									
	3/13/2018	mg/L				0.500 U		0.500 U	0.84	19.70	0.500 U	0.79	2.32			
	3/14/2018	mg/L								6.14	0.500 U			2.78	6.53/5.69	
	10/8/2018	mg/L														0.79
	10/9/2018	mg/L	1.09	0.500 U/0.702	0.87		0.500 U	0.500 U								
	10/10/2018	mg/L				0.57			1.2/1.21			0.500 U	8.38	2.29	5.84	
	3/25/2019	mg/L	0.59/0.567	1.01	0.87		0.500 U	0.500 U	1.06	10.60						
	3/26/2019	mg/L				0.500 U		0.500 U				0.93	1.88			0.500 U/0.500 U
	3/27/2019	mg/L												3.95	10.50	
	10/3/2019	mg/L	0.500 U/0.500 U	0.500 U	1.58	4.02	0.500 U	0.500 U	1.18		0.500 U					0.500 U
	10/4/2019	mg/L								11.00		0.500 U	18.3/33.7	2.93	15.10	
	3/17/2020	mg/L	0.54/0.571	0.500 U	35.60	4.66	0.500 U		1.39							
	3/18/2020	mg/L						0.500 U		11.1/36	0.500 U	0.72	4.27	4.25	17.10	0.500 U
	10/4/2020	mg/L	1.34	0.500 U	0.598/0.679		0.500 U									
	10/5/2020	mg/L				6.09		0.85	1.23/1.28	4.67	0.500 U	0.500 U	6.71			
	10/6/2020	mg/L												4.57	7.45	
	03/29/2021	mg/L						0.500 U		7.25	0.500 U	1.02	67.7	3.11/3.40	3.30	
	03/30/2021	mg/L	0.500 U	0.500 U/0.500 U	0.881	1.98	0.500 U		0.798							0.500 U
	10/05/2021	mg/L	2.38/3.08	1.12	2.23	6.94	0.500 U		1.31		0.500 U					
	10/06/2021	mg/L						3.61		29.1/16.1		0.500 U		1.97	3.44	
	10/08/2021	mg/L													13.6	
	4/4/2022	mg/L	0.689/0.524	0.500 U	0.852	3.17	0.500 U		1.16							
	4/5/2022	mg/L						0.672		9.72/10.6				1.93	6.68	
	4/6/2022	mg/L									0.500 U	0.500 U	2.47			0.500 U
	10/3/2022	mg/L	0.446/2.10	0.100 U	23.6	0.584	0.100 U				0.111					
	10/4/2022	mg/L						0.100 U	1.01	18.9		0.34	2.59/0.820	5.21	1.56	
	3/27/2023	mg/L	0.500 U					0.500 U		9.40/9.70						
	3/28/2023	mg/L				1.84			1.39			0.56	0.500 U	4.86	3.51	0.500 U
	3/29/2023	mg/L		0.500 U/0.500 U	1.42		0.500 U									

Table 8

Analytical Data Summary
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Constituent (CAS #)	Sample Date	Units	MW-5 BG/UG	MW-14 BG/UG	MW-16 BG/UG	MW-7R DG	MW-8 DG	MW-11 DG	MW-15 DG	MW-17R DG	MW-18 DG	MW-19 DG	MW-20 DG	MW-21 DG	MW-22 DG	SW-1 SW
Iron (Dissolved/ Total) (7439-89-6) IDNR AL = 0.3 Interwell CL = 16.1	10/3/2023	mg/L	0.500 U				0.500 U	0.500 U	1.07	11.0/11.4		0.500 U		2.41		
	10/4/2023	mg/L		0.500 U	2.83	0.68										
	10/5/2023	mg/L											1.52		1.39/1.70	
	4/1/2024	mg/L														0.568
	4/2/2024	mg/L	0.154	0.100 U/0.100 U												
	4/3/2024	mg/L			1.02		0.100 U							1.98	1.32	
	4/4/2024	mg/L				0.592		0.123	0.776	8.58		0.415	0.838/0.155			
	10/7/2024	mg/L				1.39	0.100 U		0.801							
	10/8/2024	mg/L	1.54		0.262			0.163		8.00			1.07	1.95/1.87	0.937	
	10/9/2024	mg/L		0.100 U												
	04/16/2025	mg/L	0.130	0.100 U	0.850	0.100 U	0.100 U	0.100 U/0.100 U	0.100 U	10.0		0.100 U/0.100 U	10.8	3.18	2.49/0.100 U	2.11
	10/08/2025	mg/L	1.65	0.419	0.281	0.923		0.100 U	1.02/0.998	8.48		0.121/0.106	6.58	1.84	1.41	
Ammonia (as N) (N/A) MCL = N/A IDNR AL = 30 Interwell CL = 1.85	7/1/1995	mg/L	0.200 U	0.560	1.500	0.200 U	0.200 U	0.400	1.700							
	8/1/1995	mg/L	0.200 U	0.200 U	1.700	0.240	0.200 U	0.370	1.500							0.200 U
	11/1/1995	mg/L	0.200 U	0.200 U	1.500	0.520	0.200 U	0.320	1.300							
	2/1/1996	mg/L	0.200 U	0.200 U	2.200		0.200 U	1.200	1.400							
	5/1/1996	mg/L	0.200 U	0.200 U	1.700	0.200 U	0.200 U	0.460	1.500	0.200 U						0.200 U
	11/1/1996	mg/L	0.200 U	0.230	0.800	0.900	0.200 U	0.450	0.200 U	0.200 U						0.200 U
	4/1/1997	mg/L	0.200 U	0.200 U	1.000	0.200 U	0.200 U	0.260	1.700	0.200 U						0.200 U
	11/1/1997	mg/L	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.400	1.500							0.200 U
	5/1/1998	mg/L	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	1.500	0.950						
	11/1/1998	mg/L	0.200 U	0.200 U	1.500	0.200 U	0.200 U	0.420	1.600	0.200 U						0.240
	5/1/1999	mg/L	0.200 U	0.230	1.800	0.200 U	0.200 U	0.570	1.700	0.200 U						0.200 U
	11/1/1999	mg/L	0.200 U	0.200 U	1.700	0.200 U	0.200 U	0.480	1.400	0.550						
	5/1/2000	mg/L	0.200 U	0.240	1.950	0.320	0.200 U	0.640	1.510	0.290						
	12/1/2000	mg/L	0.200 U	0.200 U	1.750	0.200 U	0.200 U	0.420	1.530	0.200 U						
	6/1/2001	mg/L	0.200 U	0.200 U	1.820	0.200 U	0.200 U	0.340	1.440	0.200 U						
	11/1/2001	mg/L	0.200 U	0.200 U	1.400	0.200 U	0.200 U	0.370	1.500	0.200 U						0.200 U
	5/2/2002	mg/L	0.200 U	0.200 U	1.640	0.200 U	0.200 U	0.220	1.040	0.200 U						
	11/2/2002	mg/L	0.200 U	0.200 U	1.420	0.200 U	0.200 U	0.340	1.200	0.200 U						
	5/3/2003	mg/L	0.200 U	0.200 U	1.650	0.200 U	0.200 U	0.200 U	1.310	0.300						0.200 U
	11/3/2003	mg/L	0.200 U	0.200 U	1.750	0.200 U	0.210	0.220	0.210	0.200 U						0.200 U
	5/1/2004	mg/L	0.200 U	0.200 U	1.600	0.200 U	0.200 U	0.200 U	0.200 U	0.220						0.200 U
	12/1/2004	mg/L	0.200 U	0.200 U	1.590	0.200 U	0.200 U	0.200 U	0.410	0.200 U						
	5/5/2005	mg/L	0.200 U	0.200 U	1.500	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U						
	11/5/2005	mg/L	0.200 U	0.200 U	0.200 U	0.210	0.200 U	0.200 U	0.507							
	5/6/2006	mg/L	0.200 U	0.200 U	0.469	0.200 U	0.200 U	0.200 U	0.200 U	0.439						0.200 U
	10/6/2006	mg/L	0.200 U	0.200 U	1.660	0.200 U	0.200 U	0.200 U	0.249	0.317						
	4/7/2007	mg/L	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.202	0.369						0.200 U
	10/7/2007	mg/L	0.200 U	0.200 U	1.100	0.200 U	0.200 U	0.200 U	0.467	0.332						0.200 U
	4/1/2008	mg/L	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.543						0.200 U
	10/1/2008	mg/L	0.200 U	0.200 U	1.490	0.200 U	0.200 U	0.200 U	0.716	0.295						
	10/29/2009	mg/L	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.551/0.552						0.200 U
	3/25/2010	mg/L		0.200 U		0.200 U	0.200 U	0.200 U	0.784	1.25/1.25						0.200 U
	3/30/2010	mg/L	0.200 U		1.800											
	4/22/2010	mg/L	0.200 U	0.200 U	1.830	0.200 U	0.200 U	0.200 U	1.100	1.41/1.44						0.200 U
	10/16/2010	mg/L	0.200 U	0.200 U	1.830	0.200 U	0.200 U	0.200 U/0.200 U	0.200 U	0.485						0.200 U
	4/28/2011	mg/L	0.200 U	0.200 U	1.890	0.200 U	0.200 U	0.392	0.908	0.838	0.200 U					0.200 U
	10/18/2011	mg/L	0.200 U		2.000						0.200 U					
	10/19/2011	mg/L		0.200 U		0.200 U	0.200 U/0.200 U	0.218	0.918	0.730						0.200 U
	4/25/2012	mg/L	0.200 U	0.200 U	2.170	0.200 U	0.200 U	0.301/0.327	1.050	0.719	0.200 U					0.200 U
	10/9/2012	mg/L								0.624/0.63	0.200 U					
	10/10/2012	mg/L		0.200 U	1.690	0.200 U	0.200 U	0.327	1.050							
	4/16/2013	mg/L	0.200 U	0.200 U		0.200 U					0.200 U					0.200 U
	4/17/2013	mg/L			1.890	0.200 U		0.200 U	1.250	0.762/0.799						
	10/29/2013	mg/L		0.200 U/0.200 U		0.224	0.200 U		1.060	0.760	0.200 U					
	10/30/2013	mg/L			0.952			0.386				0.332	1.050	0.909	1.450	0.200 U
	4/14/2014	mg/L	0.200 U	0.200 U	1.690	0.200 U	0.200 U/0.200 U	0.358	1.250	1.230	0.200 U					0.200 U
	4/15/2014	mg/L										0.200 U/0.200 U		0.665	1.010	
	10/7/2014	mg/L					0.200 U/0.200 U									

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Ammonia (as N) (N/A) MCL = N/A IDNR AL = 30 Interwell CL = 1.85	10/8/2014	mg/L		0.200 U		0.200 U		0.351	1.110	1.170	0.200 U					
	10/9/2014	mg/L	0.200 U		0.811							0.241/0.251	0.601	0.650	0.801	
	4/16/2015	mg/L		0.200 U/0.200 U		0.200 U	0.200 U	0.309	1.200	0.829	0.200 U					
	4/17/2015	mg/L	0.200 U		1.880							0.200 U/0.200 U	1.860	0.506	1.860	
	10/14/2015	mg/L		0.200 U		0.200 U	0.200 U/0.200 U		1.190							
	10/15/2015	mg/L						0.3/0.305		0.874	0.200 U	0.200 U	0.750		1.110	
	10/16/2015	mg/L	0.200 U		1.560									0.392		
	3/16/2016	mg/L		0.200 U/0.200 U			0.200 U									
	3/17/2016	mg/L	0.200 U		0.456/0.59	0.200 U		0.405	1.280	0.814	0.200 U					0.200 U
	3/18/2016	mg/L														
	9/27/2016	mg/L		0.200 U/0.200 U		0.200 U	0.200 U		1.140		0.200 U		0.200 U	1.790	0.426	1.540
	9/28/2016	mg/L						0.308		0.761/0.769		0.200 U	0.748	0.897	0.892	
	9/29/2016	mg/L	0.200 U		1.530											
	3/7/2017	mg/L		0.200 U/0.200 U			0.200 U									
	3/8/2017	mg/L	0.200 U		0.584	0.200 U			1.43/1.38	0.759	0.200 U					
	3/9/2017	mg/L						0.406				0.200 U	1.760	0.423	1.290	
	10/4/2017	mg/L	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U/0.200 U	0.322	1.030	0.733	0.200 U	0.200 U		0.828	0.380	1.47/1.48
	10/5/2017	mg/L														
	3/12/2018	mg/L	0.200 U	0.200 U	0.776		0.200 U/0.200 U									
	3/13/2018	mg/L				0.200 U		0.271	1.340	0.787	0.200 U	0.200 U	0.888	0.507	1.12/0.957	
	3/14/2018	mg/L														
	10/8/2018	mg/L								0.200 U	0.200 U					0.200 U
	10/9/2018	mg/L	0.200 U	0.200 U/0.200 U	1.430		0.200 U	0.372								
	10/10/2018	mg/L				0.200 U			1.4/1.36			0.200 U	0.743	0.483	1.620	
	3/25/2019	mg/L	0.200 U/0.200 U	0.200 U	0.316		0.200 U		1.340	0.200 U						
	3/26/2019	mg/L				0.200 U		0.229				0.200 U	0.418	0.432	0.878	0.200 U/0.200 U
	3/27/2019	mg/L														
	10/3/2019	mg/L	0.200 U/0.200 U	0.200 U	1.420	0.200 U	0.200 U	0.377	1.370		0.200 U					0.200 U
	10/4/2019	mg/L														
	3/17/2020	mg/L	0.200 U/0.200 U	0.200 U	1.850	0.200 U	0.200 U		1.510		0.200 U	0.221	1.31/1.6	0.511	0.866	
	3/18/2020	mg/L						0.312		0.708/0.679	0.200 U	0.200 U	1.630	0.440	1.470	0.200 U
	10/4/2020	mg/L	0.200 U	0.200 U	0.536/0.542		0.200 U									
	10/5/2020	mg/L				0.200 U		0.391	1.28/1.3	0.756	0.200 U	0.200 U	0.317			
	10/6/2020	mg/L												0.478	1.120	
	03/29/2021	mg/L						0.200 U		0.599	0.200 U	0.200 U	1.66	0.478/0.447	1.38	
	03/30/2021	mg/L	0.200 U	0.200 U/0.200 U	1.35	0.200 U	0.200 U		1.19							0.200 U
	10/05/2021	mg/L	0.200 U/0.200 U	0.200 U	0.671	0.200 U	0.200 U		1.33		0.200 U					
	10/06/2021	mg/L						0.405		0.829/0.820		0.200 U	0.312	0.471		
	10/08/2021	mg/L													1.57	
	4/4/2022	mg/L	0.200 U/0.200 U	0.200 U	1.520	0.200 U	0.200 U		1.270							
	4/5/2022	mg/L						0.289		0.604/0.626		0.200 U	1.390	0.438	1.34	
	4/6/2022	mg/L									0.200 U					0.200 U
	10/3/2022	mg/L	0.200 U/0.200 U	0.200 U	0.368	0.200 U	0.200 U				0.200 U					
	10/4/2022	mg/L						0.218	1.110	0.569		0.200 U	0.301/0.371	0.355	0.777	
	3/27/2023	mg/L	0.200 U					0.200 U		0.602/0.681						
	3/28/2023	mg/L				0.200 U			1.190			0.200 U	1.410	0.483	1.550	0.200 U
	3/29/2023	mg/L		0.200 U/0.200 U	1.660		0.200 U									
	10/3/2023	mg/L	0.200 U				0.200 U	0.297	1.470	0.668/0.878		0.200 U		0.469		
	10/4/2023	mg/L		0.200 U	1.760	0.200 U										
	10/5/2023	mg/L											2.410		1.52/1.60	
	4/1/2024	mg/L														0.200 U
	4/2/2024	mg/L	0.200 U	0.200 U/0.200 U												
	4/3/2024	mg/L			1.24		0.200 U							0.418	1.50	
	4/4/2024	mg/L				0.200 U		0.389	1.59	0.632		0.200 U	2.15/2.12			
	10/7/2024	mg/L				0.377	0.200 U		1.18							
	10/8/2024	mg/L	0.200 U		1.45			0.314		0.516				0.635	0.392/0.385	1.02
	10/9/2024	mg/L		0.200 U								0.344/0.200 U				
	04/16/2025	mg/L	0.200 UJ	0.200 UJ	1.18 J-	0.200 UJ	0.200 UJ	0.315 J-/0.301 J-	1.20 J-	0.617 J-		0.200 UJ	1.47 J-	0.396 J-	1.37 J-/1.08 J-	0.200 UJ
	10/08/2025	mg/L	0.500 UJ	0.500 UJ	1.38 J-	0.500 UJ	0.500 UJ	0.500 UJ	1.45 J-/1.50	0.739		0.500 U/0.500 U	1.27	0.500 U	1.60	

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COD (Interwell CL = 12.3) COD (N/A) MCL = N/A IDNR AL = N/A Interwell CL = 12.6	7/1/1995	mg/L	5.00 U	5.00 U	6.8	34.0	99.0	5.00 U	5.00 U							
	8/1/1995	mg/L	5.00 U	5.00 U	8.9	32.0	100.0	5.00 U	8.3	14.0						47.0
	11/1/1995	mg/L	5.00 U	5.2	14.0	27.0	230.0	5.8	16.0	17.0						
	2/1/1996	mg/L	12.0	7.3	5.00 U		270.0	5.00 U	15.0	21.0						
	5/1/1996	mg/L	5.00 U	5.00 U	7.5	26.0	230.0	5.00 U	6.7	19.0						16.0
	11/1/1996	mg/L	5.00 U	5.00 U	11.0	5.00 U	230.0	5.00 U	29.0	16.0						34.0
	4/1/1997	mg/L	5.00 U	5.00 U	5.00 U	15.0	56.0	5.00 U	5.00 U	6.6						28.0
	11/1/1997	mg/L	5.00 U	5.00 U	5.00 U	17.0	150.0	5.00 U	6.5							35.0
	5/1/1998	mg/L	7.3	5.00 U	5.00 U	26.0	86.0	5.00 U	5.00 U	15.0						
	11/1/1998	mg/L	5.00 U	5.00 U	8.6	22.0	170.0	5.00 U	5.00 U	17.0						20.0
	5/1/1999	mg/L	24.0	78.0	5.2	22.0	180.0	96.0	5.00 U	82.0						5.3
	11/1/1999	mg/L	5.00 U	5.00 U	5.00 U	14.0	260.0	5.00 U	5.00 U	19.0						
	5/1/2000	mg/L	5.00 U	5.00 U	12.0	18.0	270.0	9.6	5.00 U	17.0						
	12/1/2000	mg/L	5.00 U	5.00 U	5.00 U	7.3	210.0	5.00 U	5.00 U	14.0						
	6/1/2001	mg/L	7.4	5.00 U	6.4	12.0	130.0	5.00 U	5.00 U	25.0						
	11/1/2001	mg/L	5.00 U	5.00 U	6.7	14.0	200.0	5.00 U	5.00 U	20.0						21.9
	5/2/2002	mg/L	5.00 U	5.00 U	5.00 U	16.0	710.0	5.00 U	5.00 U	9.2						
	11/2/2002	mg/L	8.3	12.0	7.3	17.0	86.0	6.9	8.4	21.0						
	5/3/2003	mg/L	5.00 U	5.00 U	5.00 U	8.3	190.0	5.00 U	5.2	27.0						22.0
	11/3/2003	mg/L	5.00 U	5.00 U	5.00 U	6.2	93.0	5.00 U	5.00 U	27.0						13.0
	5/1/2004	mg/L	10.0	5.3	5.00 U	12.0	86.0	5.00 U	5.00 U	14.0						22.0
	12/1/2004	mg/L	5.00 U	5.00 U	5.00 U	12.0	140.0	5.00 U	6.7	12.0						
	5/5/2005	mg/L	5.00 U	5.00 U	5.00 U	12.0	100.0	5.00 U	5.2	12.0						
	11/5/2005	mg/L	5.00 U	5.00 U	5.00 U	6.8	120.0	5.00 U	5.6							
	5/6/2006	mg/L	18.5	5.00 U	5.00 U	13.4	117.0	5.00 U	10.8	16.8						25.0
	10/6/2006	mg/L	8.1	5.00 U	5.00 U	17.6	51.8	6.8	17.2	19.3						
	4/7/2007	mg/L	5.2	5.00 U	5.00 U	10.6	37.1	5.5	7.1	12.2						25.6
	10/7/2007	mg/L	9.3	5.00 U	5.00 U	7.0	94.3	5.00 U	5.00 U	7.5						5.00 U
	4/1/2008	mg/L	12.6	20.8	20.6	25.7	74.0	22.9	7.1	29.8						30.1
	10/1/2008	mg/L	9.3	5.00 U	9.9	14.4	86.8	11.2	6.6	14.8						
	10/29/2009	mg/L	5.6	5.00 U	25.0 U	25.0 U	62.6	5.00 U	25.0 U	12.1/5.00 U						5.00 U
	3/25/2010	mg/L	5.00 U	25.0 U		5.4	35.1	5.00 U	5.00 U	14.0/15.3						9.5
	3/30/2010	mg/L	5.00 U	5.00 U	5.00 U											
	4/22/2010	mg/L	5.00 U	5.00 U	5.00 U	5.00 U	35.3	5.00 U	5.00 U	18.5/14.7						7.9
	10/16/2010	mg/L	5.00 U	7.5	5.00 U	11.6	44.9	6.90/5.00 U	6.9	8.7						14.4
	4/28/2011	mg/L	5.00 U	5.00 U	5.5	10.1	19.9	5.00 U	5.5	10.1	13.1					7.6
	10/18/2011	mg/L	5.00 U		6.6						16.7					
	10/19/2011	mg/L		5.6		12.1	40.2/40.2	5.00 U	5.00 U	13.5						22.9
	4/25/2012	mg/L	5.00 U	5.00 U	5.00 U	5.00 U	27.9	5.00 U/5.00 U	5.00 U	5.00 U	6.8					5.00 U
	10/9/2012	mg/L								18.4/5.00 U	5.00 U					
	10/10/2012	mg/L		5.00 U	5.00 U	16.1	58.0	5.1	5.00 U							
	4/16/2013	mg/L	7.9	5.00 U			31.1				31.4					12.8
	4/17/2013	mg/L			5.00 U	8.8		5.00 U	5.00 U	21.3/11.8						
	10/29/2013	mg/L		5.00 U/5.00 U		5.00 U	22.1		8.6	9.6	9.9					
	10/30/2013	mg/L			6.3			5.00 U				6.7	15.0	5.00 U	8.0	5.00 U
	4/14/2014	mg/L	5.00 U	5.00 U	5.00 U	5.00 U	30.7/30	5.00 U	5.00 U	21.0	10.2					23.7
	4/15/2014	mg/L					19.2/16.8									
	10/7/2014	mg/L		5.00 U		5.00 U		5.00 U	5.00 U	25.3	8.3					
	10/8/2014	mg/L		5.00 U		5.00 U		5.00 U	5.00 U							
	10/9/2014	mg/L	5.00 U		5.00 U							5.00 U/5.00 U	302.0	14.8	5.00 U	
	4/16/2015	mg/L		5.00 U/5.00 U		5.00 U	23.3	5.00 U	5.00 U	19.1	10.2					
	4/17/2015	mg/L	5.00 U		5.7							5.00 U/5.00 U	5.00 U	10.2	10.9	
	10/14/2015	mg/L		5.00 U		5.00 U	26.9/22.4		5.00 U							
	10/15/2015	mg/L						5.00 U/5.00 U		14.8	15.5	5.00 U	7.9		5.00 U	
	10/16/2015	mg/L	11.6		5.3									17.8		
	3/16/2016	mg/L		6.88/7.54			10.5									
	3/17/2016	mg/L	7.5		5.00 U/5.00 U	5.00 U		9.5	5.00 U	16.8	18.1					5.00 U
	3/18/2016	mg/L										5.00 U				
	9/27/2016	mg/L		5.00 U/5.00 U		5.00 U	5.00 U		5.00 U		5.00 U		8.9	7.5	7.2	

Table 8

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2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
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Cedar Falls, Iowa

Constituent (CAS #)	Sample Date	Units	MW-5 BG/UG	MW-14 BG/UG	MW-16 BG/UG	MW-7R DG	MW-8 DG	MW-11 DG	MW-15 DG	MW-17R DG	MW-18 DG	MW-19 DG	MW-20 DG	MW-21 DG	MW-22 DG	SW-1 SW
COD (N/A) MCL = N/A IDNR AL = N/A Interwell CL = 12.6	9/28/2016	mg/L						5.00 U		8.57/5.00 U		12.9	14.2	18.8	15.5	
	9/29/2016	mg/L	9.6		20.1											
	3/7/2017	mg/L		5.00 U/5.00 U			6.5									
	3/8/2017	mg/L	5.5		5.00 U	5.00 U			6.86/5.00 U	5.00 U	9.2					
	3/9/2017	mg/L						5.00 U				5.00 U	5.00 U	26.5	5.00 U	
	10/4/2017	mg/L	5.00 U	5.00 U	6.8	15.0	9.39/30	7.5	5.00 U	39.4	107.0					
	10/5/2017	mg/L														
	3/12/2018	mg/L	5.00 U	5.00 U	5.00 U		5.00 U/7.01						93.4	5.00 U	5.00 U/5.00 U	
	3/13/2018	mg/L				5.00 U		5.4	5.00 U	10.5	7.3	5.1	5.00 U			
	3/14/2018	mg/L												5.00 U	5.00 U/5.00 U	
	10/8/2018	mg/L								5.00 U	14.0					12.0
	10/9/2018	mg/L	13.4	5.00 U/5.00 U	5.00 U		5.00 U	6.3								
	10/10/2018	mg/L				5.00 U			5.00 U/5.00 U			5.00 U	5.00 U	5.00 U	5.00 U	
	3/25/2019	mg/L	5.00 U/5.00 U	5.00 U	5.00 U		5.0		5.00 U	5.00 U						
	3/26/2019	mg/L				5.00 U		5.00 U				5.00 U	5.00 U			6.06/5.00 U
	3/27/2019	mg/L												6.8	7.1	
	10/3/2019	mg/L	9.33/6.99	5.00 U	5.00 U	8.0	5.00 U	6.9	5.00 U		17.3					14.1
	10/4/2019	mg/L								8.0		5.00 U	5.00 U/5.00 U	5.00 U	5.00 U	
	3/17/2020	mg/L	5.00 U/5.00 U	6.7	5.0	5.7	5.00 U		5.4							
	3/18/2020	mg/L						8.6		8.62/5.35	23.1	5.00 U	5.00 U	5.00 U	5.00 U	11.9
	10/4/2020	mg/L	5.4	5.00 U	5.00 U/5.1		6.8									
	10/5/2020	mg/L				13.5		11.1	5.77/5.00 U	10.1	24.9	5.00 U	5.4			
	10/6/2020	mg/L												7.1	6.1	
	03/29/2021	mg/L						5.25		5.00 U	17.9	5.00 U	6.29	5.00 U/5.00 U	5.00 U	
	03/30/2021	mg/L	5.00 U	5.00 U/5.00 U	5.00 U	5.94	5.00 U		5.00 U							5.60
	10/05/2021	mg/L	5.00 U/7.98	9.84	5.00 U	23.5	14.0		8.68		28.0					
	10/06/2021	mg/L						13.5		15.1/12.6		6.21	6.92	8.3		
	10/08/2021	mg/L													11.5	
	4/4/2022	mg/L	5.00 U/9.14	6.0	8.45	13.3	7.75		5.3							
	4/5/2022	mg/L						7.05		5.00 U/6.00		5.00 U	5.00 U	6.7	5.00 U	
	4/6/2022	mg/L									13.7 15.5					13.0
	10/3/2022	mg/L	7.23/5.00 U	5.00 U	7.23	9.32	9.32	5.49	5.00 U	6.19		5.00 U	5.00 U/10.0	5.00 U	5.00 U	
	10/4/2022	mg/L						6.06		5.00 U/10.4						
	3/27/2023	mg/L	25.0 U						5.00 U			7.49	5.00 U	5.00 U	5.00 U	5.00 U
	3/28/2023	mg/L				6.1		9.3								
	3/29/2023	mg/L		5.00 U/5.00 U	5.00 U			26.9	7.24	7.9	16.0/8.93	5.00 U				
	10/3/2023	mg/L	7.9													
	10/4/2023	mg/L		5.5	15.5	8.3								7.6		
	10/5/2023	mg/L											11.7		11.0/5.13	
	4/1/2024	mg/L														14.4
	4/2/2024	mg/L	5.00 U	5.00 U/5.45												
	4/3/2024	mg/L			21.8		18.3							11.9	12.6	
	4/4/2024	mg/L				10.6		16.4	11.3	16.7		10.0	10.6/12.2			
	10/7/2024	mg/L				30.6	25.0 U		25.0 U							
	10/8/2024	mg/L	5.00 U		5.00 U			30.6		35.9			5.00 U	25.0 U/25.0 U	25.3	
	10/9/2024	mg/L		5.00 U								5.00 U/5.00 U				
	04/16/2025	mg/L	11.0	6.81	16.0	16.9	10.4	12.1/12.8	5.82	11.1		5.00 U	7.47	11.6	7.14/6.15	27.3
	10/08/2025	mg/L	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U/25.0 U	25.0 U		25.0 U/25.0 U	25.0 U	25.0 U	25.0 U	
Acetone (67-64-1) MCL = N/A IDNR AL = 6300 Interwell CL = Not Established	4/1/2024	µg/L														10.0 U
	4/2/2024	µg/L	10.0 U	10.0 U/10.0 U												
	4/3/2024	µg/L			10.0 U		10.0 U							10.0 U	10.0 U	
	4/4/2024	µg/L				10.0 U		10.0 U	10.0 U	10.0 U		10.0 U	10.0 U/10.0 U			
	10/7/2024	µg/L				10.0 U			10.0 U					10.0 U/10.0 U	10.0 U	
	10/8/2024	µg/L	10.0 U		10.0 U				10.0 U					10.0 U/10.0 U	10.0 U	
	10/9/2024	µg/L		10.0 U								10.0 U/10.0 U				
	04/16/2025	mg/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U/10.0 U	10.0 U	10.0 U		10.0 U	10.0 U	10.0 U	10.0 U/10.0 U	10.0 U
TSS (N/A) MCL = N/A IDNR AL = N/A Interwell CL = Not Established	10/08/2025	mg/L	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U/10.0 U	10.0 U		10.0 U/10.0 U	10.0 U	10.0 U	10.0 U	#N/A
	4/1/2024	mg/L														26.0
	4/2/2024	mg/L	5.00 U	5.00 U/5.00 U												
	4/3/2024	mg/L			58.0		5.00 U							5.33	49.7	
	4/4/2024	mg/L				15.3		9.33	15.3	19.0		46.3	32.3/14.0			
	10/7/2024	mg/L				5.00 U	5.00 U		5.00 U							

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TSS Interwell CL = Not Established	10/8/2024	mg/L	94.5		6.00			5.00 U		14.0				5.00 U/5.00 U	5.00 U	
	10/9/2024	mg/L		1.88 U								64.5/1.88 U				
	04/16/2025	mg/L	3.13	1.88 U	--	2.00	3.38	1.88 U/1.88 U	4.25	23.0		1.88 U		9.00	34.5/40.0	114
	10/08/2025	mg/L	1.88 U	143	25.4	1.88 U	1.88 U	1.88 U	28.5 J/1.88 UJ	20.0		1.88 U/1.88 U		3.50	21.5	#N/A
TOX (N/A) MCL = N/A IDNR AL = N/A Interwell CL = 0.276	11/1/1995	mg/L	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0290	0.0100 U	0.0220						
	2/1/1996	mg/L														
	5/1/1996	mg/L														
	11/1/1996	mg/L	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0170	0.0100 U	0.0110						
	4/1/1997	mg/L														
	11/1/1997	mg/L	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0240	0.0100 U							
	5/1/1998	mg/L														
	11/1/1998	mg/L	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0130	0.0100 U	0.0100 U						
	5/1/1999	mg/L														
	11/1/1999	mg/L	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0220	0.0100 U	0.0180						
	5/1/2000	mg/L														
	12/1/2000	mg/L	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0140	0.0100 U	0.0140						
	6/1/2001	mg/L														
	11/1/2001	mg/L	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U						
	5/2/2002	mg/L														
	11/2/2002	mg/L	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U						
	5/3/2003	mg/L														
	11/3/2003	mg/L			0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U						
	5/1/2004	mg/L														
	12/1/2004	mg/L			0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U						
	5/5/2005	mg/L														
	11/5/2005	mg/L			0.0100 U			0.0100 U	0.0100 U							
	5/6/2006	mg/L														
	10/6/2006	mg/L			0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U						
	4/7/2007	mg/L														
	10/7/2007	mg/L	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0291	0.0156	0.0100 U	0.0141						
	4/1/2008	mg/L														
	10/1/2008	mg/L	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0125	0.0177	0.0100 U	0.0225						
	10/29/2009	mg/L	0.0232	0.0177	0.0125	0.0138	0.0177	0.0130	0.0111	0.0170/0.0213						0.0129
	3/25/2010	mg/L		0.0100 U		0.0119	0.0108	0.0100 U	0.0100 U	0.0236/0.0285						0.0204
	3/30/2010	mg/L	0.0100 U		0.0424											
	4/22/2010	mg/L	0.0138	0.0100 U	0.0100 U	0.0106	0.0165	0.0100 U	0.0100 U	0.0212/0.0319						0.0160
	10/16/2010	mg/L	0.0230	0.0356	0.0100 U	0.0313	0.0195	0.0120/0.0100 U	0.0113	0.0307						0.0278
	4/28/2011	mg/L	0.0114	0.0100 U	0.0100 U	0.0219	0.0188	0.0100 U	0.0100	0.0222	0.0234					0.0172
	10/18/2011	mg/L	0.0100 U		0.0100 U						0.0140					
	10/19/2011	mg/L		0.0100 U		0.0176	0.0253/0.0120	0.0209	0.0100 U	0.0316						0.0316
	4/25/2012	mg/L	0.0144	0.0112	0.0106	0.0145	0.0112	0.0100 U/0.0100 U	0.0200	0.0304	0.0196					0.0227
	10/9/2012	mg/L								0.0429/0.025	0.500 U					
	10/10/2012	mg/L		0.0128	0.0100 U	0.0254	0.0217	0.0247	0.0227							
	4/16/2013	mg/L	0.0300 U	0.0300 U			0.0356				0.0713					0.0300 U
	4/17/2013	mg/L			0.0300 U	0.0706		0.0300 U	0.0300 U	0.0508/0.0669						
	10/29/2013	mg/L		0.0300 U/0.0300 U		0.0372	0.0300 U		0.0300 U	0.0300 U	0.0783					
	10/30/2013	mg/L			0.0300 U			0.0300 U				0.0300 U	0.0300 U	0.2020	0.0300 U	0.0687
	4/14/2014	mg/L	0.0300 U	0.0300 U	0.0300 U	0.0557	0.0300 U/0.0300 U	0.0300 U	0.0300 U	0.1360	0.1320					0.0431
	4/15/2014	mg/L										0.0300 U/0.0300 U		0.1190	0.0300 U	
	4/16/2015	mg/L		0.0300 U/0.0300 U		0.0887	0.0300 U	0.0300 U	0.0300 U	0.1680	0.0537					
	4/17/2015	mg/L	0.0300 U		0.0300 U							0.0300 U/0.0300 U	0.0300 U	0.0300 U	0.0300 U	
	3/16/2016	mg/L		0.0300 U/0.0300 U			0.0300 U									
	3/17/2016	mg/L	0.0300 U		0.0300 U/0.0300 U	0.0300 U		0.0300 U	0.0300 U	0.0541	0.0534					0.0300 U
	3/18/2016	mg/L										0.0300 U	0.0300 U	0.0300 U	0.0300 U	
	3/7/2017	mg/L		0.0200 U/0.0200 U			0.0200 U									
	3/8/2017	mg/L	0.200 U		0.0200 U	0.0729			0.0537/0.0200 U	0.0632	0.0561					
	3/9/2017	mg/L						0.0200 U				0.0200 U	0.0200 U	0.0484	0.0200 U	
	3/12/2018	mg/L	0.0300 U	0.0300 U	0.0300 U		0.0300 U/0.0300 U									
	3/13/2018	mg/L				0.0300 U		0.0300 U	0.0300 U	0.0300 U	0.0899	0.0300 U	0.0300 U			
	3/14/2018	mg/L												0.0300 U	0.0300 U/0.0300 U	

Table 8

Analytical Data Summary
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Constituent (CAS #)	Sample Date	Units	MW-5 BG/UG	MW-14 BG/UG	MW-16 BG/UG	MW-7R DG	MW-8 DG	MW-11 DG	MW-15 DG	MW-17R DG	MW-18 DG	MW-19 DG	MW-20 DG	MW-21 DG	MW-22 DG	SW-1 SW
TOX (N/A) MCL = N/A IDNR AL = N/A Interwell CL = 0.276	3/25/2019	mg/L	0.0300 U/0.0300 U	0.0300 U	0.0300 U		0.0300 U		0.0300 U	0.0300 U						
	3/26/2019	mg/L				0.0300 U		0.0300 U				0.0300 U	0.0300 U			0.0469/0.154
	3/27/2019	mg/L												0.0300 U	0.0300 U	
	3/17/2020	mg/L	0.0400 U/0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U		0.0400 U							
	3/18/2020	mg/L						0.0400 U		0.0656/0.0656	0.1960	0.0400 U	0.0400 U	0.1420	0.0836	0.0614
	03/29/2021	mg/L						0.0400 U		0.0759	0.255	0.0400 U	0.0400 U	0.0400 U/0.0400 U	0.0400 U	
	03/30/2021	mg/L	0.0400 U	0.0400 U/0.0400 U	0.0400 U	0.0400 U	0.0400 U		0.0400 U							0.0400 U
	4/4/2022	mg/L	0.0400 U/0.0461	0.0400 U	0.0484	0.177	0.0400 U		0.0400 U							
	4/5/2022	mg/L						0.0400 U		0.0400 U/0.0400 U						
	4/6/2022	mg/L									0.116	0.0400 U	0.0400 U	0.0400 U	0.0400 U	0.0400 U
	3/27/2023	mg/L	0.0400 U					0.0400 U		0.0805/0.0405						
	3/28/2023	mg/L				0.0400 U			0.0400 U				0.1460	0.0400 U	0.0400 U	0.0400 U
	3/29/2023	mg/L		0.0400 U/0.0400 U	0.0400 U		0.0400 U									
	4/1/2024	mg/L														0.0654
	4/2/2024	mg/L	0.126	0.0400 U/0.0400 U												
	4/3/2024	mg/L			0.0982		0.0400 U								0.0400 U	0.0400 U
	4/4/2024	mg/L				0.116		0.0400 U	0.0400 U	0.0400 U		0.0400 U	0.0400 U/0.0400 U	0.0400 U		
TOX	04/16/2025	mg/L	0.276	0.06 U	0.06 U	0.06 U	0.06 U	0.060 U/0.060 U	0.06 U	0.06 U		0.06 U	0.06 U	0.06 U	0.060 U/0.060 U	0.06 U
Phenols (108-95-2) MCL = N/A IDNR AL = 2 Interwell CL = 0.0519	7/1/1995	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U						
	8/1/1995	mg/L	0.0200 U	0.0240	0.0240	0.0200 U	0.0200 U	0.0200 U	0.0240	0.0210	0.0280					0.0280
	11/1/1995	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U						
	2/1/1996	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U						
	5/1/1996	mg/L														0.0200 U
	11/1/1996	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U						0.0200 U
	4/1/1997	mg/L														
	11/1/1997	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U						0.0200 U
	5/1/1998	mg/L														
	11/1/1998	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U						0.0200 U
	5/1/1999	mg/L														
	11/1/1999	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U						
	5/1/2000	mg/L														
	12/1/2000	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U						
	6/1/2001	mg/L														
	11/1/2001	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U						0.0200 U
	5/2/2002	mg/L														
	11/2/2002	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U						
	5/3/2003	mg/L														
	11/3/2003	mg/L		0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U						0.0200 U
	5/1/2004	mg/L														
	12/1/2004	mg/L		0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U						
	5/5/2005	mg/L														
	11/5/2005	mg/L		0.0200 U	0.0200 U		0.0200 U	0.0200 U	0.0200 U	0.0200 U						
	5/6/2006	mg/L														
	10/6/2006	mg/L		0.0160	0.0180 U	0.0200 U	0.0164	0.0200 U	0.0200 U	0.0180 U						
	4/7/2007	mg/L														
	10/7/2007	mg/L	0.0180 U	0.0180 U	0.0200 U	0.0180 U	0.0180 U	0.0180 U	0.0200 U	0.0180 U						0.0200 U
	4/1/2008	mg/L														
	10/1/2008	mg/L	0.0180 U	0.0200 U	0.0200 U	0.0180 U	0.0200 U	0.0180 U	0.0180 U	0.0180 U						
	10/29/2009	mg/L	0.0180 U	0.0180 U	0.0180 U	0.0180 U	0.0180 U	0.0180 U	0.0180 U	0.0200 U/0.0200 U						0.1450
	3/25/2010	mg/L		0.0180 U		0.0200 U	0.0180 U	0.0236	0.0271	0.0180 U/0.0180 U						0.0180 U
	3/30/2010	mg/L	0.0200 U		0.0200 U											
	4/22/2010	mg/L	0.0180 U	0.0180 U	0.0180 U	0.0180 U	0.0180 U	0.0200 U	0.0180 U	0.0180 U/0.0180 U						0.0180 U
	10/16/2010	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0180 U	0.0200 U	0.0200 U/0.0180 U	0.0180 U	0.0200 U						0.0180 U
	4/28/2011	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0180 U	0.0180 U					0.0180 U
	10/18/2011	mg/L	0.0200 U		0.0200 U						0.0200 U					
	10/19/2011	mg/L		0.0200 U		0.0200 U	0.0200 U/0.0200 U	0.0180 U	0.0200 U	0.0180 U						0.0180 U
	4/25/2012	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U/0.0200 U	0.0200 U	0.0200 U	0.0200 U					0.0180 U
	10/9/2012	mg/L								0.0180 U/0.0200 U	0.0200 U					
	10/10/2012	mg/L		0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U							

Table 8

Analytical Data Summary
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Viking Pump Foundry Sand Landfill
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Cedar Falls, Iowa

Constituent (CAS #)	Sample Date	Units	MW-5 BG/UG	MW-14 BG/UG	MW-16 BG/UG	MW-7R DG	MW-8 DG	MW-11 DG	MW-15 DG	MW-17R DG	MW-18 DG	MW-19 DG	MW-20 DG	MW-21 DG	MW-22 DG	SW-1 SW
Phenols (108-95-2) MCL = N/A IDNR AL = 2 Interwell CL = 0.0519	4/16/2013	mg/L	0.0200 U	0.0192 U			0.0192 U				0.0200 U					0.0196 U
	4/17/2013	mg/L			0.0210 U	0.0200 U		0.0192	0.0196 U	0.0196 U/0.0194 U						
	10/29/2013	mg/L		0.0196 U/0.0180 U		0.0204 U	0.0184 U		0.0200 U	0.0196 U	0.0196 U					
	10/30/2013	mg/L			0.0180 U			0.0188 U				0.0204 U	0.0204 U	0.0192 U	0.0180 U	0.0255
	4/14/2014	mg/L	0.0100 U	0.0180 U	0.0196 U	0.0188 U	0.0216 U/0.0196 U	0.0630	0.0196 U	0.0588	0.0204					0.0192 U
	4/15/2014	mg/L										0.0200 U/0.0196 U		0.0214	0.0306	
	4/16/2015	mg/L		0.0200 U/0.0180 U		0.0196 U	0.0180 U	0.0188 U	0.0196 U	0.0180 U	0.0184 U					
	4/17/2015	mg/L	0.0184 U		0.0200 U							0.0188 U/0.0188 U	0.0180 U	0.0184 U	0.0188 U	
	3/16/2016	mg/L		0.0196 U/0.0204 U			0.0196 U									
	3/17/2016	mg/L	0.0196 U		0.0180 U/0.0204 U	0.0180 U		0.0200 U	0.0184 U	0.0196 U	0.0184 U					0.0200 U
	3/18/2016	mg/L										0.0188 U	0.0188 U	0.0184 U	0.0184 U	
	3/7/2017	mg/L		0.0188 U/0.0180 U			0.0200 U									
	3/8/2017	mg/L	0.0193		0.0180 U	0.0200 U			0.0200 U/0.0196 U	0.0197	0.0192 U					
	3/9/2017	mg/L						0.0310				0.0192 U	0.0188 U	0.0184 U	0.0196 U	
	3/12/2018	mg/L	0.0180 U	0.0184 U	0.0180 U		0.0180 U/0.0202									
	3/13/2018	mg/L				0.0200 U		0.0180 U	0.0180 U	0.0184 U	0.0184 U	0.0184 U	0.0180 U			
	3/14/2018	mg/L												0.0208 U	0.0188 U/0.0184 U	
	3/25/2019	mg/L	0.0188 U/0.0200 U	0.0204 U	0.0519		0.0208 U		0.0204 U	0.0314						
	3/26/2019	mg/L				0.0314		0.0192 U				0.0188 U	0.0188 U			0.0238/0.0559
	3/27/2019	mg/L												0.0212 U	0.0184 U	
	3/17/2020	mg/L	0.0200 U/0.0184 U	0.0192 U	0.0180 U	0.0204 U	0.0204 U		0.0196 U							
	3/18/2020	mg/L						0.0184 U		0.0180 U/0.0188 U	0.0192 U	0.0180 U	0.0180 U	0.0235	0.0200 U	0.0204 U
	03/29/2021	mg/L						0.0180 U		0.0184 U	0.0192 U	0.0192 U	0.0184 U	0.0216 U/0.0184 U	0.0224 U	
	03/30/2021	mg/L	0.0188 U	0.0184 U/0.0212 U	0.0184 U	0.0244	0.0188 U		0.0224 U							0.0188 U
	4/4/2022	mg/L	0.0200 U/0.0196 U	0.0192 U	0.0192 U	0.0192 U	0.0188 U		0.0200 U							
	4/5/2022	mg/L						0.0192 U		0.0196 U/0.0196 U						
	4/6/2022	mg/L									0.0188 U	0.0192 U	0.0208 U	0.0184 U	0.0200 U	0.0200 U
	3/27/2023	mg/L	0.0200 U			0.0212 U		0.0200 U	0.0200 U	0.0200 U/0.0200 U						
	3/28/2023	mg/L										0.0204 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U
	3/29/2023	mg/L		0.0200 U/0.0204 U	0.200 U		0.0200 U									
	4/1/2024	mg/L														0.0208 U
	4/2/2024	mg/L	0.0200 U	0.0208 U/0.0200 U			0.0220 U									
	4/3/2024	mg/L			0.0200 U									0.0208 U	0.0200 U	
	4/4/2024	mg/L				0.0200 U		0.0208 U	0.0208 U	0.0200 U		0.0200 U	0.0228 U/0.0184 U			
	04/16/2025	mg/L	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U	0.0200 U/0.0200 U	0.0200 U	0.0200 U		0.0200 U	0.0200 U	0.0200 U	0.0200 U/0.0200 U	0.0200 U
pH (N/A) MCL = N/A IDNR UAL = 8.5 IDNR LAL = 6.5 Interwell CLs = 6.07-8.26	7/1/1995	S.U.	6.70	7.05	7.58	6.97	6.80	7.35	7.25							
	8/1/1995	S.U.	7.22	7.05	7.41	6.97	6.88	7.26	7.27	7.11						8.06
	11/1/1995	S.U.	6.26	6.03	6.93	6.87	6.09	6.85	6.77	6.94						
	2/1/1996	S.U.	7.56	7.60	7.14		7.59	6.76	7.58	6.75						
	5/1/1996	S.U.	7.44	6.97	7.44	6.93	6.37	7.23	7.33	6.70						6.79
	11/1/1996	S.U.	7.48	7.30	7.54	6.50	6.87	7.03	6.20	6.94						7.62
	4/1/1997	S.U.	8.33	8.23	8.24	8.54	8.56	8.43	7.77	7.71						8.56
	11/1/1997	S.U.	7.65	7.20	7.64	6.42	7.33	7.50	6.40							8.04
	5/1/1998	S.U.	6.21	5.97	5.67	7.20	8.30		7.80							
	11/1/1998	S.U.	6.96	6.82	6.78	6.09	6.60	6.17	6.02	5.41						7.13
	5/1/1999	S.U.	9.93	7.33	7.76	7.06	8.64	8.36	7.09	7.51						7.15
	11/1/1999	S.U.	7.02	6.82	7.10	6.65	6.80	7.36	7.20	7.35						
	5/1/2000	S.U.	7.13	7.12	7.62	7.07	7.03	7.40	7.56	7.17						
	12/1/2000	S.U.	4.85	7.60	7.08	6.54	6.05	6.12	6.01	6.11						
	6/1/2001	S.U.	8.09	8.10	8.27	8.81										
	11/1/2001	S.U.	7.24	7.01	7.42	7.23	7.09	7.39	7.32	7.43						7.99
	5/2/2002	S.U.	7.50	7.24	7.42	7.40	7.29	7.56	7.70	7.54						
	11/2/2002	S.U.	7.42	7.44	7.40	7.78	7.42	8.34	8.04	7.73						
	5/3/2003	S.U.	7.76	7.64	7.02	7.24	6.63	7.59	7.46	7.06						7.33
	11/3/2003	S.U.		7.38	7.56	7.89	7.02	7.68	7.50	7.15						7.25
	5/1/2004	S.U.	7.66	7.01	7.36	7.09	6.75	7.42	7.54	6.93						7.91
	12/1/2004	S.U.		7.01	7.59	7.12	6.70	7.54	7.58	6.87						
	5/9/2005	S.U.	7.98	7.05	7.47	8.65	6.07	8.38	8.59	7.99						
	11/5/2005	S.U.		7.11	7.48		6.82	7.48	7.45							

Table 8

Analytical Data Summary
 2025 Annual Water Quality Report
 Viking Pump Foundry Sand Landfill
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 Cedar Falls, Iowa

Constituent (CAS #)	Sample Date	Units	MW-5 BG/UG	MW-14 BG/UG	MW-16 BG/UG	MW-7R DG	MW-8 DG	MW-11 DG	MW-15 DG	MW-17R DG	MW-18 DG	MW-19 DG	MW-20 DG	MW-21 DG	MW-22 DG	SW-1 SW
pH (N/A)	5/6/2006	S.U.	7.42	7.33	7.86	7.65	7.43	7.69	8.19	7.44						8.49
MCL = N/A	10/6/2006	S.U.		7.79		7.91	7.76	8.05	8.31							
IDNR UAL = 8.5	4/7/2007	S.U.	8.32	6.95	8.40	7.35	7.18	8.34	8.43	8.03						8.59
IDNR LAL = 6.5	10/7/2007	S.U.	7.75	7.72	7.45	7.85	7.68	7.85	8.06	7.77						7.29
Interwell CLs = 6.07-8.26	4/1/2008	S.U.	7.95	7.01	8.22	7.25	7.21	8.01	8.11	8.12						8.32
	10/1/2008	S.U.	7.08	7.13	7.77	7.27	7.15	7.43	7.95	7.12						
	10/29/2009	S.U.	7.06	7.08	8.33	7.25	7.12	7.70	8.28	7.19						8.01
	3/25/2010	S.U.		6.95		7.24	7.06	7.57	7.52							7.90
	3/30/2010	S.U.	7.18		7.85											
	4/22/2010	S.U.	6.96	6.87	7.49	6.86	7.09	7.48	7.48	6.90						7.74
	10/16/2010	S.U.	6.87	7.02	7.70	7.07	7.02	7.33	7.74	7.00						7.62
	4/28/2011	S.U.	7.03	6.93	7.70	7.26	7.12	7.30	7.67	7.20	6.88					8.39
	10/18/2011	S.U.	7.04		8.04						7.03					
	10/19/2011	S.U.		6.92		7.07	6.98	7.41	7.50	6.94						8.37
	4/25/2012	S.U.	7.11	7.00	7.48	7.22	7.10	7.34	7.55	7.12	6.92					8.08
	10/9/2012	S.U.									6.44					
	10/10/2012	S.U.		6.74	7.33	6.83	6.89	7.26	7.30							
	4/16/2013	S.U.	6.61	6.79			7.01				6.76					8.02
	4/17/2013	S.U.			6.95	7.05		7.35	7.32	7.08						
	10/29/2013	S.U.		6.86		7.07	7.08		7.47	7.10	6.74					
	10/30/2013	S.U.			7.44			7.26				7.23	7.10	7.22	7.53	8.54
	4/14/2014	S.U.	7.51	6.91	7.51	7.20	7.10	7.36	7.44	7.02	6.92					7.17
	4/15/2014	S.U.										7.35		7.50	7.64	
	10/7/2014	S.U.					6.99									
	10/8/2014	S.U.		7.05		7.30		7.40	7.73	7.11	7.02					
	10/9/2014	S.U.	7.20		8.02							7.31	7.52	7.99	7.99	
	4/16/2015	S.U.		6.50		6.85	6.85	7.70	7.15	6.96	6.68					
	4/17/2015	S.U.	6.96		6.96							6.43	6.85	7.23	7.55	
	10/14/2015	S.U.		7.07		7.14	7.21		7.58							
	10/15/2015	S.U.						7.63		7.15	6.94	7.47	7.52		7.63	
	10/16/2015	S.U.	7.29		7.74									7.94		
	3/16/2016	S.U.		6.29			6.65									
	3/17/2016	S.U.	6.60		8.70	9.10		7.68	9.12	8.44	8.83					8.80
	3/18/2016	S.U.										8.98	8.28	8.12	7.98	
	9/27/2016	S.U.		6.84		7.08	6.97		7.46		6.70					
	9/28/2016	S.U.						7.28		7.10		7.21	7.20	7.49	7.48	
	9/29/2016	S.U.	6.98		7.43											
	3/7/2017	S.U.		6.80			6.84									
	3/8/2017	S.U.	7.00		7.31	7.06			7.35	7.16	6.73					
	3/9/2017	S.U.						7.18				7.24	7.05	7.38	7.75	
	10/4/2017	S.U.	6.63	6.65	7.23	6.59	6.61	6.89	6.87	6.81	6.38	7.01				
	10/5/2017	S.U.											6.87	7.09	7.01	
	3/12/2018	S.U.	6.70	6.59	7.16		6.70									
	3/13/2018	S.U.				6.92		7.11	7.29	6.97	6.62	7.10	7.01			
	3/14/2018	S.U.												7.23	7.33	
	10/8/2018	S.U.								7.19	6.79					8.09
	10/9/2018	S.U.	7.20	6.98	7.61		6.92	7.54								
	10/10/2018	S.U.				7.18			7.62			7.45	7.49	7.21	7.69	
	3/25/2019	S.U.	7.42	7.21	8.04		7.50		7.86	7.70						
	3/26/2019	S.U.				7.71		7.74				7.64	7.63			8.11
	3/27/2019	S.U.												7.72	7.91	
	10/3/2019	S.U.	6.89	6.68	7.40	6.80	6.58	7.07	7.34		6.59					7.89
	10/4/2019	S.U.								7.04		7.16	7.08	7.27	7.41	
	3/17/2020	S.U.	7.33	6.99	7.60	7.19	7.04		7.52							
	3/18/2020	S.U.						7.51		7.45	6.76	7.48	7.37	7.56	7.63	7.93
	10/4/2020	S.U.	6.93	6.85	7.29		6.82									
	10/5/2020	S.U.				7.03		7.28	7.51	7.19	6.99	7.20	7.11			
	10/6/2020	S.U.												7.43	7.50	

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Constituent (CAS #)	Sample Date	Units	MW-5 BG/UG	MW-14 BG/UG	MW-16 BG/UG	MW-7R DG	MW-8 DG	MW-11 DG	MW-15 DG	MW-17R DG	MW-18 DG	MW-19 DG	MW-20 DG	MW-21 DG	MW-22 DG	SW-1 SW
pH (N/A) MCL = N/A IDNR UAL = 8.5 IDNR LAL = 6.5 Interwell CLs = 6.07-8.26	3/29/2021	S.U.						7.57		7.43	7.07	7.34	7.33	7.55	7.54	
	3/30/2021	S.U.	7.28	7.16	7.56	7.32	7.25		7.53							7.98
	10/5/2021	S.U.	6.97	6.85	7.79	7.08	7.18		7.56		6.83					
	10/6/2021	S.U.						7.33		7.20		7.22	7.33	7.47		
	10/8/2021	S.U.													7.55	
	4/4/2022	S.U.	9.27	8.19	8.68	8.11	8.41		8.54							
	4/5/2022	S.U.						8.63		8.59		8.50	8.27	8.53	8.52	
	4/6/2022	S.U.									7.98					
	10/3/2022	S.U.	7.53	7.62	8.49	7.67	7.82				7.45					
	10/4/2022	S.U.						8.04	8.26	7.92		7.95	7.83	8.10	7.96	
	3/27/2023	S.U.	7.02					7.19		7.77						
	3/28/2023	S.U.				7.70			8.05			7.84	7.82	7.93	8.24	7.90
	3/29/2023	S.U.		8.01	8.56		8.30									
	10/3/2023	S.U.	6.42				6.93	7.12	7.17	6.85		7.10				
	10/4/2023	S.U.		6.34	6.89	6.52										
	10/5/2023	S.U.											7.51	6.98	6.12	
	4/1/2024	S.U.														8.58
	4/2/2024	S.U.	6.15	6.47												
	4/3/2024	S.U.			6.35		6.01							6.50	5.82	
	4/4/2024	S.U.				6.46		6.64	6.67	6.40		6.45	6.48			
	10/7/2024	S.U.				6.80	6.57		7.21							
	10/8/2024	S.U.	6.17		6.63			6.32						6.01	6.42	6.44
	10/9/2024	S.U.		6.71								7.13				
	04/16/2025	S.U.	7.20	7.05	7.79	7.00	7.02	7.33/7.33	7.22	7.22		7.24	7.26	7.22	7.31/7.31	
	10/08/2025	S.U.	6.737	6.763	7.271	6.754	6.531	7.062	7.305/7.305	6.809		7.068/7.068	7.219	7.077	7.303	
Temperature (N/A) MCL = N/A IDNR AL = N/A Interwell CL = 20.2	7/1/1995	°C	23.0	18.0	24.0	19.0	17.0	18.0	16.0							
	8/1/1995	°C	20.0	19.0	17.0	17.0	17.0	16.0	16.0	19.0						25.0
	11/1/1995	°C	10.0	8.0	9.0	8.0	9.0	10.0	10.0	9.0						
	2/1/1996	°C	6.0	7.0	10.0		9.5	11.0	10.5	6.0						
	5/1/1996	°C	11.1	9.4	11.1	9.4	9.4	11.1	11.1	11.1						16.1
	11/1/1996	°C	13.0	13.0	13.0	13.0	13.0	12.0	11.0	13.0						
	4/1/1997	°C	15.0	15.0	13.9	10.0	13.3	12.8	5.6	11.7						
	11/1/1997	°C	6.9	7.3	7.0	10.6	8.1	8.1	9.9							10.4
	5/1/1998	°C	11.1	12.2	11.1	12.2	10.6	11.1	12.2	14.4						
	11/1/1998	°C	11.2	11.7	9.6	11.0	12.0	12.1	10.5	10.7						7.1
	5/1/1999	°C	9.4	9.4	10.0	9.4	10.0	10.6	10.0	11.1						13.3
	11/1/1999	°C	14.4	15.0	15.6	13.9	15.0	13.9	14.4	5.6						
	5/1/2000	°C	11.6	10.6	11.5	12.4	10.7	12.7	13.7	13.7						
	12/1/2000	°C	5.0	8.3	6.7	10.0	12.8	10.6	10.0	6.7						
	6/1/2001	°C	14.2	21.9	17.3	13.1	14.8		14.8							
	11/1/2001	°C	10.1	11.6	8.5	11.0	10.9	12.0	10.3	9.9						5.1
	5/2/2002	°C	13.9	12.5	15.5	13.0	13.2	13.7	15.2	14.3						
	11/2/2002	°C	10.2	11.3	10.1	10.0	10.2	10.8	9.9	9.0						
	5/3/2003	°C	18.6	16.6	17.5	16.9	15.1	17.4	16.9	18.2						22.0
	11/3/2003	°C		11.4	10.5	10.6	10.8	11.0	10.0	9.8						7.5
	5/1/2004	°C	18.9	18.3	18.9	19.9	18.8	20.8	20.9	20.4						25.5
	12/1/2004	°C		14.7	13.5	11.6	12.4	12.1	11.6	12.4						
	5/5/2005	°C	12.5	13.8	13.2	17.4	13.7	15.7	17.2	18.0						
	11/5/2005	°C		13.8	13.4		12.2	12.3	12.1							
	5/6/2006	°C	13.1	14.5	13.7	15.1	14.6	14.3	15.8	14.0						24.5
	10/6/2006	°C		15.6		18.5	13.4	16.3	14.5	17.3						
	4/7/2007	°C	12.7	14.1	14.1	13.4	12.9	13.3	14.9	11.5						23.3
	10/7/2007	°C	15.5	14.5	13.9	16.3	15.5	15.9	14.1	15.9						19.5
	4/1/2008	°C	12.4	13.5	13.5	12.9	12.2	12.5	13.6	12.9						18.1
	10/1/2008	°C	12.1	14.0	12.5	12.2	11.7	15.3	13.1	15.1						
	10/29/2009	°C	10.2	10.8	9.3	11.0	10.5	10.7	9.8	1.1						9.8
	3/25/2010	°C		4.1		4.8	7.3	7.6	9.3	4.0						6.8
	3/30/2010	°C	6.0		9.3											
	4/22/2010	°C	9.7	9.9	11.7	10.0	9.7	10.0	11.8	9.8						18.2
	10/16/2010	°C	12.9	13.8	9.5	14.8	12.7	13.9	12.1	15.7						15.3

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Temperature (N/A) MCL = N/A IDNR AL = N/A Interwell CL = 20.2	4/28/2011	°C	7.5	7.9	9.3	8.2	9.0	10.3	11.8	8.2	9.7					10.9
	10/18/2011	°C	13.8		11.3						16.5					
	10/19/2011	°C		14.2		15.3	12.3	13.4	12.0	16.6						10.2
	4/25/2012	°C	11.8	11.0	14.6	13.5	11.0	12.9	13.1	12.2	12.2					25.0
	10/9/2012	°C								17.9	18.2					
	10/10/2012	°C		15.5	11.8	17.6	13.4	15.4	12.1							
	4/16/2013	°C	6.9	6.6			9.4				10.2					9.6
	4/17/2013	°C			11.4	6.5		9.4	12.2	6.5						
	10/29/2013	°C		13.5		15.4	12.3		12.5	15.7	16.2					
	10/30/2013	°C			11.2			13.7				13.7	12.5	14.3	12.5	12.5
	4/14/2014	°C	6.1	6.0	11.1	6.6	8.9	10.0	12.0	5.9	8.7					6.8
	4/15/2014	°C										9.9		8.1	12.0	
	10/7/2014	°C					13.0									
	10/8/2014	°C		15.7		13.2		13.1	11.6	17.3	14.7					
	10/9/2014	°C	13.8		13.1							13.8	12.6	13.3	12.3	
	4/16/2015	°C		2.9		5.1	3.9	6.2	7.9	6.6	4.9					
	4/17/2015	°C										5.9	9.0	5.7	9.7	
	10/14/2015	°C		18.2		15.1	15.4		13.1							
	10/15/2015	°C						14.1		18.4	15.5	14.2	13.8		12.3	
	10/16/2015	°C	14.1		10.1									12.2		
	3/16/2016	°C		7.4			9.2									
	3/17/2016	°C														
	3/18/2016	°C	5.8		10.2	8.7		10.9	12.1	6.3	10.0					11.7
	3/18/2016	°C										10.2	12.0	10.4	12.2	
	9/27/2016	°C			16.7		16.3	14.3			16.2					
	9/28/2016	°C						14.1		18.9		15.0	14.3	14.4	13.8	
	9/29/2016	°C	18.0		12.9											
	3/7/2017	°C		4.1			6.0									
	3/8/2017	°C	2.7		7.2	5.1			9.4	3.1	7.6					
	3/9/2017	°C						8.5				7.6	9.9	8.0	9.4	
	10/4/2017	°C	15.9	15.3	12.2	16.4	12.5	13.7	12.6	17.8	15.6	14.6				
	10/5/2017	°C											13.5	14.5	12.5	
	3/12/2018	°C	4.9	6.6	11.0		8.6									
	3/13/2018	°C				6.4		10.6	11.6	5.3	9.4	9.8	10.7			
	3/14/2018	°C												9.5	12.2	
	10/8/2018	°C								16.9	15.8					16.6
	10/9/2018	°C	15.8	15.3	11.6		15.0	14.8								
	10/10/2018	°C				15.9			12.1			14.3	13.8	14.4	12.9	
	3/25/2019	°C	4.0	6.1	10.4		4.8		11.7	4.3						
	3/26/2019	°C				5.3		10.0				9.4	12.2			4.8
	3/27/2019	°C												9.3	12.1	
	10/3/2019	°C	16.8	14.8	11.9	15.0	13.8	13.5	12.4		15.3					15.5
	10/4/2019	°C								17.7		13.9	13.6	14.1	12.5	
	3/17/2020	°C	5.0	7.0	11.1	6.7	7.4		11.8							
	3/18/2020	°C						9.8		5.3	9.1	9.2	11.4	9.8	12.0	5.4
	10/4/2020	°C	15.3	15.4	12.0		13.2									
	10/5/2020	°C				15.4		13.4	12.1	16.9	15.2	13.7	14.8			
	10/6/2020	°C														
	3/29/2021	°C						13.2		8.3	10.6	10.9	14.5	13.0	12.9	
	3/30/2021	°C	6.8	6.7	9.9	7.4	7.0		11.6							13.8
	10/5/2021	°C	16.4	16.6	12.8	15.8	13.8		12.7		16.0					
	10/6/2021	°C						14.5		18.6		16.8	14.0	15.5		
	10/8/2021	°C													15.1	
	4/4/2022	°C	4.2	6.0	9.0	5.9	6.9		11.2							
	4/5/2022	°C						9.4		4.8		8.7	11.7	8.8	11.0	
	4/6/2022	°C									8.6					
	10/3/2022	°C	15.2	15.4	12.4	16.0	12.6				15.7					
	10/4/2022	°C						14.4	12.1	17.4		15.8	14.2	15.5	14.9	
	3/27/2023	°C	5.5					9.6		5.5						

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Temperature (N/A) MCL = N/A IDNR AL = N/A Interwell CL = 20.2	3/28/2023	°C				6.8			11.3			8.4	7.9	8.9	9.5	7.0
	3/29/2023	°C		8.0	8.6		5.9									
	10/3/2023	°C	18.7				15.1	21.0	16.4	21.2		19.3				
	10/4/2023	°C		15.8	13.1	18.3								16.2		
	10/5/2023	°C											13.4		13.7	
	4/1/2024	°C														8.36
	4/2/2024	°C	5.84	7.34												
	4/3/2024	°C			9.73		8.53							10.95	12.03	
	4/4/2024	°C				8.76		11.78	10.68	9.22		8.11	9.79			
	10/7/2024	°C				18.22	14.77		13.55							
	10/8/2024	°C	22.24		14.83			16.42		19.94				16.55	12.80	
	10/9/2024	°C		15.76												
Specific Conductance (N/A) MCL = N/A IDNR AL = N/A Interwell CL = 3076	04/16/2025	°C	8.41	11.02	11.18	9.73	11.49	12.20/12.20	12.75	8.70		14.83	15.64	16.55	12.78/12.78	
	10/08/2025	°C	16.22	14.93	14.22	17.34	14.84	15.81	13.87/13.87	19.15		15.17/15.17	14.27	16.38	13.96	
	7/1/1995	µS/cm	640	1274	670	1411	1100	644	726							
	8/1/1995	µS/cm	670	1340	660	1380	1050	660	810	1880						1700
	11/1/1995	µS/cm	1110	1460	820	1200	1510	230	810	1800						
	2/1/1996	µS/cm	492	1271	940		1214	634	468	2200						
	5/1/1996	µS/cm	580	1530	730	1290	1320	630	610	2630						980
	11/1/1996	µS/cm	608	1270	654	1460	1150	596	2410	2040						1020
	4/1/1997	µS/cm	645	1530	698	2320	1210	1410	3950	2320						1090
	11/1/1997	µS/cm	675	1576	747	1381	1231	671	948							1646
	5/1/1998	µS/cm	536	1520	698	1187	908		702							
	11/1/1998	µS/cm	617	1380	613	1177	1037	585	662	2380						1166
	5/1/1999	µS/cm	710	1630	750	1270	1270	559	780	1500						770
	11/1/1999	µS/cm	590	1585	733	1292	1338	654	644	1550						
	5/1/2000	µS/cm	644	1604	682	1227	1343	630	709	1520						
	12/1/2000	µS/cm	710	1620	1570	1287	1300	1020	1892	1325						
	6/1/2001	µS/cm	622	1600	700	600	600		760							
	11/1/2001	µS/cm	663.4	1627	760	1290	1405	656	767.2	144						1304
	5/2/2002	µS/cm	636	1657	720	1225	1321	620	739	1330						
	11/2/2002	µS/cm	689	1620	712	1248	1322	646	748	1349						
	5/3/2003	µS/cm	502	1602	707	992	1354	617	649	1151						955
	11/3/2003	µS/cm		1658	745	1210	1325	649	725	1289						1012
	5/1/2004	µS/cm	306	1105	479	805	954	475	524	1295						755
	12/1/2004	µS/cm		1285	570	917	1141	516	665	1229						
	5/5/2005	µS/cm	552	1144	577	941	1057	555	733	1269						
	11/5/2005	µS/cm		1290	565		1035	589	672							
	5/6/2006	µS/cm	989	1432	665	1079	1168	593	741	1490						835
	10/6/2006	µS/cm		1502		1152	1248	631	726	1435						
	4/7/2007	µS/cm	532	1412	662	911	1058	581	655	1384						906
	10/7/2007	µS/cm	645	1489	622	1134	1252	648	721	1420						901
	4/1/2008	µS/cm	535	1392	648	913	1045	593	645	1342						922
	10/1/2008	µS/cm	993	1222	743	1388	1254	726	695	1619						
	10/29/2009	µS/cm	984	1620	454	1385	1161	674	683	1799						469
	3/25/2010	µS/cm		1623		1322	924	583	662	5470						501
	3/30/2010	µS/cm	797		660											
	4/22/2010	µS/cm	724	1318	642	801	864	551	612	4830						627
	10/16/2010	µS/cm	984	1699	805	1415	1055	693	717	2210						692
	4/28/2011	µS/cm	678	1573	693	1356	913	594	717	1978	1655					738
	10/18/2011	µS/cm	816		561					1568						
	10/19/2011	µS/cm		1398		1144	887	580	649	1756						1476
	4/25/2012	µS/cm	813	1711	736	1320	1013	641	779	1742	2630					1148
	10/9/2012	µS/cm								1585	1758					
	10/10/2012	µS/cm		1716	771	1412	944	688	1241							
	4/16/2013	µS/cm	539	1255			923			1262						839
	4/17/2013	µS/cm			679	1219		578	647	1456						
	10/29/2013	µS/cm		1986		1219	1296		841	2224	1992					
	10/30/2013	µS/cm			828			723				695	912	2678	808	2337
	4/14/2014	µS/cm	802	1793	728	1645	1091	644	734	5320	1702					999

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Specific Conductance (N/A) MCL = N/A IDNR AL = N/A Interwell CL = 3076	4/15/2014	µS/cm					1400					580		3040	684	
	10/7/2014	µS/cm														
	10/8/2014	µS/cm		2120		2180		760	888	5110	2150					
	10/9/2014	µS/cm	1340		864							809	970	2420	883	
	4/16/2015	µS/cm		566		605	331	223	223	981	587					
	4/17/2015	µS/cm	297		225							187	278	573	249	
	10/14/2015	µS/cm		890		990	510		302							
	10/15/2015	µS/cm						341		1713	1062	352	482		382	
	10/16/2015	µS/cm	612		250									557		
	3/16/2016	µS/cm		1240			850									
	3/17/2016	µS/cm	339		546	896		477	551	1689	1468					793
	3/18/2016	µS/cm										463	689	701	593	
	9/27/2016	µS/cm		1680		1510	980		600		2000					
	9/28/2016	µS/cm						560		2310		570	770	720	630	
	9/29/2016	µS/cm	830		650											
	3/7/2017	µS/cm		2261			1218									
	3/8/2017	µS/cm	1025		872	1900			853	2684	2505					
	3/9/2017	µS/cm						755				760	1069	958	906	
	10/4/2017	µS/cm	1096	2090	812	1826	1100	722	801	2295	2427	728		1017	842	852
	10/5/2017	µS/cm														
	3/12/2018	µS/cm	1013	2091	796		928									
	3/13/2018	µS/cm				1555		685	764	2159	2305	686	966			
	3/14/2018	µS/cm														
	10/6/2018	µS/cm								1568	1598			879	813	683
	10/9/2018	µS/cm	484	1548	714		654	633								
	10/10/2018	µS/cm				1392			688			645	853	706	731	
	3/25/2019	µS/cm	703.8	1492	626.1		276.1		661.5	1319						
	3/26/2019	µS/cm				1073		608.7				619.1	800.1			714.7
	3/27/2019	µS/cm												738.1	670	
	10/3/2019	µS/cm	690	2470	803	1600	770	751	831		2810		759	1040	907	894
	10/4/2019	µS/cm								1880						968
	3/17/2020	µS/cm	872.2	2250	808.7	1493	592.7		779.9							
	3/18/2020	µS/cm						702.4		1572	2440	710.3	979.8	831	821.3	854.6
	10/4/2020	µS/cm	948.1	2140	783.1		790.6									
	10/5/2020	µS/cm				1807		710.6	780.1	1379	2900	964.8	702.6			
	10/6/2020	µS/cm												798.9	812.8	
	3/29/2021	µS/cm						840		1545	2560	826	1135	962	963	1122
	3/30/2021	µS/cm	977	2170	964	1429	689		875							
	10/5/2021	µS/cm	935.8	2310	742.7	1971	729.6		754.2		2640					
	10/6/2021	µS/cm						671		1343		647	918.1	718.2		
	10/8/2021	µS/cm													782.7	
	4/4/2022	µS/cm	1010	2490	811	1770	605		798							
	4/5/2022	µS/cm						764		1610		772	1100	950	935	
	4/6/2022	µS/cm									3110					
	10/3/2022	µS/cm	981.7	2320	682.7	1507	654.4				2590					
	10/4/2022	µS/cm						662	713.7	1211		653.6	904.3	740.1	755.3	
	3/27/2023	µS/cm	989.4					644.9		1234						
	3/28/2023	µS/cm				1350			716.7			659.5	885.6	763.3	446.3	864.1
	3/29/2023	µS/cm		1953	722		571.9									
	10/3/2023	µS/cm	1090				734	691	725	1230		680				
	10/4/2023	µS/cm		2130	779	1450								760		
	10/5/2023	µS/cm											961		845	

Table 8

Analytical Data Summary
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Constituent (CAS #)	Sample Date	Units	MW-5 BG/UG	MW-14 BG/UG	MW-16 BG/UG	MW-7R DG	MW-8 DG	MW-11 DG	MW-15 DG	MW-17R DG	MW-18 DG	MW-19 DG	MW-20 DG	MW-21 DG	MW-22 DG	SW-1 SW
Specific Conductance (N/A) MCL = N/A IDNR AL = N/A Interwell CL = 3076	4/1/2024	µS/cm														930
	4/2/2024	µS/cm	128	240												
	4/3/2024	µS/cm			833		810							814	1	
	4/4/2024	µS/cm				139		683	754	1380		703	1000			
	10/7/2024	µS/cm				1060	834		805							
	10/8/2024	µS/cm	1670		916		853			1340			1170	921	1000	
	10/9/2024	µS/cm		2210								676				
	04/16/2025	µS/cm	1340	2070	782	2520	647	693/693	797	1290		689	934	761	817/817	
	10/08/2025	µS/cm	1450	2435	732.2	1557	854.1	717.8	799.9/799.9	1271		644/644	1049	708.6	761	

Key:

N/FD - Normal Sample Result/Field Duplicate Sample Result

AL - Action Level

BG - Background

°C - Degrees Celsius

CL - Control Limit

COD - Chemical Oxygen Demand

DG - Downgradient

IDNR - Iowa Department of Natural Resources

Interwell CL - 1-of-2 Interwell Prediction Limit (10 COCs, Semi-Annual Sampling, 10 Downgradient wells) per IAC 567.113.10(4)g(3) and described in Chapter 19 of EPA's Unified Guidance (2009), based on Upgradient Wells MW-5, MW-14 and MW-16.

LAL - Lower Action Level

LCL - Lower Control Limit

MCL - Maximum Contaminant Level

mg/L - Milligrams per Liter

N - Nitrogen

N/A - Not Applicable

S.U. - Standard pH Units

SW - Surface Water

TOX - Total Organic Halogens

TSS - Total Suspended Solids

U - Not Detected Above the Reporting Limit

UAL - Upper Action Level

UG - Upgradient

µg/L - Micrograms per Liter

ULCL - Upgradient Lower Control Limit

µS/cm - MicroSiemens per Centimeter

UACL - Upgradient Upper Control Limit

Notes:

BOLD - Constituent Detection**BOLD+red** - Interwell Control Limit Exceedance

Table 9

Historical Control Limit and Action Level Exceedances
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Well	Constituent	Interwell Control Limit(s)	IDNR Action Level(s)	Spring 2023	Fall 2023	Spring 2024	Fall 2024	Spring 2025	Fall 2025
MW-5	Iron ¹	16.1	0.3	0.500 U	0.500 U	0.154	1.54	0.130	1.65
	pH ²	6.07-8.26	6.5-8.5	7.02	6.42	6.15	6.17	7.20	6.74
	Temperature	20.2	N/A	5.5	18.72	5.84	22.24	8.41	16.22
MW-7R	Iron ¹	16.1	0.3	1.84	0.68	0.592	1.39	0.100 U	0.92
	COD	12.6	N/A	6.06	8.25	10.6	30.6	16.9	25.0 U
	pH ²	6.07-8.26	6.5-8.5	7.70	6.52	6.46	6.80	7.00	6.75
	TOX	0.276	N/A	0.0400 U	NS	0.06 U	NS	0.06 U	NS
MW-8	COD	12.6	N/A	9.28	26.9	18.3	25.0 U	10.4	25.0 U
	Iron ¹	16.1	0.3	0.500 U	0.500 U	0.100 U	0.100 U	0.100 U	0.100 U
	pH ²	6.07-8.26	6.5-8.5	8.30	6.93	6.01	6.57	7.02	6.53
MW-11	Iron ¹	16.1	0.3	0.500 U	0.500 U	0.123	0.163	0.100 U/0.100U	0.100 U
	COD	12.6	N/A	6.06	7.24	16.4	30.6	12.1/12.8	25.0 U
	pH ²	6.07-8.26	6.5-8.5	7.19	7.12	6.64	6.32	7.33/7.33	7.06
	Temperature	20.2	N/A	9.6	20.95	11.78	16.42	12.20/12.20	15.81
MW-14	Iron ¹	16.1	0.3	0.500 U/0.500 U	0.500 U	0.100 U/0.100 U	0.100 U	0.100 U	0.42
	pH ²	6.07-8.26	6.5-8.5	8.01	6.34	6.47	6.71	7.05	6.76
MW-15	Iron ¹	16.1	0.3	1.39	1.07	0.776	0.801	0.100 U	1.02/0.998
	pH ²	6.07-8.26	6.5-8.5	8.05	7.17	6.67	7.21	7.22	7.305/7.305
MW-16	Barium	0.336	2	0.131	0.206	0.132	0.131	0.141	0.124
	COD	12.6	N/A	5.00 U	15.5	21.8	5.00 U	16.0	25.0 U
	Iron ¹	16.1	0.3	1.42	2.83	1.02	0.262	0.850	0.281
	pH ²	6.07-8.26	6.5-8.5	8.56	6.89	6.35	6.63	7.79	7.27
MW-17R	Iron ¹	16.1	0.3	9.40/9.70	11.0/11.4	8.58	8.00	10.0	8.48
	COD	12.6	N/A	5.00 U/10.4	16.0/8.93	16.7	35.9	11.1	25.0 U
	pH ²	6.07-8.26	6.5-8.5	7.77	6.85	6.40	6.19	7.22	6.81
	Temperature	20.2	N/A	5.5	21.22	9.22	19.94	8.70	19.15
MW-18	Chloride	421	250	NS	NS	NS	NS	NS	NS
	COD	12.6	N/A	NS	NS	NS	NS	NS	NS
	Iron ¹	16.1	0.3	NS	NS	NS	NS	NS	NS
	Specific Conductance	3076	N/A	NS	NS	NS	NS	NS	NS

Table 9

Historical Control Limit and Action Level Exceedances
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Well	Constituent	Interwell Control Limit(s)	IDNR Action Level(s)	Spring 2023	Fall 2023	Spring 2024	Fall 2024	Spring 2025	Fall 2025
MW-19	Iron ¹	16.1	0.3	0.56	0.500 U	0.415	0.100 U/0.100 U	0.100 U	0.121/0.106
	pH ²	6.07-8.26	6.5-8.5	7.84	7.10	6.45	7.13	7.24	7.068/7.068
MW-20	Iron ¹	16.1	0.3	0.500 U	1.52	0.838/0.155	1.07	10.8	6.58
	Ammonia (as N)	1.85	30	1.41	2.41	2.15/2.12	0.635	1.47 J-	1.27
	pH ²	6.07-8.26	6.5-8.5	7.82	7.51	6.48	6.01	7.26	7.22
	TOX	0.276	N/A	0.146	NS	0.06 U	NS	0.06 U	NS
MW-21	Iron ¹	16.1	0.3	4.86	2.41	1.98	1.95/1.87	3.18	1.84
	pH ²	6.07-8.26	6.5-8.5	7.93	6.99	6.50	6.42	7.22	7.08
MW-22	Iron ¹	16.1	0.3	3.51	1.39/1.70	1.32	0.937	2.49/0.100U	1.410
	COD	12.6	N/A	5.00 U	11.0/5.13	12.6	25.3	7.14/6.15	25.0 U
	pH ²	6.07-8.26	6.5-8.5	8.24	6.12	5.82	6.44	7.31/7.31	7.30
SW-1	COD	12.6	N/A	5.00 U	DRY	14.4	DRY	27.3	DRY
	pH ²	6.07-8.26	6.5-8.5	7.90	DRY	8.58	DRY	--	DRY

Notes:

Exceeds Interwell Control Limit only (or is below lower limit for pH)

Exceeds IDNR Action Level only (or is below lower limit for pH)

Exceeds both Interwell Control Limit and IDNR Action Level (or is below both lower limits for pH)

Inconclusive comparison (non-detect result with reporting limit higher than IDNR Action Level or Interwell Control Limit)

¹ - For Iron, the IDNR Action Level is lower than the Upgradient Control Limit. Typically, the Upgradient Control Limit is more stringent than the IDNR Action Level. Additionally, the non-detect reporting limit for Iron is greater than the IDNR Action Level.

² - For pH, the IDNR lower limit is higher than the lower Interwell Control Limit (i.e., less stringent instead of more stringent)

COD - Chemical Oxygen Demand.

DRY - Dry, unable to be sampled.

MW - Monitoring Well

NA - Not applicable - well removed.

NS - Not Sampled, as scheduled.

SW - Surface Water

TOX - Total Organic Halogens

-- - Not analyzed

Table 10

**Leachate Management Summary
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa**

Month	Max. Sump Head Level (Inches)	Max. Liner Head Level (12" on liner = 48") (Inches)	Leachate Collected (Gallons)	Discharge to Cedar Falls POTW (Gallons)
December ('24)	26.4	0.00	11,373	11,373
January	26.7	0.00	14,785	14,785
February	26.5	0.00	10,770	10,770
March	26.6	0.00	93,902	93,902
April	26.3	0.00	490,679	490,679
May	26.4	0.00	196,435	196,435
June	27.3	0.00	189,422	189,422
July	26.4	0.00	294,556	294,556
August	26.5	0.00	202,284	202,284
September	26.5	0.00	52,924	52,924
October	26.4	0.00	19,393	19,393
2025 Annual Total			1,576,523	1,576,523

Notes:

- Sump is set 3 ft deeper than Liner. 12 inches head on liner is 48 inches

Key:

POTW - Publically Operated Treatment Works

**Leachate Detection Summary
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa**

Chemical Name	Units	LCS-24" Pipe, Landfill Sump 4/17/2025		LCS-24" Pipe, Landfill Sump 10/7/2025	
General Water Quality Parameters					
Ammonia-N	mg/L	0.500 U		0.500 U	
Chloride	mg/L	17.0		42.5	
COD	mg/L	25.0 U		37.1	
Flashpoint	°F	>161		>161	
HEM (Oil and Grease)	mg/L	4.8 UJ		5.0 UJ	
Nitrate as N	mg/L	0.314		0.200 U	
pH, lab	S.U.	7.6 J	HF	7.6 J	HF
Sulfate	mg/L	48.9		16.8	
TDS	mg/L	540		708	
Total Phenols	mg/L	0.0200 U		0.0200 U	
TOX	mg/L	NS		NS	
TSS	mg/L	5.00 U		7.67	
(all other General Parameters are ND)					
Metals (Total)					
Barium	mg/L	0.0693		0.0975	
Copper	mg/L	0.00500 U		0.00773	
Iron	mg/L	1.06		2.63	
Lead	mg/L	0.000500 U		0.00300	
Manganese	mg/L	0.0898		0.113	
Molybdenum	mg/L	0.0292 J		0.0138	
Zinc	mg/L	0.0280		0.0357	
(all other analyzed Metals are ND)					
VOCs					
Acetone	µg/L	10.0 U		10.0 U	
Benzene	µg/L	0.500 U		0.500 U	
Hexane	µg/L	1.0 U		1.0 U	++
(all other analyzed VOCs are ND)					

Notes:

*+ - Laboratory Control Sample (LCS) and/or LCS-Duplicate is outside acceptance limits, high bias/sec

COD - Chemical Oxygen Demand

°F - Degrees Fahrenheit

HEM - n-Hexane Extractable Material

HF - Parameter with a holding time of 15 minutes. Sample was analyzed outside of hold time.

J - Estimated concentration

LCS - Leachate Collection System

mg/L - Milligrams per Liter

N - Nitrogen

ND - Not Detected above the reporting limit

NS - Not Sampled, parameter was not analyzed during that sampling event

S.U. - Standard pH Units

TDS - Total Dissolved Solids

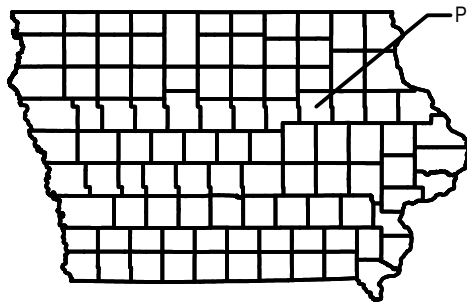
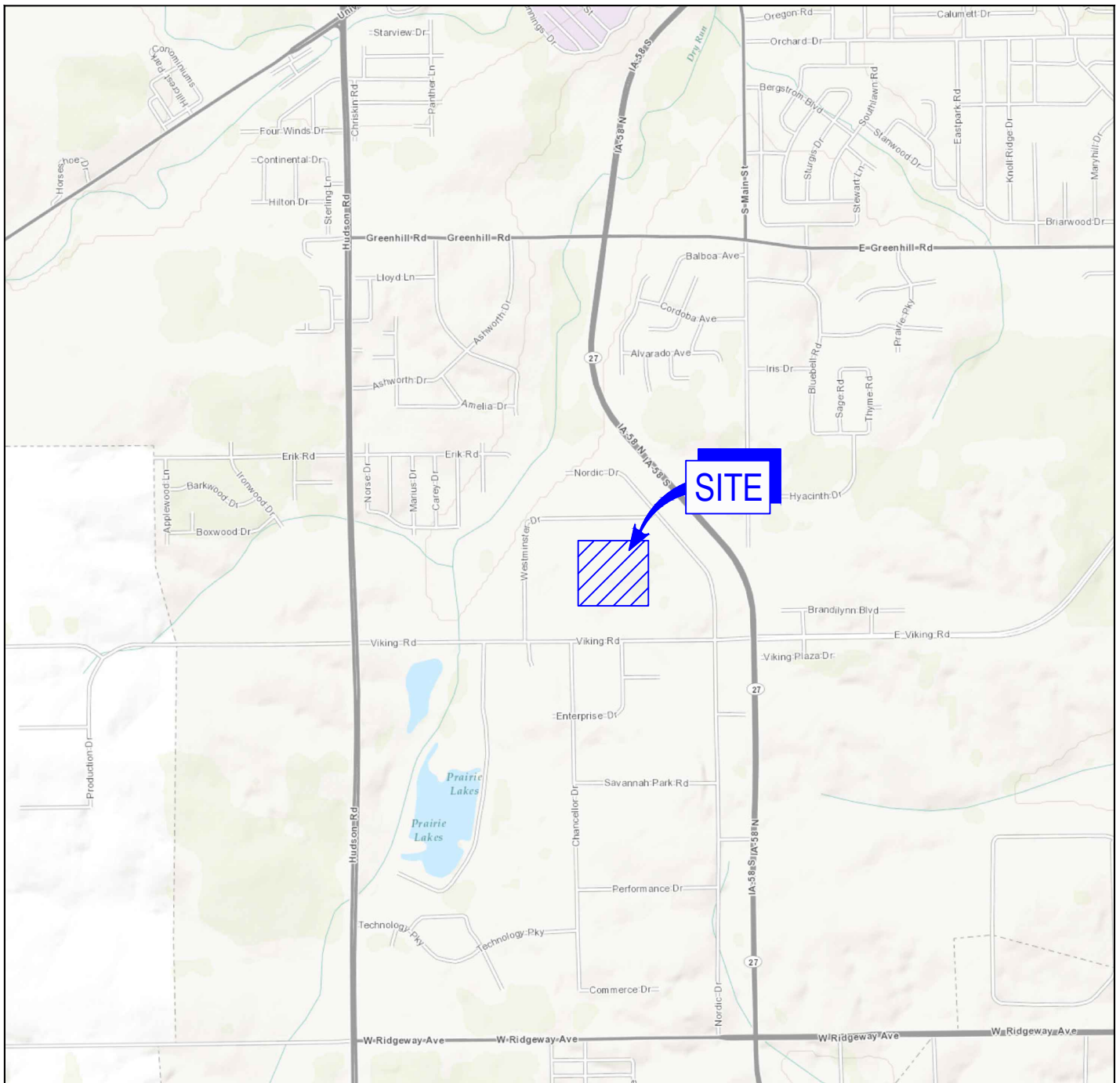
TOX - Halogens, Total Organic

TSS - Total Suspended Solids

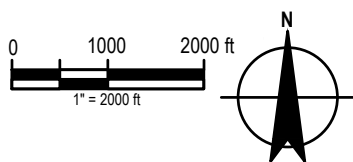
U - Not Detected Above the Reporting Limit

µg/L - Micrograms per Liter

VOC - Volatile Organic Compounds



PROJECT AREA, BLACK HAWK COUNTY



**VIKING PUMP FOUNDRY SAND LANDFILL
CEDAR FALLS, IOWA**

Project No. 12666637
Date December 2025

SITE LOCATION

FIGURE 1



LEGEND

—●— SURFACE WATER FLOW

■ MW-5 SHALLOW GROUNDWATER MONITORING WELL

● MW-16 DEEP GROUNDWATER MONITORING WELL

● SW-01 SURFACE WATER SAMPLE LOCATION

△ INDICATES UPGRADIENT LOCATION

NOTES:

MW-12 AND MW-13 USED FOR WATER LEVEL GAUGING ONLY.

MW-18 WAS SEALED DURING THE OCTOBER 2023 SAMPLING EVENT AND HAS BEEN REMOVED FROM THE MONITORING PROGRAM.

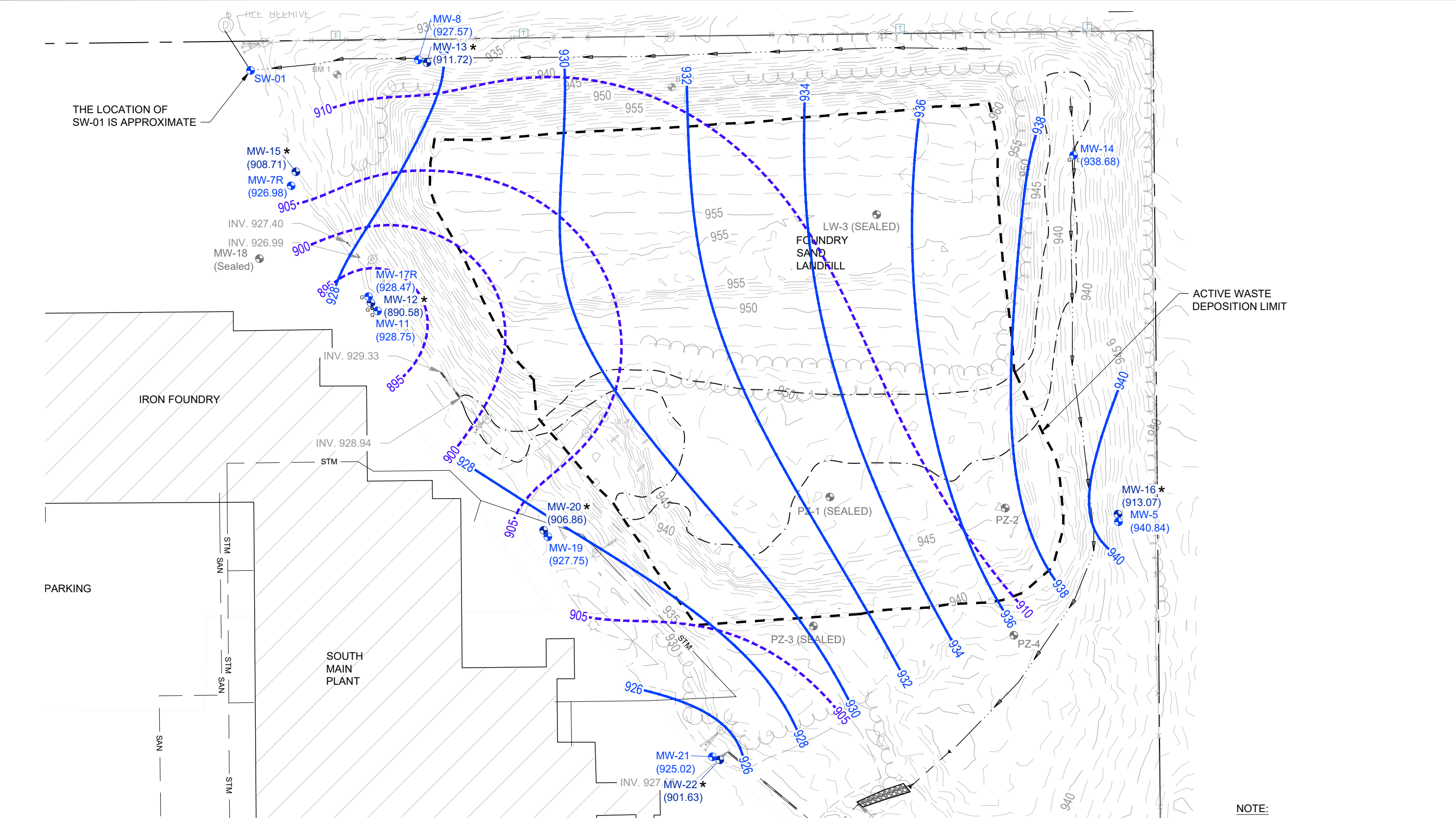
AERIAL FLYOVER SURVEY PERFORMED BY GHD ON 10/27/21

VIKING PUMP FOUNDRY SAND LANDFILL
CEDAR FALLS, IOWA

**GROUNDWATER MONITORING
WELL AND SURFACE WATER
MONITORING LOCATIONS**

Project No. 1266637
Date December 2025

FIGURE 2



LEGEND

MW-16 (913.76) GROUNDWATER MONITORING WELL

927.50 GROUNDWATER ELEVATION (FT AMSL)

910 SHALLOW GROUNDWATER CONTOUR

905 DEEP GROUNDWATER CONTOUR

* USED FOR DEEP GROUNDWATER CONTOURS ONLY

NOTE:

AERIAL FLYOVER SURVEY
PERFORMED BY GHD ON 10/27/21

0 50 100ft

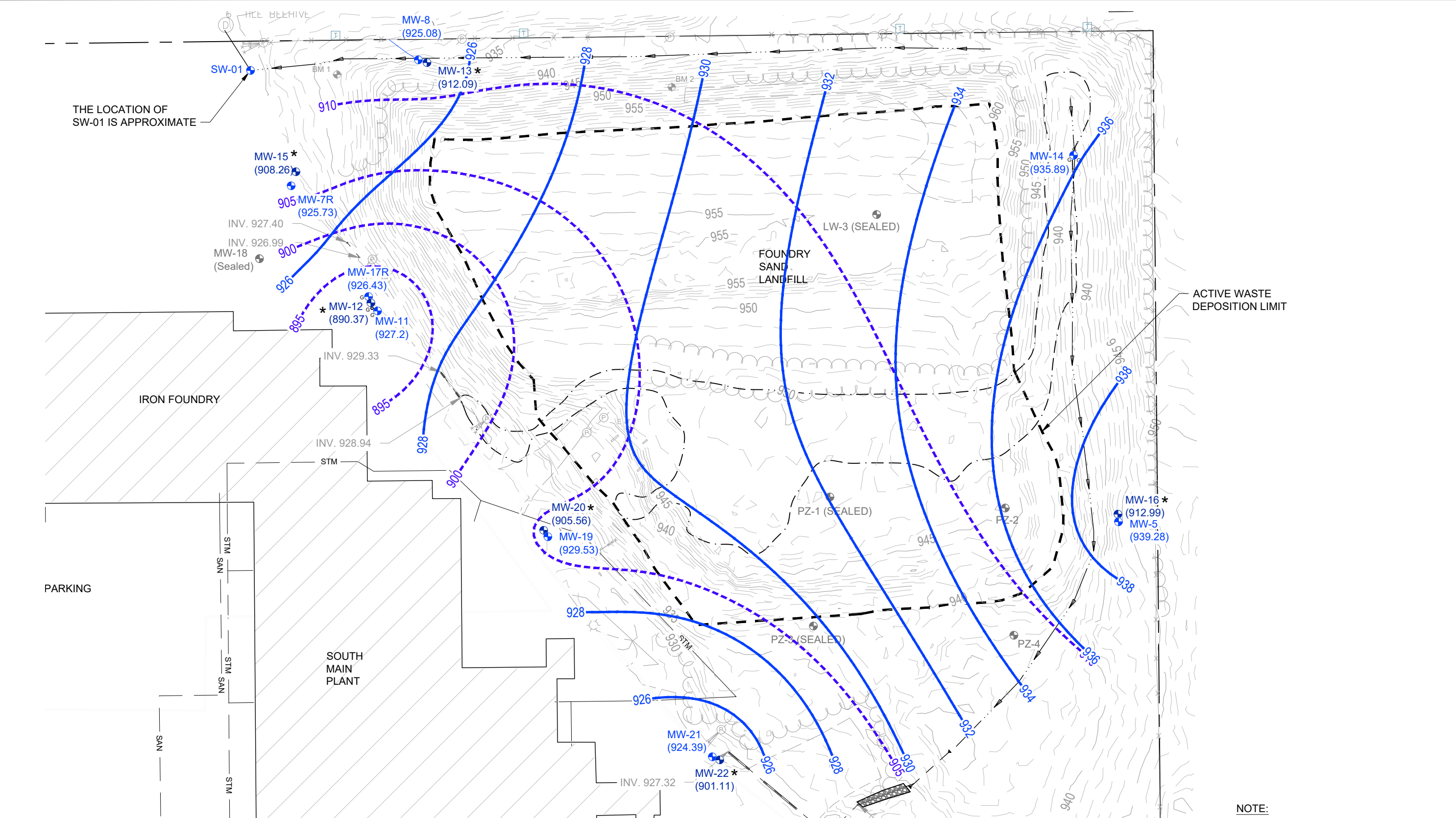
VIKING PUMP FOUNDRY SAND LANDFILL
CEDAR FALLS, IOWA

GROUNDWATER CONTOURS
APRIL 2025

Project No. 12666637
Date December 2025

FIGURE 3a

Filename: C:\ADSK\ACCDocs\GHD Services Pty Ltd\11230862-Enviro Projs\Project Files\12666637\01 WIP\Env\Figures\RPT-2025AnnualWaterQuality\12666637-GHD-00-00-RPT-EN-D103_WA-2025AnnualWaterQuality.dwg
Plot Date: 03 December 2025 9:46 AM



NOTE:
AERIAL FLYOVER SURVEY
PERFORMED BY GHD ON 10/27/21

LEGEND

MW-16 GROUNDWATER MONITORING WELL
(913.09) GROUNDWATER ELEVATION (FT AMSL)

932.5 SHALLOW GROUNDWATER CONTOUR

902.5 DEEP GROUNDWATER CONTOUR

* USED FOR DEEP GROUNDWATER CONTOURS ONLY

VIKING PUMP FOUNDRY SAND LANDFILL
CEDAR FALLS, IOWA

GROUNDWATER CONTOURS
OCTOBER 2025

Project No. 12666637
Date December 2025

FIGURE 3b

Appendices

Appendix A

**IDNR Sampling Forms from April 2025 and
October 2025**



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: LCS Weather: 68F, partly sunny, very windy

Date: 4/17/2025 Sampler Name: MGA

Monitoring Well Details

Construction Data

Borehole Diameter (in): _____ Depth to Top of Screen (ft): _____

Casing Diameter (in): _____ Casing Material: _____

Top of Casing Elevation (ft. MSL): _____ Ground Surface Elevation (ft. MSL): _____

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):			
Water Elevation (ft. MSL):			

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time		

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Other (Specify in comments) Sampling Equipment: Other (Specify in comments)

Sampling Method: No Purge Equipment Type: Dedicated

Decontamination Method: no decontamination

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP

Equipment Depth: _____ Flow Rate: mL/min Volume Removed: gal Volume Sampled: 1.5 gal

Odor? _____ Color? _____

Comments: No purge, new leachate sample pump



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-11 Weather: 65F, partly cloudy, very windy

Date: 4/16/2025 Sampler Name: MGA

Monitoring Well Details

Construction Data

Borehole Diameter (in): 10.8 Depth to Top of Screen (ft): 25.55

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 934.96 Ground Surface Elevation (ft. MSL): 930.1

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		8.15	8.15
Water Elevation (ft. MSL):		926.81	926.81

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	2:30:07 PM	14:55:01

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Electric Submersible Pump Sampling Equipment: Electric Submersible Pump

Sampling Method: Low Flow Equipment Type: Portable

Decontamination Method: no decontamination

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
4/16 2:30 PM	0.00	6.65						
4/16 2:40 PM	1.31	7.45	7.46	12.21	697	0.08	0.8	115
4/16 2:45 PM	2.00	7.75	7.38	12.27	690	0.00	0.0	99
4/16 2:50 PM	2.66	8.02	7.36	12.22	693	0.00	0.0	70
4/16 2:55 PM	3.29	8.15	7.33	12.20	693	0.00	0.0	48

Equipment Depth: _____ Flow Rate: 500 mL/min Volume Removed: 3.29 gal Volume Sampled: 0.75 gal

Odor? None Color? None

Comments: Loading foundry sand into truck right near this well when sampling



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-14 Weather: 55F, overcast, very windy

Date: 4/17/2025 Sampler Name: MGA

Monitoring Well Details

Construction Data

Borehole Diameter (in): 7.9000001 Depth to Top of Screen (ft): 8.98

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 944.12 Ground Surface Elevation (ft. MSL): 940.8

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		11.39	11.39
Water Elevation (ft. MSL):		932.73	932.73

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	8:57 AM	09:21:00

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Peristaltic Pump Sampling Equipment: Peristaltic Pump

Sampling Method: Low Flow Equipment Type: Portable

Decontamination Method: no decontamination

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
4/17 8:56 AM	0.00	5.61						
4/17 9:06 AM	0.88	10.11	7.24	11.65	2070	0.98	0.0	176
4/17 9:11 AM	1.29	10.74	7.15	11.37	2080	0.77	0.0	180
4/17 9:16 AM	1.65	10.95	7.09	11.16	2080	0.87	0.0	183
4/17 9:21 AM	1.98	11.39	7.05	11.02	2070	0.81	0.0	185

Equipment Depth: _____ Flow Rate: 300 mL/min Volume Removed: 1.98 gal Volume Sampled: 0.75 gal

Odor? None Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-15 Weather: 59F, partly cloudy, very windy

Date: 4/15/2025 Sampler Name: MGA

Monitoring Well Details

Construction Data

Borehole Diameter (in): 7.9000001 Depth to Top of Screen (ft): 53.28

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 928.92 Ground Surface Elevation (ft. MSL): 926.6

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		28.62	28.62
Water Elevation (ft. MSL):		900.3	900.3

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	5:04:06 PM	17:31:52

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Electric Submersible Pump Sampling Equipment: Electric Submersible Pump

Sampling Method: Low Flow Equipment Type: Portable

Decontamination Method: Alconox and water rinse

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
4/15 5:04 PM	0.00	24.10						
4/15 5:21 PM	2.34	26.74	7.27	12.64	785	0.22	0.7	-75
4/15 5:26 PM	2.87	27.54	7.26	12.71	793	0.44	2.2	-70
4/15 5:31 PM	3.40	28.62	7.22	12.75	797	0.54	2.9	-66

Equipment Depth: _____ Flow Rate: 400 mL/min Volume Removed: 3.4 gal Volume Sampled: 0.75 gal

Odor? Organic Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-16 Weather: 50F, partly sunny, very windy

Date: 4/16/2025 Sampler Name: MGA

Monitoring Well Details

Construction Data

Borehole Diameter (in): 7.9000001 Depth to Top of Screen (ft): 72.76

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 948.42 Ground Surface Elevation (ft. MSL): 945.6

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		57.16	57.16
Water Elevation (ft. MSL):		891.26	891.26

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	9:12:40 AM	09:47:00

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Electric Submersible Pump Sampling Equipment: Electric Submersible Pump

Sampling Method: Low Flow Equipment Type: Portable

Decontamination Method: Alconox and water rinse

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
4/16 9:12 AM	0.00	36.11						
4/16 9:32 AM	1.92	43.27	7.84	10.30	798	2.81	28.1	-89
4/16 9:37 AM	2.14	48.85	7.78	11.13	788	6.19	37.5	-113
4/16 9:42 AM	2.17	52.63	7.80	11.00	786	5.75	46.0	-118
4/16 9:47 AM	2.05	57.16	7.79	11.18	782	5.23	59.4	-114

Equipment Depth: 67.82 Flow Rate: 350 mL/min Volume Removed: 2.05 gal Volume Sampled: 0.5 gal

Odor? None Color? None

Comments: Could not get TSS sample, had issues with portable batteries - controller displayed error code meaning controller



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-17R Weather: 50F, partly sunny, very windy

Date: 4/15/2025 Sampler Name: MGA

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.0 Depth to Top of Screen (ft): 8.1

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 933.82 Ground Surface Elevation (ft. MSL): 930.72

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		6.46	6.46
Water Elevation (ft. MSL):		927.36	927.36

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	6:25:24 PM	18:44:46

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Peristaltic Pump Sampling Equipment: Peristaltic Pump

Sampling Method: Low Flow Equipment Type: Portable

Decontamination Method: no decontamination

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
4/15 6:25 PM	0.00	5.38						
4/15 6:35 PM	0.80	6.37	7.27	8.78	1280	0.00	10.7	-85
4/15 6:40 PM	1.16	6.41	7.24	8.73	1290	0.00	8.9	-96
4/15 6:44 PM	1.54	6.46	7.22	8.70	1290	0.00	5.4	-100

Equipment Depth: _____ Flow Rate: 300 mL/min Volume Removed: 1.54 gal Volume Sampled: 0.75 gal

Odor? None Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL
Well/Piezometer: MW-19 Weather: 60F, partly cloudy, very windy
Date: 4/17/2025 Sampler Name: MGA

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.0 Depth to Top of Screen (ft): 17.85
Casing Diameter (in): 2.0 Casing Material: PVC
Top of Casing Elevation (ft. MSL): 934.26 Ground Surface Elevation (ft. MSL): 931.38

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		9.24	9.24
Water Elevation (ft. MSL):		925.02	925.02

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	11:09:25 AM	11:29:57

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Electric Submersible Pump Sampling Equipment: Electric Submersible Pump
Sampling Method: Low Flow Equipment Type: Portable
Decontamination Method: Alconox and water rinse

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
4/17 11:05 AM	0.00	8.55						
4/17 11:20 AM	1.96	8.84	7.28	11.16	691	0.00	14.0	69
4/17 11:25 AM	2.59	9.11	7.26	11.20	690	0.00	7.4	64
4/17 11:29 AM	3.24	9.24	7.24	11.39	689	0.00	3.8	60

Equipment Depth: _____ Flow Rate: 500 mL/min Volume Removed: 3.24 gal Volume Sampled: 0.75 gal
Odor? None Color? None
Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-20 Weather: 68F, partly sunny, very windy

Date: 4/16/2025 Sampler Name: MGA

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.0 Depth to Top of Screen (ft): 64.65

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 934.17 Ground Surface Elevation (ft. MSL): 931.95

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		47.30	47.3
Water Elevation (ft. MSL):		886.87	886.87

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	4:05:54 PM	16:34:16

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Electric Submersible Pump Sampling Equipment: Electric Submersible Pump

Sampling Method: Low Flow Equipment Type: Portable

Decontamination Method: Alconox and water rinse

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
4/16 4:05 PM	0.00	27.16						
4/16 4:21 PM	1.80	42.14	7.30	15.81	968	0.00	68.7	-63
4/16 4:25 PM	2.34	44.00	7.28	17.02	938	0.00	50.8	-63
4/16 4:30 PM	2.90	45.75	7.26	16.31	974	0.00	52.9	-63
4/16 4:34 PM	3.26	47.30	7.26	16.99	934	0.00	48.3	-51

Equipment Depth: _____ Flow Rate: 400 mL/min Volume Removed: 3.26 gal Volume Sampled: 0.75 gal

Odor? None Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL
Well/Piezometer: MW-21 Weather: 45F , partly cloudy, very windy
Date: 4/15/2025 Sampler Name: MGA

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.0 Depth to Top of Screen (ft): 16.77
Casing Diameter (in): 2.0 Casing Material: PVC
Top of Casing Elevation (ft. MSL): 931.94 Ground Surface Elevation (ft. MSL): 929.17

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		7.27	7.27
Water Elevation (ft. MSL):		924.67	924.67

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	8:56:10 AM	09:21:22

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Peristaltic Pump Sampling Equipment: Peristaltic Pump
Sampling Method: Low Flow Equipment Type: Portable
Decontamination Method: no decontamination

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
4/15 8:56 AM	0.00	6.98	8.46	9.59	796	9.93	70.6	-86
4/15 9:01 AM	0.45	7.20	8.07	9.61	770	9.89	65.1	-85
4/15 9:06 AM	0.83	7.21	7.56	9.63	770	9.62	48.7	-84
4/15 9:12 AM	1.27	7.24	7.37	9.71	765	8.86	38.8	-82
4/15 9:17 AM	1.66	7.25	7.27	9.73	764	8.18	27.9	-83
4/15 9:21 AM	2.00	7.27	7.22	9.77	761	7.64	23.2	-84

Equipment Depth: _____ Flow Rate: 300 mL/min Volume Removed: 2 gal Volume Sampled: 0.75 gal
Odor? None Color? None
Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-22 Weather: 50F, partly cloudy, very windy

Date: 4/15/2025 Sampler Name: MGA

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.0 Depth to Top of Screen (ft): 67.62

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 931.74 Ground Surface Elevation (ft. MSL): 929.45

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		52.01	52.01
Water Elevation (ft. MSL):		879.73	879.73

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	10:39:41 AM	11:16:30

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Electric Submersible Pump Sampling Equipment: Electric Submersible Pump

Sampling Method: Low Flow Equipment Type: Portable

Decontamination Method: Alconox and water rinse

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
4/15 10:39 AM	0.00							
4/15 10:54 AM	1.94	42.05	7.33	12.78	802	0.04	357	-112
4/15 10:59 AM	2.55	45.05	7.31	12.83	810	2.50	241	-114
4/15 11:04 AM	3.10	46.80	7.25	12.73	819	8.35	160	-114
4/15 11:08 AM	3.64	49.04	7.30	12.75	816	6.65	79.1	-119
4/15 11:12 AM	4.08	50.52	7.26	12.86	815	6.17	64.1	-117
4/15 11:16 AM	4.55	52.01	7.31	12.78	817	6.68	46.1	-120

Equipment Depth: _____ Flow Rate: 450 mL/min Volume Removed: 4.55 gal Volume Sampled: 0.75 gal

Odor? None Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-5 Weather: 52F, partly sunny, very windy

Date: 4/16/2025 Sampler Name: MGA

Monitoring Well Details

Construction Data

Borehole Diameter (in): 10.8 Depth to Top of Screen (ft): 7.76

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 949.34 Ground Surface Elevation (ft. MSL): 945.5

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		10.59	10.59
Water Elevation (ft. MSL):		938.75	938.75

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	10:13:03 AM	10:31:00

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Peristaltic Pump Sampling Equipment: Peristaltic Pump

Sampling Method: Low Flow Equipment Type: Portable

Decontamination Method: no decontamination

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
4/16 10:13 AM	0.00	8.55						
4/16 10:23 AM	1.12	10.07	7.31	8.32	1330	3.63	0.4	63
4/16 10:27 AM	1.28	10.27	7.27	8.36	1330	3.25	0.1	63
4/16 10:31 AM	1.46	10.59	7.20	8.41	1340	2.46	0.6	58

Equipment Depth: _____ Flow Rate: 300 mL/min Volume Removed: 1.46 gal Volume Sampled: 0.75 gal

Odor? _____ Color? _____

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-7R Weather: 59F, partly sunny, very windy

Date: 4/15/2025 Sampler Name: MGA

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.0 Depth to Top of Screen (ft): 9.68

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 932.77 Ground Surface Elevation (ft. MSL): 930.09

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		9.65	9.65
Water Elevation (ft. MSL):		923.12	923.12

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	2:21:14 PM	14:54:01

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Peristaltic Pump Sampling Equipment: Peristaltic Pump

Sampling Method: Low Flow Equipment Type: Portable

Decontamination Method: no decontamination

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
4/15 2:21 PM	0.00	6.31						
4/15 2:25 PM	0.43	7.71	7.17	9.12	2680	1.19	8.4	131
4/15 2:29 PM	0.80	8.18	7.09	8.88	2700	0.79	5.0	132
4/15 2:34 PM	1.18	8.75	7.06	8.75	2700	0.35	8.7	132
4/15 2:39 PM	1.54	9.20	7.03	8.73	2680	0.09	7.5	129
4/15 2:44 PM	1.91	9.31	7.01	9.40	2590	0.00	2.6	122
4/15 2:49 PM	2.32	9.51	7.02	9.71	2530	0.00	0.7	110
4/15 2:54 PM	2.70	9.65	7.00	9.73	2520	0.00	0.2	91

Equipment Depth: _____ Flow Rate: 300 mL/min Volume Removed: 2.7 gal Volume Sampled: 0.75 gal

Odor? None Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-8 Weather: 59F, partly sunny, very windy

Date: 4/15/2025 Sampler Name: MGA

Monitoring Well Details

Construction Data

Borehole Diameter (in): 10.8 Depth to Top of Screen (ft): 11.65

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 939.91 Ground Surface Elevation (ft. MSL): 937.8

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		13.10	13.1
Water Elevation (ft. MSL):		926.81	926.81

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	3:47:33 PM	16:12:01

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Peristaltic Pump Sampling Equipment: Peristaltic Pump

Sampling Method: Low Flow Equipment Type: Portable

Decontamination Method: no decontamination

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
4/15 3:47 PM	0.00	12.61						
4/15 4:02 PM	1.54	12.98	7.12	11.53	642	7.14	0.0	160
4/15 4:07 PM	2.07	13.08	7.08	11.41	647	6.57	1.3	164
4/15 4:12 PM	2.59	13.10	7.02	11.49	647	6.33	0.0	167

Equipment Depth: _____ Flow Rate: 400 mL/min Volume Removed: 2.59 gal Volume Sampled: 0.75 gal

Odor? None Color? None

Comments: _____

Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: SW-01 Weather: 55F, partly sunny, very windy

Date: 4/15/2025 Sampler Name: MGA

Monitoring Well Details

Construction Data

Borehole Diameter (in): _____ Depth to Top of Screen (ft): _____

Casing Diameter (in): _____ Casing Material: _____

Top of Casing Elevation (ft. MSL): _____ Ground Surface Elevation (ft. MSL): _____

Field Observations

Well Lock Condtn: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):			
Water Elevation (ft. MSL):			

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time		

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Other (Specify in comments) Sampling Equipment: Other (Specify in comments)

Sampling Method: No Purge Equipment Type: Portable

Decontamination Method: no decontamination

Field Analysis

[illegible]

Equipment Depth: _____ Flow Rate: mL/min _____ Volume Removed: gal _____ Volume Sampled: 0.75 gal

Odor? _____ Color? _____

Comments: No pumping



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: LCS Weather: Sunny, cool

Date: 10/7/2025 Sampler Name: TML

Monitoring Well Details

Construction Data

Borehole Diameter (in): _____ Depth to Top of Screen (ft): _____

Casing Diameter (in): _____ Casing Material: _____

Top of Casing Elevation (ft. MSL): _____ Ground Surface Elevation (ft. MSL): _____

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):			
Water Elevation (ft. MSL):			

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time		09:23:54

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Other (Specify in comments) Sampling Equipment: Other (Specify in comments)

Sampling Method: No Purge Equipment Type: Dedicated

Decontamination Method: no decontamination

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
10/7 9:23 AM			7.004	16.69	1.488	3.110	29.09	-81.1

Equipment Depth: _____ Flow Rate: mL/min Volume Removed: gal Volume Sampled: 1.42 gal

Odor? None Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-11 Weather: 69°F clear

Date: 10/7/2025 Sampler Name: TML

Monitoring Well Details

Construction Data

Borehole Diameter (in): 10.8 Depth to Top of Screen (ft): 25.55

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 934.96 Ground Surface Elevation (ft. MSL): 930.1

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		8.27	8.27
Water Elevation (ft. MSL):		926.69	926.69

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	5:12:09 PM	17:34:35

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Peristaltic Pump Sampling Equipment: Peristaltic Pump

Sampling Method: Low Flow Equipment Type: Dedicated

Decontamination Method: Alconox and water rinse

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
10/7 5:16 PM	0.00	8.07	7.132	16.40	727.7	0.684	36.65	-62.1
10/7 5:19 PM	0.16	8.18	7.045	16.11	723.1	0.485	15.45	-44.3
10/7 5:22 PM	0.32	8.19	7.015	16.03	721.6	0.390	5.918	-35.0
10/7 5:25 PM	0.48	8.21	7.027	15.97	720.6	0.306	2.485	-28.7
10/7 5:28 PM	0.64	8.22	7.049	15.90	719.3	0.275	1.360	-24.8
10/7 5:31 PM	0.80	8.22	7.060	15.88	716.3	0.253	0.830	-22.2
10/7 5:34 PM	0.98	8.27	7.062	15.81	717.8	0.258	0.788	-18.9

Equipment Depth: _____ Flow Rate: 200 mL/min Volume Removed: .98 gal Volume Sampled: 1.41 gal

Odor? None Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-14 Weather: _____

Date: 10/7/2025 Sampler Name: TML

Monitoring Well Details

Construction Data

Borehole Diameter (in): 7.9000001 Depth to Top of Screen (ft): 8.98

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 944.12 Ground Surface Elevation (ft. MSL): 940.8

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		18.68	18.68
Water Elevation (ft. MSL):		925.44	925.44

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	10:26:06 AM	11:49:00

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Peristaltic Pump Sampling Equipment: Peristaltic Pump

Sampling Method: _____ Equipment Type: _____

Decontamination Method: _____

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
10/7 10:26 AM	0.00	9.83	6.804	15.31	2444	2.975	0.004	64.2
10/7 10:32 AM	0.66	10.87	6.672	15.60	2435	2.330	0.028	86.9
10/7 10:37 AM	1.16	11.42	6.696	15.94	2416	2.420	0.337	94.6
10/7 10:42 AM	1.75	12.02	6.727	16.24	2393	2.356	0.030	101.5
10/7 10:47 AM	2.29	12.57	6.720	16.14	2399	1.704	0.002	106.3
10/7 10:52 AM	2.84	13.24	6.720	16.03	2401	1.232	0.000	109.1
10/7 10:57 AM	3.29	13.88	6.728	15.94	2407	0.752	0.073	109.6
10/7 11:02 AM	3.83	14.54	6.743	15.84	2414	0.606	0.000	108.8
10/7 11:14 AM	5.13	16.08	6.766	15.51	2426	0.413	0.000	110.3
10/7 11:19 AM	5.67	16.57	6.773	15.42	2401	0.373	0.000	110.4
10/7 11:22 AM	5.93	16.78	6.775	15.45	2395	0.363	0.000	109.9
10/7 11:30 AM	6.77	16.87	6.823	15.22	2444	1.659	319	108.0
10/7 11:34 AM	7.24	16.47	6.771	14.95	2443	0.986	15.43	112.0

Equipment Depth: _____ Flow Rate: 400 mL/min Volume Removed: 8.76 gal Volume Sampled: gal

Odor? None Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-15 Weather: _____

Date: 10/7/2025 Sampler Name: TML

Monitoring Well Details

Construction Data

Borehole Diameter (in): 7.9000001 Depth to Top of Screen (ft): 53.28

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 928.92 Ground Surface Elevation (ft. MSL): 926.6

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		33.69	33.69
Water Elevation (ft. MSL):		895.23	895.23

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	1:56:16 PM	15:03:00

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Electric Submersible Pump Sampling Equipment: Electric Submersible Pump

Sampling Method: _____ Equipment Type: _____

Decontamination Method: _____

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
10/7 1:56 PM	0.00	21.76	7.275	13.63	776.5	2.029	1.318	109.5
10/7 2:02 PM	0.63	22.34	7.136	13.76	745.4	0.793	0.118	48.7
10/7 2:05 PM	0.94	22.53	7.104	14.30	783.4	0.491	0.000	-17.9
10/7 2:08 PM	1.26	21.95	7.180	15.46	755.6	1.113	0.187	-28.7
10/7 2:11 PM	1.66	21.79	7.264	16.17	696.8	2.435	0.000	-1.2
10/7 2:14 PM	1.78	22.03	7.282	16.15	689.4	2.137	0.231	5.6
10/7 2:17 PM	1.93	22.69	7.259	14.25	835.1	1.395	1.836	-29.5
10/7 2:20 PM	2.06	23.75	7.210	13.74	825.7	0.475	0.000	-60.5
10/7 2:23 PM	2.24	24.18	7.195	13.9	827.5	0.276	0.000	-69.8
10/7 2:26 PM	2.39	23.96	7.225	14.94	828.5	0.306	0.000	-71.0
10/7 2:31 PM	2.57	25.17	7.242	14.26	657.7	0.421	0.332	-70.5
10/7 2:34 PM	2.89	26.65	7.250	13.44	673.2	0.334	0.000	-77.4
10/7 2:37 PM	3.19	28.19	7.262	13.21	764.3	0.316	0.000	-80.7

Equipment Depth: _____ Flow Rate: 400 mL/min Volume Removed: 6 gal Volume Sampled: gal

Odor? None Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-16 Weather: _____

Date: 10/8/2025 Sampler Name: TML

Monitoring Well Details

Construction Data

Borehole Diameter (in): 7.9000001 Depth to Top of Screen (ft): 72.76

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 948.42 Ground Surface Elevation (ft. MSL): 945.6

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):	35.40	72.37	72.37
Water Elevation (ft. MSL):	913.02	876.05	876.05

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	12:20:52 PM	15:18:01

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Electric Submersible Pump Sampling Equipment: Electric Submersible Pump

Sampling Method: Low Flow Equipment Type: Dedicated

Decontamination Method: Alconox and water rinse

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
10/8 12:20 PM	0.00	37.78	7.356	13.42	727.2	3.741	8.582	-65.3
10/8 12:24 PM	0.37	39.43	7.187	12.86	749.9	2.135	126.2	-81.6
10/8 12:27 PM	0.70	40.67	7.185	12.57	746.5	1.401	319.7	-75.6
10/8 12:30 PM	1.00	41.03	7.194	12.63	746.5	1.207	199.8	-62.0
10/8 12:33 PM	1.30	43.51	7.222	12.37	743.3	0.734	100.3	-52.3
10/8 2:17 PM	12.27	43.31	7.3275	29.98	683.7	2.522	30.58	-41.0
10/8 2:20 PM	12.60	48.01	7.364	15.56	742.6	0.339	674.9	-84.2
10/8 2:23 PM	12.94	49.60	7.213	13.72	742.9	0.242	444.0	-72.2
10/8 2:26 PM	13.23	51.36	7.122	13.14	739.4	0.230	274.4	-69.9
10/8 2:29 PM	13.57	53.34	7.121	13.44	735.4	0.200	187.8	-76.1
10/8 2:32 PM	13.89	54.71	7.158	13.65	728.5	0.191	117.3	-83.3
10/8 2:35 PM	14.21	55.62	7.272	14.7	726.7	0.280	83.15	-89.1
10/8 2:38 PM	14.50	56.63	7.195	13.86	722.4	0.223	60.40	-89.8

Equipment Depth: _____ Flow Rate: 400 mL/min Volume Removed: 17.71 gal Volume Sampled: 1.41 gal

Odor? None Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-17R Weather: 73°F Clear

Date: _____ Sampler Name: TML

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.0 Depth to Top of Screen (ft): 8.1

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 933.82 Ground Surface Elevation (ft. MSL): 930.72

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		8.14	8.14
Water Elevation (ft. MSL):		925.68	925.68

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	4:34:12 PM	16:53:40

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Peristaltic Pump Sampling Equipment: Peristaltic Pump

Sampling Method: Low Flow Equipment Type: Dedicated

Decontamination Method: Alconox and water rinse

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
10/7 4:34 PM	0.00	8.02	6.820	19.01	1218	1.666	6.695	-78.5
10/7 4:37 PM	0.18	8.08	6.799	18.99	1219	1.222	0.066	-77.4
10/7 4:39 PM	0.30	8.12	6.789	19.10	1220	1.177	0.000	-77.4
10/7 4:41 PM	0.44	8.12	6.787	19.16	1229	0.961	0.000	-80.0
10/7 4:44 PM	0.60	8.12	6.790	19.18	1239	1.033	0.000	-82.5
10/7 4:47 PM	0.76	8.16	6.786	19.16	1254	0.833	0.003	-85.8
10/7 4:50 PM	0.92	8.16	6.800	19.17	1266	0.783	0.073	-88.8
10/7 4:53 PM	1.11	8.14	6.809	19.15	1271	0.783	0.052	-91.8

Equipment Depth: _____ Flow Rate: 200 mL/min Volume Removed: 1.11 gal Volume Sampled: 1.41 gal

Odor? None Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-19 Weather: 45°F Sunny

Date: 10/8/2025 Sampler Name: TML

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.0 Depth to Top of Screen (ft): 17.85

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 934.26 Ground Surface Elevation (ft. MSL): 931.38

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):	4.42	4.92	4.92
Water Elevation (ft. MSL):	929.84	929.34	929.34

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	7:44:17 AM	08:07:37

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Peristaltic Pump Sampling Equipment: Peristaltic Pump

Sampling Method: Low Flow Equipment Type: Dedicated

Decontamination Method: Alconox and water rinse

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
10/8 7:44 AM	0.00	4.67	6.950	14.88	643.6	0.790	2.658	-27.6
10/8 7:47 AM	0.15	4.67	6.954	15.08	645.6	0.684	1.087	-30.0
10/8 7:50 AM	0.33	4.72	6.998	15.22	647.4	0.537	0.508	-33.4
10/8 7:53 AM	0.49	4.78	7.029	15.30	648.7	0.448	1.576	-36.2
10/8 7:56 AM	0.66	4.81	7.055	15.36	647.6	0.391	0.956	-40.7
10/8 8:00 AM	0.86	4.86	7.049	15.36	646.3	0.330	0.739	-44.9
10/8 8:03 AM	1.02	4.88	7.064	15.21	644.8	0.311	0.141	-48.7
10/8 8:07 AM	1.23	4.92	7.068	15.17	644.0	0.279	0.719	-55.1

Equipment Depth: _____ Flow Rate: 200 mL/min Volume Removed: 1.23 gal Volume Sampled: 1.41 gal

Odor? Sulfur Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-20 Weather: _____

Date: 10/7/2025 Sampler Name: TML

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.0 Depth to Top of Screen (ft): 64.65

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 934.17 Ground Surface Elevation (ft. MSL): 931.95

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		63.71	63.71
Water Elevation (ft. MSL):		870.46	870.46

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	6:22 PM	19:09:07

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Electric Submersible Pump Sampling Equipment: Electric Submersible Pump

Sampling Method: _____ Equipment Type: _____

Decontamination Method: _____

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
10/7 6:24 PM	0.00	30.39	7.132	14.72	1042	1.839	86.79	-6.9
10/7 6:27 PM	0.25	31.64	7.032	14.71	1057	0.455	1600	-52.9
10/7 6:32 PM	0.66	35.15	7.007	14.17	1051	0.091	1550	-55.5
10/7 6:35 PM	1.05	37.12	7.004	14.35	1048	0.041	1087	-54.1
10/7 6:38 PM	1.28	37.82	7.015	14.49	1047	0.048	774.7	-54.5
10/7 6:41 PM	1.63	39.42	7.015	14.65	1046	0.072	630.0	-54.8
10/7 6:44 PM	1.92	40.61	7.039	14.39	1063	0.272	432.6	-53.7
10/7 6:47 PM	2.26	42.18	7.046	14.49	1062	0.149	235.3	-58.0
10/7 6:50 PM	2.57	44.26	7.037	14.45	1057	0.287	173.0	-57.9
10/7 6:53 PM	2.87	45.91	7.103	14.71	1055	0.441	108.5	-56.6
10/7 6:56 PM	3.20	47.25	7.145	14.49	1054	0.608	86.95	-54.3
10/7 6:59 PM	3.50	51.69	7.161	14.50	1052	0.922	88.88	-43.7
10/7 7:02 PM	3.81	57.20	7.205	14.29	1049	1.136	35.51	-34.4

Equipment Depth: _____ Flow Rate: 400 mL/min Volume Removed: 4.56 gal Volume Sampled: gal

Odor? None Color? Brown

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-21 Weather: _____

Date: 10/8/2025 Sampler Name: TML

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.0 Depth to Top of Screen (ft): 16.77

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 931.94 Ground Surface Elevation (ft. MSL): 929.17

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):	7.68		7.87
Water Elevation (ft. MSL):	924.26	931.94	924.07

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	9:04:52 AM	09:27:38

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Peristaltic Pump Sampling Equipment: Peristaltic Pump

Sampling Method: Low Flow Equipment Type: Dedicated

Decontamination Method: Alconox and water rinse

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
10/8 9:04 AM	0.00	7.79	7.08	16.40	729.7	2.041	0.000	-109.6
10/8 9:07 AM	0.12	7.81	7.111	16.26	727.0	1.860	0.000	-104.5
10/8 9:12 AM	0.41	7.82	7.141	16.29	710.2	1.203	0.029	-94.5
10/8 9:15 AM	0.55	7.83	7.140	16.29	708.4	1.090	0.000	-93.1
10/8 9:18 AM	0.73	7.87	7.144	16.34	707.9	0.974	0.000	-91.4
10/8 9:21 AM	0.88	7.87	7.103	16.37	708.3	0.875	0.000	-91.6
10/8 9:24 AM	1.06	7.87	7.096	16.39	707.8	0.801	0.000	-90.6
10/8 9:27 AM	1.20		7.077	16.38	708.6	0.740	0.010	-91.8

Equipment Depth: _____ Flow Rate: 200 mL/min Volume Removed: 1.2 gal Volume Sampled: 1.41 gal

Odor? None Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL
Well/Piezometer: MW-22 Weather: _____
Date: 10/8/2025 Sampler Name: TML

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.0 Depth to Top of Screen (ft): 67.62
Casing Diameter (in): 2.0 Casing Material: PVC
Top of Casing Elevation (ft. MSL): 931.74 Ground Surface Elevation (ft. MSL): 929.45

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):	30.38	49.12	49.12
Water Elevation (ft. MSL):	901.36	882.62	882.62

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	9:57:15 AM	10:32:04

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Electric Submersible Pump Sampling Equipment: Electric Submersible Pump
Sampling Method: Low Flow Equipment Type: Dedicated
Decontamination Method: Alconox and water rinse

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
10/8 9:57 AM	0.00	32.49	7.168	13.03	729.9	0.25	244.4	-84.7
10/8 10:00 AM	0.36	34.94	6.947	13.32	742.6	0.079	181.7	-88.6
10/8 10:03 AM	0.64	36.41	6.953	13.49	739.5	0.048	108.0	-88.2
10/8 10:06 AM	0.93	36.61	6.969	13.96	738.5	0.097	61.09	-98.0
10/8 10:09 AM	1.26	37.91	7.030	14.31	738.1	0.093	88.51	-102.8
10/8 10:12 AM	1.58	38.43	7.133	13.92	738.2	0.035	56.01	-110.7
10/8 10:15 AM	1.89	41.13	7.165	13.99	759.9	0.521	50.51	-101.8
10/8 10:17 AM	2.12	42.35	7.174	14.01	761.9	0.014	38.89	-108.5
10/8 10:20 AM	2.44	43.07	7.220	14.03	760.9	0.007	33.90	-117.3
10/8 10:23 AM	2.73	44.75	7.249	14.30	761.2	0.047	35.67	-120.1
10/8 10:26 AM	3.07	46.04	7.257	13.94	764.9	0.000	22.81	-122.9
10/8 10:29 AM	3.36	47.65	7.281	13.96	762.9	0.000	22.37	-124.7
10/8 10:32 AM	3.68	49.12	7.303	13.96	761.0	0.000	24.91	-126.2

Equipment Depth: _____ Flow Rate: 400 mL/min Volume Removed: 3.68 gal Volume Sampled: 1.41 gal
Odor? None Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-5 Weather: _____

Date: 10/8/2025 Sampler Name: TML

Monitoring Well Details

Construction Data

Borehole Diameter (in): 10.8 Depth to Top of Screen (ft): 7.76

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 949.34 Ground Surface Elevation (ft. MSL): 945.5

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):	10.11	13.72	13.72
Water Elevation (ft. MSL):	939.23	935.62	935.62

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) No

	Start	End
Purge Date/Time	11:06:45 AM	11:47:19

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Peristaltic Pump Sampling Equipment: Peristaltic Pump

Sampling Method: _____ Equipment Type: _____

Decontamination Method: _____

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
10/8 11:06 AM	0.00	10.40	6.882	16.60	1416	2.608	3.144	-10.3
10/8 11:09 AM	0.13	10.73	6.792	16.83	1399	1.826	1.812	5.9
10/8 11:12 AM	0.29	10.96	6.759	16.89	1399	1.078	0.000	-26.6
10/8 11:15 AM	0.46	11.38	6.716	16.80	1398	0.851	0.018	-46.4
10/8 11:18 AM	0.60	11.51	6.680	16.71	1404	1.018	0.000	-53.5
10/8 11:21 AM	0.76	11.95	6.716	16.64	1408	0.304	0.000	-59.3
10/8 11:24 AM	0.93	12.08	6.711	16.58	1409	0.277	0.052	-57.1
10/8 11:27 AM	1.08	12.21	6.690	16.50	1418	0.914	0.000	-53.7
10/8 11:29 AM	1.22	12.40	6.764	16.30	1483	1.963	0.000	-40.8
10/8 11:32 AM	1.35	12.62	6.729	16.32	1484	0.963	0.000	-33.2
10/8 11:35 AM	1.51	12.85	6.720	16.40	1473	0.565	0.000	-37.6
10/8 11:38 AM	1.67	13.05	6.724	16.38	1469	0.494	0.000	-37.2
10/8 11:41 AM	1.86	13.30	6.713	16.28	1465	0.426	0.000	-40.8

Equipment Depth: _____ Flow Rate: 200 mL/min Volume Removed: 2.15 gal Volume Sampled: gal

Odor? Sulfur Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL
Well/Piezometer: MW-7R Weather: _____
Date: 10/7/2025 Sampler Name: TML

Monitoring Well Details

Construction Data

Borehole Diameter (in): 8.0 Depth to Top of Screen (ft): 9.68
Casing Diameter (in): 2.0 Casing Material: PVC
Top of Casing Elevation (ft. MSL): 932.77 Ground Surface Elevation (ft. MSL): 930.09

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		10.92	10.92
Water Elevation (ft. MSL):		921.85	921.85

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	3:29:20 PM	16:03:33

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Peristaltic Pump Sampling Equipment: Peristaltic Pump

Sampling Method: _____ Equipment Type: _____

Decontamination Method: _____

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
10/7 3:29 PM	0.00	7.76	6.97	16.46	2058	2.069	0.105	8.1
10/7 3:33 PM	0.41	8.43	6.835	16.82	1610	1.577	0.129	42.8
10/7 3:36 PM	0.76	8.63	6.754	16.85	1554	1.281	0.069	53.3
10/7 3:39 PM	1.07	8.85	6.742	17.06	1541	1.128	0.171	51.2
10/7 3:42 PM	1.39	9.07	6.746	17.19	1541	1.078	0.226	24.4
10/7 3:45 PM	1.70	9.41	6.751	17.27	1545	0.844	0.248	-2.1
10/7 3:50 PM	2.19	9.80	6.471	17.33	1549	0.758	0.257	-14.4
10/7 3:55 PM	2.72	10.17	6.753	17.34	1555	0.666	0.252	-31.2
10/7 4:00 PM	3.24	10.55	6.752	17.38	1557	0.594	0.213	-41.3
10/7 4:03 PM	3.61	10.92	6.754	17.34	1557	0.562	0.149	-46.3

Equipment Depth: _____ Flow Rate: 400 mL/min Volume Removed: 3.61 gal Volume Sampled: gal

Odor? None Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: MW-8 Weather: _____

Date: 10/7/2025 Sampler Name: TML

Monitoring Well Details

Construction Data

Borehole Diameter (in): 10.8 Depth to Top of Screen (ft): 11.65

Casing Diameter (in): 2.0 Casing Material: PVC

Top of Casing Elevation (ft. MSL): 939.91 Ground Surface Elevation (ft. MSL): 937.8

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):		15.04	15.04
Water Elevation (ft. MSL):		924.87	924.87

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time	1:10:55 PM	13:24:00

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: Peristaltic Pump Sampling Equipment: Peristaltic Pump

Sampling Method: _____ Equipment Type: _____

Decontamination Method: _____

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP
10/7 1:12 PM	0.00	14.97	6.540	16.50	845.2	2.780	0.930	130.3
10/7 1:15 PM	0.13	14.97	6.305	15.34	850.4	2.407	0.000	140.2
10/7 1:18 PM	0.29	15.01	6.390	14.89	852.1	2.057	0.000	134.2
10/7 1:21 PM	0.45	15.03	6.466	14.73	854.4	1.932	0.000	130.1
10/7 1:24 PM	0.58	15.04	6.531	14.84	854.1	1.884	0.000	126.1

Equipment Depth: _____ Flow Rate: 200 mL/min Volume Removed: .58 gal Volume Sampled: gal

Odor? None Color? None

Comments: _____



Groundwater Sampling Field Sheet

Disposal Site Name: Viking Pump Foundry Sand Landfill Permit No.: 07-SDP-12-89P-FSL

Well/Piezometer: SW-01 Weather: _____

Date: 10/7/2025 Sampler Name: TML

Monitoring Well Details

Construction Data

Borehole Diameter (in): _____ Depth to Top of Screen (ft): _____

Casing Diameter (in): _____ Casing Material: _____

Top of Casing Elevation (ft. MSL): _____ Ground Surface Elevation (ft. MSL): _____

Field Observations

Well Lock Condition: _____

	Before Purging	After Purging	Before Sampling
Depth to Water Level (ft.):			
Water Elevation (ft. MSL):			

Screen Submerged? (Depth to Water Level < Depth to Top of Screen) Yes

	Start	End
Purge Date/Time		

Well Conditions Commentary:

Well Condition: _____ Well Cap Condition: _____ Well ID Condition: _____

Sampling Equipment and Methods:

Purging Equipment: _____ Sampling Equipment: _____

Sampling Method: _____ Equipment Type: _____

Decontamination Method: _____

Field Analysis

Date/Time	Cumulative Volume Purged	Depth To Water	pH (standard	Temp	Conductivity	Dissolved Oxygen (mg/	Turbidity	ORP

Equipment Depth: _____ Flow Rate: mL/min Volume Removed: gal Volume Sampled: gal

Odor? _____ Color? _____

Comments: Dry

Appendix B

**Laboratory Analytical Reports – April 2025
and October 2025**

ANALYTICAL REPORT

PREPARED FOR

Attn: Alicia Ferber
GHD Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112
Generated 12/18/2025 10:26:07 AM Revision 2

JOB DESCRIPTION

Leachate Semi-Annual LCS Sample

JOB NUMBER

310-304512-1

Eurofins Cedar Falls

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.

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Authorized for release by
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Case Narrative

Client: GHD Inc.
Project: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

Job ID: 310-304512-1

Eurofins Cedar Falls

Job Narrative 310-304512-1

REVISION

The report being provided is a revision of the original report sent on 4/28/2025. The report (revision 1) is being revised due to missing nitrate data in first report.

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 4/17/2025 2:35 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 5.6°C.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) analyzed in batch 310-452597 was outside the method criteria for the following analyte: Bromomethane (-21.9%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 is considered estimated.

Method 8260D: The following sample 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: Trip Blank (310-304512-2).

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

HPLC/IC

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.

Eurofins Cedar Falls

Case Narrative

Client: GHD Inc.
Project: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

Job ID: 310-304512-2

Eurofins Cedar Falls

Job Narrative 310-304512-2

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 4/17/2025 2:35 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 5.6°C.

HPLC/IC

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

Eurofins Cedar Falls

Sample Summary

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
310-304512-1	LCS-0425	Water	04/17/25 13:00	04/17/25 14:35	Iowa
310-304512-2	Trip Blank	Water	04/17/25 00:00	04/17/25 14:35	Iowa

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Detection Summary

Client: GHD Inc.

Job ID: 310-304512-1

Project/Site: Leachate Semi-Annual LCS Sample

Client Sample ID: LCS-0425

Lab Sample ID: 310-304512-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	17.0		1.00		mg/L	1		300.0	Total/NA
Nitrate as N	0.314		0.200		mg/L	1		300.0	Total/NA
Sulfate	48.9		1.00		mg/L	1		300.0	Total/NA
Barium	0.0693		0.00200		mg/L	1		6020B	Total/NA
Iron	1.06		0.100		mg/L	1		6020B	Total/NA
Manganese	0.0898		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.0292		0.00200		mg/L	1		6020B	Total/NA
Zinc	0.0280		0.0200		mg/L	1		6020B	Total/NA
Flashpoint	>161		65.0		Degrees F	1		D93_85	Total/NA
Total Dissolved Solids	540		250		mg/L	1		SM 2540C	Total/NA
pH	7.6	HF	1.0		SU	1		SM 4500 H+ B	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 310-304512-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

Client Sample ID: LCS-0425

Lab Sample ID: 310-304512-1

Date Collected: 04/17/25 13:00

Matrix: Water

Date Received: 04/17/25 14:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/24/25 17:02	1
Benzene	<0.500		0.500		ug/L			04/24/25 17:02	1
Bromobenzene	<1.00		1.00		ug/L			04/24/25 17:02	1
Bromochloromethane	<5.00		5.00		ug/L			04/24/25 17:02	1
Bromodichloromethane	<1.00		1.00		ug/L			04/24/25 17:02	1
Bromoform	<5.00		5.00		ug/L			04/24/25 17:02	1
Bromomethane	<4.00		4.00		ug/L			04/24/25 17:02	1
2-Butanone (MEK)	<10.0		10.0		ug/L			04/24/25 17:02	1
Carbon disulfide	<1.00		1.00		ug/L			04/24/25 17:02	1
Carbon tetrachloride	<2.00		2.00		ug/L			04/24/25 17:02	1
Chlorobenzene	<1.00		1.00		ug/L			04/24/25 17:02	1
Chlorodibromomethane	<5.00		5.00		ug/L			04/24/25 17:02	1
Chloroethane	<4.00		4.00		ug/L			04/24/25 17:02	1
Chloroform	<3.00		3.00		ug/L			04/24/25 17:02	1
Chloromethane	<3.00		3.00		ug/L			04/24/25 17:02	1
2-Chlorotoluene	<1.00		1.00		ug/L			04/24/25 17:02	1
4-Chlorotoluene	<1.00		1.00		ug/L			04/24/25 17:02	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			04/24/25 17:02	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			04/24/25 17:02	1
1,2-Dibromo-3-chloropropane	<5.00		5.00		ug/L			04/24/25 17:02	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			04/24/25 17:02	1
Dibromomethane	<1.00		1.00		ug/L			04/24/25 17:02	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			04/24/25 17:02	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			04/24/25 17:02	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			04/24/25 17:02	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			04/24/25 17:02	1
1,1-Dichloroethane	<1.00		1.00		ug/L			04/24/25 17:02	1
1,2-Dichloroethane	<1.00		1.00		ug/L			04/24/25 17:02	1
1,1-Dichloroethene	<2.00		2.00		ug/L			04/24/25 17:02	1
1,2-Dichloropropane	<1.00		1.00		ug/L			04/24/25 17:02	1
1,3-Dichloropropane	<1.00		1.00		ug/L			04/24/25 17:02	1
2,2-Dichloropropane	<4.00		4.00		ug/L			04/24/25 17:02	1
1,1-Dichloropropene	<1.00		1.00		ug/L			04/24/25 17:02	1
Ethylbenzene	<1.00		1.00		ug/L			04/24/25 17:02	1
Hexachlorobutadiene	<5.00		5.00		ug/L			04/24/25 17:02	1
Hexane	<1.00		1.00		ug/L			04/24/25 17:02	1
Isopropylbenzene	<1.00		1.00		ug/L			04/24/25 17:02	1
Methylene chloride	<5.00		5.00		ug/L			04/24/25 17:02	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			04/24/25 17:02	1
Naphthalene	<5.00		5.00		ug/L			04/24/25 17:02	1
n-Butylbenzene	<1.00		1.00		ug/L			04/24/25 17:02	1
n-Propylbenzene	<1.00		1.00		ug/L			04/24/25 17:02	1
p-Isopropyltoluene	<1.00		1.00		ug/L			04/24/25 17:02	1
sec-Butylbenzene	<1.00		1.00		ug/L			04/24/25 17:02	1
Styrene	<1.00		1.00		ug/L			04/24/25 17:02	1
tert-Butylbenzene	<1.00		1.00		ug/L			04/24/25 17:02	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			04/24/25 17:02	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			04/24/25 17:02	1
Tetrachloroethene	<1.00		1.00		ug/L			04/24/25 17:02	1

Eurofins Cedar Falls

Client Sample Results

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

Client Sample ID: LCS-0425

Lab Sample ID: 310-304512-1

Date Collected: 04/17/25 13:00

Matrix: Water

Date Received: 04/17/25 14:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	<1.00		1.00		ug/L			04/24/25 17:02	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			04/24/25 17:02	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			04/24/25 17:02	1
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			04/24/25 17:02	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			04/24/25 17:02	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			04/24/25 17:02	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			04/24/25 17:02	1
Trichloroethene	<1.00		1.00		ug/L			04/24/25 17:02	1
Trichlorofluoromethane	<4.00		4.00		ug/L			04/24/25 17:02	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			04/24/25 17:02	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			04/24/25 17:02	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			04/24/25 17:02	1
Vinyl chloride	<1.00		1.00		ug/L			04/24/25 17:02	1
Xylenes, Total	<3.00		3.00		ug/L			04/24/25 17:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		80 - 120		04/24/25 17:02	1
Dibromofluoromethane (Surr)	107		73 - 130		04/24/25 17:02	1
Toluene-d8 (Surr)	98		80 - 120		04/24/25 17:02	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	17.0		1.00		mg/L			04/17/25 16:51	1
Nitrate as N	0.314		0.200		mg/L			04/17/25 16:51	1
Nitrite as N	<0.200		0.200		mg/L			04/17/25 16:51	1
Sulfate	48.9		1.00		mg/L			04/17/25 16:51	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		04/21/25 09:00	04/21/25 20:35	1
Barium	0.0693		0.00200		mg/L		04/21/25 09:00	04/21/25 20:35	1
Cadmium	<0.000200		0.000200		mg/L		04/21/25 09:00	04/21/25 20:35	1
Chromium	<0.00500		0.00500		mg/L		04/21/25 09:00	04/21/25 20:35	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/21/25 20:35	1
Iron	1.06		0.100		mg/L		04/21/25 09:00	04/21/25 20:35	1
Lead	<0.000500		0.000500		mg/L		04/21/25 09:00	04/21/25 20:35	1
Manganese	0.0898		0.0100		mg/L		04/21/25 09:00	04/21/25 20:35	1
Molybdenum	0.0292		0.00200		mg/L		04/21/25 09:00	04/22/25 13:16	1
Nickel	<0.00500		0.00500		mg/L		04/21/25 09:00	04/21/25 20:35	1
Selenium	<0.00500		0.00500		mg/L		04/21/25 09:00	04/21/25 20:35	1
Silver	<0.00100		0.00100		mg/L		04/21/25 09:00	04/21/25 20:35	1
Zinc	0.0280		0.0200		mg/L		04/21/25 09:00	04/21/25 20:35	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/24/25 12:56	04/25/25 10:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	<4.8		4.8		mg/L		04/24/25 12:30	04/24/25 12:30	1
Ammonia (EPA 350.1)	<0.500		0.500		mg/L		04/25/25 08:59	04/25/25 18:43	1

Eurofins Cedar Falls

Client Sample Results

Client: GHD Inc.

Job ID: 310-304512-1

Project/Site: Leachate Semi-Annual LCS Sample

Client Sample ID: LCS-0425

Lab Sample ID: 310-304512-1

Date Collected: 04/17/25 13:00

Matrix: Water

Date Received: 04/17/25 14:35

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<3.00		3.00		mg/L		04/22/25 10:31	04/22/25 12:16	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 20:13	1
Total Suspended Solids (USGS I-3765-85)	<5.00		5.00		mg/L			04/22/25 16:07	1
Total Dissolved Solids (SM 2540C)	540		250		mg/L			04/22/25 14:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			04/24/25 10:53	5
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint (ASTM D93_85)	>161		65.0		Degrees F			04/23/25 13:36	1
pH (SM 4500 H+ B)	7.6	HF	1.0		SU			04/17/25 15:25	1

Client Sample Results

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

Client Sample ID: Trip Blank

Lab Sample ID: 310-304512-2

Date Collected: 04/17/25 00:00

Matrix: Water

Date Received: 04/17/25 14:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/24/25 14:23	1
Benzene	<0.500		0.500		ug/L			04/24/25 14:23	1
Bromobenzene	<1.00		1.00		ug/L			04/24/25 14:23	1
Bromochloromethane	<5.00		5.00		ug/L			04/24/25 14:23	1
Bromodichloromethane	<1.00		1.00		ug/L			04/24/25 14:23	1
Bromoform	<5.00		5.00		ug/L			04/24/25 14:23	1
Bromomethane	<4.00		4.00		ug/L			04/24/25 14:23	1
2-Butanone (MEK)	<10.0		10.0		ug/L			04/24/25 14:23	1
Carbon disulfide	<1.00		1.00		ug/L			04/24/25 14:23	1
Carbon tetrachloride	<2.00		2.00		ug/L			04/24/25 14:23	1
Chlorobenzene	<1.00		1.00		ug/L			04/24/25 14:23	1
Chlorodibromomethane	<5.00		5.00		ug/L			04/24/25 14:23	1
Chloroethane	<4.00		4.00		ug/L			04/24/25 14:23	1
Chloroform	<3.00		3.00		ug/L			04/24/25 14:23	1
Chloromethane	<3.00		3.00		ug/L			04/24/25 14:23	1
2-Chlorotoluene	<1.00		1.00		ug/L			04/24/25 14:23	1
4-Chlorotoluene	<1.00		1.00		ug/L			04/24/25 14:23	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			04/24/25 14:23	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			04/24/25 14:23	1
1,2-Dibromo-3-chloropropane	<5.00		5.00		ug/L			04/24/25 14:23	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			04/24/25 14:23	1
Dibromomethane	<1.00		1.00		ug/L			04/24/25 14:23	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			04/24/25 14:23	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			04/24/25 14:23	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			04/24/25 14:23	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			04/24/25 14:23	1
1,1-Dichloroethane	<1.00		1.00		ug/L			04/24/25 14:23	1
1,2-Dichloroethane	<1.00		1.00		ug/L			04/24/25 14:23	1
1,1-Dichloroethene	<2.00		2.00		ug/L			04/24/25 14:23	1
1,2-Dichloropropane	<1.00		1.00		ug/L			04/24/25 14:23	1
1,3-Dichloropropane	<1.00		1.00		ug/L			04/24/25 14:23	1
2,2-Dichloropropane	<4.00		4.00		ug/L			04/24/25 14:23	1
1,1-Dichloropropene	<1.00		1.00		ug/L			04/24/25 14:23	1
Ethylbenzene	<1.00		1.00		ug/L			04/24/25 14:23	1
Hexachlorobutadiene	<5.00		5.00		ug/L			04/24/25 14:23	1
Hexane	<1.00		1.00		ug/L			04/24/25 14:23	1
Isopropylbenzene	<1.00		1.00		ug/L			04/24/25 14:23	1
Methylene chloride	<5.00		5.00		ug/L			04/24/25 14:23	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			04/24/25 14:23	1
Naphthalene	<5.00		5.00		ug/L			04/24/25 14:23	1
n-Butylbenzene	<1.00		1.00		ug/L			04/24/25 14:23	1
n-Propylbenzene	<1.00		1.00		ug/L			04/24/25 14:23	1
p-Isopropyltoluene	<1.00		1.00		ug/L			04/24/25 14:23	1
sec-Butylbenzene	<1.00		1.00		ug/L			04/24/25 14:23	1
Styrene	<1.00		1.00		ug/L			04/24/25 14:23	1
tert-Butylbenzene	<1.00		1.00		ug/L			04/24/25 14:23	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			04/24/25 14:23	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			04/24/25 14:23	1
Tetrachloroethene	<1.00		1.00		ug/L			04/24/25 14:23	1

Eurofins Cedar Falls

Client Sample Results

Client: GHD Inc.

Job ID: 310-304512-1

Project/Site: Leachate Semi-Annual LCS Sample

Client Sample ID: Trip Blank

Lab Sample ID: 310-304512-2

Date Collected: 04/17/25 00:00

Matrix: Water

Date Received: 04/17/25 14:35

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	<1.00		1.00		ug/L			04/24/25 14:23	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			04/24/25 14:23	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			04/24/25 14:23	1
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			04/24/25 14:23	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			04/24/25 14:23	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			04/24/25 14:23	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			04/24/25 14:23	1
Trichloroethene	<1.00		1.00		ug/L			04/24/25 14:23	1
Trichlorofluoromethane	<4.00		4.00		ug/L			04/24/25 14:23	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			04/24/25 14:23	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			04/24/25 14:23	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			04/24/25 14:23	1
Vinyl chloride	<1.00		1.00		ug/L			04/24/25 14:23	1
Xylenes, Total	<3.00		3.00		ug/L			04/24/25 14:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		04/24/25 14:23	1
Dibromofluoromethane (Surr)	107		73 - 130		04/24/25 14:23	1
Toluene-d8 (Surr)	98		80 - 120		04/24/25 14:23	1

Definitions/Glossary

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

Qualifiers

Metals

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

General Chemistry

Qualifier	Qualifier Description
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

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: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

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

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	BFB	DBFM	TOL
		(80-120)	(73-130)	(80-120)
310-304512-1	LCS-0425	99	107	98
310-304512-2	Trip Blank	101	107	98
LCS 310-452597/7	Lab Control Sample	99	98	101
LCS 310-452597/8	Lab Control Sample	99	105	98
MB 310-452597/6	Method Blank	99	106	99
Surrogate Legend				
BFB = 4-Bromofluorobenzene (Surr)				
DBFM = Dibromofluoromethane (Surr)				
TOL = Toluene-d8 (Surr)				

QC Sample Results

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

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

Lab Sample ID: MB 310-452597/6

Matrix: Water

Analysis Batch: 452597

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/24/25 13:14	1
Benzene	<0.500		0.500		ug/L			04/24/25 13:14	1
Bromobenzene	<1.00		1.00		ug/L			04/24/25 13:14	1
Bromochloromethane	<5.00		5.00		ug/L			04/24/25 13:14	1
Bromodichloromethane	<1.00		1.00		ug/L			04/24/25 13:14	1
Bromoform	<5.00		5.00		ug/L			04/24/25 13:14	1
Bromomethane	<4.00		4.00		ug/L			04/24/25 13:14	1
2-Butanone (MEK)	<10.0		10.0		ug/L			04/24/25 13:14	1
Carbon disulfide	<1.00		1.00		ug/L			04/24/25 13:14	1
Carbon tetrachloride	<2.00		2.00		ug/L			04/24/25 13:14	1
Chlorobenzene	<1.00		1.00		ug/L			04/24/25 13:14	1
Chlorodibromomethane	<5.00		5.00		ug/L			04/24/25 13:14	1
Chloroethane	<4.00		4.00		ug/L			04/24/25 13:14	1
Chloroform	<3.00		3.00		ug/L			04/24/25 13:14	1
Chloromethane	<3.00		3.00		ug/L			04/24/25 13:14	1
2-Chlorotoluene	<1.00		1.00		ug/L			04/24/25 13:14	1
4-Chlorotoluene	<1.00		1.00		ug/L			04/24/25 13:14	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			04/24/25 13:14	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			04/24/25 13:14	1
1,2-Dibromo-3-chloropropane	<5.00		5.00		ug/L			04/24/25 13:14	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			04/24/25 13:14	1
Dibromomethane	<1.00		1.00		ug/L			04/24/25 13:14	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			04/24/25 13:14	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			04/24/25 13:14	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			04/24/25 13:14	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			04/24/25 13:14	1
1,1-Dichloroethane	<1.00		1.00		ug/L			04/24/25 13:14	1
1,2-Dichloroethane	<1.00		1.00		ug/L			04/24/25 13:14	1
1,1-Dichloroethene	<2.00		2.00		ug/L			04/24/25 13:14	1
1,2-Dichloropropane	<1.00		1.00		ug/L			04/24/25 13:14	1
1,3-Dichloropropane	<1.00		1.00		ug/L			04/24/25 13:14	1
2,2-Dichloropropane	<4.00		4.00		ug/L			04/24/25 13:14	1
1,1-Dichloropropene	<1.00		1.00		ug/L			04/24/25 13:14	1
Ethylbenzene	<1.00		1.00		ug/L			04/24/25 13:14	1
Hexachlorobutadiene	<5.00		5.00		ug/L			04/24/25 13:14	1
Hexane	<1.00		1.00		ug/L			04/24/25 13:14	1
Isopropylbenzene	<1.00		1.00		ug/L			04/24/25 13:14	1
Methylene chloride	<5.00		5.00		ug/L			04/24/25 13:14	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			04/24/25 13:14	1
Naphthalene	<5.00		5.00		ug/L			04/24/25 13:14	1
n-Butylbenzene	<1.00		1.00		ug/L			04/24/25 13:14	1
n-Propylbenzene	<1.00		1.00		ug/L			04/24/25 13:14	1
p-Isopropyltoluene	<1.00		1.00		ug/L			04/24/25 13:14	1
sec-Butylbenzene	<1.00		1.00		ug/L			04/24/25 13:14	1
Styrene	<1.00		1.00		ug/L			04/24/25 13:14	1
tert-Butylbenzene	<1.00		1.00		ug/L			04/24/25 13:14	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			04/24/25 13:14	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			04/24/25 13:14	1

Eurofins Cedar Falls

QC Sample Results

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

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

Lab Sample ID: MB 310-452597/6

Matrix: Water

Analysis Batch: 452597

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<1.00		1.00		ug/L			04/24/25 13:14	1
Toluene	<1.00		1.00		ug/L			04/24/25 13:14	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			04/24/25 13:14	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			04/24/25 13:14	1
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			04/24/25 13:14	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			04/24/25 13:14	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			04/24/25 13:14	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			04/24/25 13:14	1
Trichloroethene	<1.00		1.00		ug/L			04/24/25 13:14	1
Trichlorofluoromethane	<4.00		4.00		ug/L			04/24/25 13:14	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			04/24/25 13:14	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			04/24/25 13:14	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			04/24/25 13:14	1
Vinyl chloride	<1.00		1.00		ug/L			04/24/25 13:14	1
Xylenes, Total	<3.00		3.00		ug/L			04/24/25 13:14	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		80 - 120		04/24/25 13:14	1
Dibromofluoromethane (Surr)	106		73 - 130		04/24/25 13:14	1
Toluene-d8 (Surr)	99		80 - 120		04/24/25 13:14	1

Lab Sample ID: LCS 310-452597/7

Matrix: Water

Analysis Batch: 452597

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	40.0	33.32		ug/L		83	50 - 150
Benzene	20.0	18.17		ug/L		91	72 - 124
Bromobenzene	20.0	18.45		ug/L		92	72 - 120
Bromochloromethane	20.0	18.34		ug/L		92	73 - 130
Bromodichloromethane	20.0	17.62		ug/L		88	74 - 122
Bromoform	20.0	16.79		ug/L		84	61 - 122
2-Butanone (MEK)	40.0	34.44		ug/L		86	50 - 150
Carbon disulfide	20.0	19.04		ug/L		95	59 - 135
Carbon tetrachloride	20.0	17.21		ug/L		86	67 - 132
Chlorobenzene	20.0	18.67		ug/L		93	76 - 120
Chlorodibromomethane	20.0	18.31		ug/L		92	71 - 121
Chloroform	20.0	17.63		ug/L		88	72 - 125
2-Chlorotoluene	20.0	19.01		ug/L		95	73 - 121
4-Chlorotoluene	20.0	19.01		ug/L		95	72 - 121
cis-1,2-Dichloroethene	20.0	18.22		ug/L		91	74 - 123
cis-1,3-Dichloropropene	20.0	16.89		ug/L		84	71 - 125
1,2-Dibromo-3-chloropropane	20.0	16.93		ug/L		85	50 - 150
1,2-Dibromoethane (EDB)	20.0	16.92		ug/L		85	75 - 125
Dibromomethane	20.0	17.74		ug/L		89	74 - 125
1,2-Dichlorobenzene	20.0	18.79		ug/L		94	74 - 120
1,3-Dichlorobenzene	20.0	18.49		ug/L		92	72 - 120
1,4-Dichlorobenzene	20.0	18.63		ug/L		93	72 - 120

Eurofins Cedar Falls

QC Sample Results

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

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

Lab Sample ID: LCS 310-452597/7

Matrix: Water

Analysis Batch: 452597

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethane	20.0	18.34		ug/L		92	70 - 127
1,2-Dichloroethane	20.0	18.35		ug/L		92	71 - 125
1,1-Dichloroethene	20.0	18.70		ug/L		94	63 - 132
1,2-Dichloropropane	20.0	17.86		ug/L		89	73 - 124
1,3-Dichloropropane	20.0	18.37		ug/L		92	72 - 125
2,2-Dichloropropane	20.0	19.55		ug/L		98	50 - 150
1,1-Dichloropropene	20.0	18.36		ug/L		92	69 - 132
Ethylbenzene	20.0	19.05		ug/L		95	74 - 122
Hexachlorobutadiene	20.0	18.25		ug/L		91	50 - 150
Hexane	20.0	19.19		ug/L		96	45 - 150
Isopropylbenzene	20.0	19.12		ug/L		96	73 - 125
Methylene chloride	20.0	18.09		ug/L		90	50 - 150
Methyl tert-butyl ether	20.0	16.03		ug/L		80	68 - 130
Naphthalene	20.0	17.35		ug/L		87	50 - 150
n-Butylbenzene	20.0	18.78		ug/L		94	67 - 131
n-Propylbenzene	20.0	19.31		ug/L		97	72 - 126
p-Isopropyltoluene	20.0	18.86		ug/L		94	70 - 127
sec-Butylbenzene	20.0	18.79		ug/L		94	70 - 127
Styrene	20.0	18.96		ug/L		95	74 - 121
tert-Butylbenzene	20.0	18.58		ug/L		93	72 - 124
1,1,1,2-Tetrachloroethane	20.0	16.98		ug/L		85	71 - 120
1,1,2,2-Tetrachloroethane	20.0	18.84		ug/L		94	68 - 124
Tetrachloroethene	20.0	19.16		ug/L		96	71 - 130
Toluene	20.0	18.37		ug/L		92	74 - 123
trans-1,2-Dichloroethene	20.0	18.30		ug/L		92	70 - 126
trans-1,3-Dichloropropene	20.0	16.58		ug/L		83	69 - 123
1,2,3-Trichlorobenzene	20.0	18.32		ug/L		92	50 - 150
1,2,4-Trichlorobenzene	20.0	18.36		ug/L		92	68 - 124
1,1,1-Trichloroethane	20.0	18.27		ug/L		91	73 - 129
1,1,2-Trichloroethane	20.0	17.17		ug/L		86	73 - 123
Trichloroethene	20.0	18.10		ug/L		91	72 - 126
1,2,3-Trichloropropane	20.0	18.31		ug/L		92	65 - 127
1,2,4-Trimethylbenzene	20.0	18.61		ug/L		93	73 - 124
1,3,5-Trimethylbenzene	20.0	18.65		ug/L		93	73 - 123
Xylenes, Total	40.0	38.07		ug/L		95	73 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	98		73 - 130
Toluene-d8 (Surr)	101		80 - 120

Lab Sample ID: LCS 310-452597/8

Matrix: Water

Analysis Batch: 452597

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	14.23		ug/L		71	23 - 150
Chloroethane	20.0	18.22		ug/L		91	54 - 136

Eurofins Cedar Falls

QC Sample Results

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

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

Lab Sample ID: LCS 310-452597/8

Matrix: Water

Analysis Batch: 452597

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloromethane	20.0	15.21		ug/L		76	38 - 150
Dichlorodifluoromethane	20.0	20.55		ug/L		103	39 - 150
Trichlorofluoromethane	20.0	20.67		ug/L		103	54 - 149
Vinyl chloride	20.0	19.00		ug/L		95	56 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	105		73 - 130
Toluene-d8 (Surr)	98		80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 310-452108/3

Matrix: Water

Analysis Batch: 452108

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			04/17/25 12:30	1
Nitrate as N	<0.200		0.200		mg/L			04/17/25 12:30	1
Nitrite as N	<0.200		0.200		mg/L			04/17/25 12:30	1
Sulfate	<1.00		1.00		mg/L			04/17/25 12:30	1

Lab Sample ID: LCS 310-452108/4

Matrix: Water

Analysis Batch: 452108

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	10.24		mg/L		102	90 - 110
Nitrate as N	2.00	2.061		mg/L		103	90 - 110
Nitrite as N	2.00	2.088		mg/L		104	90 - 110
Sulfate	10.0	9.843		mg/L		98	90 - 110

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-452054/1-A

Matrix: Water

Analysis Batch: 452282

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 452054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		04/21/25 09:00	04/21/25 19:38	1
Barium	<0.00200		0.00200		mg/L		04/21/25 09:00	04/21/25 19:38	1
Cadmium	<0.000200		0.000200		mg/L		04/21/25 09:00	04/21/25 19:38	1
Chromium	<0.00500		0.00500		mg/L		04/21/25 09:00	04/21/25 19:38	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/21/25 19:38	1
Iron	<0.100		0.100		mg/L		04/21/25 09:00	04/21/25 19:38	1
Lead	<0.000500		0.000500		mg/L		04/21/25 09:00	04/21/25 19:38	1
Manganese	<0.0100		0.0100		mg/L		04/21/25 09:00	04/21/25 19:38	1
Nickel	<0.00500		0.00500		mg/L		04/21/25 09:00	04/21/25 19:38	1
Selenium	<0.00500		0.00500		mg/L		04/21/25 09:00	04/21/25 19:38	1

Eurofins Cedar Falls

QC Sample Results

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

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

Lab Sample ID: MB 310-452054/1-A
Matrix: Water
Analysis Batch: 452282

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.00100		0.00100		mg/L		04/21/25 09:00	04/21/25 19:38	1
Zinc	<0.0200		0.0200		mg/L		04/21/25 09:00	04/21/25 19:38	1

Lab Sample ID: MB 310-452054/1-A
Matrix: Water
Analysis Batch: 452401

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452054

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Molybdenum	<0.00200		0.00200		mg/L		04/21/25 09:00	04/22/25 13:02	1

Lab Sample ID: LCS 310-452054/2-A
Matrix: Water
Analysis Batch: 452282

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.2025		mg/L		101	80 - 120
Barium	0.100	0.1018		mg/L		102	80 - 120
Cadmium	0.100	0.09828		mg/L		98	80 - 120
Chromium	0.100	0.1027		mg/L		103	80 - 120
Copper	0.200	0.2040		mg/L		102	80 - 120
Iron	0.200	0.2087		mg/L		104	80 - 120
Lead	0.200	0.2047		mg/L		102	80 - 120
Manganese	0.100	0.09797		mg/L		98	80 - 120
Nickel	0.200	0.2046		mg/L		102	80 - 120
Selenium	0.400	0.3956		mg/L		99	80 - 120
Silver	0.100	0.1104		mg/L		110	80 - 120
Zinc	0.200	0.1950		mg/L		98	80 - 120

Lab Sample ID: LCS 310-452054/2-A
Matrix: Water
Analysis Batch: 452401

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452054

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Molybdenum	0.200	0.2056		mg/L		103	80 - 120

Lab Sample ID: 310-304512-1 DU
Matrix: Water
Analysis Batch: 452282

Client Sample ID: LCS-0425
Prep Type: Total/NA
Prep Batch: 452054

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	<0.00200		<0.00200		mg/L		NC	20
Barium	0.0693		0.07000		mg/L		1	20
Cadmium	<0.000200		<0.000200		mg/L		NC	20
Chromium	<0.00500		<0.00500		mg/L		NC	20
Copper	<0.00500		<0.00500		mg/L		NC	20
Iron	1.06		1.038		mg/L		2	20
Lead	<0.000500		<0.000500		mg/L		NC	20
Manganese	0.0898		0.1053		mg/L		16	20
Nickel	<0.00500		<0.00500		mg/L		NC	20
Selenium	<0.00500		<0.00500		mg/L		NC	20

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QC Sample Results

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

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

Lab Sample ID: 310-304512-1 DU
Matrix: Water
Analysis Batch: 452282

Client Sample ID: LCS-0425
Prep Type: Total/NA
Prep Batch: 452054

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Silver	<0.00100		<0.00100		mg/L		NC	20
Zinc	0.0280		0.03015		mg/L		7	20

Lab Sample ID: 310-304512-1 DU
Matrix: Water
Analysis Batch: 452401

Client Sample ID: LCS-0425
Prep Type: Total/NA
Prep Batch: 452054

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Molybdenum	0.0292		0.01935	F3	mg/L		41	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-452501/1-A
Matrix: Water
Analysis Batch: 452733

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452501

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/24/25 12:56	04/25/25 10:40	1

Lab Sample ID: LCS 310-452501/2-A
Matrix: Water
Analysis Batch: 452733

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452501

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001718		mg/L		103	80 - 120

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 310-452607/1-A
Matrix: Water
Analysis Batch: 452652

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452607

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<5.0		5.0		mg/L		04/24/25 12:30	04/24/25 12:30	1

Lab Sample ID: LCS 310-452607/2-A
Matrix: Water
Analysis Batch: 452652

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452607

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	32.10		mg/L		80	78 - 114

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 310-452691/1-A
Matrix: Water
Analysis Batch: 452799

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452691

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.500		0.500		mg/L		04/25/25 08:59	04/25/25 18:30	1

Eurofins Cedar Falls

QC Sample Results

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: LCS 310-452691/2-A
Matrix: Water
Analysis Batch: 452799

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452691

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	4.00	3.866		mg/L		97	90 - 110

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-653099/1-A
Matrix: Water
Analysis Batch: 653127

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 653099

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<3.00		3.00		mg/L		04/22/25 10:31	04/22/25 12:16	1

Lab Sample ID: LCS 240-653099/2-A
Matrix: Water
Analysis Batch: 653127

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 653099

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	7.87	6.933		mg/L		88	70 - 120

Method: 9066 - Phenolics, Total Recoverable

Lab Sample ID: MB 310-452147/1-A
Matrix: Water
Analysis Batch: 452249

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 452147

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 20:11	1

Lab Sample ID: LCS 310-452147/2-A
Matrix: Water
Analysis Batch: 452249

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 452147

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Phenols, Total	0.100	0.09438		mg/L		94	90 - 110

Method: D93_85 - Ignitability, Pensky-Martens Closed Cup Method

Lab Sample ID: LCS 310-452619/1
Matrix: Water
Analysis Batch: 452619

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Flashpoint	81.0	86.40		Degrees F		107	95 - 112

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-452367/1
Matrix: Water
Analysis Batch: 452367

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		mg/L			04/22/25 16:07	1

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QC Sample Results

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: LCS 310-452367/2
Matrix: Water
Analysis Batch: 452367

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	81 - 116

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-452347/1
Matrix: Water
Analysis Batch: 452347

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			04/22/25 14:38	1

Lab Sample ID: LCS 310-452347/2
Matrix: Water
Analysis Batch: 452347

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	974.0		mg/L		97	88 - 110

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-451851/19
Matrix: Water
Analysis Batch: 451851

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.0		SU		100	98 - 102

Method: SM 5220D - COD

Lab Sample ID: MB 310-452591/148
Matrix: Water
Analysis Batch: 452591

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<5.00		5.00		mg/L			04/24/25 10:53	1

Lab Sample ID: MB 310-452591/32
Matrix: Water
Analysis Batch: 452591

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<5.00		5.00		mg/L			04/24/25 10:53	1

Lab Sample ID: LCS 310-452591/149
Matrix: Water
Analysis Batch: 452591

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	126.6		mg/L		101	85 - 110

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QC Sample Results

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

Method: SM 5220D - COD (Continued)

Lab Sample ID: LCS 310-452591/33
Matrix: Water
Analysis Batch: 452591

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	123.0		mg/L		98	85 - 110

QC Association Summary

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

GC/MS VOA

Analysis Batch: 452597

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	8260D	
310-304512-2	Trip Blank	Total/NA	Water	8260D	
MB 310-452597/6	Method Blank	Total/NA	Water	8260D	
LCS 310-452597/7	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-452597/8	Lab Control Sample	Total/NA	Water	8260D	

HPLC/IC

Analysis Batch: 452108

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	300.0	
MB 310-452108/3	Method Blank	Total/NA	Water	300.0	
LCS 310-452108/4	Lab Control Sample	Total/NA	Water	300.0	

Metals

Prep Batch: 452054

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	3005A	
MB 310-452054/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-452054/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-304512-1 DU	LCS-0425	Total/NA	Water	3005A	

Analysis Batch: 452282

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	6020B	452054
MB 310-452054/1-A	Method Blank	Total/NA	Water	6020B	452054
LCS 310-452054/2-A	Lab Control Sample	Total/NA	Water	6020B	452054
310-304512-1 DU	LCS-0425	Total/NA	Water	6020B	452054

Analysis Batch: 452401

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	6020B	452054
MB 310-452054/1-A	Method Blank	Total/NA	Water	6020B	452054
LCS 310-452054/2-A	Lab Control Sample	Total/NA	Water	6020B	452054
310-304512-1 DU	LCS-0425	Total/NA	Water	6020B	452054

Prep Batch: 452501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	7470A	
MB 310-452501/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-452501/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 452733

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	7470A	452501
MB 310-452501/1-A	Method Blank	Total/NA	Water	7470A	452501
LCS 310-452501/2-A	Lab Control Sample	Total/NA	Water	7470A	452501

Eurofins Cedar Falls

QC Association Summary

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

General Chemistry

Analysis Batch: 451851

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	SM 4500 H+ B	
LCS 310-451851/19	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

Prep Batch: 452147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	Distill/Phenol	
MB 310-452147/1-A	Method Blank	Total/NA	Water	Distill/Phenol	
LCS 310-452147/2-A	Lab Control Sample	Total/NA	Water	Distill/Phenol	

Analysis Batch: 452249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	9066	452147
MB 310-452147/1-A	Method Blank	Total/NA	Water	9066	452147
LCS 310-452147/2-A	Lab Control Sample	Total/NA	Water	9066	452147

Analysis Batch: 452347

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	SM 2540C	
MB 310-452347/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-452347/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 452367

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	I-3765-85	
MB 310-452367/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-452367/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 452591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	SM 5220D	
MB 310-452591/148	Method Blank	Total/NA	Water	SM 5220D	
MB 310-452591/32	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-452591/149	Lab Control Sample	Total/NA	Water	SM 5220D	
LCS 310-452591/33	Lab Control Sample	Total/NA	Water	SM 5220D	

Prep Batch: 452607

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	1664A	
MB 310-452607/1-A	Method Blank	Total/NA	Water	1664A	
LCS 310-452607/2-A	Lab Control Sample	Total/NA	Water	1664A	

Analysis Batch: 452619

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	D93_85	
LCS 310-452619/1	Lab Control Sample	Total/NA	Water	D93_85	

Analysis Batch: 452652

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	1664A	452607
MB 310-452607/1-A	Method Blank	Total/NA	Water	1664A	452607
LCS 310-452607/2-A	Lab Control Sample	Total/NA	Water	1664A	452607

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QC Association Summary

Client: GHD Inc.

Job ID: 310-304512-1

Project/Site: Leachate Semi-Annual LCS Sample

General Chemistry

Prep Batch: 452691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	350.1	
MB 310-452691/1-A	Method Blank	Total/NA	Water	350.1	
LCS 310-452691/2-A	Lab Control Sample	Total/NA	Water	350.1	

Analysis Batch: 452799

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	350.1	452691
MB 310-452691/1-A	Method Blank	Total/NA	Water	350.1	452691
LCS 310-452691/2-A	Lab Control Sample	Total/NA	Water	350.1	452691

Prep Batch: 653099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	9030B	
MB 240-653099/1-A	Method Blank	Total/NA	Water	9030B	
LCS 240-653099/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 653127

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304512-1	LCS-0425	Total/NA	Water	9034	653099
MB 240-653099/1-A	Method Blank	Total/NA	Water	9034	653099
LCS 240-653099/2-A	Lab Control Sample	Total/NA	Water	9034	653099

Lab Chronicle

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

Client Sample ID: LCS-0425

Lab Sample ID: 310-304512-1

Date Collected: 04/17/25 13:00

Matrix: Water

Date Received: 04/17/25 14:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452597	FE5V	EET CF	04/24/25 17:02
Total/NA	Analysis	300.0		1	452108	WZC8	EET CF	04/17/25 16:51
Total/NA	Prep	3005A			452054	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452401	NFT2	EET CF	04/22/25 13:16
Total/NA	Prep	3005A			452054	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452282	ZRI4	EET CF	04/21/25 20:35
Total/NA	Prep	7470A			452501	F5MW	EET CF	04/24/25 12:56
Total/NA	Analysis	7470A		1	452733	QTZ5	EET CF	04/25/25 10:55
Total/NA	Prep	1664A			452607	MDU9	EET CF	04/24/25 12:30
Total/NA	Analysis	1664A		1	452652	MDU9	EET CF	04/24/25 12:30
Total/NA	Prep	350.1			452691	RLT9	EET CF	04/25/25 08:59
Total/NA	Analysis	350.1		1	452799	ZJX4	EET CF	04/25/25 18:43
Total/NA	Prep	9030B			653099	C5SV	EET CLE	04/22/25 10:31
Total/NA	Analysis	9034		1	653127	C5SV	EET CLE	04/22/25 12:16
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 20:13
Total/NA	Analysis	D93_85		1	452619	WZC8	EET CF	04/23/25 13:36
Total/NA	Analysis	I-3765-85		1	452367	XJ7V	EET CF	04/22/25 16:07
Total/NA	Analysis	SM 2540C		1	452347	XJ7V	EET CF	04/22/25 14:38
Total/NA	Analysis	SM 4500 H+ B		1	451851	W9YR	EET CF	04/17/25 15:25
Total/NA	Analysis	SM 5220D		5	452591	HE7K	EET CF	04/24/25 10:53

Client Sample ID: Trip Blank

Lab Sample ID: 310-304512-2

Date Collected: 04/17/25 00:00

Matrix: Water

Date Received: 04/17/25 14:35

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452597	FE5V	EET CF	04/24/25 14:23

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	07-10-25
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
8260D		Water	1,2,3-Trichlorobenzene
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Bromobenzene
8260D		Water	Hexane
8260D		Water	p-Isopropyltoluene
8260D		Water	sec-Butylbenzene
8260D		Water	tert-Butylbenzene
D93_85		Water	Flashpoint

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0806	11-03-25
Georgia	State	4062	02-27-26
Illinois	NELAP	200004	07-02-25
Iowa	State	421	05-31-25
Kansas	NELAP	E-10336	01-31-26
Kentucky (UST)	State	112225	02-27-26
Kentucky (WW)	State	KY98016	12-31-25
Minnesota	NELAP	039-999-348	12-11-25
New Hampshire	NELAP	2250	09-30-25
New Jersey	NELAP	OH001	06-30-25
New York	NELAP	10975	05-26-25
North Dakota	State	R-244	12-11-25
Ohio	State	8303	10-28-25
Ohio VAP	State	ORELAP 4062	02-27-26
Oregon	NELAP	4062	07-10-25
Pennsylvania	NELAP	68-00340	07-20-25
Texas	NELAP	T104704517	08-31-25
US Fish & Wildlife	US Federal Programs	A26406	02-28-26
USDA	US Federal Programs	525-24-5-34740	01-05-27
Virginia	NELAP	460175	06-15-25
West Virginia DEP	State	210	12-11-25
Wisconsin	State	399167560	08-07-25

Method Summary

Client: GHD Inc.
Project/Site: Leachate Semi-Annual LCS Sample

Job ID: 310-304512-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
300.0	Anions, Ion Chromatography	EPA	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
1664A	HEM and SGT-HEM	1664A	EET CF
350.1	Nitrogen, Ammonia	EPA	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
9066	Phenolics, Total Recoverable	SW846	EET CF
D93_85	Ignitability, Pensky-Martens Closed Cup Method	ASTM	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
SM 5220D	COD	SM	EET CF
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
350.1	Distillation, Ammonia	EPA	EET CF
5030B	Purge and Trap	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE
Distill/Phenol	Distillation, Phenolics	None	EET CF

Protocol References:

1664A = EPA-821-98-002

ASTM = ASTM International

EPA = US Environmental Protection Agency

None = None

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 CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396



Environment Testing
America



310-304512 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHO</u>			
City/State:	CITY <u>New Brighton</u>	STATE <u>MA</u>	Project:
Receipt Information			
Date/Time Received:	DATE <u>4-17-15</u>	TIME <u>1436</u>	Received By. <u>PH</u>
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? <u>↓</u> <u>A11</u>			
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>A1</u>		Correction Factor (°C) <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>5.6</u>		Corrected Temp (°C): <u>5.6</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1	CONTAINER 2	
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			

Chain of Custody Record

Client Information		Sample		Lab PM		Carrier Tracking No(s)		COC No:	
Client Contact: Alicia Ferber		Phone 563-468-1673		Bindert, Zach T		State of Origin		310-90686-25029 1	
Company GHD Services Inc.		PWSID:		E-Mail Zach.Bindert@et.eurofins.us.com		Job #:		Page 1 of 1	
Address 900 Long Lake Road Suite 200		Due Date Requested		Analysis Requested		Total Number of Containers		Preservation Codes	
City New Brighton		TAT Requested (days) 14		Compliance Project: ☒ Yes ☐ No		1664A - Oil and Grease		A - HCL B - NaOH C - Zn Acetate D - Nitric Acid E - NaHSO4 F - MeOH G - Ascorbic Acid H - Ascorbic Acid I - Ice J - DI Water K - EDTA L - EDA Other	
State Zip: MN 55112		Purchase Order Requested		PO #:		9034 Calo - Sulfide		M - Hexane N - None O - AsNaO2 P - Na2O4S Q - Na2SO3 R - Na2SO3 S - H2SO4 T - TSP Dodecahydrate U - Acetone V - MCAA W - pH 4-5 Y - Trizma Z - other (specify)	
Phone: 651-639-0913(Tel) 651-639-0923(Fax)		Purchase Order Requested		VO #:		1664A - Oil and Grease			
Email: Alicia.Ferber@ghd.com		Purchase Order Requested		Project #:		9034 Calo - Sulfide			
Project Name: Leachate Semi-Annual LCS Sample		Purchase Order Requested		31017275		9034 Calo - Sulfide			
Site: Viking Foundry Sand Landfill		Purchase Order Requested		SSOW#:		9034 Calo - Sulfide			
Sample Identification		Sample Date		Sample Time		Sample Type		Matrix	
LCS-0425		4-17-25		13:00		G		Water	
Sample Date		Sample Time		Sample Type		Matrix		Special Instructions/Note:	
4-17-25		13:00		G		Water		Nitrate, Nitrite - 48 HOUR HOLD TIME	
Sample Type		Sample Time		Sample Type		Matrix		Temp blanks at	
G		13:00		G		Water		trip blanks in cooler	
Sample Date		Sample Time		Sample Type		Matrix			
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Sample Type		Sample Time							

Environment Testing

Ver 12/18/2025 (Rev. 2)

Eurofins - Cleveland Sample Receipt Form/Narrative		Eurofins Barberton Facility		Euglin #	
Client <u>Eurofins (cedar falls)</u>		Site Name		Cooler unpacked by: <u>TC</u>	
Cooler Received on <u>4-19-25</u>		Opened on <u>4-19-25</u>			
FedEx 1 st Grd <u>Exp</u> UPS FAS Waypoint		Client Drop Off		Eurofins Courier Other	
Receipt After-hours Drop-off Date/Time		Storage Location			
Eurofins Cooler # <u>22</u>		Foam Box	Client Cooler	Box	Other
Packing material used		Bubble Wrap	Foam	Plastic Bag	None Other
1 Cooler temperature upon receipt IR GUN # <u>18</u> (CF <u>0.1</u> °C) Observed Cooler Temp <u>4.1</u> °C Corrected Cooler Temp <u>4.0</u> °C ☐ See Multiple Cooler Form 2. Were tamper/custody seals on the outside of the cooler(s)? If Yes Quantity <u>Yes</u> <u>No</u> <u>NA</u> -Were the seals on the outside of the cooler(s) signed & dated? <u>Yes</u> <u>No</u> <u>NA</u> -Were tamper/custody seals on the bottle(s) or bottle kits (LLHg/MeHg)? <u>Yes</u> <u>No</u> <u>NA</u> -Were tamper/custody seals intact and uncompromised? <u>Yes</u> <u>No</u> <u>NA</u> 3 Shippers' packing ship accompany the sample(s)? <u>Yes</u> <u>No</u> <u>NA</u> 4 Did custody papers accompany the sample(s)? <u>Yes</u> <u>No</u> <u>NA</u> 5 Were the custody papers relinquished & signed in the appropriate place? <u>Yes</u> <u>No</u> <u>NA</u> 6 Was/were the person(s) who collected the samples clearly identified on the COC? <u>Yes</u> <u>No</u> <u>NA</u> 7 Did all bottles arrive in good condition (Unbroken)? <u>Yes</u> <u>No</u> <u>NA</u> 8 Could all bottle labels (ID/Date/Time) be reconciled with the COC? <u>Yes</u> <u>No</u> <u>NA</u> 9 For each sample, does the COC specify preservatives (Y/N), # of containers (Y/N), and sample type of grab/comp (Y/N)? <u>Yes</u> <u>No</u> <u>NA</u> 10. Were correct bottle(s) used for the test(s) indicated? <u>Yes</u> <u>No</u> <u>NA</u> 11 Sufficient quantity received to perform indicated analyses? <u>Yes</u> <u>No</u> <u>NA</u> 12. Are these work share samples and all listed on the COC? <u>Yes</u> <u>No</u> <u>NA</u> If yes, Questions 13-17 have been checked at the originating laboratory 13 Were all preserved sample(s) at the correct pH upon receipt? <u>Yes</u> <u>No</u> <u>NA</u> pH Ship Lot# HC457151 14 Were VOAAs on the COC? <u>Yes</u> <u>No</u> <u>NA</u> 15 Were air bubbles >6 mm in any VOA vials? <u>Yes</u> <u>No</u> <u>NA</u> 16 Was a VOA trip blank present in the cooler(s)? Trip Blank Lot # <u>Yes</u> <u>No</u> <u>NA</u> 17 Was a LL Hg or Me Hg trip blank present? <u>Yes</u> <u>No</u> <u>NA</u>					
Concerning _____ Date _____ by _____ via Verbal Voice Mail Other _____					
18. CHAIN OF CUSTODY & SAMPLE DISCREPANCIES ☐ additional next page					Samples processed by
19 SAMPLE CONDITION					
Sample(s) _____ were received after the recommended holding time had expired.					
Sample(s) _____ were received in a broken container					
Sample(s) _____ were received with bubble >6 mm in diameter (Notify PM)					
20 SAMPLE PRESERVATION					
Sample(s) _____ were further preserved in the laboratory					
Time preserved _____ Preservative(s) added/Lot number(s) _____					
VOA Sample Preservation - Date/Time VOAAs Frozen _____					

- 1
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OVERNIGHT
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BARBERTON OH
44203-3543-00
AVE
0823

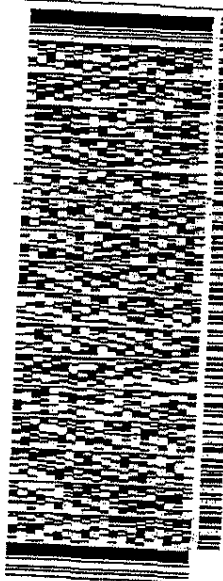
Part # 159469-434 RRD82 EXP 02/26

ORIGIN ID: AL0A (319) 277-2401
SAMPLE RECEIVING
EUROFINS TESTAMERICA
3019 VENTURE WAY
CEDAR FALLS, IA 50613
UNITED STATES US

SHIP DATE 1989R25
ACTWGT 20.85 LB
CAD 0870970/CREF3855
BILL SENDER

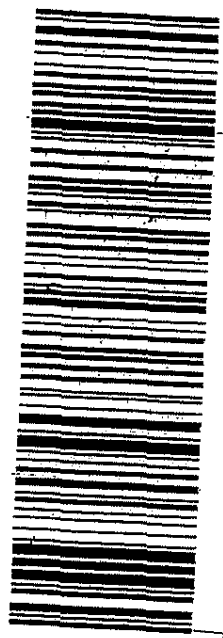
SHIPPING/RECEIVING
EUROFINS ENVIRONMENT TESTING NORTH
180 S. VAN BUREN AVENUE

BARBERTON OH 44203
(330) 497-9996
REF. S310-105999



TRK# 4085 8618 0994 SATURDAY 12:00P
0207 PRIORITY OVERNIGHT

X0 CAKA 44203
OH-US CLE



Login Sample Receipt Checklist

Client: GHD Inc.

Job Number: 310-304512-1

Login Number: 304512

List Number: 1

Creator: Cappi, Sage

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ 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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

Eurofins Cedar Falls

ANALYTICAL REPORT

PREPARED FOR

Attn: Alicia Ferber
GHD Inc.
900 Long Lake Road
Suite 200
New Brighton, Minnesota 55112

Generated 5/2/2025 10:03:40 AM

JOB DESCRIPTION

Viking Pump Landfill

JOB NUMBER

310-304528-1

Eurofins Cedar Falls

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



Generated
5/2/2025 10:03:40 AM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Case Narrative

Client: GHD Inc.
Project: Viking Pump Landfill

Job ID: 310-304528-1

Job ID: 310-304528-1

Eurofins Cedar Falls

Job Narrative 310-304528-1

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 4/17/2025 3:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 5 coolers at receipt time were 2.4°C, 4.4°C, 5.3°C, 7.8°C and 7.9°C.

GC/MS VOA

Method 8260D: The method requirement for no headspace was not met. The following volatile samples were analyzed with headspace in the sample container: Trip Blank 1 (310-304528-18) and Trip Blank 2 (310-304528-19).

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

HPLC/IC

Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW16-GW-0425 (310-304528-7), MW19-GW-0425 (310-304528-9), MW20-GW-0425 (310-304528-10), MW22-GW-0425 (310-304528-12) and DP01-GW-0425 (310-304528-14). Elevated reporting limits (RLs) are provided.

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 9020B_Calc: The following samples for batch 280-693721 (Total Organic Halides) were diluted to 2x due to the nature of the sample matrix based on CI pre-screen test: MW7R-GW-0425 (310-304528-2), MW8-GW-0425 (310-304528-3), MW11-GW-0425 (310-304528-4), MW14-GW-0425 (310-304528-5), MW15-GW-0425 (310-304528-6), MW16-GW-0425 (310-304528-7), MW17R-GW-0425 (310-304528-8), MW19-GW-0425 (310-304528-9), MW20-GW-0425 (310-304528-10), MW21-GW-0425 (310-304528-11), MW22-GW-0425 (310-304528-12), SW01-0425 (310-304528-13), DP01-GW-0425 (310-304528-14) and DP02-GW-0425 (310-304528-15). Elevated reporting limits (RLs) are provided.

Method 9020B_Calc: The following samples for batch 280-693991 (Total Organic Halides) were diluted to 2x due to the nature of the sample matrix based on CI pre-screen test: FB-0425 (310-304528-16) and RB-0425 (310-304528-17). Elevated reporting limits (RLs) are provided.

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

Eurofins Cedar Falls

Sample Summary

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-304528-1	MW5-GW-0425	Water	04/16/25 10:35	04/17/25 15:05
310-304528-2	MW7R-GW-0425	Water	04/15/25 15:00	04/17/25 15:05
310-304528-3	MW8-GW-0425	Water	04/15/25 16:15	04/17/25 15:05
310-304528-4	MW11-GW-0425	Water	04/16/25 15:00	04/17/25 15:05
310-304528-5	MW14-GW-0425	Water	04/17/25 09:25	04/17/25 15:05
310-304528-6	MW15-GW-0425	Water	04/15/25 17:35	04/17/25 15:05
310-304528-7	MW16-GW-0425	Water	04/16/25 09:50	04/17/25 15:05
310-304528-8	MW17R-GW-0425	Water	04/15/25 18:50	04/17/25 15:05
310-304528-9	MW19-GW-0425	Water	04/17/25 11:35	04/17/25 15:05
310-304528-10	MW20-GW-0425	Water	04/16/25 16:40	04/17/25 15:05
310-304528-11	MW21-GW-0425	Water	04/15/25 09:25	04/17/25 15:05
310-304528-12	MW22-GW-0425	Water	04/15/25 11:20	04/17/25 15:05
310-304528-13	SW01-0425	Water	04/15/25 13:20	04/17/25 15:05
310-304528-14	DP01-GW-0425	Water	04/15/25 00:00	04/17/25 15:05
310-304528-15	DP02-GW-0425	Water	04/16/25 00:00	04/17/25 15:05
310-304528-16	FB-0425	Water	04/15/25 12:00	04/17/25 15:05
310-304528-17	RB-0425	Water	04/15/25 12:00	04/17/25 15:05
310-304528-18	Trip Blank 1	Water	04/17/25 00:00	04/17/25 15:05
310-304528-19	Trip Blank 2	Water	04/17/25 00:00	04/17/25 15:05

Detection Summary

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW5-GW-0425

Lab Sample ID: 310-304528-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	179		5.00		mg/L	5		9056A	Total/NA
Barium	0.0864		0.00200		mg/L	1		6020B	Total/NA
Iron	0.130		0.100		mg/L	1		6020B	Total/NA
Manganese	0.0522		0.0100		mg/L	1		6020B	Total/NA
Chemical Oxygen Demand	11.0		10.0		mg/L	2		5220D LL	Total/NA
TOX Dup	276		60.0		ug/L	1		9020B	Total/NA
Total Suspended Solids	3.13		1.88		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW7R-GW-0425

Lab Sample ID: 310-304528-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	606		20.0		mg/L	20		9056A	Total/NA
Barium	0.141		0.00200		mg/L	1		6020B	Total/NA
Iron	0.108		0.100		mg/L	1		6020B	Total/NA
Manganese	0.580		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00341		0.00200		mg/L	1		6020B	Total/NA
Chemical Oxygen Demand	16.9		10.0		mg/L	2		5220D LL	Total/NA
Total Suspended Solids	2.00		1.88		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW8-GW-0425

Lab Sample ID: 310-304528-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.96		5.00		mg/L	5		9056A	Total/NA
Barium	0.0881		0.00200		mg/L	1		6020B	Total/NA
Chemical Oxygen Demand	10.4		5.00		mg/L	1		5220D LL	Total/NA
Total Suspended Solids	3.38		1.88		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW11-GW-0425

Lab Sample ID: 310-304528-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.02		5.00		mg/L	5		9056A	Total/NA
Barium	0.161		0.00200		mg/L	1		6020B	Total/NA
Manganese	0.436		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00514		0.00200		mg/L	1		6020B	Total/NA
Ammonia	0.315		0.200		mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	12.1		5.00		mg/L	1		5220D LL	Total/NA

Client Sample ID: MW14-GW-0425

Lab Sample ID: 310-304528-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	8.59		5.00		mg/L	5		9056A	Total/NA
Barium	0.0162		0.00200		mg/L	1		6020B	Total/NA
Chemical Oxygen Demand	6.81		5.00		mg/L	1		5220D LL	Total/NA

Client Sample ID: MW15-GW-0425

Lab Sample ID: 310-304528-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	14.5		5.00		mg/L	5		9056A	Total/NA
Barium	0.0636		0.00200		mg/L	1		6020B	Total/NA
Iron	0.969		0.100		mg/L	1		6020B	Total/NA
Manganese	0.0472		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00781		0.00200		mg/L	1		6020B	Total/NA
Ammonia	1.20		0.200		mg/L	1		350.1	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW15-GW-0425 (Continued)

Lab Sample ID: 310-304528-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chemical Oxygen Demand	5.82		5.00		mg/L	1		5220D LL	Total/NA
Total Suspended Solids	4.25		1.88		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW16-GW-0425

Lab Sample ID: 310-304528-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.141		0.00200		mg/L	1		6020B	Total/NA
Copper	0.00632		0.00500		mg/L	1		6020B	Total/NA
Iron	0.850		0.100		mg/L	1		6020B	Total/NA
Lead	0.00132		0.000500		mg/L	1		6020B	Total/NA
Manganese	0.349		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00317		0.00200		mg/L	1		6020B	Total/NA
Ammonia	1.18		0.200		mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	16.0		5.00		mg/L	1		5220D LL	Total/NA

Client Sample ID: MW17R-GW-0425

Lab Sample ID: 310-304528-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	41.0		5.00		mg/L	5		9056A	Total/NA
Barium	0.0931		0.00200		mg/L	1		6020B	Total/NA
Iron	10.0		0.100		mg/L	1		6020B	Total/NA
Manganese	2.54		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00357		0.00200		mg/L	1		6020B	Total/NA
Ammonia	0.617	F1	0.200		mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	11.1		5.00		mg/L	1		5220D LL	Total/NA
Total Suspended Solids	23.0		7.50		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW19-GW-0425

Lab Sample ID: 310-304528-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.159		0.00200		mg/L	1		6020B	Total/NA
Manganese	0.0711		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00924		0.00200		mg/L	1		6020B	Total/NA

Client Sample ID: MW20-GW-0425

Lab Sample ID: 310-304528-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.119		0.00200		mg/L	1		6020B	Total/NA
Copper	0.0316		0.00500		mg/L	1		6020B	Total/NA
Iron	10.8		0.100		mg/L	1		6020B	Total/NA
Lead	0.00249		0.000500		mg/L	1		6020B	Total/NA
Manganese	0.655		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.0248		0.00200		mg/L	1		6020B	Total/NA
Ammonia	1.47		0.200		mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	7.47		5.00		mg/L	1		5220D LL	Total/NA
Total Suspended Solids	37.0		7.50		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW21-GW-0425

Lab Sample ID: 310-304528-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	65.9		5.00		mg/L	5		9056A	Total/NA
Barium	0.174		0.00200		mg/L	1		6020B	Total/NA
Iron	3.18		0.100		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW21-GW-0425 (Continued)

Lab Sample ID: 310-304528-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	0.202		0.0100		mg/L	1		6020B	Total/NA
Ammonia	0.396		0.200		mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	11.6		10.0		mg/L	2		5220D LL	Total/NA
Total Suspended Solids	9.00		5.00		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW22-GW-0425

Lab Sample ID: 310-304528-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0925		0.00200		mg/L	1		6020B	Total/NA
Iron	2.49		0.100		mg/L	1		6020B	Total/NA
Manganese	0.0669		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00663		0.00200		mg/L	1		6020B	Total/NA
Ammonia	1.37		0.200		mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	7.14		5.00		mg/L	1		5220D LL	Total/NA
Total Suspended Solids	34.5		7.50		mg/L	1		I-3765-85	Total/NA

Client Sample ID: SW01-0425

Lab Sample ID: 310-304528-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	69.9		5.00		mg/L	5		9056A	Total/NA
Barium	0.105		0.00200		mg/L	1		6020B	Total/NA
Iron	2.11		0.100		mg/L	1		6020B	Total/NA
Lead	0.000635		0.000500		mg/L	1		6020B	Total/NA
Manganese	0.458		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.0162		0.00200		mg/L	1		6020B	Total/NA
Chemical Oxygen Demand	27.3		5.00		mg/L	1		5220D LL	Total/NA
Total Suspended Solids	114		15.0		mg/L	1		I-3765-85	Total/NA

Client Sample ID: DP01-GW-0425

Lab Sample ID: 310-304528-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0939		0.00200		mg/L	1		6020B	Total/NA
Iron	2.69		0.100		mg/L	1		6020B	Total/NA
Lead	0.000917		0.000500		mg/L	1		6020B	Total/NA
Manganese	0.0664		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00580		0.00200		mg/L	1		6020B	Total/NA
Ammonia	1.08		0.200		mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	6.15		5.00		mg/L	1		5220D LL	Total/NA
Total Suspended Solids	40.0		7.50		mg/L	1		I-3765-85	Total/NA

Client Sample ID: DP02-GW-0425

Lab Sample ID: 310-304528-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	5.60		5.00		mg/L	5		9056A	Total/NA
Barium	0.160		0.00200		mg/L	1		6020B	Total/NA
Manganese	0.452		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00509		0.00200		mg/L	1		6020B	Total/NA
Ammonia	0.301		0.200		mg/L	1		350.1	Total/NA
Chemical Oxygen Demand	12.8		5.00		mg/L	1		5220D LL	Total/NA

Client Sample ID: FB-0425

Lab Sample ID: 310-304528-16

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

- 1
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Job ID: 310-304528-1

Client Sample ID: RB-0425

Lab Sample ID: 310-304528-17

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.00308		0.00200		mg/L	1		6020B	Total/NA
Iron	0.398		0.100		mg/L	1		6020B	Total/NA
Manganese	0.0193		0.0100		mg/L	1		6020B	Total/NA

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-304528-18

No Detections.

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-304528-19

No Detections.

Eurofins Cedar Falls

Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW5-GW-0425

Lab Sample ID: 310-304528-1

Date Collected: 04/16/25 10:35

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 12:10	1
Benzene	<0.500		0.500		ug/L			04/19/25 12:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		80 - 120					04/19/25 12:10	1
Dibromofluoromethane (Surr)	118		73 - 130					04/19/25 12:10	1
Toluene-d8 (Surr)	96		80 - 120					04/19/25 12:10	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	179		5.00		mg/L			04/22/25 18:03	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0864		0.00200		mg/L		04/21/25 09:00	04/22/25 17:46	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/22/25 17:46	1
Iron	0.130		0.100		mg/L		04/21/25 09:00	04/22/25 17:46	1
Lead	<0.000500		0.000500		mg/L		04/21/25 09:00	04/22/25 17:46	1
Manganese	0.0522		0.0100		mg/L		04/21/25 09:00	04/22/25 17:46	1
Molybdenum	<0.00200		0.00200		mg/L		04/21/25 09:00	04/22/25 17:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200	F1	0.200		mg/L			04/19/25 00:27	1
Chemical Oxygen Demand (SM 5220D LL)	11.0		10.0		mg/L			04/24/25 10:53	2
TOX Dup (SW846 9020B)	276		60.0		ug/L			04/28/25 10:59	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 20:13	1
Total Suspended Solids (USGS I-3765-85)	3.13		1.88		mg/L			04/21/25 15:26	1

Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW7R-GW-0425

Lab Sample ID: 310-304528-2

Date Collected: 04/15/25 15:00

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 12:32	1
Benzene	<0.500		0.500		ug/L			04/19/25 12:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120					04/19/25 12:32	1
Dibromofluoromethane (Surr)	114		73 - 130					04/19/25 12:32	1
Toluene-d8 (Surr)	95		80 - 120					04/19/25 12:32	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	606		20.0		mg/L			04/23/25 10:55	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.141		0.00200		mg/L		04/21/25 09:00	04/22/25 17:48	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/22/25 17:48	1
Iron	0.108		0.100		mg/L		04/21/25 09:00	04/22/25 17:48	1
Lead	<0.000500		0.000500		mg/L		04/21/25 09:00	04/22/25 17:48	1
Manganese	0.580		0.0100		mg/L		04/21/25 09:00	04/22/25 17:48	1
Molybdenum	0.00341		0.00200		mg/L		04/21/25 09:00	04/22/25 17:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200		mg/L			04/19/25 00:29	1
Chemical Oxygen Demand (SM 5220D LL)	16.9		10.0		mg/L			04/24/25 10:53	2
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/28/25 10:59	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 20:14	1
Total Suspended Solids (USGS I-3765-85)	2.00		1.88		mg/L			04/21/25 14:55	1

Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW8-GW-0425

Lab Sample ID: 310-304528-3

Date Collected: 04/15/25 16:15

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 12:54	1
Benzene	<0.500		0.500		ug/L			04/19/25 12:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120					04/19/25 12:54	1
Dibromofluoromethane (Surr)	117		73 - 130					04/19/25 12:54	1
Toluene-d8 (Surr)	95		80 - 120					04/19/25 12:54	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.96		5.00		mg/L			04/22/25 18:34	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0881		0.00200		mg/L		04/21/25 09:00	04/22/25 17:40	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/22/25 17:40	1
Iron	<0.100		0.100		mg/L		04/21/25 09:00	04/22/25 17:40	1
Lead	<0.000500		0.000500		mg/L		04/21/25 09:00	04/22/25 17:40	1
Manganese	<0.0100		0.0100		mg/L		04/21/25 09:00	04/22/25 17:40	1
Molybdenum	<0.00200		0.00200		mg/L		04/21/25 09:00	04/22/25 17:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200		mg/L			04/19/25 00:30	1
Chemical Oxygen Demand (SM 5220D LL)	10.4		5.00		mg/L			04/24/25 10:53	1
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/28/25 10:59	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 20:14	1
Total Suspended Solids (USGS I-3765-85)	3.38		1.88		mg/L			04/21/25 14:55	1

Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW11-GW-0425

Lab Sample ID: 310-304528-4

Date Collected: 04/16/25 15:00

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 13:15	1
Benzene	<0.500		0.500		ug/L			04/19/25 13:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		80 - 120					04/19/25 13:15	1
Dibromofluoromethane (Surr)	120		73 - 130					04/19/25 13:15	1
Toluene-d8 (Surr)	94		80 - 120					04/19/25 13:15	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	6.02		5.00		mg/L			04/22/25 18:50	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.161		0.00200		mg/L		04/21/25 09:00	04/22/25 17:05	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/22/25 17:05	1
Iron	<0.100		0.100		mg/L		04/21/25 09:00	04/22/25 17:05	1
Lead	<0.000500		0.000500		mg/L		04/21/25 09:00	04/22/25 17:05	1
Manganese	0.436		0.0100		mg/L		04/21/25 09:00	04/22/25 17:05	1
Molybdenum	0.00514		0.00200		mg/L		04/21/25 09:00	04/22/25 17:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	0.315		0.200		mg/L			04/19/25 00:30	1
Chemical Oxygen Demand (SM 5220D LL)	12.1		5.00		mg/L			04/24/25 10:53	1
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/28/25 10:59	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 20:40	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88		mg/L			04/21/25 15:26	1

Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW14-GW-0425

Lab Sample ID: 310-304528-5

Date Collected: 04/17/25 09:25

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 13:37	1
Benzene	<0.500		0.500		ug/L			04/19/25 13:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120					04/19/25 13:37	1
Dibromofluoromethane (Surr)	117		73 - 130					04/19/25 13:37	1
Toluene-d8 (Surr)	96		80 - 120					04/19/25 13:37	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	8.59		5.00		mg/L			04/22/25 19:05	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0162		0.00200		mg/L		04/21/25 09:00	04/22/25 17:08	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/22/25 17:08	1
Iron	<0.100		0.100		mg/L		04/21/25 09:00	04/22/25 17:08	1
Lead	<0.000500		0.000500		mg/L		04/21/25 09:00	04/22/25 17:08	1
Manganese	<0.0100		0.0100		mg/L		04/21/25 09:00	04/22/25 17:08	1
Molybdenum	<0.00200		0.00200		mg/L		04/21/25 09:00	04/22/25 17:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200		mg/L			04/19/25 00:32	1
Chemical Oxygen Demand (SM 5220D LL)	6.81		5.00		mg/L			04/24/25 10:53	1
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/28/25 10:59	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 20:40	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88		mg/L			04/23/25 09:18	1

Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW15-GW-0425

Lab Sample ID: 310-304528-6

Date Collected: 04/15/25 17:35

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 13:59	1
Benzene	<0.500		0.500		ug/L			04/19/25 13:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		80 - 120					04/19/25 13:59	1
Dibromofluoromethane (Surr)	119		73 - 130					04/19/25 13:59	1
Toluene-d8 (Surr)	93		80 - 120					04/19/25 13:59	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	14.5		5.00		mg/L			04/22/25 19:21	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0636		0.00200		mg/L		04/21/25 09:00	04/22/25 17:14	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/22/25 17:14	1
Iron	0.969		0.100		mg/L		04/21/25 09:00	04/22/25 17:14	1
Lead	<0.000500		0.000500		mg/L		04/21/25 09:00	04/22/25 17:14	1
Manganese	0.0472		0.0100		mg/L		04/21/25 09:00	04/22/25 17:14	1
Molybdenum	0.00781		0.00200		mg/L		04/21/25 09:00	04/22/25 17:14	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	1.20		0.200		mg/L			04/19/25 00:32	1
Chemical Oxygen Demand (SM 5220D LL)	5.82		5.00		mg/L			04/24/25 10:53	1
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/28/25 10:59	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 20:40	1
Total Suspended Solids (USGS I-3765-85)	4.25		1.88		mg/L			04/21/25 14:55	1

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Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW16-GW-0425

Lab Sample ID: 310-304528-7

Date Collected: 04/16/25 09:50

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 14:21	1
Benzene	<0.500		0.500		ug/L			04/19/25 14:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120					04/19/25 14:21	1
Dibromofluoromethane (Surr)	123		73 - 130					04/19/25 14:21	1
Toluene-d8 (Surr)	95		80 - 120					04/19/25 14:21	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			04/22/25 19:37	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.141		0.00200		mg/L		04/21/25 09:00	04/22/25 17:43	1
Copper	0.00632		0.00500		mg/L		04/21/25 09:00	04/22/25 17:43	1
Iron	0.850		0.100		mg/L		04/21/25 09:00	04/22/25 17:43	1
Lead	0.00132		0.000500		mg/L		04/21/25 09:00	04/22/25 17:43	1
Manganese	0.349		0.0100		mg/L		04/21/25 09:00	04/22/25 17:43	1
Molybdenum	0.00317		0.00200		mg/L		04/21/25 09:00	04/22/25 17:43	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	1.18		0.200		mg/L			04/19/25 00:34	1
Chemical Oxygen Demand (SM 5220D LL)	16.0		5.00		mg/L			04/24/25 10:53	1
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/28/25 10:59	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 20:41	1

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Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW17R-GW-0425

Lab Sample ID: 310-304528-8

Date Collected: 04/15/25 18:50

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 14:43	1
Benzene	<0.500		0.500		ug/L			04/19/25 14:43	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		80 - 120					04/19/25 14:43	1
Dibromofluoromethane (Surr)	123		73 - 130					04/19/25 14:43	1
Toluene-d8 (Surr)	94		80 - 120					04/19/25 14:43	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	41.0		5.00		mg/L			04/22/25 20:23	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0931		0.00200		mg/L		04/24/25 09:00	04/25/25 12:47	1
Copper	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 12:47	1
Iron	10.0		0.100		mg/L		04/24/25 09:00	04/25/25 12:47	1
Lead	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 12:47	1
Manganese	2.54		0.0100		mg/L		04/24/25 09:00	04/25/25 12:47	1
Molybdenum	0.00357		0.00200		mg/L		04/24/25 09:00	04/25/25 12:47	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	0.617	F1	0.200		mg/L			04/19/25 00:35	1
Chemical Oxygen Demand (SM 5220D LL)	11.1		5.00		mg/L			04/24/25 10:53	1
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/28/25 10:59	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 20:41	1
Total Suspended Solids (USGS I-3765-85)	23.0		7.50		mg/L			04/21/25 14:55	1

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Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW19-GW-0425

Lab Sample ID: 310-304528-9

Date Collected: 04/17/25 11:35

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 15:04	1
Benzene	<0.500		0.500		ug/L			04/19/25 15:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		80 - 120					04/19/25 15:04	1
Dibromofluoromethane (Surr)	118		73 - 130					04/19/25 15:04	1
Toluene-d8 (Surr)	95		80 - 120					04/19/25 15:04	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			04/22/25 21:10	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.159		0.00200		mg/L		04/24/25 09:00	04/25/25 12:56	1
Copper	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 12:56	1
Iron	<0.100		0.100		mg/L		04/24/25 09:00	04/25/25 12:56	1
Lead	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 12:56	1
Manganese	0.0711		0.0100		mg/L		04/24/25 09:00	04/25/25 12:56	1
Molybdenum	0.00924		0.00200		mg/L		04/24/25 09:00	04/25/25 12:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200		mg/L			04/19/25 00:37	1
Chemical Oxygen Demand (SM 5220D LL)	<5.00		5.00		mg/L			04/24/25 10:53	1
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/28/25 10:59	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 20:42	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88		mg/L			04/23/25 09:18	1

Eurofins Cedar Falls

Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW20-GW-0425

Lab Sample ID: 310-304528-10

Date Collected: 04/16/25 16:40

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 15:26	1
Benzene	<0.500		0.500		ug/L			04/19/25 15:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120					04/19/25 15:26	1
Dibromofluoromethane (Surr)	120		73 - 130					04/19/25 15:26	1
Toluene-d8 (Surr)	95		80 - 120					04/19/25 15:26	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			04/22/25 21:26	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.119		0.00200		mg/L		04/21/25 09:00	04/23/25 15:29	1
Copper	0.0316		0.00500		mg/L		04/21/25 09:00	04/23/25 15:29	1
Iron	10.8		0.100		mg/L		04/21/25 09:00	04/23/25 15:29	1
Lead	0.00249		0.000500		mg/L		04/21/25 09:00	04/23/25 15:29	1
Manganese	0.655		0.0100		mg/L		04/21/25 09:00	04/23/25 15:29	1
Molybdenum	0.0248		0.00200		mg/L		04/21/25 09:00	04/23/25 15:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	1.47		0.200		mg/L			04/19/25 00:39	1
Chemical Oxygen Demand (SM 5220D LL)	7.47		5.00		mg/L			04/24/25 10:53	1
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/28/25 10:59	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 20:43	1
Total Suspended Solids (USGS I-3765-85)	37.0		7.50		mg/L			04/21/25 15:26	1

Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW21-GW-0425

Lab Sample ID: 310-304528-11

Date Collected: 04/15/25 09:25

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 15:48	1
Benzene	<0.500		0.500		ug/L			04/19/25 15:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120					04/19/25 15:48	1
Dibromofluoromethane (Surr)	124		73 - 130					04/19/25 15:48	1
Toluene-d8 (Surr)	92		80 - 120					04/19/25 15:48	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	65.9		5.00		mg/L			04/22/25 21:41	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.174		0.00200		mg/L		04/21/25 09:00	04/23/25 15:15	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/23/25 15:15	1
Iron	3.18		0.100		mg/L		04/21/25 09:00	04/23/25 15:15	1
Lead	<0.000500		0.000500		mg/L		04/21/25 09:00	04/23/25 15:15	1
Manganese	0.202		0.0100		mg/L		04/21/25 09:00	04/23/25 15:15	1
Molybdenum	<0.00200		0.00200		mg/L		04/21/25 09:00	04/23/25 15:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	0.396		0.200		mg/L			04/19/25 00:39	1
Chemical Oxygen Demand (SM 5220D LL)	11.6		10.0		mg/L			04/24/25 10:53	2
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/28/25 10:59	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 20:43	1
Total Suspended Solids (USGS I-3765-85)	9.00		5.00		mg/L			04/21/25 14:55	1

Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW22-GW-0425

Lab Sample ID: 310-304528-12

Date Collected: 04/15/25 11:20

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 16:10	1
Benzene	<0.500		0.500		ug/L			04/19/25 16:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120					04/19/25 16:10	1
Dibromofluoromethane (Surr)	124		73 - 130					04/19/25 16:10	1
Toluene-d8 (Surr)	94		80 - 120					04/19/25 16:10	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			04/22/25 21:57	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0925		0.00200		mg/L		04/21/25 09:00	04/23/25 15:12	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/23/25 15:12	1
Iron	2.49		0.100		mg/L		04/21/25 09:00	04/23/25 15:12	1
Lead	<0.000500		0.000500		mg/L		04/21/25 09:00	04/23/25 15:12	1
Manganese	0.0669		0.0100		mg/L		04/21/25 09:00	04/23/25 15:12	1
Molybdenum	0.00663		0.00200		mg/L		04/21/25 09:00	04/23/25 15:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	1.37		0.200		mg/L			04/19/25 00:40	1
Chemical Oxygen Demand (SM 5220D LL)	7.14		5.00		mg/L			04/24/25 10:53	1
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/28/25 10:59	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 21:02	1
Total Suspended Solids (USGS I-3765-85)	34.5		7.50		mg/L			04/21/25 14:55	1

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Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: SW01-0425

Lab Sample ID: 310-304528-13

Date Collected: 04/15/25 13:20

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 16:32	1
Benzene	<0.500		0.500		ug/L			04/19/25 16:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120					04/19/25 16:32	1
Dibromofluoromethane (Surr)	120		73 - 130					04/19/25 16:32	1
Toluene-d8 (Surr)	92		80 - 120					04/19/25 16:32	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	69.9		5.00		mg/L			04/22/25 22:12	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.105		0.00200		mg/L		04/23/25 09:30	04/23/25 17:57	1
Copper	<0.00500		0.00500		mg/L		04/23/25 09:30	04/23/25 17:57	1
Iron	2.11		0.100		mg/L		04/23/25 09:30	04/23/25 17:57	1
Lead	0.000635		0.000500		mg/L		04/23/25 09:30	04/23/25 17:57	1
Manganese	0.458		0.0100		mg/L		04/23/25 09:30	04/23/25 17:57	1
Molybdenum	0.0162		0.00200		mg/L		04/23/25 09:30	04/23/25 17:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200		mg/L			04/19/25 00:41	1
Chemical Oxygen Demand (SM 5220D LL)	27.3		5.00		mg/L			04/24/25 10:53	1
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/28/25 10:59	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 21:02	1
Total Suspended Solids (USGS I-3765-85)	114		15.0		mg/L			04/21/25 14:55	1

Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: DP01-GW-0425

Lab Sample ID: 310-304528-14

Date Collected: 04/15/25 00:00

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 16:53	1
Benzene	<0.500		0.500		ug/L			04/19/25 16:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120					04/19/25 16:53	1
Dibromofluoromethane (Surr)	123		73 - 130					04/19/25 16:53	1
Toluene-d8 (Surr)	92		80 - 120					04/19/25 16:53	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			04/22/25 22:28	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0939		0.00200		mg/L		04/21/25 09:00	04/22/25 17:22	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/22/25 17:22	1
Iron	2.69		0.100		mg/L		04/21/25 09:00	04/22/25 17:22	1
Lead	0.000917		0.000500		mg/L		04/21/25 09:00	04/22/25 17:22	1
Manganese	0.0664		0.0100		mg/L		04/21/25 09:00	04/22/25 17:22	1
Molybdenum	0.00580		0.00200		mg/L		04/21/25 09:00	04/22/25 17:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	1.08		0.200		mg/L			04/19/25 00:42	1
Chemical Oxygen Demand (SM 5220D LL)	6.15		5.00		mg/L			04/24/25 10:53	1
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/28/25 10:59	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 21:03	1
Total Suspended Solids (USGS I-3765-85)	40.0		7.50		mg/L			04/21/25 14:55	1

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Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: DP02-GW-0425

Lab Sample ID: 310-304528-15

Date Collected: 04/16/25 00:00

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 17:15	1
Benzene	<0.500		0.500		ug/L			04/19/25 17:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		80 - 120					04/19/25 17:15	1
Dibromofluoromethane (Surr)	126		73 - 130					04/19/25 17:15	1
Toluene-d8 (Surr)	92		80 - 120					04/19/25 17:15	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	5.60		5.00		mg/L			04/22/25 19:14	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.160		0.00200		mg/L		04/21/25 09:00	04/22/25 17:25	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/22/25 17:25	1
Iron	<0.100		0.100		mg/L		04/21/25 09:00	04/22/25 17:25	1
Lead	<0.000500		0.000500		mg/L		04/21/25 09:00	04/22/25 17:25	1
Manganese	0.452		0.0100		mg/L		04/21/25 09:00	04/22/25 17:25	1
Molybdenum	0.00509		0.00200		mg/L		04/21/25 09:00	04/22/25 17:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	0.301		0.200		mg/L			04/19/25 00:44	1
Chemical Oxygen Demand (SM 5220D LL)	12.8		5.00		mg/L			04/24/25 10:53	1
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/28/25 10:59	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 21:03	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88		mg/L			04/21/25 15:26	1

Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: FB-0425

Lab Sample ID: 310-304528-16

Date Collected: 04/15/25 12:00

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 17:37	1
Benzene	<0.500		0.500		ug/L			04/19/25 17:37	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120					04/19/25 17:37	1
Dibromofluoromethane (Surr)	125		73 - 130					04/19/25 17:37	1
Toluene-d8 (Surr)	94		80 - 120					04/19/25 17:37	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			04/22/25 19:27	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.00200		0.00200		mg/L		04/21/25 09:00	04/22/25 17:34	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/22/25 17:34	1
Iron	<0.100		0.100		mg/L		04/21/25 09:00	04/22/25 17:34	1
Lead	<0.000500		0.000500		mg/L		04/21/25 09:00	04/22/25 17:34	1
Manganese	<0.0100		0.0100		mg/L		04/21/25 09:00	04/22/25 17:34	1
Molybdenum	<0.00200		0.00200		mg/L		04/21/25 09:00	04/22/25 17:34	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200		mg/L			04/19/25 00:44	1
Chemical Oxygen Demand (SM 5220D LL)	<5.00		5.00		mg/L			04/24/25 10:53	1
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/30/25 16:39	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 21:04	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88		mg/L			04/21/25 14:55	1

Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: RB-0425

Lab Sample ID: 310-304528-17

Date Collected: 04/15/25 12:00

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 17:59	1
Benzene	<0.500		0.500		ug/L			04/19/25 17:59	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120					04/19/25 17:59	1
Dibromofluoromethane (Surr)	126		73 - 130					04/19/25 17:59	1
Toluene-d8 (Surr)	93		80 - 120					04/19/25 17:59	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			04/22/25 19:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.00308		0.00200		mg/L		04/21/25 09:00	04/22/25 17:20	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/22/25 17:20	1
Iron	0.398		0.100		mg/L		04/21/25 09:00	04/22/25 17:20	1
Lead	<0.000500		0.000500		mg/L		04/21/25 09:00	04/22/25 17:20	1
Manganese	0.0193		0.0100		mg/L		04/21/25 09:00	04/22/25 17:20	1
Molybdenum	<0.00200		0.00200		mg/L		04/21/25 09:00	04/22/25 17:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.200		0.200		mg/L			04/19/25 00:46	1
Chemical Oxygen Demand (SM 5220D LL)	<5.00		5.00		mg/L			04/24/25 10:53	1
TOX Dup (SW846 9020B)	<60.0		60.0		ug/L			04/30/25 16:39	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 21:04	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88		mg/L			04/21/25 14:55	1

Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-304528-18

Date Collected: 04/17/25 00:00

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 11:26	1
Benzene	<0.500		0.500		ug/L			04/19/25 11:26	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120					04/19/25 11:26	1
Dibromofluoromethane (Surr)	115		73 - 130					04/19/25 11:26	1
Toluene-d8 (Surr)	94		80 - 120					04/19/25 11:26	1

Client Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-304528-19

Date Collected: 04/17/25 00:00

Matrix: Water

Date Received: 04/17/25 15:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 11:48	1
Benzene	<0.500		0.500		ug/L			04/19/25 11:48	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 120					04/19/25 11:48	1
Dibromofluoromethane (Surr)	119		73 - 130					04/19/25 11:48	1
Toluene-d8 (Surr)	95		80 - 120					04/19/25 11:48	1

Definitions/Glossary

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Qualifiers

Metals

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.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

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: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (80-120)	DBFM (73-130)	TOL (80-120)
310-304528-1	MW5-GW-0425	106	118	96
310-304528-2	MW7R-GW-0425	102	114	95
310-304528-3	MW8-GW-0425	105	117	95
310-304528-4	MW11-GW-0425	106	120	94
310-304528-5	MW14-GW-0425	104	117	96
310-304528-6	MW15-GW-0425	107	119	93
310-304528-7	MW16-GW-0425	102	123	95
310-304528-8	MW17R-GW-0425	108	123	94
310-304528-8 MS	MW17R-GW-0425 MS	98	93	102
310-304528-8 MSD	MW17R-GW-0425 MSD	99	92	101
310-304528-9	MW19-GW-0425	106	118	95
310-304528-10	MW20-GW-0425	102	120	95
310-304528-11	MW21-GW-0425	104	124	92
310-304528-12	MW22-GW-0425	103	124	94
310-304528-13	SW01-0425	104	120	92
310-304528-14	DP01-GW-0425	103	123	92
310-304528-15	DP02-GW-0425	107	126	92
310-304528-16	FB-0425	104	125	94
310-304528-17	RB-0425	103	126	93
310-304528-18	Trip Blank 1	104	115	94
310-304528-19	Trip Blank 2	100	119	95
LCS 310-452063/7	Lab Control Sample	100	93	101
MB 310-452063/6	Method Blank	104	110	95

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

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

Lab Sample ID: MB 310-452063/6

Matrix: Water

Analysis Batch: 452063

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			04/19/25 10:21	1
Benzene	<0.500		0.500		ug/L			04/19/25 10:21	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120					04/19/25 10:21	1
Dibromofluoromethane (Surr)	110		73 - 130					04/19/25 10:21	1
Toluene-d8 (Surr)	95		80 - 120					04/19/25 10:21	1

Lab Sample ID: LCS 310-452063/7

Matrix: Water

Analysis Batch: 452063

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	40.0	34.75		ug/L		87	50 - 150
Benzene	20.0	19.26		ug/L		96	72 - 124
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	100		80 - 120				
Dibromofluoromethane (Surr)	93		73 - 130				
Toluene-d8 (Surr)	101		80 - 120				

Lab Sample ID: 310-304528-8 MS

Matrix: Water

Analysis Batch: 452063

Client Sample ID: MW17R-GW-0425 MS

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	<10.0		50.0	31.67		ug/L		63	31 - 150
Benzene	<0.500		25.0	19.10		ug/L		76	46 - 130
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	98		80 - 120						
Dibromofluoromethane (Surr)	93		73 - 130						
Toluene-d8 (Surr)	102		80 - 120						

Lab Sample ID: 310-304528-8 MSD

Matrix: Water

Analysis Batch: 452063

Client Sample ID: MW17R-GW-0425 MSD

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Acetone	<10.0		50.0	32.24		ug/L		64	31 - 150	2	29
Benzene	<0.500		25.0	17.67		ug/L		71	46 - 130	8	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	99		80 - 120								
Dibromofluoromethane (Surr)	92		73 - 130								
Toluene-d8 (Surr)	101		80 - 120								

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QC Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-452649/3

Matrix: Water

Analysis Batch: 452649

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			04/22/25 14:00	1

Lab Sample ID: LCS 310-452649/4

Matrix: Water

Analysis Batch: 452649

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	10.24		mg/L		102	90 - 110

Lab Sample ID: MB 310-452750/3

Matrix: Water

Analysis Batch: 452750

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			04/22/25 15:27	1

Lab Sample ID: LCS 310-452750/4

Matrix: Water

Analysis Batch: 452750

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	10.04		mg/L		100	90 - 110

Lab Sample ID: 310-304528-8 MS

Matrix: Water

Analysis Batch: 452750

Client Sample ID: MW17R-GW-0425 MS

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	41.0		25.0	65.54		mg/L		98	80 - 120

Lab Sample ID: 310-304528-8 MSD

Matrix: Water

Analysis Batch: 452750

Client Sample ID: MW17R-GW-0425 MSD

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	41.0		25.0	63.35		mg/L		90	80 - 120	3	15

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-452055/1-A

Matrix: Water

Analysis Batch: 452465

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 452055

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.00200		0.00200		mg/L		04/21/25 09:00	04/22/25 16:36	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/22/25 16:36	1
Iron	<0.100		0.100		mg/L		04/21/25 09:00	04/22/25 16:36	1
Lead	<0.000500		0.000500		mg/L		04/21/25 09:00	04/22/25 16:36	1
Manganese	<0.0100		0.0100		mg/L		04/21/25 09:00	04/22/25 16:36	1
Molybdenum	<0.00200		0.00200		mg/L		04/21/25 09:00	04/22/25 16:36	1

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QC Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

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

Lab Sample ID: LCS 310-452055/2-A

Matrix: Water

Analysis Batch: 452465

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 452055

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.100	0.09728		mg/L		97	80 - 120
Copper	0.200	0.2073		mg/L		104	80 - 120
Iron	0.200	0.1965		mg/L		98	80 - 120
Lead	0.200	0.1975		mg/L		99	80 - 120
Manganese	0.100	0.09728		mg/L		97	80 - 120
Molybdenum	0.200	0.1927		mg/L		96	80 - 120

Lab Sample ID: 310-304528-16 DU

Matrix: Water

Analysis Batch: 452465

Client Sample ID: FB-0425

Prep Type: Total/NA

Prep Batch: 452055

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Barium	<0.00200		<0.00200		mg/L		NC	20
Copper	<0.00500		<0.00500		mg/L		NC	20
Iron	<0.100		<0.100		mg/L		NC	20
Lead	<0.000500		<0.000500		mg/L		NC	20
Manganese	<0.0100		<0.0100		mg/L		NC	20
Molybdenum	<0.00200		<0.00200		mg/L		NC	20

Lab Sample ID: MB 310-452057/1-A

Matrix: Water

Analysis Batch: 452529

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 452057

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.00200		0.00200		mg/L		04/21/25 09:00	04/23/25 14:53	1
Copper	<0.00500		0.00500		mg/L		04/21/25 09:00	04/23/25 14:53	1
Iron	<0.100		0.100		mg/L		04/21/25 09:00	04/23/25 14:53	1
Lead	<0.000500		0.000500		mg/L		04/21/25 09:00	04/23/25 14:53	1
Manganese	<0.0100		0.0100		mg/L		04/21/25 09:00	04/23/25 14:53	1
Molybdenum	<0.00200		0.00200		mg/L		04/21/25 09:00	04/23/25 14:53	1

Lab Sample ID: LCS 310-452057/2-A

Matrix: Water

Analysis Batch: 452529

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 452057

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.100	0.1022		mg/L		102	80 - 120
Copper	0.200	0.2046		mg/L		102	80 - 120
Iron	0.200	0.2071		mg/L		104	80 - 120
Lead	0.200	0.2117		mg/L		106	80 - 120
Manganese	0.100	0.09815		mg/L		98	80 - 120
Molybdenum	0.200	0.1894		mg/L		95	80 - 120

Lab Sample ID: MB 310-452353/1-A

Matrix: Water

Analysis Batch: 452529

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 452353

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.00200		0.00200		mg/L		04/23/25 09:30	04/23/25 17:17	1

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QC Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

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

Lab Sample ID: MB 310-452353/1-A

Matrix: Water

Analysis Batch: 452529

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 452353

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Copper	<0.00500		0.00500		mg/L		04/23/25 09:30	04/23/25 17:17	1
Iron	<0.100		0.100		mg/L		04/23/25 09:30	04/23/25 17:17	1
Lead	<0.000500		0.000500		mg/L		04/23/25 09:30	04/23/25 17:17	1
Manganese	<0.0100		0.0100		mg/L		04/23/25 09:30	04/23/25 17:17	1
Molybdenum	<0.00200		0.00200		mg/L		04/23/25 09:30	04/23/25 17:17	1

Lab Sample ID: LCS 310-452353/2-A

Matrix: Water

Analysis Batch: 452529

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 452353

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.100	0.1001		mg/L		100	80 - 120
Copper	0.200	0.2015		mg/L		101	80 - 120
Iron	0.200	0.2041		mg/L		102	80 - 120
Lead	0.200	0.2092		mg/L		105	80 - 120
Manganese	0.100	0.09562		mg/L		96	80 - 120
Molybdenum	0.200	0.1804		mg/L		90	80 - 120

Lab Sample ID: 310-304528-13 DU

Matrix: Water

Analysis Batch: 452529

Client Sample ID: SW01-0425

Prep Type: Total/NA

Prep Batch: 452353

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Barium	0.105		0.1070		mg/L		2	20
Copper	<0.00500		<0.00500		mg/L		NC	20
Iron	2.11		2.170		mg/L		3	20
Lead	0.000635		0.0006930		mg/L		9	20
Manganese	0.458		0.4612		mg/L		0.8	20
Molybdenum	0.0162		0.01652		mg/L		2	20

Lab Sample ID: MB 310-452480/1-A

Matrix: Water

Analysis Batch: 452834

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 452480

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 12:42	1
Copper	<0.00500		0.00500		mg/L		04/24/25 09:00	04/25/25 12:42	1
Iron	<0.100		0.100		mg/L		04/24/25 09:00	04/25/25 12:42	1
Lead	<0.000500		0.000500		mg/L		04/24/25 09:00	04/25/25 12:42	1
Manganese	<0.0100		0.0100		mg/L		04/24/25 09:00	04/25/25 12:42	1
Molybdenum	<0.00200		0.00200		mg/L		04/24/25 09:00	04/25/25 12:42	1

Lab Sample ID: LCS 310-452480/2-A

Matrix: Water

Analysis Batch: 452834

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 452480

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.100	0.1059		mg/L		106	80 - 120
Copper	0.200	0.2061		mg/L		103	80 - 120
Iron	0.200	0.2191		mg/L		110	80 - 120

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QC Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

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

Lab Sample ID: LCS 310-452480/2-A

Matrix: Water

Analysis Batch: 452834

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 452480

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	0.200	0.2087		mg/L		104	80 - 120
Manganese	0.100	0.09914		mg/L		99	80 - 120
Molybdenum	0.200	0.2018		mg/L		101	80 - 120

Lab Sample ID: 310-304528-8 MS

Matrix: Water

Analysis Batch: 452834

Client Sample ID: MW17R-GW-0425 MS

Prep Type: Total/NA

Prep Batch: 452480

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.0931		0.100	0.1983		mg/L		105	75 - 125
Copper	<0.00500		0.200	0.1905		mg/L		95	75 - 125
Iron	10.0		0.200	10.87	4	mg/L		427	75 - 125
Lead	<0.000500		0.200	0.1901		mg/L		95	75 - 125
Manganese	2.54		0.100	2.637	4	mg/L		93	75 - 125
Molybdenum	0.00357		0.200	0.2052		mg/L		101	75 - 125

Lab Sample ID: 310-304528-8 MSD

Matrix: Water

Analysis Batch: 452834

Client Sample ID: MW17R-GW-0425 MSD

Prep Type: Total/NA

Prep Batch: 452480

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Barium	0.0931		0.100	0.1978		mg/L		105	75 - 125	0	20
Copper	<0.00500		0.200	0.1908		mg/L		95	75 - 125	0	20
Iron	10.0		0.200	10.45	4	mg/L		220	75 - 125	4	20
Lead	<0.000500		0.200	0.1911		mg/L		96	75 - 125	1	20
Manganese	2.54		0.100	2.679	4	mg/L		135	75 - 125	2	20
Molybdenum	0.00357		0.200	0.2107		mg/L		104	75 - 125	3	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 310-452095/150

Matrix: Water

Analysis Batch: 452095

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.200		0.200		mg/L			04/19/25 00:25	1

Lab Sample ID: LCS 310-452095/151

Matrix: Water

Analysis Batch: 452095

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	8.55	8.169		mg/L		96	90 - 110

Lab Sample ID: 310-304528-1 MS

Matrix: Water

Analysis Batch: 452095

Client Sample ID: MW5-GW-0425

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	<0.200	F1	1.00	0.8047	F1	mg/L		80	90 - 110

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QC Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 310-304528-1 MSD

Matrix: Water

Analysis Batch: 452095

Client Sample ID: MW5-GW-0425

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	<0.200	F1	1.00	0.8016	F1	mg/L		80	90 - 110	0	13

Lab Sample ID: 310-304528-8 MS

Matrix: Water

Analysis Batch: 452095

Client Sample ID: MW17R-GW-0425 MS

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.617	F1	1.00	1.372	F1	mg/L		76	90 - 110		

Lab Sample ID: 310-304528-8 MSD

Matrix: Water

Analysis Batch: 452095

Client Sample ID: MW17R-GW-0425 MSD

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	0.617	F1	1.00	1.469	F1	mg/L		85	90 - 110	7	13

Method: 5220D LL - COD

Lab Sample ID: MB 310-452591/32

Matrix: Water

Analysis Batch: 452591

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<5.00		5.00		mg/L			04/24/25 10:53	1

Lab Sample ID: MB 310-452591/60

Matrix: Water

Analysis Batch: 452591

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<5.00		5.00		mg/L			04/24/25 10:53	1

Lab Sample ID: LCS 310-452591/33

Matrix: Water

Analysis Batch: 452591

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chemical Oxygen Demand	125	123.0		mg/L		98	85 - 110		

Lab Sample ID: LCS 310-452591/63

Matrix: Water

Analysis Batch: 452591

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chemical Oxygen Demand	125	123.9		mg/L		99	85 - 110		

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QC Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Method: 5220D LL - COD (Continued)

Lab Sample ID: 310-304528-8 MS

Matrix: Water

Analysis Batch: 452591

Client Sample ID: MW17R-GW-0425 MS

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chemical Oxygen Demand	11.1		50.0	67.52		mg/L		113	83 - 146		

Lab Sample ID: 310-304528-8 MSD

Matrix: Water

Analysis Batch: 452591

Client Sample ID: MW17R-GW-0425 MSD

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chemical Oxygen Demand	11.1		50.0	65.21		mg/L		108	83 - 146	3	18

Lab Sample ID: 310-304528-13 MS

Matrix: Water

Analysis Batch: 452591

Client Sample ID: SW01-0425

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chemical Oxygen Demand	27.3		50.0	80.39		mg/L		106	83 - 146		

Lab Sample ID: 310-304528-13 MSD

Matrix: Water

Analysis Batch: 452591

Client Sample ID: SW01-0425

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chemical Oxygen Demand	27.3		50.0	79.40		mg/L		104	83 - 146	1	18

Method: 9020B - Organic Halides, Total (TOX)

Lab Sample ID: MB 280-693721/2

Matrix: Water

Analysis Batch: 693721

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<30.0		30.0		ug/L			04/28/25 10:59	1

Lab Sample ID: LCS 280-693721/4

Matrix: Water

Analysis Batch: 693721

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
TOX Result 1	100	94.60		ug/L		95	78 - 114		
TOX Dup	100	94.60		ug/L		95	78 - 114		

Lab Sample ID: 310-304528-8 MS

Matrix: Water

Analysis Batch: 693721

Client Sample ID: MW17R-GW-0425 MS

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
TOX Result 1	<60.0		100	92.92		ug/L		93	78 - 114		
TOX Dup	<60.0		100	92.92		ug/L		93	78 - 114		

Eurofins Cedar Falls

QC Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Method: 9020B - Organic Halides, Total (TOX) (Continued)

Lab Sample ID: 310-304528-8 MSD

Matrix: Water

Analysis Batch: 693721

Client Sample ID: MW17R-GW-0425 MSD

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
TOX Result 1	<60.0		100	81.52		ug/L		82	78 - 114	13	23
TOX Dup	<60.0		100	81.52		ug/L		82	78 - 114	13	23

Lab Sample ID: MB 280-693991/2

Matrix: Water

Analysis Batch: 693991

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
TOX Dup	<30.0		30.0		ug/L			04/30/25 16:39	1

Lab Sample ID: LCS 280-693991/4

Matrix: Water

Analysis Batch: 693991

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
TOX Result 1	100	104.4		ug/L		104	78 - 114
TOX Dup	100	104.4		ug/L		104	78 - 114

Method: 9066 - Phenolics, Total Recoverable

Lab Sample ID: MB 310-452147/1-A

Matrix: Water

Analysis Batch: 452249

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 452147

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	<0.0200		0.0200		mg/L		04/21/25 09:16	04/21/25 20:11	1

Lab Sample ID: LCS 310-452147/2-A

Matrix: Water

Analysis Batch: 452249

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 452147

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Phenols, Total	0.100	0.09438		mg/L		94	90 - 110

Lab Sample ID: 310-304528-8 MS

Matrix: Water

Analysis Batch: 452249

Client Sample ID: MW17R-GW-0425 MS

Prep Type: Total/NA

Prep Batch: 452147

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Phenols, Total	<0.0200		0.100	0.09974		mg/L		100	76 - 119

Lab Sample ID: 310-304528-8 MSD

Matrix: Water

Analysis Batch: 452249

Client Sample ID: MW17R-GW-0425 MSD

Prep Type: Total/NA

Prep Batch: 452147

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Phenols, Total	<0.0200		0.100	0.08841		mg/L		88	76 - 119	12	16

Eurofins Cedar Falls

QC Sample Results

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-452219/1

Matrix: Water

Analysis Batch: 452219

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		mg/L			04/21/25 14:55	1

Lab Sample ID: LCS 310-452219/2

Matrix: Water

Analysis Batch: 452219

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	112.0		mg/L		112	81 - 116

Lab Sample ID: 310-304528-8 DU

Matrix: Water

Analysis Batch: 452219

Client Sample ID: MW17R-GW-0425

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	23.0		23.50		mg/L		2	35

Lab Sample ID: MB 310-452222/1

Matrix: Water

Analysis Batch: 452222

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		mg/L			04/21/25 15:26	1

Lab Sample ID: LCS 310-452222/2

Matrix: Water

Analysis Batch: 452222

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	112.0		mg/L		112	81 - 116

Lab Sample ID: MB 310-452418/1

Matrix: Water

Analysis Batch: 452418

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		mg/L			04/23/25 09:18	1

Lab Sample ID: LCS 310-452418/2

Matrix: Water

Analysis Batch: 452418

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	105.0		mg/L		105	81 - 116

Eurofins Cedar Falls

QC Association Summary

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

GC/MS VOA

Analysis Batch: 452063

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-1	MW5-GW-0425	Total/NA	Water	8260D	
310-304528-2	MW7R-GW-0425	Total/NA	Water	8260D	
310-304528-3	MW8-GW-0425	Total/NA	Water	8260D	
310-304528-4	MW11-GW-0425	Total/NA	Water	8260D	
310-304528-5	MW14-GW-0425	Total/NA	Water	8260D	
310-304528-6	MW15-GW-0425	Total/NA	Water	8260D	
310-304528-7	MW16-GW-0425	Total/NA	Water	8260D	
310-304528-8	MW17R-GW-0425	Total/NA	Water	8260D	
310-304528-9	MW19-GW-0425	Total/NA	Water	8260D	
310-304528-10	MW20-GW-0425	Total/NA	Water	8260D	
310-304528-11	MW21-GW-0425	Total/NA	Water	8260D	
310-304528-12	MW22-GW-0425	Total/NA	Water	8260D	
310-304528-13	SW01-0425	Total/NA	Water	8260D	
310-304528-14	DP01-GW-0425	Total/NA	Water	8260D	
310-304528-15	DP02-GW-0425	Total/NA	Water	8260D	
310-304528-16	FB-0425	Total/NA	Water	8260D	
310-304528-17	RB-0425	Total/NA	Water	8260D	
310-304528-18	Trip Blank 1	Total/NA	Water	8260D	
310-304528-19	Trip Blank 2	Total/NA	Water	8260D	
MB 310-452063/6	Method Blank	Total/NA	Water	8260D	
LCS 310-452063/7	Lab Control Sample	Total/NA	Water	8260D	
310-304528-8 MS	MW17R-GW-0425 MS	Total/NA	Water	8260D	
310-304528-8 MSD	MW17R-GW-0425 MSD	Total/NA	Water	8260D	

HPLC/IC

Analysis Batch: 452649

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-15	DP02-GW-0425	Total/NA	Water	9056A	
310-304528-16	FB-0425	Total/NA	Water	9056A	
310-304528-17	RB-0425	Total/NA	Water	9056A	
MB 310-452649/3	Method Blank	Total/NA	Water	9056A	
LCS 310-452649/4	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 452750

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-1	MW5-GW-0425	Total/NA	Water	9056A	
310-304528-2	MW7R-GW-0425	Total/NA	Water	9056A	
310-304528-3	MW8-GW-0425	Total/NA	Water	9056A	
310-304528-4	MW11-GW-0425	Total/NA	Water	9056A	
310-304528-5	MW14-GW-0425	Total/NA	Water	9056A	
310-304528-6	MW15-GW-0425	Total/NA	Water	9056A	
310-304528-7	MW16-GW-0425	Total/NA	Water	9056A	
310-304528-8	MW17R-GW-0425	Total/NA	Water	9056A	
310-304528-9	MW19-GW-0425	Total/NA	Water	9056A	
310-304528-10	MW20-GW-0425	Total/NA	Water	9056A	
310-304528-11	MW21-GW-0425	Total/NA	Water	9056A	
310-304528-12	MW22-GW-0425	Total/NA	Water	9056A	
310-304528-13	SW01-0425	Total/NA	Water	9056A	
310-304528-14	DP01-GW-0425	Total/NA	Water	9056A	
MB 310-452750/3	Method Blank	Total/NA	Water	9056A	

Eurofins Cedar Falls

QC Association Summary

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

HPLC/IC (Continued)

Analysis Batch: 452750 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-452750/4	Lab Control Sample	Total/NA	Water	9056A	
310-304528-8 MS	MW17R-GW-0425 MS	Total/NA	Water	9056A	
310-304528-8 MSD	MW17R-GW-0425 MSD	Total/NA	Water	9056A	

Metals

Prep Batch: 452055

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-1	MW5-GW-0425	Total/NA	Water	3005A	
310-304528-2	MW7R-GW-0425	Total/NA	Water	3005A	
310-304528-3	MW8-GW-0425	Total/NA	Water	3005A	
310-304528-4	MW11-GW-0425	Total/NA	Water	3005A	
310-304528-5	MW14-GW-0425	Total/NA	Water	3005A	
310-304528-6	MW15-GW-0425	Total/NA	Water	3005A	
310-304528-7	MW16-GW-0425	Total/NA	Water	3005A	
310-304528-14	DP01-GW-0425	Total/NA	Water	3005A	
310-304528-15	DP02-GW-0425	Total/NA	Water	3005A	
310-304528-16	FB-0425	Total/NA	Water	3005A	
310-304528-17	RB-0425	Total/NA	Water	3005A	
MB 310-452055/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-452055/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-304528-16 DU	FB-0425	Total/NA	Water	3005A	

Prep Batch: 452057

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-10	MW20-GW-0425	Total/NA	Water	3005A	
310-304528-11	MW21-GW-0425	Total/NA	Water	3005A	
310-304528-12	MW22-GW-0425	Total/NA	Water	3005A	
MB 310-452057/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-452057/2-A	Lab Control Sample	Total/NA	Water	3005A	

Prep Batch: 452353

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-13	SW01-0425	Total/NA	Water	3005A	
MB 310-452353/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-452353/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-304528-13 DU	SW01-0425	Total/NA	Water	3005A	

Analysis Batch: 452465

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-1	MW5-GW-0425	Total/NA	Water	6020B	452055
310-304528-2	MW7R-GW-0425	Total/NA	Water	6020B	452055
310-304528-3	MW8-GW-0425	Total/NA	Water	6020B	452055
310-304528-4	MW11-GW-0425	Total/NA	Water	6020B	452055
310-304528-5	MW14-GW-0425	Total/NA	Water	6020B	452055
310-304528-6	MW15-GW-0425	Total/NA	Water	6020B	452055
310-304528-7	MW16-GW-0425	Total/NA	Water	6020B	452055
310-304528-14	DP01-GW-0425	Total/NA	Water	6020B	452055
310-304528-15	DP02-GW-0425	Total/NA	Water	6020B	452055
310-304528-16	FB-0425	Total/NA	Water	6020B	452055
310-304528-17	RB-0425	Total/NA	Water	6020B	452055

Eurofins Cedar Falls

QC Association Summary

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Metals (Continued)

Analysis Batch: 452465 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-452055/1-A	Method Blank	Total/NA	Water	6020B	452055
LCS 310-452055/2-A	Lab Control Sample	Total/NA	Water	6020B	452055
310-304528-16 DU	FB-0425	Total/NA	Water	6020B	452055

Prep Batch: 452480

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-8	MW17R-GW-0425	Total/NA	Water	3005A	
310-304528-9	MW19-GW-0425	Total/NA	Water	3005A	
MB 310-452480/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-452480/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-304528-8 MS	MW17R-GW-0425 MS	Total/NA	Water	3005A	
310-304528-8 MSD	MW17R-GW-0425 MSD	Total/NA	Water	3005A	

Analysis Batch: 452529

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-10	MW20-GW-0425	Total/NA	Water	6020B	452057
310-304528-11	MW21-GW-0425	Total/NA	Water	6020B	452057
310-304528-12	MW22-GW-0425	Total/NA	Water	6020B	452057
310-304528-13	SW01-0425	Total/NA	Water	6020B	452353
MB 310-452057/1-A	Method Blank	Total/NA	Water	6020B	452057
MB 310-452353/1-A	Method Blank	Total/NA	Water	6020B	452353
LCS 310-452057/2-A	Lab Control Sample	Total/NA	Water	6020B	452057
LCS 310-452353/2-A	Lab Control Sample	Total/NA	Water	6020B	452353
310-304528-13 DU	SW01-0425	Total/NA	Water	6020B	452353

Analysis Batch: 452834

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-8	MW17R-GW-0425	Total/NA	Water	6020B	452480
310-304528-9	MW19-GW-0425	Total/NA	Water	6020B	452480
MB 310-452480/1-A	Method Blank	Total/NA	Water	6020B	452480
LCS 310-452480/2-A	Lab Control Sample	Total/NA	Water	6020B	452480
310-304528-8 MS	MW17R-GW-0425 MS	Total/NA	Water	6020B	452480
310-304528-8 MSD	MW17R-GW-0425 MSD	Total/NA	Water	6020B	452480

General Chemistry

Analysis Batch: 452095

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-1	MW5-GW-0425	Total/NA	Water	350.1	
310-304528-2	MW7R-GW-0425	Total/NA	Water	350.1	
310-304528-3	MW8-GW-0425	Total/NA	Water	350.1	
310-304528-4	MW11-GW-0425	Total/NA	Water	350.1	
310-304528-5	MW14-GW-0425	Total/NA	Water	350.1	
310-304528-6	MW15-GW-0425	Total/NA	Water	350.1	
310-304528-7	MW16-GW-0425	Total/NA	Water	350.1	
310-304528-8	MW17R-GW-0425	Total/NA	Water	350.1	
310-304528-9	MW19-GW-0425	Total/NA	Water	350.1	
310-304528-10	MW20-GW-0425	Total/NA	Water	350.1	
310-304528-11	MW21-GW-0425	Total/NA	Water	350.1	
310-304528-12	MW22-GW-0425	Total/NA	Water	350.1	
310-304528-13	SW01-0425	Total/NA	Water	350.1	

Eurofins Cedar Falls

QC Association Summary

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

General Chemistry (Continued)

Analysis Batch: 452095 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-14	DP01-GW-0425	Total/NA	Water	350.1	
310-304528-15	DP02-GW-0425	Total/NA	Water	350.1	
310-304528-16	FB-0425	Total/NA	Water	350.1	
310-304528-17	RB-0425	Total/NA	Water	350.1	
MB 310-452095/150	Method Blank	Total/NA	Water	350.1	
LCS 310-452095/151	Lab Control Sample	Total/NA	Water	350.1	
310-304528-1 MS	MW5-GW-0425	Total/NA	Water	350.1	
310-304528-1 MSD	MW5-GW-0425	Total/NA	Water	350.1	
310-304528-8 MS	MW17R-GW-0425 MS	Total/NA	Water	350.1	
310-304528-8 MSD	MW17R-GW-0425 MSD	Total/NA	Water	350.1	

Prep Batch: 452147

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-1	MW5-GW-0425	Total/NA	Water	Distill/Phenol	
310-304528-2	MW7R-GW-0425	Total/NA	Water	Distill/Phenol	
310-304528-3	MW8-GW-0425	Total/NA	Water	Distill/Phenol	
310-304528-4	MW11-GW-0425	Total/NA	Water	Distill/Phenol	
310-304528-5	MW14-GW-0425	Total/NA	Water	Distill/Phenol	
310-304528-6	MW15-GW-0425	Total/NA	Water	Distill/Phenol	
310-304528-7	MW16-GW-0425	Total/NA	Water	Distill/Phenol	
310-304528-8	MW17R-GW-0425	Total/NA	Water	Distill/Phenol	
310-304528-9	MW19-GW-0425	Total/NA	Water	Distill/Phenol	
310-304528-10	MW20-GW-0425	Total/NA	Water	Distill/Phenol	
310-304528-11	MW21-GW-0425	Total/NA	Water	Distill/Phenol	
310-304528-12	MW22-GW-0425	Total/NA	Water	Distill/Phenol	
310-304528-13	SW01-0425	Total/NA	Water	Distill/Phenol	
310-304528-14	DP01-GW-0425	Total/NA	Water	Distill/Phenol	
310-304528-15	DP02-GW-0425	Total/NA	Water	Distill/Phenol	
310-304528-16	FB-0425	Total/NA	Water	Distill/Phenol	
310-304528-17	RB-0425	Total/NA	Water	Distill/Phenol	
MB 310-452147/1-A	Method Blank	Total/NA	Water	Distill/Phenol	
LCS 310-452147/2-A	Lab Control Sample	Total/NA	Water	Distill/Phenol	
310-304528-8 MS	MW17R-GW-0425 MS	Total/NA	Water	Distill/Phenol	
310-304528-8 MSD	MW17R-GW-0425 MSD	Total/NA	Water	Distill/Phenol	

Analysis Batch: 452219

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-2	MW7R-GW-0425	Total/NA	Water	I-3765-85	
310-304528-3	MW8-GW-0425	Total/NA	Water	I-3765-85	
310-304528-6	MW15-GW-0425	Total/NA	Water	I-3765-85	
310-304528-8	MW17R-GW-0425	Total/NA	Water	I-3765-85	
310-304528-11	MW21-GW-0425	Total/NA	Water	I-3765-85	
310-304528-12	MW22-GW-0425	Total/NA	Water	I-3765-85	
310-304528-13	SW01-0425	Total/NA	Water	I-3765-85	
310-304528-14	DP01-GW-0425	Total/NA	Water	I-3765-85	
310-304528-16	FB-0425	Total/NA	Water	I-3765-85	
310-304528-17	RB-0425	Total/NA	Water	I-3765-85	
MB 310-452219/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-452219/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-304528-8 DU	MW17R-GW-0425	Total/NA	Water	I-3765-85	

Eurofins Cedar Falls

QC Association Summary

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

General Chemistry

Analysis Batch: 452222

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-1	MW5-GW-0425	Total/NA	Water	I-3765-85	
310-304528-4	MW11-GW-0425	Total/NA	Water	I-3765-85	
310-304528-10	MW20-GW-0425	Total/NA	Water	I-3765-85	
310-304528-15	DP02-GW-0425	Total/NA	Water	I-3765-85	
MB 310-452222/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-452222/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 452249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-1	MW5-GW-0425	Total/NA	Water	9066	452147
310-304528-2	MW7R-GW-0425	Total/NA	Water	9066	452147
310-304528-3	MW8-GW-0425	Total/NA	Water	9066	452147
310-304528-4	MW11-GW-0425	Total/NA	Water	9066	452147
310-304528-5	MW14-GW-0425	Total/NA	Water	9066	452147
310-304528-6	MW15-GW-0425	Total/NA	Water	9066	452147
310-304528-7	MW16-GW-0425	Total/NA	Water	9066	452147
310-304528-8	MW17R-GW-0425	Total/NA	Water	9066	452147
310-304528-9	MW19-GW-0425	Total/NA	Water	9066	452147
310-304528-10	MW20-GW-0425	Total/NA	Water	9066	452147
310-304528-11	MW21-GW-0425	Total/NA	Water	9066	452147
310-304528-12	MW22-GW-0425	Total/NA	Water	9066	452147
310-304528-13	SW01-0425	Total/NA	Water	9066	452147
310-304528-14	DP01-GW-0425	Total/NA	Water	9066	452147
310-304528-15	DP02-GW-0425	Total/NA	Water	9066	452147
310-304528-16	FB-0425	Total/NA	Water	9066	452147
310-304528-17	RB-0425	Total/NA	Water	9066	452147
MB 310-452147/1-A	Method Blank	Total/NA	Water	9066	452147
LCS 310-452147/2-A	Lab Control Sample	Total/NA	Water	9066	452147
310-304528-8 MS	MW17R-GW-0425 MS	Total/NA	Water	9066	452147
310-304528-8 MSD	MW17R-GW-0425 MSD	Total/NA	Water	9066	452147

Analysis Batch: 452418

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-5	MW14-GW-0425	Total/NA	Water	I-3765-85	
310-304528-9	MW19-GW-0425	Total/NA	Water	I-3765-85	
MB 310-452418/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-452418/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 452591

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-1	MW5-GW-0425	Total/NA	Water	5220D LL	
310-304528-2	MW7R-GW-0425	Total/NA	Water	5220D LL	
310-304528-3	MW8-GW-0425	Total/NA	Water	5220D LL	
310-304528-4	MW11-GW-0425	Total/NA	Water	5220D LL	
310-304528-5	MW14-GW-0425	Total/NA	Water	5220D LL	
310-304528-6	MW15-GW-0425	Total/NA	Water	5220D LL	
310-304528-7	MW16-GW-0425	Total/NA	Water	5220D LL	
310-304528-8	MW17R-GW-0425	Total/NA	Water	5220D LL	
310-304528-9	MW19-GW-0425	Total/NA	Water	5220D LL	
310-304528-10	MW20-GW-0425	Total/NA	Water	5220D LL	
310-304528-11	MW21-GW-0425	Total/NA	Water	5220D LL	

Eurofins Cedar Falls

QC Association Summary

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

General Chemistry (Continued)

Analysis Batch: 452591 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-12	MW22-GW-0425	Total/NA	Water	5220D LL	
310-304528-13	SW01-0425	Total/NA	Water	5220D LL	
310-304528-14	DP01-GW-0425	Total/NA	Water	5220D LL	
310-304528-15	DP02-GW-0425	Total/NA	Water	5220D LL	
310-304528-16	FB-0425	Total/NA	Water	5220D LL	
310-304528-17	RB-0425	Total/NA	Water	5220D LL	
MB 310-452591/32	Method Blank	Total/NA	Water	5220D LL	
MB 310-452591/60	Method Blank	Total/NA	Water	5220D LL	
LCS 310-452591/33	Lab Control Sample	Total/NA	Water	5220D LL	
LCS 310-452591/63	Lab Control Sample	Total/NA	Water	5220D LL	
310-304528-8 MS	MW17R-GW-0425 MS	Total/NA	Water	5220D LL	
310-304528-8 MSD	MW17R-GW-0425 MSD	Total/NA	Water	5220D LL	
310-304528-13 MS	SW01-0425	Total/NA	Water	5220D LL	
310-304528-13 MSD	SW01-0425	Total/NA	Water	5220D LL	

Analysis Batch: 693721

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-1	MW5-GW-0425	Total/NA	Water	9020B	
310-304528-2	MW7R-GW-0425	Total/NA	Water	9020B	
310-304528-3	MW8-GW-0425	Total/NA	Water	9020B	
310-304528-4	MW11-GW-0425	Total/NA	Water	9020B	
310-304528-5	MW14-GW-0425	Total/NA	Water	9020B	
310-304528-6	MW15-GW-0425	Total/NA	Water	9020B	
310-304528-7	MW16-GW-0425	Total/NA	Water	9020B	
310-304528-8	MW17R-GW-0425	Total/NA	Water	9020B	
310-304528-9	MW19-GW-0425	Total/NA	Water	9020B	
310-304528-10	MW20-GW-0425	Total/NA	Water	9020B	
310-304528-11	MW21-GW-0425	Total/NA	Water	9020B	
310-304528-12	MW22-GW-0425	Total/NA	Water	9020B	
310-304528-13	SW01-0425	Total/NA	Water	9020B	
310-304528-14	DP01-GW-0425	Total/NA	Water	9020B	
310-304528-15	DP02-GW-0425	Total/NA	Water	9020B	
MB 280-693721/2	Method Blank	Total/NA	Water	9020B	
LCS 280-693721/4	Lab Control Sample	Total/NA	Water	9020B	
310-304528-8 MS	MW17R-GW-0425 MS	Total/NA	Water	9020B	
310-304528-8 MSD	MW17R-GW-0425 MSD	Total/NA	Water	9020B	

Analysis Batch: 693991

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-304528-16	FB-0425	Total/NA	Water	9020B	
310-304528-17	RB-0425	Total/NA	Water	9020B	
MB 280-693991/2	Method Blank	Total/NA	Water	9020B	
LCS 280-693991/4	Lab Control Sample	Total/NA	Water	9020B	

Lab Chronicle

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW5-GW-0425

Lab Sample ID: 310-304528-1

Date Collected: 04/16/25 10:35

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 12:10
Total/NA	Analysis	9056A		5	452750	ZRI4	EET CF	04/22/25 18:03
Total/NA	Prep	3005A			452055	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 17:46
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:27
Total/NA	Analysis	5220D LL		2	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693721	CAI	EET DEN	04/28/25 10:59
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 20:13
Total/NA	Analysis	I-3765-85		1	452222	HE7K	EET CF	04/21/25 15:26

Client Sample ID: MW7R-GW-0425

Lab Sample ID: 310-304528-2

Date Collected: 04/15/25 15:00

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 12:32
Total/NA	Analysis	9056A		20	452750	ZRI4	EET CF	04/23/25 10:55
Total/NA	Prep	3005A			452055	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 17:48
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:29
Total/NA	Analysis	5220D LL		2	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693721	CAI	EET DEN	04/28/25 10:59
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 20:14
Total/NA	Analysis	I-3765-85		1	452219	HE7K	EET CF	04/21/25 14:55

Client Sample ID: MW8-GW-0425

Lab Sample ID: 310-304528-3

Date Collected: 04/15/25 16:15

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 12:54
Total/NA	Analysis	9056A		5	452750	ZRI4	EET CF	04/22/25 18:34
Total/NA	Prep	3005A			452055	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 17:40
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:30
Total/NA	Analysis	5220D LL		1	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693721	CAI	EET DEN	04/28/25 10:59
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 20:14
Total/NA	Analysis	I-3765-85		1	452219	HE7K	EET CF	04/21/25 14:55

Eurofins Cedar Falls

Lab Chronicle

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW11-GW-0425

Lab Sample ID: 310-304528-4

Date Collected: 04/16/25 15:00

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 13:15
Total/NA	Analysis	9056A		5	452750	ZRI4	EET CF	04/22/25 18:50
Total/NA	Prep	3005A			452055	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 17:05
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:30
Total/NA	Analysis	5220D LL		1	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693721	CAI	EET DEN	04/28/25 10:59
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 20:40
Total/NA	Analysis	I-3765-85		1	452222	HE7K	EET CF	04/21/25 15:26

Client Sample ID: MW14-GW-0425

Lab Sample ID: 310-304528-5

Date Collected: 04/17/25 09:25

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 13:37
Total/NA	Analysis	9056A		5	452750	ZRI4	EET CF	04/22/25 19:05
Total/NA	Prep	3005A			452055	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 17:08
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:32
Total/NA	Analysis	5220D LL		1	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693721	CAI	EET DEN	04/28/25 10:59
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 20:40
Total/NA	Analysis	I-3765-85		1	452418	HE7K	EET CF	04/23/25 09:18

Client Sample ID: MW15-GW-0425

Lab Sample ID: 310-304528-6

Date Collected: 04/15/25 17:35

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 13:59
Total/NA	Analysis	9056A		5	452750	ZRI4	EET CF	04/22/25 19:21
Total/NA	Prep	3005A			452055	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 17:14
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:32
Total/NA	Analysis	5220D LL		1	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693721	CAI	EET DEN	04/28/25 10:59
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 20:40
Total/NA	Analysis	I-3765-85		1	452219	HE7K	EET CF	04/21/25 14:55

Eurofins Cedar Falls

Lab Chronicle

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW16-GW-0425

Lab Sample ID: 310-304528-7

Date Collected: 04/16/25 09:50

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 14:21
Total/NA	Analysis	9056A		5	452750	ZRI4	EET CF	04/22/25 19:37
Total/NA	Prep	3005A			452055	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 17:43
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:34
Total/NA	Analysis	5220D LL		1	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693721	CAI	EET DEN	04/28/25 10:59
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 20:41

Client Sample ID: MW17R-GW-0425

Lab Sample ID: 310-304528-8

Date Collected: 04/15/25 18:50

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 14:43
Total/NA	Analysis	9056A		5	452750	ZRI4	EET CF	04/22/25 20:23
Total/NA	Prep	3005A			452480	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		1	452834	NFT2	EET CF	04/25/25 12:47
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:35
Total/NA	Analysis	5220D LL		1	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693721	CAI	EET DEN	04/28/25 10:59
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 20:41
Total/NA	Analysis	I-3765-85		1	452219	HE7K	EET CF	04/21/25 14:55

Client Sample ID: MW19-GW-0425

Lab Sample ID: 310-304528-9

Date Collected: 04/17/25 11:35

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 15:04
Total/NA	Analysis	9056A		5	452750	ZRI4	EET CF	04/22/25 21:10
Total/NA	Prep	3005A			452480	QTZ5	EET CF	04/24/25 09:00
Total/NA	Analysis	6020B		1	452834	NFT2	EET CF	04/25/25 12:56
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:37
Total/NA	Analysis	5220D LL		1	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693721	CAI	EET DEN	04/28/25 10:59
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 20:42
Total/NA	Analysis	I-3765-85		1	452418	HE7K	EET CF	04/23/25 09:18

Eurofins Cedar Falls

Lab Chronicle

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: MW20-GW-0425

Lab Sample ID: 310-304528-10

Date Collected: 04/16/25 16:40

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 15:26
Total/NA	Analysis	9056A		5	452750	ZRI4	EET CF	04/22/25 21:26
Total/NA	Prep	3005A			452057	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452529	NFT2	EET CF	04/23/25 15:29
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:39
Total/NA	Analysis	5220D LL		1	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693721	CAI	EET DEN	04/28/25 10:59
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 20:43
Total/NA	Analysis	I-3765-85		1	452222	HE7K	EET CF	04/21/25 15:26

Client Sample ID: MW21-GW-0425

Lab Sample ID: 310-304528-11

Date Collected: 04/15/25 09:25

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 15:48
Total/NA	Analysis	9056A		5	452750	ZRI4	EET CF	04/22/25 21:41
Total/NA	Prep	3005A			452057	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452529	NFT2	EET CF	04/23/25 15:15
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:39
Total/NA	Analysis	5220D LL		2	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693721	CAI	EET DEN	04/28/25 10:59
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 20:43
Total/NA	Analysis	I-3765-85		1	452219	HE7K	EET CF	04/21/25 14:55

Client Sample ID: MW22-GW-0425

Lab Sample ID: 310-304528-12

Date Collected: 04/15/25 11:20

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 16:10
Total/NA	Analysis	9056A		5	452750	ZRI4	EET CF	04/22/25 21:57
Total/NA	Prep	3005A			452057	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452529	NFT2	EET CF	04/23/25 15:12
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:40
Total/NA	Analysis	5220D LL		1	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693721	CAI	EET DEN	04/28/25 10:59
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 21:02
Total/NA	Analysis	I-3765-85		1	452219	HE7K	EET CF	04/21/25 14:55

Eurofins Cedar Falls

Lab Chronicle

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: SW01-0425

Lab Sample ID: 310-304528-13

Date Collected: 04/15/25 13:20

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 16:32
Total/NA	Analysis	9056A		5	452750	ZRI4	EET CF	04/22/25 22:12
Total/NA	Prep	3005A			452353	QTZ5	EET CF	04/23/25 09:30
Total/NA	Analysis	6020B		1	452529	NFT2	EET CF	04/23/25 17:57
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:41
Total/NA	Analysis	5220D LL		1	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693721	CAI	EET DEN	04/28/25 10:59
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 21:02
Total/NA	Analysis	I-3765-85		1	452219	HE7K	EET CF	04/21/25 14:55

Client Sample ID: DP01-GW-0425

Lab Sample ID: 310-304528-14

Date Collected: 04/15/25 00:00

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 16:53
Total/NA	Analysis	9056A		5	452750	ZRI4	EET CF	04/22/25 22:28
Total/NA	Prep	3005A			452055	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 17:22
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:42
Total/NA	Analysis	5220D LL		1	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693721	CAI	EET DEN	04/28/25 10:59
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 21:03
Total/NA	Analysis	I-3765-85		1	452219	HE7K	EET CF	04/21/25 14:55

Client Sample ID: DP02-GW-0425

Lab Sample ID: 310-304528-15

Date Collected: 04/16/25 00:00

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 17:15
Total/NA	Analysis	9056A		5	452649	WZC8	EET CF	04/22/25 19:14
Total/NA	Prep	3005A			452055	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 17:25
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:44
Total/NA	Analysis	5220D LL		1	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693721	CAI	EET DEN	04/28/25 10:59
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 21:03
Total/NA	Analysis	I-3765-85		1	452222	HE7K	EET CF	04/21/25 15:26

Eurofins Cedar Falls

Lab Chronicle

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Client Sample ID: FB-0425

Lab Sample ID: 310-304528-16

Date Collected: 04/15/25 12:00

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 17:37
Total/NA	Analysis	9056A		1	452649	WZC8	EET CF	04/22/25 19:27
Total/NA	Prep	3005A			452055	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 17:34
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:44
Total/NA	Analysis	5220D LL		1	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693991	CAI	EET DEN	04/30/25 16:39
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 21:04
Total/NA	Analysis	I-3765-85		1	452219	HE7K	EET CF	04/21/25 14:55

Client Sample ID: RB-0425

Lab Sample ID: 310-304528-17

Date Collected: 04/15/25 12:00

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 17:59
Total/NA	Analysis	9056A		1	452649	WZC8	EET CF	04/22/25 19:40
Total/NA	Prep	3005A			452055	QTZ5	EET CF	04/21/25 09:00
Total/NA	Analysis	6020B		1	452465	ZRI4	EET CF	04/22/25 17:20
Total/NA	Analysis	350.1		1	452095	ZJX4	EET CF	04/19/25 00:46
Total/NA	Analysis	5220D LL		1	452591	HE7K	EET CF	04/24/25 10:53
Total/NA	Analysis	9020B		1	693991	CAI	EET DEN	04/30/25 16:39
Total/NA	Prep	Distill/Phenol			452147	HE7K	EET CF	04/21/25 09:16
Total/NA	Analysis	9066		1	452249	ZJX4	EET CF	04/21/25 21:04
Total/NA	Analysis	I-3765-85		1	452219	HE7K	EET CF	04/21/25 14:55

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-304528-18

Date Collected: 04/17/25 00:00

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 11:26

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-304528-19

Date Collected: 04/17/25 00:00

Matrix: Water

Date Received: 04/17/25 15:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	452063	WSE8	EET CF	04/19/25 11:48

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100

Eurofins Cedar Falls

Accreditation/Certification Summary

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

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 Denver

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
A2LA	Dept. of Defense ELAP	2907.01	10-31-26
A2LA	ISO/IEC 17025	2907.01	10-31-26
Alabama	State Program	40730	09-30-12 *
Alaska (UST)	State	18-001	11-30-25
Arizona	State	AZ0713	12-20-25
Arkansas DEQ	State	88-00687	04-02-26
California	State	2513	01-08-26
Colorado	Petroleum Storage Tank Program	2907.01 (A2LA)	10-31-26
Colorado	State	CO00026	06-30-25
Connecticut	State	PH-0686	09-30-26
Florida	NELAP	E87667	06-30-25
Georgia	State	4025	01-08-26
Illinois	NELAP	200017	05-31-25
Iowa	State	370	12-01-26
Kansas	NELAP	E-10166	04-30-25
Kentucky (WW)	State	KY98047	12-31-25
Louisiana	NELAP	30785	06-30-14 *
Louisiana (All)	NELAP	30785	06-30-25
Minnesota	NELAP	1788752	12-31-25
Nevada	State	CO00026	07-31-25
New Hampshire	NELAP	2053	04-28-26
New Jersey	NELAP	230001	06-30-25
New York	NELAP	11964	04-01-26
North Dakota	State	R-034	01-08-25 *
Oklahoma	NELAP	8614	08-31-25
Oregon	NELAP	4025	01-08-26
Pennsylvania	NELAP	68-00664	07-31-25
South Carolina	State	72002001	01-18-25 *
Texas	NELAP	TX104704183-08-TX	09-30-09 *
Texas	NELAP	T104704183	09-30-25
US Fish & Wildlife	US Federal Programs	058448	07-31-25
USDA	US Federal Programs	P330-20-00065	12-19-25
Utah	NELAP	QUAN5	06-30-13 *
Utah	NELAP	CO00026	07-31-25
Virginia	NELAP	460232	06-14-25
Washington	State	C583	08-03-25
West Virginia DEP	State	354	11-30-25
Wisconsin	State	999615430	08-31-25
Wyoming (UST)	A2LA	2907.01	10-31-26

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Eurofins Cedar Falls

Method Summary

Client: GHD Inc.
Project/Site: Viking Pump Landfill

Job ID: 310-304528-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
350.1	Nitrogen, Ammonia	EPA	EET CF
5220D LL	COD	SM	EET CF
9020B	Organic Halides, Total (TOX)	SW846	EET DEN
9066	Phenolics, Total Recoverable	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
Distill/Phenol	Distillation, Phenolics	None	EET CF

Protocol References:

EPA = US Environmental Protection Agency

None = None

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 DEN = Eurofins Denver, 4955 Yarrow Street, Arvada, CO 80002, TEL (303)736-0100



Environment Testing
America



310-304528 Chain of Custody

Cooler/Sample Receipt and Temperature Log form

Client Information			
Client: <u>GHD Services Inc.</u>			
City/State:	<u>NEW BRIGHTON</u>	STATE: <u>MN</u>	Project:
Receipt Information			
Date/Time Received:	DATE: <u>4/17/25</u>	TIME: <u>1505</u>	Received By: <u>BP</u>
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 # <u>1</u> of <u>5</u>			
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? <u>↓</u>			
<u>MW5-GW-0425, MW14-GW-0425, MW16-GW-0425,</u> <u>RB-0425</u>			
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>AA</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>2.4</u>		Corrected Temp (°C): <u>2.4</u>	
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
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			

Document CED-P-SAM-FRM45521
Revision 26
Date: 27 Jan 2022

Eurofins Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C



Environment Testing
America

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Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHD Services Inc.</u>			
City/State:	<u>New Brighton</u>	STATE <u>MN</u>	Project:
Receipt Information			
Date/Time Received:	DATE <u>4/17/25</u>	TIME <u>1505</u>	Received By: <u>BP</u>
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 # <u>2</u> of <u>5</u>
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? ↓
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>AA</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>4.4</u>		Corrected Temp (°C): <u>4.4</u>	
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>	<u>CONTAINER 2</u>	
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			

Document: CED-P-SAM-FRM45521

Revision: 26

Date: 27 Jan 2022

Eurofins Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C



Environment Testing
America

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Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHD Services Inc.</u>			
City/State:	<u>NEW BRIGHTON</u>	STATE: <u>MN</u>	Project:
Receipt Information			
Date/Time Received:	DATE: <u>4/17/25</u>	TIME: <u>1505</u>	Received By: <u>BP</u>
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 # <u>3</u> of <u>5</u>			
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? <u>↓</u>			
<u>MW11, MW17R, MW17R MS/MSD</u>			
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>AA</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>7.9</u>		Corrected Temp (°C): <u>7.9</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1 <u>pl 1 Liter unpreserved</u>	CONTAINER 2 <u>pl 1 Liter unpreserved</u>	
Uncorrected Temp (°C):	<u>8.1</u>	<u>7.5</u>	
Corrected Temp (°C):	<u>8.1</u>	<u>7.5</u>	
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			
<u>MW11, MW17R, MW17R MS/MSD</u>			

Document: CED-P-SAM-FRM45521

Revision 26

Date 27 Jan 2022

Eurofins Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C



Environment Testing
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Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHD Services Inc.</u>			
City/State:	<u>New Brighton</u>	STATE: <u>MN</u>	Project:
Receipt Information			
Date/Time Received:	DATE: <u>4/17/25</u>	TIME: <u>1505</u>	Received By: <u>BP</u>
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 # <u>4</u> of <u>5</u>
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? ↓
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>AA</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>7.8</u>		Corrected Temp (°C): <u>7.8</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1 <u>plastic 1 Liter unpreserved</u>	CONTAINER 2 <u>plastic 1 Liter unpreserved</u>	
Uncorrected Temp (°C):	<u>12.0</u>	<u>10.3</u>	
Corrected Temp (°C):	<u>12.0</u>	<u>10.3</u>	
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			
<u>out of temp</u>			
<u>MW-19, MW-20, MW DP-02</u>			



Environment Testing
America

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Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHD Services Inc.</u>			
City/State:	<u>New Brighton</u>	STATE: <u>MN</u>	Project:
Receipt Information			
Date/Time Received:	DATE: <u>4/17/25</u>	TIME: <u>1505</u>	Received By: <u>BP</u>
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 # <u>5</u> of <u>5</u>
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? ↓
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>AA</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>5.3</u>		Corrected Temp (°C): <u>5.3</u>	
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>		<u>CONTAINER 2</u>
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			

Document: CED-P-SAM-FRM45521

Revision: 26

Date: 27 Jan 2022

Eurofins Cedar Falls

General temperature criteria is 0 to 6°C
Bacteria temperature criteria is 0 to 10°C

Client Information Client Contact: Alicia Ferber Company: GHD Services Inc. Address: 900 Long Lake Road Suite 200 City: New Brighton State Zip: MN, 55112 Phone: 651-639-0913(Tel) 651-639-0923(Fax) Email: Alicia.Ferber@ghd.com Project Name: Viking Pump Landfill - MW/SW Semi-Annual - Spring Site: Viking Pumping Sand Landfill		Lab PM: Bindert, Zach T E-Mail: Zach.Bindert@eurofins.com PWID:	Carrier Tracking No(s): 310-90685-25028.1 State of Origin: Page 1 of 2 Job #:
Due Date Requested TAT Requested (days): 14 days Compliance Project: Yes ☒ No ☐ PO #: 056934 WO #: 31017275 Project #: 31017275 SSOW#:		Analysis Requested 9066A_ORGFM_28D - Chloride Ammonia - 350.1, COD 6220D_LL 9066B - Barium and Iron 9066D - Total Recoverable Phenolics 9020B - Total Organic Halides (TOX) Perform MS/MSD (Yes or No) ☒ Field Filtered Sample (Yes or No) ☒ Preservation Codes:	
Sample Identification Sample Date Sample Time Sample Type Matrix MW5 - GW - 0425 4-16-25 10:35 G Water MW7R - GW - 0425 4-15-25 15:00 G Water MW8 - GW - 0425 4-15-25 16:15 G Water MW11 - GW - 0425 4-16-25 15:00 G Water MW14 - GW - 0425 4-17-25 09:25 G Water MW15 - GW - 0425 4-15-25 17:35 G Water MW16 - GW - 0425 4-16-25 09:50 G Water MW17L - GW - 0425 4-15-25 18:50 G Water MW19 - GW - 0425 4-17-25 11:35 G Water MW20 - GW - 0425 4-16-25 16:40 G Water MW21 - GW - 0425 4-15-25 09:25 G Water		Special Instructions/Note: Temp Blanks in each cooler + Trip Blanks in two coolers could not get TSS sample	
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested I II III IV Other (specify)			
Empty Kit Relinquished by Relinquished by: Mary Grace Amburst Relinquished by: Relinquished by:		Special Instructions/QC Requirements Date: 4-17-25 15:06 Company: GHD Date: Date: Date:	
Custody Seals Intact: ☒ Yes ☐ No Custody Seal No.		Cooler Temperature(s) °C and Other Remarks.	

Chain of Custody Record

Eurofins Minneapolis SC
213

En'rgement Test in 2008

Client Information					
Company: Mary Grace Amburst					
Address: 900 Long Lake Road Suite 200 City: New Brighton State: MN Zip: 55112 Phone: 651-639-0913(Tel) 651-639-0923(Fax) Email: Alicia.Ferber@gghd.com					
Project Name: Viking Pump Landfill - MW/SW Semi-Annual - Spring Site: Viking Pumps Sand Landfill					
Due Date Requested: TAT Requested (days): Compliance Project: Yes No PO #: WO #: Project #: 31017275 SSOW#:					
Sample Identification					
Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix (Water, Solid, On-waste, etc.)	Preservation Code: (BIO-TISSUE, A&U)
MW22-GW-0425	4-15-25	11:20	G	Water	
SW01-0425	4-15-25	13:20	G	Water	
DP01-GW-0425	4-15-25		G	Water	
DP02-GW-0425	4-16-25		G	Water	
FB-0425	4-15-25	12:00	G	Water	
RB-0425	4-16-25	12:00	G	Water	
NGA 4-17-25					
Possible Hazard Identification ☒ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Radiological Deliverable Requested I, II, III, IV Other (specify)					
Empty Kit Relinquished by: Mary Grace Amburst Relinquished by: Date: 4-17-25 13:06 Company: GHG Relinquished by: Date/Time: Company: Relinquished by: Date/Time: Company:					
Custody Seals Intact: Yes No Custody Seal No					

Ver: 10/10/2024

Eurofins Cedar Falls

3019 Venture Way

Cedar Falls, IA 50613

Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record



En Route of Testing

Client Information (Sub Contract Lab)		Sampler: N/A	Lab PM: Bindert, Zach T	Carrier Tracking No(s): N/A	COC No: 310-82197-3
Client Contact Shipping/Receiving		Phone: N/A	E-Mail: Zach.Bindert@eurofins.com	State of Origin: Iowa	Page: Page 3 of 3
Company: TestAmerica Laboratories, Inc.		Job #: 310-304528-1			
Address: 4955 Yarrow Street, City: Arvada State, Zip: CO, 80002		Preservation Codes: -			
Phone: 303-736-0100(Tel) 303-431-7171(Fax)		Accreditations Required (See note): State - Iowa			
Email: N/A		Due Date Requested: 4/30/2025			
Project Name: Viking Pump Landfill		TAT Requested (days): N/A			
Site: N/A		PO #: N/A			
		WO #: N/A			
		Project #: 31017275			
		SSOW#: N/A			
		Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)			
		Sample Type (C=Comp, G=grab)			
		Sample Time 12:00 Central			
		Sample Date 4/15/25			
		Preservation Code: G Water			
		Field Filtered Sample (Yes or No)			
		Perform MS/MSD (Yes or No)			
		902B_Calc/ TOX In duplicate			
		Total Number of containers			
		Special Instructions/Note: 1			
		Other: N/A			

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/test/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

Unconfirmed
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2

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:

Empty Kit Relinquished by: Date: Time: Method of Shipment:

Relinquished by: Date/Time: Company Received by: Date/Time: Company

Relinquished by: Date/Time: Company Received by: Date/Time: Company

Relinquished by: Date/Time: Company Received by: Date/Time: Company

Custody Seals Intact: ☐ Yes ☐ No Custody Seal No.: Cooler Temperature(s) °C and Other Remarks:

Ver: 10/10/2024

Login Sample Receipt Checklist

Client: GHD Inc.

Job Number: 310-304528-1

Login Number: 304528

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Cappi, Sage

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ 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 $<6\text{mm}$ (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: GHD Inc.

Job Number: 310-304528-1

Login Number: 304528

List Number: 2

Creator: Roehsner, Karen P

List Source: Eurofins Denver

List Creation: 04/19/25 03:00 PM

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ 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	
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?	N/A	
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.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

ANALYTICAL REPORT

PREPARED FOR

Attn: Thao Larson
GHD Services Inc.
11228 Aurora Avenue
Des Moines, Iowa 50322-7905
Generated 10/20/2025 2:40:48 PM Revision 1

JOB DESCRIPTION

Leachate Semi-Annual "LCS Sample"

JOB NUMBER

310-317351-1

Eurofins Cedar Falls

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



Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Revision 1

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Case Narrative

Client: GHD Services Inc.
Project: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Job ID: 310-317351-1

Eurofins Cedar Falls

Job Narrative 310-317351-1

REVISION

The report being provided is a revision of the original report sent on 10/20/2025. The report (revision 1) is being revised due to This report was revised 10/20/2025. Nitrate data note merged into final report by mistake..

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 10/7/2025 12:27 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 4.6°C.

GC/MS VOA

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 (310-317351-2).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-469289 recovered outside of the control limits for 1,2-Dichloropropane (-25%D), cis-1,3-Dichloropropene (-22%D), 1,1,2,2-Tetrachloroethane (-21%D), 1,3-Dichloropropane (-24%D), and 1,1-Dichloroethane (-22%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 analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-469289/3).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-469289 recovered outside of the control limits for Vinyl chloride (-22%D), Chloromethane (-30%D), and Bromomethane (-26.%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 310-469289/4).

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

HPLC/IC

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

Metals

Method 6020B: The laboratory control sample (LCS) for preparation batch 310-469897 and analytical batch 310-470580 recovered outside control limits for the following analytes: silver. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 7470A: The continuing calibration verification (CCV) associated with batch 310-470410 recovered above the upper control limit for Mercury. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

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.

Eurofins Cedar Falls

Case Narrative

Client: GHD Services Inc.
Project: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Job ID: 310-317351-1 (Continued)

Eurofins Cedar Falls

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Eurofins Cedar Falls

Case Narrative

Client: GHD Services Inc.
Project: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Job ID: 310-317351-2

Eurofins Cedar Falls

Job Narrative 310-317351-2

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 10/7/2025 12:27 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 4.6°C.

HPLC/IC

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

Eurofins Cedar Falls

Sample Summary

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
310-317351-1	LCS-1025	Water	10/07/25 09:30	10/07/25 12:27	Iowa
310-317351-2	Trip Blank 1	Water	10/07/25 09:00	10/07/25 12:27	Iowa

- 1
- 2
- 3
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- 5
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- 10
- 11
- 12
- 13
- 14
- 15

Detection Summary

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Client Sample ID: LCS-1025

Lab Sample ID: 310-317351-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil	Fac	D	Method	Prep Type
Chloride	42.5		1.00		mg/L		1		300.0	Total/NA
Sulfate	16.8		1.00		mg/L		1		300.0	Total/NA
Barium	0.0975		0.00200		mg/L		1		6020B	Total/NA
Copper	0.00773		0.00500		mg/L		1		6020B	Total/NA
Iron	2.63		0.100		mg/L		1		6020B	Total/NA
Lead	0.00300		0.000500		mg/L		1		6020B	Total/NA
Manganese	0.113		0.0100		mg/L		1		6020B	Total/NA
Molybdenum	0.0138		0.00200		mg/L		1		6020B	Total/NA
Zinc	0.0357		0.0200		mg/L		1		6020B	Total/NA
Flashpoint	>162		65.0		Degrees F		1		D93_85	Total/NA
Total Suspended Solids	7.67		5.00		mg/L		1		I-3765-85	Total/NA
Total Dissolved Solids	708		50.0		mg/L		1		SM 2540C	Total/NA
pH	7.6	HF	1.0		SU		1		SM 4500 H+ B	Total/NA
Chemical Oxygen Demand	37.1		25.0		mg/L		5		SM 5220D	Total/NA

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-317351-2

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Client Sample ID: LCS-1025

Lab Sample ID: 310-317351-1

Date Collected: 10/07/25 09:30

Matrix: Water

Date Received: 10/07/25 12:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/08/25 14:36	1
Benzene	<0.500		0.500		ug/L			10/08/25 14:36	1
Bromobenzene	<1.00		1.00		ug/L			10/08/25 14:36	1
Bromochloromethane	<5.00		5.00		ug/L			10/08/25 14:36	1
Bromodichloromethane	<1.00		1.00		ug/L			10/08/25 14:36	1
Bromoform	<5.00		5.00		ug/L			10/08/25 14:36	1
Bromomethane	<4.00		4.00		ug/L			10/08/25 14:36	1
2-Butanone (MEK)	<10.0		10.0		ug/L			10/08/25 14:36	1
Carbon disulfide	<1.00		1.00		ug/L			10/08/25 14:36	1
Carbon tetrachloride	<2.00		2.00		ug/L			10/08/25 14:36	1
Chlorobenzene	<1.00		1.00		ug/L			10/08/25 14:36	1
Chlorodibromomethane	<5.00		5.00		ug/L			10/08/25 14:36	1
Chloroethane	<4.00		4.00		ug/L			10/08/25 14:36	1
Chloroform	<3.00		3.00		ug/L			10/08/25 14:36	1
Chloromethane	<3.00		3.00		ug/L			10/08/25 14:36	1
2-Chlorotoluene	<1.00		1.00		ug/L			10/08/25 14:36	1
4-Chlorotoluene	<1.00		1.00		ug/L			10/08/25 14:36	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			10/08/25 14:36	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			10/08/25 14:36	1
1,2-Dibromo-3-chloropropane	<5.00		5.00		ug/L			10/08/25 14:36	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			10/08/25 14:36	1
Dibromomethane	<1.00		1.00		ug/L			10/08/25 14:36	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			10/08/25 14:36	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			10/08/25 14:36	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			10/08/25 14:36	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			10/08/25 14:36	1
1,1-Dichloroethane	<1.00		1.00		ug/L			10/08/25 14:36	1
1,2-Dichloroethane	<1.00		1.00		ug/L			10/08/25 14:36	1
1,1-Dichloroethene	<2.00		2.00		ug/L			10/08/25 14:36	1
1,2-Dichloropropane	<1.00		1.00		ug/L			10/08/25 14:36	1
1,3-Dichloropropane	<1.00		1.00		ug/L			10/08/25 14:36	1
2,2-Dichloropropane	<4.00		4.00		ug/L			10/08/25 14:36	1
1,1-Dichloropropene	<1.00		1.00		ug/L			10/08/25 14:36	1
Ethylbenzene	<1.00		1.00		ug/L			10/08/25 14:36	1
Hexachlorobutadiene	<5.00		5.00		ug/L			10/08/25 14:36	1
Hexane	<1.00		1.00		ug/L			10/08/25 14:36	1
Isopropylbenzene	<1.00		1.00		ug/L			10/08/25 14:36	1
Methylene chloride	<5.00		5.00		ug/L			10/08/25 14:36	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			10/08/25 14:36	1
Naphthalene	<5.00		5.00		ug/L			10/08/25 14:36	1
n-Butylbenzene	<1.00		1.00		ug/L			10/08/25 14:36	1
n-Propylbenzene	<1.00		1.00		ug/L			10/08/25 14:36	1
p-Isopropyltoluene	<1.00		1.00		ug/L			10/08/25 14:36	1
sec-Butylbenzene	<1.00		1.00		ug/L			10/08/25 14:36	1
Styrene	<1.00		1.00		ug/L			10/08/25 14:36	1
tert-Butylbenzene	<1.00		1.00		ug/L			10/08/25 14:36	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			10/08/25 14:36	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			10/08/25 14:36	1
Tetrachloroethene	<1.00		1.00		ug/L			10/08/25 14:36	1

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Client Sample ID: LCS-1025

Lab Sample ID: 310-317351-1

Date Collected: 10/07/25 09:30

Matrix: Water

Date Received: 10/07/25 12:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	<1.00		1.00		ug/L			10/08/25 14:36	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			10/08/25 14:36	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			10/08/25 14:36	1
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			10/08/25 14:36	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			10/08/25 14:36	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			10/08/25 14:36	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			10/08/25 14:36	1
Trichloroethene	<1.00		1.00		ug/L			10/08/25 14:36	1
Trichlorofluoromethane	<4.00		4.00		ug/L			10/08/25 14:36	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			10/08/25 14:36	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			10/08/25 14:36	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			10/08/25 14:36	1
Vinyl chloride	<1.00		1.00		ug/L			10/08/25 14:36	1
Xylenes, Total	<3.00		3.00		ug/L			10/08/25 14:36	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120		10/08/25 14:36	1
Dibromofluoromethane (Surr)	101		76 - 130		10/08/25 14:36	1
Toluene-d8 (Surr)	95		80 - 120		10/08/25 14:36	1

Method: EPA 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	42.5		1.00		mg/L			10/07/25 19:43	1
Nitrate as N	<0.200		0.200		mg/L			10/07/25 19:43	1
Nitrite as N	<0.200		0.200		mg/L			10/07/25 19:43	1
Sulfate	16.8		1.00		mg/L			10/07/25 19:43	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		10/14/25 08:30	10/18/25 17:34	1
Barium	0.0975		0.00200		mg/L		10/14/25 08:30	10/18/25 17:34	1
Cadmium	<0.000200		0.000200		mg/L		10/14/25 08:30	10/18/25 17:34	1
Chromium	<0.00500		0.00500		mg/L		10/14/25 08:30	10/18/25 17:34	1
Copper	0.00773		0.00500		mg/L		10/14/25 08:30	10/18/25 17:34	1
Iron	2.63		0.100		mg/L		10/14/25 08:30	10/18/25 17:34	1
Lead	0.00300		0.000500		mg/L		10/14/25 08:30	10/18/25 17:34	1
Manganese	0.113		0.0100		mg/L		10/14/25 08:30	10/18/25 17:34	1
Molybdenum	0.0138		0.00200		mg/L		10/14/25 08:30	10/18/25 17:34	1
Nickel	<0.00500		0.00500		mg/L		10/14/25 08:30	10/18/25 17:34	1
Selenium	<0.00500		0.00500		mg/L		10/14/25 08:30	10/18/25 17:34	1
Silver	<0.00100	+	0.00100		mg/L		10/14/25 08:30	10/18/25 17:34	1
Zinc	0.0357		0.0200		mg/L		10/14/25 08:30	10/18/25 17:34	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200	^+	0.000200		mg/L		10/15/25 14:45	10/16/25 14:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease) (1664A)	<5.0	F1	5.0		mg/L		10/16/25 08:00	10/16/25 08:00	1
Ammonia (EPA 350.1)	<0.500		0.500		mg/L			10/09/25 16:10	1

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Client Sample ID: LCS-1025

Lab Sample ID: 310-317351-1

Date Collected: 10/07/25 09:30

Matrix: Water

Date Received: 10/07/25 12:27

General Chemistry (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<3.00		3.00		mg/L		10/10/25 11:08	10/10/25 15:52	1
Phenols, Total (SW846 9066)	<0.0200		0.0200		mg/L		10/09/25 09:52	10/09/25 20:33	1
Total Suspended Solids (USGS I-3765-85)	7.67		5.00		mg/L			10/07/25 13:49	1
Total Dissolved Solids (SM 2540C)	708		50.0		mg/L			10/08/25 14:16	1
Chemical Oxygen Demand (SM 5220D)	37.1		25.0		mg/L			10/08/25 10:04	5
Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Flashpoint (ASTM D93_85)	>162		65.0		Degrees F			10/16/25 15:45	1
pH (SM 4500 H+ B)	7.6	HF	1.0		SU			10/08/25 00:12	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-317351-2

Date Collected: 10/07/25 09:00

Matrix: Water

Date Received: 10/07/25 12:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/08/25 14:14	1
Benzene	<0.500		0.500		ug/L			10/08/25 14:14	1
Bromobenzene	<1.00		1.00		ug/L			10/08/25 14:14	1
Bromochloromethane	<5.00		5.00		ug/L			10/08/25 14:14	1
Bromodichloromethane	<1.00		1.00		ug/L			10/08/25 14:14	1
Bromoform	<5.00		5.00		ug/L			10/08/25 14:14	1
Bromomethane	<4.00		4.00		ug/L			10/08/25 14:14	1
2-Butanone (MEK)	<10.0		10.0		ug/L			10/08/25 14:14	1
Carbon disulfide	<1.00		1.00		ug/L			10/08/25 14:14	1
Carbon tetrachloride	<2.00		2.00		ug/L			10/08/25 14:14	1
Chlorobenzene	<1.00		1.00		ug/L			10/08/25 14:14	1
Chlorodibromomethane	<5.00		5.00		ug/L			10/08/25 14:14	1
Chloroethane	<4.00		4.00		ug/L			10/08/25 14:14	1
Chloroform	<3.00		3.00		ug/L			10/08/25 14:14	1
Chloromethane	<3.00		3.00		ug/L			10/08/25 14:14	1
2-Chlorotoluene	<1.00		1.00		ug/L			10/08/25 14:14	1
4-Chlorotoluene	<1.00		1.00		ug/L			10/08/25 14:14	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			10/08/25 14:14	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			10/08/25 14:14	1
1,2-Dibromo-3-chloropropane	<5.00		5.00		ug/L			10/08/25 14:14	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			10/08/25 14:14	1
Dibromomethane	<1.00		1.00		ug/L			10/08/25 14:14	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			10/08/25 14:14	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			10/08/25 14:14	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			10/08/25 14:14	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			10/08/25 14:14	1
1,1-Dichloroethane	<1.00		1.00		ug/L			10/08/25 14:14	1
1,2-Dichloroethane	<1.00		1.00		ug/L			10/08/25 14:14	1
1,1-Dichloroethene	<2.00		2.00		ug/L			10/08/25 14:14	1
1,2-Dichloropropane	<1.00		1.00		ug/L			10/08/25 14:14	1
1,3-Dichloropropane	<1.00		1.00		ug/L			10/08/25 14:14	1
2,2-Dichloropropane	<4.00		4.00		ug/L			10/08/25 14:14	1
1,1-Dichloropropene	<1.00		1.00		ug/L			10/08/25 14:14	1
Ethylbenzene	<1.00		1.00		ug/L			10/08/25 14:14	1
Hexachlorobutadiene	<5.00		5.00		ug/L			10/08/25 14:14	1
Hexane	<1.00		1.00		ug/L			10/08/25 14:14	1
Isopropylbenzene	<1.00		1.00		ug/L			10/08/25 14:14	1
Methylene chloride	<5.00		5.00		ug/L			10/08/25 14:14	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			10/08/25 14:14	1
Naphthalene	<5.00		5.00		ug/L			10/08/25 14:14	1
n-Butylbenzene	<1.00		1.00		ug/L			10/08/25 14:14	1
n-Propylbenzene	<1.00		1.00		ug/L			10/08/25 14:14	1
p-Isopropyltoluene	<1.00		1.00		ug/L			10/08/25 14:14	1
sec-Butylbenzene	<1.00		1.00		ug/L			10/08/25 14:14	1
Styrene	<1.00		1.00		ug/L			10/08/25 14:14	1
tert-Butylbenzene	<1.00		1.00		ug/L			10/08/25 14:14	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			10/08/25 14:14	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			10/08/25 14:14	1
Tetrachloroethene	<1.00		1.00		ug/L			10/08/25 14:14	1

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Client Sample Results

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-317351-2

Date Collected: 10/07/25 09:00

Matrix: Water

Date Received: 10/07/25 12:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Toluene	<1.00		1.00		ug/L			10/08/25 14:14	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			10/08/25 14:14	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			10/08/25 14:14	1
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			10/08/25 14:14	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			10/08/25 14:14	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			10/08/25 14:14	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			10/08/25 14:14	1
Trichloroethene	<1.00		1.00		ug/L			10/08/25 14:14	1
Trichlorofluoromethane	<4.00		4.00		ug/L			10/08/25 14:14	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			10/08/25 14:14	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			10/08/25 14:14	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			10/08/25 14:14	1
Vinyl chloride	<1.00		1.00		ug/L			10/08/25 14:14	1
Xylenes, Total	<3.00		3.00		ug/L			10/08/25 14:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		10/08/25 14:14	1
Dibromofluoromethane (Surr)	102		76 - 130		10/08/25 14:14	1
Toluene-d8 (Surr)	95		80 - 120		10/08/25 14:14	1

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Qualifiers

Metals

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.
HF	Parameter with a holding time of 15 minutes. Test performed by laboratory at client's request. Sample was analyzed outside of hold time.

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: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

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

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	BFB	DBFM	TOL
		(80-120)	(76-130)	(80-120)
310-317351-1	LCS-1025	103	101	95
310-317351-2	Trip Blank 1	102	102	95
LCS 310-469289/8	Lab Control Sample	103	101	95
LCS 310-469289/9	Lab Control Sample	107	101	96
MB 310-469289/7	Method Blank	105	101	96
Surrogate Legend				
BFB = 4-Bromofluorobenzene (Surr)				
DBFM = Dibromofluoromethane (Surr)				
TOL = Toluene-d8 (Surr)				

QC Sample Results

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

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

Lab Sample ID: MB 310-469289/7

Matrix: Water

Analysis Batch: 469289

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/08/25 10:55	1
Benzene	<0.500		0.500		ug/L			10/08/25 10:55	1
Bromobenzene	<1.00		1.00		ug/L			10/08/25 10:55	1
Bromochloromethane	<5.00		5.00		ug/L			10/08/25 10:55	1
Bromodichloromethane	<1.00		1.00		ug/L			10/08/25 10:55	1
Bromoform	<5.00		5.00		ug/L			10/08/25 10:55	1
Bromomethane	<4.00		4.00		ug/L			10/08/25 10:55	1
2-Butanone (MEK)	<10.0		10.0		ug/L			10/08/25 10:55	1
Carbon disulfide	<1.00		1.00		ug/L			10/08/25 10:55	1
Carbon tetrachloride	<2.00		2.00		ug/L			10/08/25 10:55	1
Chlorobenzene	<1.00		1.00		ug/L			10/08/25 10:55	1
Chlorodibromomethane	<5.00		5.00		ug/L			10/08/25 10:55	1
Chloroethane	<4.00		4.00		ug/L			10/08/25 10:55	1
Chloroform	<3.00		3.00		ug/L			10/08/25 10:55	1
Chloromethane	<3.00		3.00		ug/L			10/08/25 10:55	1
2-Chlorotoluene	<1.00		1.00		ug/L			10/08/25 10:55	1
4-Chlorotoluene	<1.00		1.00		ug/L			10/08/25 10:55	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			10/08/25 10:55	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			10/08/25 10:55	1
1,2-Dibromo-3-chloropropane	<5.00		5.00		ug/L			10/08/25 10:55	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			10/08/25 10:55	1
Dibromomethane	<1.00		1.00		ug/L			10/08/25 10:55	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			10/08/25 10:55	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			10/08/25 10:55	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			10/08/25 10:55	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			10/08/25 10:55	1
1,1-Dichloroethane	<1.00		1.00		ug/L			10/08/25 10:55	1
1,2-Dichloroethane	<1.00		1.00		ug/L			10/08/25 10:55	1
1,1-Dichloroethene	<2.00		2.00		ug/L			10/08/25 10:55	1
1,2-Dichloropropane	<1.00		1.00		ug/L			10/08/25 10:55	1
1,3-Dichloropropane	<1.00		1.00		ug/L			10/08/25 10:55	1
2,2-Dichloropropane	<4.00		4.00		ug/L			10/08/25 10:55	1
1,1-Dichloropropene	<1.00		1.00		ug/L			10/08/25 10:55	1
Ethylbenzene	<1.00		1.00		ug/L			10/08/25 10:55	1
Hexachlorobutadiene	<5.00		5.00		ug/L			10/08/25 10:55	1
Hexane	<1.00		1.00		ug/L			10/08/25 10:55	1
Isopropylbenzene	<1.00		1.00		ug/L			10/08/25 10:55	1
Methylene chloride	<5.00		5.00		ug/L			10/08/25 10:55	1
Methyl tert-butyl ether	<1.00		1.00		ug/L			10/08/25 10:55	1
Naphthalene	<5.00		5.00		ug/L			10/08/25 10:55	1
n-Butylbenzene	<1.00		1.00		ug/L			10/08/25 10:55	1
n-Propylbenzene	<1.00		1.00		ug/L			10/08/25 10:55	1
p-Isopropyltoluene	<1.00		1.00		ug/L			10/08/25 10:55	1
sec-Butylbenzene	<1.00		1.00		ug/L			10/08/25 10:55	1
Styrene	<1.00		1.00		ug/L			10/08/25 10:55	1
tert-Butylbenzene	<1.00		1.00		ug/L			10/08/25 10:55	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			10/08/25 10:55	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			10/08/25 10:55	1

Eurofins Cedar Falls

QC Sample Results

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

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

Lab Sample ID: MB 310-469289/7

Matrix: Water

Analysis Batch: 469289

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<1.00		1.00		ug/L			10/08/25 10:55	1
Toluene	<1.00		1.00		ug/L			10/08/25 10:55	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			10/08/25 10:55	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			10/08/25 10:55	1
1,2,3-Trichlorobenzene	<5.00		5.00		ug/L			10/08/25 10:55	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			10/08/25 10:55	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			10/08/25 10:55	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			10/08/25 10:55	1
Trichloroethene	<1.00		1.00		ug/L			10/08/25 10:55	1
Trichlorofluoromethane	<4.00		4.00		ug/L			10/08/25 10:55	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			10/08/25 10:55	1
1,2,4-Trimethylbenzene	<1.00		1.00		ug/L			10/08/25 10:55	1
1,3,5-Trimethylbenzene	<1.00		1.00		ug/L			10/08/25 10:55	1
Vinyl chloride	<1.00		1.00		ug/L			10/08/25 10:55	1
Xylenes, Total	<3.00		3.00		ug/L			10/08/25 10:55	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120		10/08/25 10:55	1
Dibromofluoromethane (Surr)	101		76 - 130		10/08/25 10:55	1
Toluene-d8 (Surr)	96		80 - 120		10/08/25 10:55	1

Lab Sample ID: LCS 310-469289/8

Matrix: Water

Analysis Batch: 469289

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	40.0	38.30		ug/L		96	59 - 136
Benzene	20.0	17.79		ug/L		89	71 - 125
Bromobenzene	20.0	18.29		ug/L		91	71 - 120
Bromochloromethane	20.0	18.82		ug/L		94	69 - 131
Bromodichloromethane	20.0	16.84		ug/L		84	70 - 122
Bromoform	20.0	17.27		ug/L		86	62 - 122
2-Butanone (MEK)	40.0	34.06		ug/L		85	60 - 134
Carbon disulfide	20.0	16.77		ug/L		84	58 - 137
Carbon tetrachloride	20.0	19.22		ug/L		96	63 - 136
Chlorobenzene	20.0	16.95		ug/L		85	74 - 120
Chlorodibromomethane	20.0	16.16		ug/L		81	69 - 121
Chloroform	20.0	18.61		ug/L		93	72 - 122
2-Chlorotoluene	20.0	17.48		ug/L		87	73 - 121
4-Chlorotoluene	20.0	17.82		ug/L		89	72 - 121
cis-1,2-Dichloroethene	20.0	18.37		ug/L		92	72 - 123
cis-1,3-Dichloropropene	20.0	15.69		ug/L		78	72 - 123
1,2-Dibromo-3-chloropropane	20.0	16.80		ug/L		84	62 - 132
1,2-Dibromoethane (EDB)	20.0	17.14		ug/L		86	74 - 122
Dibromomethane	20.0	17.89		ug/L		89	72 - 122
1,2-Dichlorobenzene	20.0	18.51		ug/L		93	74 - 120
1,3-Dichlorobenzene	20.0	18.12		ug/L		91	71 - 120
1,4-Dichlorobenzene	20.0	17.88		ug/L		89	72 - 120

Eurofins Cedar Falls

QC Sample Results

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

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

Lab Sample ID: LCS 310-469289/8

Matrix: Water

Analysis Batch: 469289

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethane	20.0	17.03		ug/L		85	69 - 127
1,2-Dichloroethane	20.0	17.65		ug/L		88	68 - 125
1,1-Dichloroethene	20.0	18.14		ug/L		91	64 - 134
1,2-Dichloropropane	20.0	15.44		ug/L		77	72 - 128
1,3-Dichloropropane	20.0	16.16		ug/L		81	72 - 125
2,2-Dichloropropane	20.0	20.47		ug/L		102	51 - 146
1,1-Dichloropropene	20.0	17.61		ug/L		88	70 - 133
Ethylbenzene	20.0	17.43		ug/L		87	75 - 120
Hexachlorobutadiene	20.0	18.98		ug/L		95	67 - 127
Hexane	20.0	15.85		ug/L		79	49 - 150
Isopropylbenzene	20.0	18.82		ug/L		94	74 - 122
Methylene chloride	20.0	18.09		ug/L		90	72 - 128
Methyl tert-butyl ether	20.0	17.19		ug/L		86	66 - 130
Naphthalene	20.0	16.81		ug/L		84	69 - 126
n-Butylbenzene	20.0	17.02		ug/L		85	70 - 130
n-Propylbenzene	20.0	18.06		ug/L		90	73 - 125
p-Isopropyltoluene	20.0	18.39		ug/L		92	72 - 127
sec-Butylbenzene	20.0	18.06		ug/L		90	72 - 127
Styrene	20.0	17.26		ug/L		86	74 - 122
tert-Butylbenzene	20.0	18.40		ug/L		92	72 - 125
1,1,1,2-Tetrachloroethane	20.0	17.56		ug/L		88	70 - 121
1,1,2,2-Tetrachloroethane	20.0	15.67		ug/L		78	70 - 122
Tetrachloroethene	20.0	19.83		ug/L		99	70 - 128
Toluene	20.0	17.38		ug/L		87	74 - 120
trans-1,2-Dichloroethene	20.0	17.54		ug/L		88	67 - 127
trans-1,3-Dichloropropene	20.0	16.32		ug/L		82	67 - 123
1,2,3-Trichlorobenzene	20.0	17.17		ug/L		86	69 - 124
1,2,4-Trichlorobenzene	20.0	18.11		ug/L		91	69 - 125
1,1,1-Trichloroethane	20.0	19.78		ug/L		99	69 - 130
1,1,2-Trichloroethane	20.0	16.56		ug/L		83	75 - 121
Trichloroethene	20.0	17.61		ug/L		88	70 - 128
1,2,3-Trichloropropane	20.0	17.35		ug/L		87	70 - 122
1,2,4-Trimethylbenzene	20.0	17.09		ug/L		85	71 - 125
1,3,5-Trimethylbenzene	20.0	18.60		ug/L		93	72 - 124
Xylenes, Total	40.0	35.73		ug/L		89	74 - 121

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	101		76 - 130
Toluene-d8 (Surr)	95		80 - 120

Lab Sample ID: LCS 310-469289/9

Matrix: Water

Analysis Batch: 469289

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	17.40		ug/L		87	33 - 138
Chloroethane	20.0	19.75		ug/L		99	59 - 139

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

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

Lab Sample ID: LCS 310-469289/9

Matrix: Water

Analysis Batch: 469289

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloromethane	20.0	16.87		ug/L		84	52 - 146
Dichlorodifluoromethane	20.0	20.40		ug/L		102	45 - 150
Trichlorofluoromethane	20.0	22.99		ug/L		115	55 - 150
Vinyl chloride	20.0	19.37		ug/L		97	60 - 142

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	107		80 - 120
Dibromofluoromethane (Surr)	101		76 - 130
Toluene-d8 (Surr)	96		80 - 120

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 310-469448/3

Matrix: Water

Analysis Batch: 469448

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			10/03/25 16:47	1
Nitrate as N	<0.200		0.200		mg/L			10/03/25 16:47	1
Nitrite as N	<0.200		0.200		mg/L			10/03/25 16:47	1
Sulfate	<1.00		1.00		mg/L			10/03/25 16:47	1

Lab Sample ID: LCS 310-469448/4

Matrix: Water

Analysis Batch: 469448

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.481		mg/L		95	90 - 110
Nitrate as N	2.00	2.009		mg/L		100	90 - 110
Nitrite as N	2.00	2.050		mg/L		103	90 - 110
Sulfate	10.0	10.01		mg/L		100	90 - 110

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-469897/1-A

Matrix: Water

Analysis Batch: 470580

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 469897

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		10/14/25 08:30	10/18/25 17:17	1
Barium	<0.00200		0.00200		mg/L		10/14/25 08:30	10/18/25 17:17	1
Cadmium	<0.000200		0.000200		mg/L		10/14/25 08:30	10/18/25 17:17	1
Chromium	<0.00500		0.00500		mg/L		10/14/25 08:30	10/18/25 17:17	1
Copper	<0.00500		0.00500		mg/L		10/14/25 08:30	10/18/25 17:17	1
Iron	<0.100		0.100		mg/L		10/14/25 08:30	10/18/25 17:17	1
Lead	<0.000500		0.000500		mg/L		10/14/25 08:30	10/18/25 17:17	1
Manganese	<0.0100		0.0100		mg/L		10/14/25 08:30	10/18/25 17:17	1
Molybdenum	<0.00200		0.00200		mg/L		10/14/25 08:30	10/18/25 17:17	1
Nickel	<0.00500		0.00500		mg/L		10/14/25 08:30	10/18/25 17:17	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

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

Lab Sample ID: MB 310-469897/1-A

Matrix: Water

Analysis Batch: 470580

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 469897

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Selenium	<0.00500		0.00500		mg/L		10/14/25 08:30	10/18/25 17:17	1
Silver	<0.00100		0.00100		mg/L		10/14/25 08:30	10/18/25 17:17	1
Zinc	<0.0200		0.0200		mg/L		10/14/25 08:30	10/18/25 17:17	1

Lab Sample ID: LCS 310-469897/2-A

Matrix: Water

Analysis Batch: 470580

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 469897

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.1903		mg/L		95	80 - 120
Barium	0.100	0.1019		mg/L		102	80 - 120
Cadmium	0.100	0.09925		mg/L		99	80 - 120
Chromium	0.100	0.09809		mg/L		98	80 - 120
Copper	0.200	0.1866		mg/L		93	80 - 120
Iron	0.200	0.1816		mg/L		91	80 - 120
Lead	0.200	0.2127		mg/L		106	80 - 120
Manganese	0.100	0.09463		mg/L		95	80 - 120
Molybdenum	0.200	0.1986		mg/L		99	80 - 120
Nickel	0.200	0.2017		mg/L		101	80 - 120
Selenium	0.400	0.3985		mg/L		100	80 - 120
Silver	0.100	0.1209	*+	mg/L		121	80 - 120
Zinc	0.200	0.1990		mg/L		100	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-470187/1-A

Matrix: Water

Analysis Batch: 470410

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 470187

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200	^+	0.000200		mg/L		10/15/25 14:45	10/16/25 13:04	1

Lab Sample ID: LCS 310-470187/2-A

Matrix: Water

Analysis Batch: 470410

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 470187

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001697	^+	mg/L		102	80 - 120

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 310-470182/1-A

Matrix: Water

Analysis Batch: 470383

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 470182

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM (Oil & Grease)	<5.0		5.0		mg/L		10/16/25 08:00	10/16/25 08:00	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Method: 1664A - HEM and SGT-HEM (Continued)

Lab Sample ID: LCS 310-470182/2-A
Matrix: Water
Analysis Batch: 470383

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 470182

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	40.0	35.30		mg/L		88	78 - 114

Lab Sample ID: 310-317351-1 MS
Matrix: Water
Analysis Batch: 470383

Client Sample ID: LCS-1025
Prep Type: Total/NA
Prep Batch: 470182

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
HEM (Oil & Grease)	<5.0	F1	41.2	29.48	F1	mg/L		72	78 - 114

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 310-469590/48
Matrix: Water
Analysis Batch: 469590

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.500		0.500		mg/L			10/09/25 15:11	1

Lab Sample ID: LCS 310-469590/49
Matrix: Water
Analysis Batch: 469590

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	2.26	2.155		mg/L		95	90 - 110

Method: 9034 - Sulfide, Acid soluble and Insoluble (Titrimetric)

Lab Sample ID: MB 240-675478/1-A
Matrix: Water
Analysis Batch: 675555

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 675478

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<3.00		3.00		mg/L		10/10/25 11:08	10/10/25 15:52	1

Lab Sample ID: LCS 240-675478/2-A
Matrix: Water
Analysis Batch: 675555

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 675478

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	8.00	7.067		mg/L		88	70 - 120

Method: 9066 - Phenolics, Total Recoverable

Lab Sample ID: MB 310-469441/1-A
Matrix: Water
Analysis Batch: 469561

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 469441

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Phenols, Total	<0.0200		0.0200		mg/L		10/09/25 09:52	10/09/25 20:27	1

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Method: 9066 - Phenolics, Total Recoverable (Continued)

Lab Sample ID: LCS 310-469441/2-A
Matrix: Water
Analysis Batch: 469561

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 469441

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Phenols, Total	0.100	0.09505		mg/L		95	90 - 110

Method: D93_85 - Ignitability, Pensky-Martens Closed Cup Method

Lab Sample ID: LCS 310-470416/1
Matrix: Water
Analysis Batch: 470416

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Flashpoint	81.0	88.50		Degrees F		109	95 - 112

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-469187/1
Matrix: Water
Analysis Batch: 469187

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		mg/L			10/07/25 13:16	1

Lab Sample ID: LCS 310-469187/2
Matrix: Water
Analysis Batch: 469187

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	99.00		mg/L		99	82 - 117

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 310-469368/1
Matrix: Water
Analysis Batch: 469368

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			10/08/25 14:16	1

Lab Sample ID: LCS 310-469368/2
Matrix: Water
Analysis Batch: 469368

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	1048		mg/L		105	89 - 110

Method: SM 4500 H+ B - pH

Lab Sample ID: LCS 310-469241/28
Matrix: Water
Analysis Batch: 469241

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
pH	7.00	7.1		SU		101	98 - 102

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QC Sample Results

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Method: SM 5220D - COD

Lab Sample ID: MB 310-469287/32

Matrix: Water

Analysis Batch: 469287

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<5.00		5.00		mg/L			10/08/25 10:04	1

Lab Sample ID: LCS 310-469287/33

Matrix: Water

Analysis Batch: 469287

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	62.7	62.87		mg/L		100	85 - 115

QC Association Summary

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

GC/MS VOA

Analysis Batch: 469289

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	8260D	
310-317351-2	Trip Blank 1	Total/NA	Water	8260D	
MB 310-469289/7	Method Blank	Total/NA	Water	8260D	
LCS 310-469289/8	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-469289/9	Lab Control Sample	Total/NA	Water	8260D	

HPLC/IC

Analysis Batch: 469448

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	300.0	
MB 310-469448/3	Method Blank	Total/NA	Water	300.0	
LCS 310-469448/4	Lab Control Sample	Total/NA	Water	300.0	

Metals

Prep Batch: 469897

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	3005A	
MB 310-469897/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-469897/2-A	Lab Control Sample	Total/NA	Water	3005A	

Prep Batch: 470187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	7470A	
MB 310-470187/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-470187/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 470410

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	7470A	470187
MB 310-470187/1-A	Method Blank	Total/NA	Water	7470A	470187
LCS 310-470187/2-A	Lab Control Sample	Total/NA	Water	7470A	470187

Analysis Batch: 470580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	6020B	469897
MB 310-469897/1-A	Method Blank	Total/NA	Water	6020B	469897
LCS 310-469897/2-A	Lab Control Sample	Total/NA	Water	6020B	469897

General Chemistry

Analysis Batch: 469187

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	I-3765-85	
MB 310-469187/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-469187/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 469241

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	SM 4500 H+ B	
LCS 310-469241/28	Lab Control Sample	Total/NA	Water	SM 4500 H+ B	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

General Chemistry

Analysis Batch: 469287

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	SM 5220D	
MB 310-469287/32	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-469287/33	Lab Control Sample	Total/NA	Water	SM 5220D	

Analysis Batch: 469368

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	SM 2540C	
MB 310-469368/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-469368/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Prep Batch: 469441

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	Distill/Phenol	
MB 310-469441/1-A	Method Blank	Total/NA	Water	Distill/Phenol	
LCS 310-469441/2-A	Lab Control Sample	Total/NA	Water	Distill/Phenol	

Analysis Batch: 469561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	9066	469441
MB 310-469441/1-A	Method Blank	Total/NA	Water	9066	469441
LCS 310-469441/2-A	Lab Control Sample	Total/NA	Water	9066	469441

Analysis Batch: 469590

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	350.1	
MB 310-469590/48	Method Blank	Total/NA	Water	350.1	
LCS 310-469590/49	Lab Control Sample	Total/NA	Water	350.1	

Prep Batch: 470182

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	1664A	
MB 310-470182/1-A	Method Blank	Total/NA	Water	1664A	
LCS 310-470182/2-A	Lab Control Sample	Total/NA	Water	1664A	
310-317351-1 MS	LCS-1025	Total/NA	Water	1664A	

Analysis Batch: 470383

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	1664A	470182
MB 310-470182/1-A	Method Blank	Total/NA	Water	1664A	470182
LCS 310-470182/2-A	Lab Control Sample	Total/NA	Water	1664A	470182
310-317351-1 MS	LCS-1025	Total/NA	Water	1664A	470182

Analysis Batch: 470416

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	D93_85	
LCS 310-470416/1	Lab Control Sample	Total/NA	Water	D93_85	

Prep Batch: 675478

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	9030B	
MB 240-675478/1-A	Method Blank	Total/NA	Water	9030B	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

General Chemistry (Continued)

Prep Batch: 675478 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 240-675478/2-A	Lab Control Sample	Total/NA	Water	9030B	

Analysis Batch: 675555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317351-1	LCS-1025	Total/NA	Water	9034	675478
MB 240-675478/1-A	Method Blank	Total/NA	Water	9034	675478
LCS 240-675478/2-A	Lab Control Sample	Total/NA	Water	9034	675478

Lab Chronicle

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Client Sample ID: LCS-1025

Lab Sample ID: 310-317351-1

Date Collected: 10/07/25 09:30

Matrix: Water

Date Received: 10/07/25 12:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469289	WSE8	EET CF	10/08/25 14:36
Total/NA	Analysis	300.0		1	469448	QTZ5	EET CF	10/07/25 19:43
Total/NA	Prep	3005A			469897	QTZ5	EET CF	10/14/25 08:30
Total/NA	Analysis	6020B		1	470580	NFT2	EET CF	10/18/25 17:34
Total/NA	Prep	7470A			470187	RLT9	EET CF	10/15/25 14:45
Total/NA	Analysis	7470A		1	470410	RLT9	EET CF	10/16/25 14:30
Total/NA	Prep	1664A			470182	DGU1	EET CF	10/16/25 08:00
Total/NA	Analysis	1664A		1	470383	DGU1	EET CF	10/16/25 08:00
Total/NA	Analysis	350.1		1	469590	WZC8	EET CF	10/09/25 16:10
Total/NA	Prep	9030B			675478	VH6H	EET CLE	10/10/25 11:08
Total/NA	Analysis	9034		1	675555	VH6H	EET CLE	10/10/25 15:52
Total/NA	Prep	Distill/Phenol			469441	ENB7	EET CF	10/09/25 09:52
Total/NA	Analysis	9066		1	469561	ZJX4	EET CF	10/09/25 20:33
Total/NA	Analysis	D93_85		1	470416	ENB7	EET CF	10/16/25 15:45
Total/NA	Analysis	I-3765-85		1	469187	DGU1	EET CF	10/07/25 13:49
Total/NA	Analysis	SM 2540C		1	469368	TGN5	EET CF	10/08/25 14:16
Total/NA	Analysis	SM 4500 H+ B		1	469241	ZJX4	EET CF	10/08/25 00:12
Total/NA	Analysis	SM 5220D		5	469287	ENB7	EET CF	10/08/25 10:04

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-317351-2

Date Collected: 10/07/25 09:00

Matrix: Water

Date Received: 10/07/25 12:27

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469289	WSE8	EET CF	10/08/25 14:14

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

EET CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Laboratory: Eurofins Cedar Falls

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25
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
8260D		Water	1,2,3-Trichlorobenzene
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Bromobenzene
8260D		Water	Hexane
8260D		Water	p-Isopropyltoluene
8260D		Water	sec-Butylbenzene
8260D		Water	tert-Butylbenzene
D93_85		Water	Flashpoint

Laboratory: Eurofins Cleveland

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Connecticut	State	PH-0806	12-31-26
Georgia	State	4062	02-27-26
Illinois	NELAP	200004	08-31-26
Iowa	State	421	06-01-27
Kansas	NELAP	E-10336	01-31-26
Kentucky (UST)	State	112225	02-28-26
Kentucky (WW)	State	KY98016	12-31-25
Minnesota	NELAP	039-999-348	12-31-25
New Hampshire	NELAP	2250	09-30-26
New Jersey	NELAP	OH001	06-30-26
New York	NELAP	10975	04-01-26
North Dakota	State	R-244	02-27-26
Ohio	State	8303	11-04-25
Ohio VAP	State	ORELAP 4062	02-28-26
Oregon	NELAP	4062	02-27-26
Pennsylvania	NELAP	68-00340	08-31-26
Texas	NELAP	T104704517	08-31-26
US Fish & Wildlife	US Federal Programs	A26406	02-28-26
USDA	US Federal Programs	P330-18-00281	01-05-27
Virginia	NELAP	460175	09-14-26
West Virginia DEP	State	210	12-31-25
Wisconsin	State	399167560	08-31-26

Method Summary

Client: GHD Services Inc.
Project/Site: Leachate Semi-Annual "LCS Sample"

Job ID: 310-317351-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
300.0	Anions, Ion Chromatography	EPA	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
1664A	HEM and SGT-HEM	1664A	EET CF
350.1	Nitrogen, Ammonia	EPA	EET CF
9034	Sulfide, Acid soluble and Insoluble (Titrimetric)	SW846	EET CLE
9066	Phenolics, Total Recoverable	SW846	EET CF
D93_85	Ignitability, Pensky-Martens Closed Cup Method	ASTM	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
SM 4500 H+ B	pH	SM	EET CF
SM 5220D	COD	SM	EET CF
1664A	HEM and SGT-HEM (Aqueous)	1664A	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
9030B	Sulfide, Distillation (Acid Soluble and Insoluble)	SW846	EET CLE
Distill/Phenol	Distillation, Phenolics	None	EET CF

Protocol References:

1664A = EPA-821-98-002

ASTM = ASTM International

EPA = US Environmental Protection Agency

None = None

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 CLE = Eurofins Cleveland, 180 S. Van Buren Avenue, Barberton, OH 44203, TEL (330)497-9396



Environment Testing
America



310-317351 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>640</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE	TIME	Received By
	<u>10-7-25</u>	<u>1227</u>	<u>CC</u>
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? <u>MCL</u> ☒ Yes ☐ No If yes: Which VOA samples are in cooler? <u>All</u>			
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID <u>R</u>		Correction Factor (°C) <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>46</u>		Corrected Temp (°C) <u>46</u>	
• Sample Container Temperature			
Container(s) used	CONTAINER 1		CONTAINER 2
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			

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 310-317351-1

Login Number: 317351

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Hirsch, Preston

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ 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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

This receipt checklist is generated for all samples received in this Login. It may not be applicable to all Jobs associated with this Login.

Eurofins Cedar Falls

ANALYTICAL REPORT

PREPARED FOR

Attn: Thao Larson
GHD Services Inc.
11228 Aurora Avenue
Des Moines, Iowa 50322-7905

Generated 10/20/2025 12:18:59 PM

JOB DESCRIPTION

MW/SW Semi-Annual - Fall

JOB NUMBER

310-317576-1

Eurofins Cedar Falls

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



Generated
10/20/2025 12:18:59 PM

Authorized for release by
Zach Bindert, Senior Project Manager
Zach.Bindert@et.eurofinsus.com
(319)595-2016

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Case Narrative

Client: GHD Services Inc.
Project: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Job ID: 310-317576-1

Eurofins Cedar Falls

Job Narrative 310-317576-1

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 10/8/2025 3:56 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 1.1°C, 2.1°C, 3.1°C and 4.4°C.

GC/MS VOA

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

HPLC/IC

Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW8-GW-1025 (310-317576-3) and MW11-GW-1025 (310-317576-4). Elevated reporting limits (RLs) are provided.

Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW16-GW-1025 (310-317576-7), MW19-GW-1025 (310-317576-9), MW20-GW-1025 (310-317576-10), MW22-GW-1025 (310-317576-12), DP02-GW-1025 (310-317576-14) and RB-1025 (310-317576-15). Elevated reporting limits (RLs) are provided.

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.

Eurofins Cedar Falls

Sample Summary

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
310-317576-1	MW5-GW-1025	Water	10/08/25 11:55	10/08/25 15:56	Iowa
310-317576-2	MW7R-GW-1025	Water	10/07/25 16:05	10/08/25 15:56	Iowa
310-317576-3	MW8-GW-1025	Water	10/07/25 13:25	10/08/25 15:56	Iowa
310-317576-4	MW11-GW-1025	Water	10/07/25 17:40	10/08/25 15:56	Iowa
310-317576-5	MW14-GW-1025	Water	10/07/25 11:50	10/08/25 15:56	Iowa
310-317576-6	MW15-GW-1025	Water	10/07/25 15:05	10/08/25 15:56	Iowa
310-317576-7	MW16-GW-1025	Water	10/08/25 15:25	10/08/25 15:56	Iowa
310-317576-8	MW17R-GW-1025	Water	10/07/25 17:00	10/08/25 15:56	Iowa
310-317576-9	MW19-GW-1025	Water	10/08/25 08:15	10/08/25 15:56	Iowa
310-317576-10	MW20-GW-1025	Water	10/07/25 19:15	10/08/25 15:56	Iowa
310-317576-11	MW21-GW-1025	Water	10/08/25 09:40	10/08/25 15:56	Iowa
310-317576-12	MW22-GW-1025	Water	10/08/25 10:40	10/08/25 15:56	Iowa
310-317576-13	DP01-GW-1025	Water	10/07/25 00:00	10/08/25 15:56	Iowa
310-317576-14	DP02-GW-1025	Water	10/08/25 00:00	10/08/25 15:56	Iowa
310-317576-15	RB-1025	Water	10/07/25 15:40	10/08/25 15:56	Iowa
310-317576-16	FB-1025	Water	10/08/25 07:30	10/08/25 15:56	Iowa
310-317576-17	Trip Blank 1	Water	10/08/25 00:00	10/08/25 15:56	Iowa
310-317576-18	Trip Blank 2	Water	10/08/25 00:00	10/08/25 15:56	Iowa

Detection Summary

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - FallII

Job ID: 310-317576-1

Client Sample ID: MW5-GW-1025

Lab Sample ID: 310-317576-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	126		5.00		mg/L	5		9056A	Total/NA
Barium	0.125		0.00200		mg/L	1		6020B	Total/NA
Iron	1.65		0.100		mg/L	1		6020B	Total/NA
Manganese	0.320		0.0100		mg/L	1		6020B	Total/NA
Total Suspended Solids	6.00		1.88		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW7R-GW-1025

Lab Sample ID: 310-317576-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	141		5.00		mg/L	5		9056A	Total/NA
Barium	0.0742		0.00200		mg/L	1		6020B	Total/NA
Iron	0.923		0.100		mg/L	1		6020B	Total/NA
Manganese	0.913		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00602		0.00200		mg/L	1		6020B	Total/NA
Total Suspended Solids	3.00		1.88		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW8-GW-1025

Lab Sample ID: 310-317576-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.106		0.00200		mg/L	1		6020B	Total/NA
Manganese	0.0141		0.0100		mg/L	1		6020B	Total/NA

Client Sample ID: MW11-GW-1025

Lab Sample ID: 310-317576-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.158		0.00200		mg/L	1		6020B	Total/NA
Manganese	0.756		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00743		0.00200		mg/L	1		6020B	Total/NA

Client Sample ID: MW14-GW-1025

Lab Sample ID: 310-317576-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.37		5.00		mg/L	5		9056A	Total/NA
Barium	0.0225		0.00200		mg/L	1		6020B	Total/NA
Iron	0.419		0.100		mg/L	1		6020B	Total/NA
Manganese	0.0539		0.0100		mg/L	1		6020B	Total/NA
Total Suspended Solids	143		1.88		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW15-GW-1025

Lab Sample ID: 310-317576-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.39		5.00		mg/L	5		9056A	Total/NA
Barium	0.0592		0.00200		mg/L	1		6020B	Total/NA
Iron	1.02		0.100		mg/L	1		6020B	Total/NA
Manganese	0.0507		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00701		0.00200		mg/L	1		6020B	Total/NA
Ammonia	1.45		0.500		mg/L	1		350.1	Total/NA
Total Suspended Solids	28.5		1.88		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW16-GW-1025

Lab Sample ID: 310-317576-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.124		0.00200		mg/L	1		6020B	Total/NA
Copper	0.0187		0.00500		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - FallII

Job ID: 310-317576-1

Client Sample ID: MW16-GW-1025 (Continued)

Lab Sample ID: 310-317576-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	0.281		0.100		mg/L	1		6020B	Total/NA
Lead	0.000552		0.000500		mg/L	1		6020B	Total/NA
Manganese	0.522		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00273		0.00200		mg/L	1		6020B	Total/NA
Ammonia	1.38		0.500		mg/L	1		350.1	Total/NA
Total Suspended Solids	25.4		1.88		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW17R-GW-1025

Lab Sample ID: 310-317576-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	38.0		5.00		mg/L	5		9056A	Total/NA
Barium	0.0994		0.00200		mg/L	1		6020B	Total/NA
Iron	8.48		0.100		mg/L	1		6020B	Total/NA
Manganese	2.03		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00362		0.00200		mg/L	1		6020B	Total/NA
Ammonia	0.739		0.500		mg/L	1		350.1	Total/NA
Total Suspended Solids	20.0		15.0		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW19-GW-1025

Lab Sample ID: 310-317576-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.175		0.00200		mg/L	1		6020B	Total/NA
Iron	0.121		0.100		mg/L	1		6020B	Total/NA
Manganese	0.795		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.0120		0.00200		mg/L	1		6020B	Total/NA
Total Suspended Solids	2.25		1.88		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW20-GW-1025

Lab Sample ID: 310-317576-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.113		0.00200		mg/L	1		6020B	Total/NA
Copper	0.0346		0.00500		mg/L	1		6020B	Total/NA
Iron	6.58		0.100		mg/L	1		6020B	Total/NA
Lead	0.00386		0.000500		mg/L	1		6020B	Total/NA
Manganese	0.499		0.0100		mg/L	1		6020B	Total/NA
Ammonia	1.27		0.500		mg/L	1		350.1	Total/NA
Total Suspended Solids	189		15.0		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW21-GW-1025

Lab Sample ID: 310-317576-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	68.9		5.00		mg/L	5		9056A	Total/NA
Barium	0.167		0.00200		mg/L	1		6020B	Total/NA
Iron	1.84		0.100		mg/L	1		6020B	Total/NA
Manganese	0.200		0.0100		mg/L	1		6020B	Total/NA
Total Suspended Solids	3.50		1.88		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW22-GW-1025

Lab Sample ID: 310-317576-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0827		0.00200		mg/L	1		6020B	Total/NA
Iron	1.41		0.100		mg/L	1		6020B	Total/NA
Manganese	0.0502		0.0100		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW22-GW-1025 (Continued)

Lab Sample ID: 310-317576-12

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Molybdenum	0.00567		0.00200		mg/L	1		6020B	Total/NA
Ammonia	1.60		0.500		mg/L	1		350.1	Total/NA
Total Suspended Solids	21.5		2.50		mg/L	1		I-3765-85	Total/NA

Client Sample ID: DP01-GW-1025

Lab Sample ID: 310-317576-13

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.81		5.00		mg/L	5		9056A	Total/NA
Barium	0.0575		0.00200		mg/L	1		6020B	Total/NA
Iron	0.998		0.100		mg/L	1		6020B	Total/NA
Manganese	0.0498		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.00676		0.00200		mg/L	1		6020B	Total/NA
Ammonia	1.50		0.500		mg/L	1		350.1	Total/NA
Total Suspended Solids	9.75		1.88		mg/L	1		I-3765-85	Total/NA

Client Sample ID: DP02-GW-1025

Lab Sample ID: 310-317576-14

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.170		0.00200		mg/L	1		6020B	Total/NA
Iron	0.106		0.100		mg/L	1		6020B	Total/NA
Manganese	0.759		0.0100		mg/L	1		6020B	Total/NA
Molybdenum	0.0114		0.00200		mg/L	1		6020B	Total/NA
Total Suspended Solids	2.88		1.88		mg/L	1		I-3765-85	Total/NA

Client Sample ID: RB-1025

Lab Sample ID: 310-317576-15

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	2.00		1.88		mg/L	1		I-3765-85	Total/NA

Client Sample ID: FB-1025

Lab Sample ID: 310-317576-16

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	3.00		1.88		mg/L	1		I-3765-85	Total/NA

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-317576-17

No Detections.

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-317576-18

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW5-GW-1025

Lab Sample ID: 310-317576-1

Date Collected: 10/08/25 11:55

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 12:57	1
Benzene	<0.500		0.500		ug/L			10/10/25 12:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		80 - 120					10/10/25 12:57	1
Dibromofluoromethane (Surr)	92		76 - 130					10/10/25 12:57	1
Toluene-d8 (Surr)	99		80 - 120					10/10/25 12:57	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	126		5.00		mg/L			10/10/25 15:56	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.125		0.00200		mg/L		10/15/25 08:30	10/18/25 13:57	1
Copper	<0.00500		0.00500		mg/L		10/15/25 08:30	10/18/25 13:57	1
Iron	1.65		0.100		mg/L		10/15/25 08:30	10/18/25 13:57	1
Lead	<0.000500		0.000500		mg/L		10/15/25 08:30	10/18/25 13:57	1
Manganese	0.320		0.0100		mg/L		10/15/25 08:30	10/18/25 13:57	1
Molybdenum	<0.00200		0.00200		mg/L		10/15/25 08:30	10/18/25 13:57	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.500		0.500		mg/L			10/11/25 16:12	1
Total Suspended Solids (USGS I-3765-85)	6.00		1.88		mg/L			10/09/25 10:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW7R-GW-1025

Lab Sample ID: 310-317576-2

Date Collected: 10/07/25 16:05

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 13:19	1
Benzene	<0.500		0.500		ug/L			10/10/25 13:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		80 - 120					10/10/25 13:19	1
Dibromofluoromethane (Surr)	93		76 - 130					10/10/25 13:19	1
Toluene-d8 (Surr)	98		80 - 120					10/10/25 13:19	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	141		5.00		mg/L			10/10/25 16:07	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0742		0.00200		mg/L		10/15/25 08:30	10/18/25 14:00	1
Copper	<0.00500		0.00500		mg/L		10/15/25 08:30	10/18/25 14:00	1
Iron	0.923		0.100		mg/L		10/15/25 08:30	10/18/25 14:00	1
Lead	<0.000500		0.000500		mg/L		10/15/25 08:30	10/18/25 14:00	1
Manganese	0.913		0.0100		mg/L		10/15/25 08:30	10/18/25 14:00	1
Molybdenum	0.00602		0.00200		mg/L		10/15/25 08:30	10/18/25 14:00	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.500		0.500		mg/L			10/11/25 16:16	1
Total Suspended Solids (USGS I-3765-85)	3.00		1.88		mg/L			10/09/25 10:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW8-GW-1025

Lab Sample ID: 310-317576-3

Date Collected: 10/07/25 13:25

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 13:41	1
Benzene	<0.500		0.500		ug/L			10/10/25 13:41	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120					10/10/25 13:41	1
Dibromofluoromethane (Surr)	93		76 - 130					10/10/25 13:41	1
Toluene-d8 (Surr)	97		80 - 120					10/10/25 13:41	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			10/10/25 16:18	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.106		0.00200		mg/L		10/15/25 08:30	10/18/25 14:02	1
Copper	<0.00500		0.00500		mg/L		10/15/25 08:30	10/18/25 14:02	1
Iron	<0.100		0.100		mg/L		10/15/25 08:30	10/18/25 14:02	1
Lead	<0.000500		0.000500		mg/L		10/15/25 08:30	10/18/25 14:02	1
Manganese	0.0141		0.0100		mg/L		10/15/25 08:30	10/18/25 14:02	1
Molybdenum	<0.00200		0.00200		mg/L		10/15/25 08:30	10/18/25 14:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.500		0.500		mg/L			10/11/25 16:20	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88		mg/L			10/09/25 10:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW11-GW-1025

Lab Sample ID: 310-317576-4

Date Collected: 10/07/25 17:40

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 14:03	1
Benzene	<0.500		0.500		ug/L			10/10/25 14:03	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120					10/10/25 14:03	1
Dibromofluoromethane (Surr)	94		76 - 130					10/10/25 14:03	1
Toluene-d8 (Surr)	101		80 - 120					10/10/25 14:03	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			10/10/25 16:29	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.158		0.00200		mg/L		10/15/25 08:30	10/18/25 14:05	1
Copper	<0.00500		0.00500		mg/L		10/15/25 08:30	10/18/25 14:05	1
Iron	<0.100		0.100		mg/L		10/15/25 08:30	10/18/25 14:05	1
Lead	<0.000500		0.000500		mg/L		10/15/25 08:30	10/18/25 14:05	1
Manganese	0.756		0.0100		mg/L		10/15/25 08:30	10/18/25 14:05	1
Molybdenum	0.00743		0.00200		mg/L		10/15/25 08:30	10/18/25 14:05	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.500	F1	0.500		mg/L			10/11/25 16:23	1
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88		mg/L			10/09/25 10:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW14-GW-1025

Lab Sample ID: 310-317576-5

Date Collected: 10/07/25 11:50

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 14:25	1
Benzene	<0.500		0.500		ug/L			10/10/25 14:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120					10/10/25 14:25	1
Dibromofluoromethane (Surr)	90		76 - 130					10/10/25 14:25	1
Toluene-d8 (Surr)	100		80 - 120					10/10/25 14:25	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.37		5.00		mg/L			10/10/25 17:25	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0225		0.00200		mg/L		10/15/25 08:30	10/18/25 14:20	1
Copper	<0.00500		0.00500		mg/L		10/15/25 08:30	10/18/25 14:20	1
Iron	0.419		0.100		mg/L		10/15/25 08:30	10/18/25 14:20	1
Lead	<0.000500		0.000500		mg/L		10/15/25 08:30	10/18/25 14:20	1
Manganese	0.0539		0.0100		mg/L		10/15/25 08:30	10/18/25 14:20	1
Molybdenum	<0.00200		0.00200		mg/L		10/15/25 08:30	10/18/25 14:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.500		0.500		mg/L			10/11/25 16:35	1
Total Suspended Solids (USGS I-3765-85)	143		1.88		mg/L			10/09/25 10:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW15-GW-1025

Lab Sample ID: 310-317576-6

Date Collected: 10/07/25 15:05

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 14:47	1
Benzene	<0.500		0.500		ug/L			10/10/25 14:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120					10/10/25 14:47	1
4-Bromofluorobenzene (Surr)	103		80 - 120					10/11/25 01:52	1
Dibromofluoromethane (Surr)	94		76 - 130					10/10/25 14:47	1
Dibromofluoromethane (Surr)	92		76 - 130					10/11/25 01:52	1
Toluene-d8 (Surr)	98		80 - 120					10/10/25 14:47	1
Toluene-d8 (Surr)	98		80 - 120					10/11/25 01:52	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.39		5.00		mg/L			10/10/25 17:36	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0592		0.00200		mg/L		10/15/25 08:30	10/18/25 14:23	1
Copper	<0.00500		0.00500		mg/L		10/15/25 08:30	10/18/25 14:23	1
Iron	1.02		0.100		mg/L		10/15/25 08:30	10/18/25 14:23	1
Lead	<0.000500		0.000500		mg/L		10/15/25 08:30	10/18/25 14:23	1
Manganese	0.0507		0.0100		mg/L		10/15/25 08:30	10/18/25 14:23	1
Molybdenum	0.00701		0.00200		mg/L		10/15/25 08:30	10/18/25 14:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	1.45		0.500		mg/L			10/11/25 16:38	1
Total Suspended Solids (USGS I-3765-85)	28.5		1.88		mg/L			10/09/25 10:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW16-GW-1025

Lab Sample ID: 310-317576-7

Date Collected: 10/08/25 15:25

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 15:09	1
Benzene	<0.500		0.500		ug/L			10/10/25 15:09	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120					10/10/25 15:09	1
Dibromofluoromethane (Surr)	93		76 - 130					10/10/25 15:09	1
Toluene-d8 (Surr)	98		80 - 120					10/10/25 15:09	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			10/13/25 13:02	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.124		0.00200		mg/L		10/15/25 08:30	10/18/25 14:25	1
Copper	0.0187		0.00500		mg/L		10/15/25 08:30	10/18/25 14:25	1
Iron	0.281		0.100		mg/L		10/15/25 08:30	10/18/25 14:25	1
Lead	0.000552		0.000500		mg/L		10/15/25 08:30	10/18/25 14:25	1
Manganese	0.522		0.0100		mg/L		10/15/25 08:30	10/18/25 14:25	1
Molybdenum	0.00273		0.00200		mg/L		10/15/25 08:30	10/18/25 14:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	1.38		0.500		mg/L			10/11/25 16:42	1
Total Suspended Solids (USGS I-3765-85)	25.4		1.88		mg/L			10/09/25 10:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW17R-GW-1025

Lab Sample ID: 310-317576-8

Date Collected: 10/07/25 17:00

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 15:32	1
Benzene	<0.500		0.500		ug/L			10/10/25 15:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120					10/10/25 15:32	1
Dibromofluoromethane (Surr)	89		76 - 130					10/10/25 15:32	1
Toluene-d8 (Surr)	97		80 - 120					10/10/25 15:32	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	38.0		5.00		mg/L			10/13/25 13:16	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0994		0.00200		mg/L		10/15/25 08:30	10/18/25 14:28	1
Copper	<0.00500		0.00500		mg/L		10/15/25 08:30	10/18/25 14:28	1
Iron	8.48		0.100		mg/L		10/15/25 08:30	10/18/25 14:28	1
Lead	<0.000500		0.000500		mg/L		10/15/25 08:30	10/18/25 14:28	1
Manganese	2.03		0.0100		mg/L		10/15/25 08:30	10/18/25 14:28	1
Molybdenum	0.00362		0.00200		mg/L		10/15/25 08:30	10/18/25 14:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	0.739		0.500		mg/L			10/15/25 12:05	1
Total Suspended Solids (USGS I-3765-85)	20.0		15.0		mg/L			10/09/25 10:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW19-GW-1025

Lab Sample ID: 310-317576-9

Date Collected: 10/08/25 08:15

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 15:54	1
Benzene	<0.500		0.500		ug/L			10/10/25 15:54	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120					10/10/25 15:54	1
Dibromofluoromethane (Surr)	94		76 - 130					10/10/25 15:54	1
Toluene-d8 (Surr)	97		80 - 120					10/10/25 15:54	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			10/13/25 13:29	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.175		0.00200		mg/L		10/15/25 08:30	10/18/25 14:30	1
Copper	<0.00500		0.00500		mg/L		10/15/25 08:30	10/18/25 14:30	1
Iron	0.121		0.100		mg/L		10/15/25 08:30	10/18/25 14:30	1
Lead	<0.000500		0.000500		mg/L		10/15/25 08:30	10/18/25 14:30	1
Manganese	0.795		0.0100		mg/L		10/15/25 08:30	10/18/25 14:30	1
Molybdenum	0.0120		0.00200		mg/L		10/15/25 08:30	10/18/25 14:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.500		0.500		mg/L			10/15/25 12:08	1
Total Suspended Solids (USGS I-3765-85)	2.25		1.88		mg/L			10/09/25 10:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW20-GW-1025

Lab Sample ID: 310-317576-10

Date Collected: 10/07/25 19:15

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 16:16	1
Benzene	<0.500		0.500		ug/L			10/10/25 16:16	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120					10/10/25 16:16	1
Dibromofluoromethane (Surr)	90		76 - 130					10/10/25 16:16	1
Toluene-d8 (Surr)	99		80 - 120					10/10/25 16:16	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			10/13/25 13:43	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.113		0.00200		mg/L		10/15/25 08:30	10/18/25 14:35	1
Copper	0.0346		0.00500		mg/L		10/15/25 08:30	10/18/25 14:35	1
Iron	6.58		0.100		mg/L		10/15/25 08:30	10/18/25 14:35	1
Lead	0.00386		0.000500		mg/L		10/15/25 08:30	10/18/25 14:35	1
Manganese	0.499		0.0100		mg/L		10/15/25 08:30	10/18/25 14:35	1
Molybdenum	<0.00200		0.00200		mg/L		10/15/25 08:30	10/18/25 14:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	1.27		0.500		mg/L			10/15/25 12:12	1
Total Suspended Solids (USGS I-3765-85)	189		15.0		mg/L			10/09/25 10:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW21-GW-1025

Lab Sample ID: 310-317576-11

Date Collected: 10/08/25 09:40

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 16:38	1
Benzene	<0.500		0.500		ug/L			10/10/25 16:38	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120					10/10/25 16:38	1
Dibromofluoromethane (Surr)	90		76 - 130					10/10/25 16:38	1
Toluene-d8 (Surr)	95		80 - 120					10/10/25 16:38	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	68.9		5.00		mg/L			10/13/25 13:57	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.167		0.00200		mg/L		10/15/25 08:30	10/18/25 14:38	1
Copper	<0.00500		0.00500		mg/L		10/15/25 08:30	10/18/25 14:38	1
Iron	1.84		0.100		mg/L		10/15/25 08:30	10/18/25 14:38	1
Lead	<0.000500		0.000500		mg/L		10/15/25 08:30	10/18/25 14:38	1
Manganese	0.200		0.0100		mg/L		10/15/25 08:30	10/18/25 14:38	1
Molybdenum	<0.00200		0.00200		mg/L		10/15/25 08:30	10/18/25 14:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.500		0.500		mg/L			10/15/25 12:16	1
Total Suspended Solids (USGS I-3765-85)	3.50		1.88		mg/L			10/09/25 12:33	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW22-GW-1025

Lab Sample ID: 310-317576-12

Date Collected: 10/08/25 10:40

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 17:00	1
Benzene	<0.500		0.500		ug/L			10/10/25 17:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	103		80 - 120					10/10/25 17:00	1
Dibromofluoromethane (Surr)	92		76 - 130					10/10/25 17:00	1
Toluene-d8 (Surr)	99		80 - 120					10/10/25 17:00	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			10/13/25 14:10	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0827		0.00200		mg/L		10/15/25 08:30	10/18/25 14:46	1
Copper	<0.00500		0.00500		mg/L		10/15/25 08:30	10/18/25 14:46	1
Iron	1.41		0.100		mg/L		10/15/25 08:30	10/18/25 14:46	1
Lead	<0.000500		0.000500		mg/L		10/15/25 08:30	10/18/25 14:46	1
Manganese	0.0502		0.0100		mg/L		10/15/25 08:30	10/18/25 14:46	1
Molybdenum	0.00567		0.00200		mg/L		10/15/25 08:30	10/18/25 14:46	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	1.60		0.500		mg/L			10/15/25 12:19	1
Total Suspended Solids (USGS I-3765-85)	21.5		2.50		mg/L			10/09/25 10:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: DP01-GW-1025

Lab Sample ID: 310-317576-13

Date Collected: 10/07/25 00:00

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 17:23	1
Benzene	<0.500		0.500		ug/L			10/10/25 17:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		80 - 120					10/10/25 17:23	1
Dibromofluoromethane (Surr)	91		76 - 130					10/10/25 17:23	1
Toluene-d8 (Surr)	98		80 - 120					10/10/25 17:23	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	7.81		5.00		mg/L			10/13/25 14:24	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.0575		0.00200		mg/L		10/15/25 08:30	10/18/25 14:48	1
Copper	<0.00500		0.00500		mg/L		10/15/25 08:30	10/18/25 14:48	1
Iron	0.998		0.100		mg/L		10/15/25 08:30	10/18/25 14:48	1
Lead	<0.000500		0.000500		mg/L		10/15/25 08:30	10/18/25 14:48	1
Manganese	0.0498		0.0100		mg/L		10/15/25 08:30	10/18/25 14:48	1
Molybdenum	0.00676		0.00200		mg/L		10/15/25 08:30	10/18/25 14:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	1.50		0.500		mg/L			10/15/25 12:22	1
Total Suspended Solids (USGS I-3765-85)	9.75		1.88		mg/L			10/09/25 10:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

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Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: DP02-GW-1025

Lab Sample ID: 310-317576-14

Date Collected: 10/08/25 00:00

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 17:45	1
Benzene	<0.500		0.500		ug/L			10/10/25 17:45	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120					10/10/25 17:45	1
Dibromofluoromethane (Surr)	92		76 - 130					10/10/25 17:45	1
Toluene-d8 (Surr)	98		80 - 120					10/10/25 17:45	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			10/13/25 15:04	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	0.170		0.00200		mg/L		10/15/25 08:30	10/18/25 14:51	1
Copper	<0.00500		0.00500		mg/L		10/15/25 08:30	10/18/25 14:51	1
Iron	0.106		0.100		mg/L		10/15/25 08:30	10/18/25 14:51	1
Lead	<0.000500		0.000500		mg/L		10/15/25 08:30	10/18/25 14:51	1
Manganese	0.759		0.0100		mg/L		10/15/25 08:30	10/18/25 14:51	1
Molybdenum	0.0114		0.00200		mg/L		10/15/25 08:30	10/18/25 14:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.500		0.500		mg/L			10/15/25 12:27	1
Total Suspended Solids (USGS I-3765-85)	2.88		1.88		mg/L			10/09/25 10:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

Eurofins Cedar Falls

Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: RB-1025

Lab Sample ID: 310-317576-15

Date Collected: 10/07/25 15:40

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 18:07	1
Benzene	<0.500		0.500		ug/L			10/10/25 18:07	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120					10/10/25 18:07	1
Dibromofluoromethane (Surr)	90		76 - 130					10/10/25 18:07	1
Toluene-d8 (Surr)	98		80 - 120					10/10/25 18:07	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			10/13/25 15:18	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.00200		0.00200		mg/L		10/15/25 08:30	10/18/25 14:53	1
Copper	<0.00500		0.00500		mg/L		10/15/25 08:30	10/18/25 14:53	1
Iron	<0.100		0.100		mg/L		10/15/25 08:30	10/18/25 14:53	1
Lead	<0.000500		0.000500		mg/L		10/15/25 08:30	10/18/25 14:53	1
Manganese	<0.0100		0.0100		mg/L		10/15/25 08:30	10/18/25 14:53	1
Molybdenum	<0.00200		0.00200		mg/L		10/15/25 08:30	10/18/25 14:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.500		0.500		mg/L			10/15/25 12:30	1
Total Suspended Solids (USGS I-3765-85)	2.00		1.88		mg/L			10/09/25 10:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: FB-1025

Lab Sample ID: 310-317576-16

Date Collected: 10/08/25 07:30

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 11:50	1
Benzene	<0.500		0.500		ug/L			10/10/25 11:50	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120					10/10/25 11:50	1
Dibromofluoromethane (Surr)	92		76 - 130					10/10/25 11:50	1
Toluene-d8 (Surr)	99		80 - 120					10/10/25 11:50	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			10/13/25 15:32	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.00200		0.00200		mg/L		10/15/25 08:30	10/18/25 14:56	1
Copper	<0.00500		0.00500		mg/L		10/15/25 08:30	10/18/25 14:56	1
Iron	<0.100		0.100		mg/L		10/15/25 08:30	10/18/25 14:56	1
Lead	<0.000500		0.000500		mg/L		10/15/25 08:30	10/18/25 14:56	1
Manganese	<0.0100		0.0100		mg/L		10/15/25 08:30	10/18/25 14:56	1
Molybdenum	<0.00200		0.00200		mg/L		10/15/25 08:30	10/18/25 14:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (EPA 350.1)	<0.500		0.500		mg/L			10/15/25 12:33	1
Total Suspended Solids (USGS I-3765-85)	3.00		1.88		mg/L			10/09/25 10:38	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0		mg/L			10/13/25 12:11	5

Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-317576-17

Date Collected: 10/08/25 00:00

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 12:12	1
Benzene	<0.500		0.500		ug/L			10/10/25 12:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	106		80 - 120					10/10/25 12:12	1
Dibromofluoromethane (Surr)	92		76 - 130					10/10/25 12:12	1
Toluene-d8 (Surr)	99		80 - 120					10/10/25 12:12	1

Client Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-317576-18

Date Collected: 10/08/25 00:00

Matrix: Water

Date Received: 10/08/25 15:56

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 12:34	1
Benzene	<0.500		0.500		ug/L			10/10/25 12:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120					10/10/25 12:34	1
Dibromofluoromethane (Surr)	95		76 - 130					10/10/25 12:34	1
Toluene-d8 (Surr)	97		80 - 120					10/10/25 12:34	1

Definitions/Glossary

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Qualifiers

Metals

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.

General Chemistry

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

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: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

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

Matrix: Water

Prep Type: Total/NA

		Percent Surrogate Recovery (Acceptance Limits)		
Lab Sample ID	Client Sample ID	BFB	DBFM	TOL
		(80-120)	(76-130)	(80-120)
310-317576-1	MW5-GW-1025	107	92	99
310-317576-2	MW7R-GW-1025	109	93	98
310-317576-3	MW8-GW-1025	105	93	97
310-317576-4	MW11-GW-1025	105	94	101
310-317576-4 MS	MW11-GW-1025	102	96	100
310-317576-4 MSD	MW11-GW-1025	104	97	99
310-317576-5	MW14-GW-1025	105	90	100
310-317576-6	MW15-GW-1025	103	94	98
310-317576-6	MW15-GW-1025	103	92	98
310-317576-7	MW16-GW-1025	105	93	98
310-317576-8	MW17R-GW-1025	105	89	97
310-317576-9	MW19-GW-1025	104	94	97
310-317576-10	MW20-GW-1025	103	90	99
310-317576-11	MW21-GW-1025	102	90	95
310-317576-12	MW22-GW-1025	103	92	99
310-317576-13	DP01-GW-1025	106	91	98
310-317576-14	DP02-GW-1025	104	92	98
310-317576-15	RB-1025	105	90	98
310-317576-16	FB-1025	105	92	99
310-317576-17	Trip Blank 1	106	92	99
310-317576-18	Trip Blank 2	102	95	97
LCS 310-469547/6	Lab Control Sample	104	97	96
LCS 310-469674/6	Lab Control Sample	102	97	98
MB 310-469547/5	Method Blank	105	94	102
MB 310-469674/5	Method Blank	108	94	97

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

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

Lab Sample ID: MB 310-469547/5

Matrix: Water

Analysis Batch: 469547

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 10:44	1
Benzene	<0.500		0.500		ug/L			10/10/25 10:44	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120					10/10/25 10:44	1
Dibromofluoromethane (Surr)	94		76 - 130					10/10/25 10:44	1
Toluene-d8 (Surr)	102		80 - 120					10/10/25 10:44	1

Lab Sample ID: LCS 310-469547/6

Matrix: Water

Analysis Batch: 469547

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	40.0	40.14		ug/L		100	59 - 136
Benzene	20.0	20.82		ug/L		104	71 - 125
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	104		80 - 120				
Dibromofluoromethane (Surr)	97		76 - 130				
Toluene-d8 (Surr)	96		80 - 120				

Lab Sample ID: 310-317576-4 MS

Matrix: Water

Analysis Batch: 469547

Client Sample ID: MW11-GW-1025

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	<10.0		40.0	39.23		ug/L		98	39 - 141
Benzene	<0.500		20.0	18.57		ug/L		93	48 - 125
Surrogate	MS %Recovery	MS Qualifier	Limits						
4-Bromofluorobenzene (Surr)	102		80 - 120						
Dibromofluoromethane (Surr)	96		76 - 130						
Toluene-d8 (Surr)	100		80 - 120						

Lab Sample ID: 310-317576-4 MSD

Matrix: Water

Analysis Batch: 469547

Client Sample ID: MW11-GW-1025

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	Limit
Acetone	<10.0		40.0	39.94		ug/L		100	39 - 141	2	23
Benzene	<0.500		20.0	18.35		ug/L		92	48 - 125	1	20
Surrogate	MSD %Recovery	MSD Qualifier	Limits								
4-Bromofluorobenzene (Surr)	104		80 - 120								
Dibromofluoromethane (Surr)	97		76 - 130								
Toluene-d8 (Surr)	99		80 - 120								

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QC Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

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

Lab Sample ID: MB 310-469674/5

Matrix: Water

Analysis Batch: 469674

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0		ug/L			10/10/25 21:25	1
Benzene	<0.500		0.500		ug/L			10/10/25 21:25	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	108		80 - 120					10/10/25 21:25	1
Dibromofluoromethane (Surr)	94		76 - 130					10/10/25 21:25	1
Toluene-d8 (Surr)	97		80 - 120					10/10/25 21:25	1

Lab Sample ID: LCS 310-469674/6

Matrix: Water

Analysis Batch: 469674

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	40.0	41.85		ug/L		105	59 - 136
Benzene	20.0	20.23		ug/L		101	71 - 125
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	102		80 - 120				
Dibromofluoromethane (Surr)	97		76 - 130				
Toluene-d8 (Surr)	98		80 - 120				

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-469848/3

Matrix: Water

Analysis Batch: 469848

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			10/10/25 12:58	1

Lab Sample ID: LCS 310-469848/4

Matrix: Water

Analysis Batch: 469848

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.106		mg/L		91	90 - 110

Lab Sample ID: 310-317576-4 MS

Matrix: Water

Analysis Batch: 469848

Client Sample ID: MW11-GW-1025

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	<5.00		25.0	26.04		mg/L		84	80 - 120

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QC Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Method: 9056A - Anions, Ion Chromatography (Continued)

Lab Sample ID: 310-317576-4 MSD

Matrix: Water

Analysis Batch: 469848

Client Sample ID: MW11-GW-1025

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	<5.00		25.0	26.23		mg/L		85	80 - 120	1	15

Lab Sample ID: MB 310-469989/3

Matrix: Water

Analysis Batch: 469989

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			10/13/25 09:39	1

Lab Sample ID: LCS 310-469989/4

Matrix: Water

Analysis Batch: 469989

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloride	10.0	9.956		mg/L		100	90 - 110

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-470065/1-A

Matrix: Water

Analysis Batch: 470574

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 470065

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Barium	<0.00200		0.00200		mg/L		10/15/25 08:30	10/18/25 13:47	1
Copper	<0.00500		0.00500		mg/L		10/15/25 08:30	10/18/25 13:47	1
Iron	<0.100		0.100		mg/L		10/15/25 08:30	10/18/25 13:47	1
Lead	<0.000500		0.000500		mg/L		10/15/25 08:30	10/18/25 13:47	1
Manganese	<0.0100		0.0100		mg/L		10/15/25 08:30	10/18/25 13:47	1
Molybdenum	<0.00200		0.00200		mg/L		10/15/25 08:30	10/18/25 13:47	1

Lab Sample ID: LCS 310-470065/2-A

Matrix: Water

Analysis Batch: 470574

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 470065

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.100	0.1009		mg/L		101	80 - 120
Copper	0.200	0.2056		mg/L		103	80 - 120
Iron	0.200	0.2233		mg/L		112	80 - 120
Lead	0.200	0.2061		mg/L		103	80 - 120
Manganese	0.100	0.1022		mg/L		102	80 - 120
Molybdenum	0.200	0.1999		mg/L		100	80 - 120

Lab Sample ID: 310-317576-4 MS

Matrix: Water

Analysis Batch: 470574

Client Sample ID: MW11-GW-1025

Prep Type: Total/NA

Prep Batch: 470065

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Barium	0.158		0.100	0.2554		mg/L		97	75 - 125
Copper	<0.00500		0.200	0.1913		mg/L		96	75 - 125
Iron	<0.100		0.200	0.2901		mg/L		104	75 - 125

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QC Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

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

Lab Sample ID: 310-317576-4 MS

Matrix: Water

Analysis Batch: 470574

Client Sample ID: MW11-GW-1025

Prep Type: Total/NA

Prep Batch: 470065

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Lead	<0.000500		0.200	0.2011		mg/L		101	75 - 125
Manganese	0.756		0.100	0.8617	4	mg/L		106	75 - 125
Molybdenum	0.00743		0.200	0.2023		mg/L		97	75 - 125

Lab Sample ID: 310-317576-4 MSD

Matrix: Water

Analysis Batch: 470574

Client Sample ID: MW11-GW-1025

Prep Type: Total/NA

Prep Batch: 470065

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Barium	0.158		0.100	0.2600		mg/L		102	75 - 125	2	20
Copper	<0.00500		0.200	0.1964		mg/L		98	75 - 125	3	20
Iron	<0.100		0.200	0.2951		mg/L		106	75 - 125	2	20
Lead	<0.000500		0.200	0.2051		mg/L		103	75 - 125	2	20
Manganese	0.756		0.100	0.8626	4	mg/L		107	75 - 125	0	20
Molybdenum	0.00743		0.200	0.2105		mg/L		102	75 - 125	4	20

Lab Sample ID: 310-317576-9 DU

Matrix: Water

Analysis Batch: 470574

Client Sample ID: MW19-GW-1025

Prep Type: Total/NA

Prep Batch: 470065

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Barium	0.175		0.1725		mg/L		2	20
Copper	<0.00500		<0.00500		mg/L		NC	20
Iron	0.121		0.1211		mg/L		0.1	20
Lead	<0.000500		<0.000500		mg/L		NC	20
Manganese	0.795		0.7733		mg/L		3	20
Molybdenum	0.0120		0.01182		mg/L		2	20

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 310-469777/84

Matrix: Water

Analysis Batch: 469777

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.500		0.500		mg/L			10/11/25 15:17	1

Lab Sample ID: LCS 310-469777/85

Matrix: Water

Analysis Batch: 469777

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	2.26	2.088		mg/L		92	90 - 110

Lab Sample ID: 310-317576-4 MS

Matrix: Water

Analysis Batch: 469777

Client Sample ID: MW11-GW-1025

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	<0.500	F1	2.50	2.512	F1	mg/L		87	90 - 110

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QC Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Method: 350.1 - Nitrogen, Ammonia (Continued)

Lab Sample ID: 310-317576-4 MSD

Matrix: Water

Analysis Batch: 469777

Client Sample ID: MW11-GW-1025

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Ammonia	<0.500	F1	2.50	2.483	F1	mg/L		85	90 - 110	1	20

Lab Sample ID: MB 310-470267/16

Matrix: Water

Analysis Batch: 470267

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.500		0.500		mg/L			10/15/25 11:21	1

Lab Sample ID: MB 310-470267/48

Matrix: Water

Analysis Batch: 470267

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia	<0.500		0.500		mg/L			10/15/25 13:18	1

Lab Sample ID: LCS 310-470267/17

Matrix: Water

Analysis Batch: 470267

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia	2.26	2.027		mg/L		90	90 - 110

Method: I-3765-85 - Residue, Non-filterable (TSS)

Lab Sample ID: MB 310-469455/1

Matrix: Water

Analysis Batch: 469455

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		mg/L			10/09/25 10:38	1

Lab Sample ID: LCS 310-469455/2

Matrix: Water

Analysis Batch: 469455

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	104.0		mg/L		104	82 - 117

Lab Sample ID: 310-317576-4 DU

Matrix: Water

Analysis Batch: 469455

Client Sample ID: MW11-GW-1025

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	<1.88		<1.88		mg/L		NC	35

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QC Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Method: I-3765-85 - Residue, Non-filterable (TSS) (Continued)

Lab Sample ID: MB 310-469513/1

Matrix: Water

Analysis Batch: 469513

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		mg/L			10/09/25 12:33	1

Lab Sample ID: LCS 310-469513/2

Matrix: Water

Analysis Batch: 469513

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	82 - 117

Method: SM 5220D - COD

Lab Sample ID: MB 310-469865/32

Matrix: Water

Analysis Batch: 469865

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<5.00		5.00		mg/L			10/13/25 12:11	1

Lab Sample ID: MB 310-469865/5

Matrix: Water

Analysis Batch: 469865

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<5.00		5.00		mg/L			10/13/25 12:11	1

Lab Sample ID: LCS 310-469865/3

Matrix: Water

Analysis Batch: 469865

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	62.7	60.46		mg/L		96	85 - 115

Lab Sample ID: LCS 310-469865/33

Matrix: Water

Analysis Batch: 469865

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	62.7	62.22		mg/L		99	85 - 115

Lab Sample ID: 310-317576-4 MS

Matrix: Water

Analysis Batch: 469865

Client Sample ID: MW11-GW-1025

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	<25.0		250	319.9		mg/L		128	84 - 141

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QC Sample Results

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - FallI

Job ID: 310-317576-1

Method: SM 5220D - COD (Continued)

Lab Sample ID: 310-317576-4 MSD					Client Sample ID: MW11-GW-1025							
Matrix: Water					Prep Type: Total/NA							
Analysis Batch: 469865												
Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit	
Chemical Oxygen Demand	<25.0		250	307.6		mg/L		123	84 - 141	4	14	

QC Association Summary

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

GC/MS VOA

Analysis Batch: 469547

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317576-1	MW5-GW-1025	Total/NA	Water	8260D	
310-317576-2	MW7R-GW-1025	Total/NA	Water	8260D	
310-317576-3	MW8-GW-1025	Total/NA	Water	8260D	
310-317576-4	MW11-GW-1025	Total/NA	Water	8260D	
310-317576-5	MW14-GW-1025	Total/NA	Water	8260D	
310-317576-6	MW15-GW-1025	Total/NA	Water	8260D	
310-317576-7	MW16-GW-1025	Total/NA	Water	8260D	
310-317576-8	MW17R-GW-1025	Total/NA	Water	8260D	
310-317576-9	MW19-GW-1025	Total/NA	Water	8260D	
310-317576-10	MW20-GW-1025	Total/NA	Water	8260D	
310-317576-11	MW21-GW-1025	Total/NA	Water	8260D	
310-317576-12	MW22-GW-1025	Total/NA	Water	8260D	
310-317576-13	DP01-GW-1025	Total/NA	Water	8260D	
310-317576-14	DP02-GW-1025	Total/NA	Water	8260D	
310-317576-15	RB-1025	Total/NA	Water	8260D	
310-317576-16	FB-1025	Total/NA	Water	8260D	
310-317576-17	Trip Blank 1	Total/NA	Water	8260D	
310-317576-18	Trip Blank 2	Total/NA	Water	8260D	
MB 310-469547/5	Method Blank	Total/NA	Water	8260D	
LCS 310-469547/6	Lab Control Sample	Total/NA	Water	8260D	
310-317576-4 MS	MW11-GW-1025	Total/NA	Water	8260D	
310-317576-4 MSD	MW11-GW-1025	Total/NA	Water	8260D	

Analysis Batch: 469674

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317576-6	MW15-GW-1025	Total/NA	Water	8260D	
MB 310-469674/5	Method Blank	Total/NA	Water	8260D	
LCS 310-469674/6	Lab Control Sample	Total/NA	Water	8260D	

HPLC/IC

Analysis Batch: 469848

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317576-1	MW5-GW-1025	Total/NA	Water	9056A	
310-317576-2	MW7R-GW-1025	Total/NA	Water	9056A	
310-317576-3	MW8-GW-1025	Total/NA	Water	9056A	
310-317576-4	MW11-GW-1025	Total/NA	Water	9056A	
310-317576-5	MW14-GW-1025	Total/NA	Water	9056A	
310-317576-6	MW15-GW-1025	Total/NA	Water	9056A	
MB 310-469848/3	Method Blank	Total/NA	Water	9056A	
LCS 310-469848/4	Lab Control Sample	Total/NA	Water	9056A	
310-317576-4 MS	MW11-GW-1025	Total/NA	Water	9056A	
310-317576-4 MSD	MW11-GW-1025	Total/NA	Water	9056A	

Analysis Batch: 469989

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317576-7	MW16-GW-1025	Total/NA	Water	9056A	
310-317576-8	MW17R-GW-1025	Total/NA	Water	9056A	
310-317576-9	MW19-GW-1025	Total/NA	Water	9056A	
310-317576-10	MW20-GW-1025	Total/NA	Water	9056A	
310-317576-11	MW21-GW-1025	Total/NA	Water	9056A	

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QC Association Summary

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - FallI

Job ID: 310-317576-1

HPLC/IC (Continued)

Analysis Batch: 469989 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317576-12	MW22-GW-1025	Total/NA	Water	9056A	
310-317576-13	DP01-GW-1025	Total/NA	Water	9056A	
310-317576-14	DP02-GW-1025	Total/NA	Water	9056A	
310-317576-15	RB-1025	Total/NA	Water	9056A	
310-317576-16	FB-1025	Total/NA	Water	9056A	
MB 310-469989/3	Method Blank	Total/NA	Water	9056A	
LCS 310-469989/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 470065

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317576-1	MW5-GW-1025	Total/NA	Water	3005A	
310-317576-2	MW7R-GW-1025	Total/NA	Water	3005A	
310-317576-3	MW8-GW-1025	Total/NA	Water	3005A	
310-317576-4	MW11-GW-1025	Total/NA	Water	3005A	
310-317576-5	MW14-GW-1025	Total/NA	Water	3005A	
310-317576-6	MW15-GW-1025	Total/NA	Water	3005A	
310-317576-7	MW16-GW-1025	Total/NA	Water	3005A	
310-317576-8	MW17R-GW-1025	Total/NA	Water	3005A	
310-317576-9	MW19-GW-1025	Total/NA	Water	3005A	
310-317576-10	MW20-GW-1025	Total/NA	Water	3005A	
310-317576-11	MW21-GW-1025	Total/NA	Water	3005A	
310-317576-12	MW22-GW-1025	Total/NA	Water	3005A	
310-317576-13	DP01-GW-1025	Total/NA	Water	3005A	
310-317576-14	DP02-GW-1025	Total/NA	Water	3005A	
310-317576-15	RB-1025	Total/NA	Water	3005A	
310-317576-16	FB-1025	Total/NA	Water	3005A	
MB 310-470065/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-470065/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-317576-4 MS	MW11-GW-1025	Total/NA	Water	3005A	
310-317576-4 MSD	MW11-GW-1025	Total/NA	Water	3005A	
310-317576-9 DU	MW19-GW-1025	Total/NA	Water	3005A	

Analysis Batch: 470574

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317576-1	MW5-GW-1025	Total/NA	Water	6020B	470065
310-317576-2	MW7R-GW-1025	Total/NA	Water	6020B	470065
310-317576-3	MW8-GW-1025	Total/NA	Water	6020B	470065
310-317576-4	MW11-GW-1025	Total/NA	Water	6020B	470065
310-317576-5	MW14-GW-1025	Total/NA	Water	6020B	470065
310-317576-6	MW15-GW-1025	Total/NA	Water	6020B	470065
310-317576-7	MW16-GW-1025	Total/NA	Water	6020B	470065
310-317576-8	MW17R-GW-1025	Total/NA	Water	6020B	470065
310-317576-9	MW19-GW-1025	Total/NA	Water	6020B	470065
310-317576-10	MW20-GW-1025	Total/NA	Water	6020B	470065
310-317576-11	MW21-GW-1025	Total/NA	Water	6020B	470065
310-317576-12	MW22-GW-1025	Total/NA	Water	6020B	470065
310-317576-13	DP01-GW-1025	Total/NA	Water	6020B	470065
310-317576-14	DP02-GW-1025	Total/NA	Water	6020B	470065
310-317576-15	RB-1025	Total/NA	Water	6020B	470065

Eurofins Cedar Falls

QC Association Summary

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Metals (Continued)

Analysis Batch: 470574 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317576-16	FB-1025	Total/NA	Water	6020B	470065
MB 310-470065/1-A	Method Blank	Total/NA	Water	6020B	470065
LCS 310-470065/2-A	Lab Control Sample	Total/NA	Water	6020B	470065
310-317576-4 MS	MW11-GW-1025	Total/NA	Water	6020B	470065
310-317576-4 MSD	MW11-GW-1025	Total/NA	Water	6020B	470065
310-317576-9 DU	MW19-GW-1025	Total/NA	Water	6020B	470065

General Chemistry

Analysis Batch: 469455

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317576-1	MW5-GW-1025	Total/NA	Water	I-3765-85	
310-317576-2	MW7R-GW-1025	Total/NA	Water	I-3765-85	
310-317576-3	MW8-GW-1025	Total/NA	Water	I-3765-85	
310-317576-4	MW11-GW-1025	Total/NA	Water	I-3765-85	
310-317576-5	MW14-GW-1025	Total/NA	Water	I-3765-85	
310-317576-6	MW15-GW-1025	Total/NA	Water	I-3765-85	
310-317576-7	MW16-GW-1025	Total/NA	Water	I-3765-85	
310-317576-8	MW17R-GW-1025	Total/NA	Water	I-3765-85	
310-317576-9	MW19-GW-1025	Total/NA	Water	I-3765-85	
310-317576-10	MW20-GW-1025	Total/NA	Water	I-3765-85	
310-317576-12	MW22-GW-1025	Total/NA	Water	I-3765-85	
310-317576-13	DP01-GW-1025	Total/NA	Water	I-3765-85	
310-317576-14	DP02-GW-1025	Total/NA	Water	I-3765-85	
310-317576-15	RB-1025	Total/NA	Water	I-3765-85	
310-317576-16	FB-1025	Total/NA	Water	I-3765-85	
MB 310-469455/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-469455/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-317576-4 DU	MW11-GW-1025	Total/NA	Water	I-3765-85	

Analysis Batch: 469513

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317576-11	MW21-GW-1025	Total/NA	Water	I-3765-85	
MB 310-469513/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-469513/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 469777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317576-1	MW5-GW-1025	Total/NA	Water	350.1	
310-317576-2	MW7R-GW-1025	Total/NA	Water	350.1	
310-317576-3	MW8-GW-1025	Total/NA	Water	350.1	
310-317576-4	MW11-GW-1025	Total/NA	Water	350.1	
310-317576-5	MW14-GW-1025	Total/NA	Water	350.1	
310-317576-6	MW15-GW-1025	Total/NA	Water	350.1	
310-317576-7	MW16-GW-1025	Total/NA	Water	350.1	
MB 310-469777/84	Method Blank	Total/NA	Water	350.1	
LCS 310-469777/85	Lab Control Sample	Total/NA	Water	350.1	
310-317576-4 MS	MW11-GW-1025	Total/NA	Water	350.1	
310-317576-4 MSD	MW11-GW-1025	Total/NA	Water	350.1	

Eurofins Cedar Falls

QC Association Summary

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

General Chemistry

Analysis Batch: 469865

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317576-1	MW5-GW-1025	Total/NA	Water	SM 5220D	
310-317576-2	MW7R-GW-1025	Total/NA	Water	SM 5220D	
310-317576-3	MW8-GW-1025	Total/NA	Water	SM 5220D	
310-317576-4	MW11-GW-1025	Total/NA	Water	SM 5220D	
310-317576-5	MW14-GW-1025	Total/NA	Water	SM 5220D	
310-317576-6	MW15-GW-1025	Total/NA	Water	SM 5220D	
310-317576-7	MW16-GW-1025	Total/NA	Water	SM 5220D	
310-317576-8	MW17R-GW-1025	Total/NA	Water	SM 5220D	
310-317576-9	MW19-GW-1025	Total/NA	Water	SM 5220D	
310-317576-10	MW20-GW-1025	Total/NA	Water	SM 5220D	
310-317576-11	MW21-GW-1025	Total/NA	Water	SM 5220D	
310-317576-12	MW22-GW-1025	Total/NA	Water	SM 5220D	
310-317576-13	DP01-GW-1025	Total/NA	Water	SM 5220D	
310-317576-14	DP02-GW-1025	Total/NA	Water	SM 5220D	
310-317576-15	RB-1025	Total/NA	Water	SM 5220D	
310-317576-16	FB-1025	Total/NA	Water	SM 5220D	
MB 310-469865/32	Method Blank	Total/NA	Water	SM 5220D	
MB 310-469865/5	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-469865/3	Lab Control Sample	Total/NA	Water	SM 5220D	
LCS 310-469865/33	Lab Control Sample	Total/NA	Water	SM 5220D	
310-317576-4 MS	MW11-GW-1025	Total/NA	Water	SM 5220D	
310-317576-4 MSD	MW11-GW-1025	Total/NA	Water	SM 5220D	

Analysis Batch: 470267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-317576-8	MW17R-GW-1025	Total/NA	Water	350.1	
310-317576-9	MW19-GW-1025	Total/NA	Water	350.1	
310-317576-10	MW20-GW-1025	Total/NA	Water	350.1	
310-317576-11	MW21-GW-1025	Total/NA	Water	350.1	
310-317576-12	MW22-GW-1025	Total/NA	Water	350.1	
310-317576-13	DP01-GW-1025	Total/NA	Water	350.1	
310-317576-14	DP02-GW-1025	Total/NA	Water	350.1	
310-317576-15	RB-1025	Total/NA	Water	350.1	
310-317576-16	FB-1025	Total/NA	Water	350.1	
MB 310-470267/16	Method Blank	Total/NA	Water	350.1	
MB 310-470267/48	Method Blank	Total/NA	Water	350.1	
LCS 310-470267/17	Lab Control Sample	Total/NA	Water	350.1	

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW5-GW-1025

Lab Sample ID: 310-317576-1

Date Collected: 10/08/25 11:55

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 12:57
Total/NA	Analysis	9056A		5	469848	QTZ5	EET CF	10/10/25 15:56
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 13:57
Total/NA	Analysis	350.1		1	469777	WZC8	EET CF	10/11/25 16:12
Total/NA	Analysis	I-3765-85		1	469455	DGU1	EET CF	10/09/25 10:38
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Client Sample ID: MW7R-GW-1025

Lab Sample ID: 310-317576-2

Date Collected: 10/07/25 16:05

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 13:19
Total/NA	Analysis	9056A		5	469848	QTZ5	EET CF	10/10/25 16:07
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 14:00
Total/NA	Analysis	350.1		1	469777	WZC8	EET CF	10/11/25 16:16
Total/NA	Analysis	I-3765-85		1	469455	DGU1	EET CF	10/09/25 10:38
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Client Sample ID: MW8-GW-1025

Lab Sample ID: 310-317576-3

Date Collected: 10/07/25 13:25

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 13:41
Total/NA	Analysis	9056A		5	469848	QTZ5	EET CF	10/10/25 16:18
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 14:02
Total/NA	Analysis	350.1		1	469777	WZC8	EET CF	10/11/25 16:20
Total/NA	Analysis	I-3765-85		1	469455	DGU1	EET CF	10/09/25 10:38
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Client Sample ID: MW11-GW-1025

Lab Sample ID: 310-317576-4

Date Collected: 10/07/25 17:40

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 14:03
Total/NA	Analysis	9056A		5	469848	QTZ5	EET CF	10/10/25 16:29
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 14:05

Eurofins Cedar Falls

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW11-GW-1025

Lab Sample ID: 310-317576-4

Date Collected: 10/07/25 17:40

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	350.1		1	469777	WZC8	EET CF	10/11/25 16:23
Total/NA	Analysis	I-3765-85		1	469455	DGU1	EET CF	10/09/25 10:38
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Client Sample ID: MW14-GW-1025

Lab Sample ID: 310-317576-5

Date Collected: 10/07/25 11:50

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 14:25
Total/NA	Analysis	9056A		5	469848	QTZ5	EET CF	10/10/25 17:25
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 14:20
Total/NA	Analysis	350.1		1	469777	WZC8	EET CF	10/11/25 16:35
Total/NA	Analysis	I-3765-85		1	469455	DGU1	EET CF	10/09/25 10:38
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Client Sample ID: MW15-GW-1025

Lab Sample ID: 310-317576-6

Date Collected: 10/07/25 15:05

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 14:47
Total/NA	Analysis	8260D		1	469674	FE5V	EET CF	10/11/25 01:52
Total/NA	Analysis	9056A		5	469848	QTZ5	EET CF	10/10/25 17:36
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 14:23
Total/NA	Analysis	350.1		1	469777	WZC8	EET CF	10/11/25 16:38
Total/NA	Analysis	I-3765-85		1	469455	DGU1	EET CF	10/09/25 10:38
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Client Sample ID: MW16-GW-1025

Lab Sample ID: 310-317576-7

Date Collected: 10/08/25 15:25

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 15:09
Total/NA	Analysis	9056A		5	469989	ZRI4	EET CF	10/13/25 13:02
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 14:25
Total/NA	Analysis	350.1		1	469777	WZC8	EET CF	10/11/25 16:42
Total/NA	Analysis	I-3765-85		1	469455	DGU1	EET CF	10/09/25 10:38
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Eurofins Cedar Falls

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW17R-GW-1025

Lab Sample ID: 310-317576-8

Date Collected: 10/07/25 17:00

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 15:32
Total/NA	Analysis	9056A		5	469989	ZRI4	EET CF	10/13/25 13:16
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 14:28
Total/NA	Analysis	350.1		1	470267	WZC8	EET CF	10/15/25 12:05
Total/NA	Analysis	I-3765-85		1	469455	DGU1	EET CF	10/09/25 10:38
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Client Sample ID: MW19-GW-1025

Lab Sample ID: 310-317576-9

Date Collected: 10/08/25 08:15

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 15:54
Total/NA	Analysis	9056A		5	469989	ZRI4	EET CF	10/13/25 13:29
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 14:30
Total/NA	Analysis	350.1		1	470267	WZC8	EET CF	10/15/25 12:08
Total/NA	Analysis	I-3765-85		1	469455	DGU1	EET CF	10/09/25 10:38
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Client Sample ID: MW20-GW-1025

Lab Sample ID: 310-317576-10

Date Collected: 10/07/25 19:15

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 16:16
Total/NA	Analysis	9056A		5	469989	ZRI4	EET CF	10/13/25 13:43
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 14:35
Total/NA	Analysis	350.1		1	470267	WZC8	EET CF	10/15/25 12:12
Total/NA	Analysis	I-3765-85		1	469455	DGU1	EET CF	10/09/25 10:38
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Client Sample ID: MW21-GW-1025

Lab Sample ID: 310-317576-11

Date Collected: 10/08/25 09:40

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 16:38
Total/NA	Analysis	9056A		5	469989	ZRI4	EET CF	10/13/25 13:57
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 14:38

Eurofins Cedar Falls

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: MW21-GW-1025

Lab Sample ID: 310-317576-11

Date Collected: 10/08/25 09:40

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	350.1		1	470267	WZC8	EET CF	10/15/25 12:16
Total/NA	Analysis	I-3765-85		1	469513	DGU1	EET CF	10/09/25 12:33
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Client Sample ID: MW22-GW-1025

Lab Sample ID: 310-317576-12

Date Collected: 10/08/25 10:40

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 17:00
Total/NA	Analysis	9056A		5	469989	ZRI4	EET CF	10/13/25 14:10
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 14:46
Total/NA	Analysis	350.1		1	470267	WZC8	EET CF	10/15/25 12:19
Total/NA	Analysis	I-3765-85		1	469455	DGU1	EET CF	10/09/25 10:38
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Client Sample ID: DP01-GW-1025

Lab Sample ID: 310-317576-13

Date Collected: 10/07/25 00:00

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 17:23
Total/NA	Analysis	9056A		5	469989	ZRI4	EET CF	10/13/25 14:24
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 14:48
Total/NA	Analysis	350.1		1	470267	WZC8	EET CF	10/15/25 12:22
Total/NA	Analysis	I-3765-85		1	469455	DGU1	EET CF	10/09/25 10:38
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Client Sample ID: DP02-GW-1025

Lab Sample ID: 310-317576-14

Date Collected: 10/08/25 00:00

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 17:45
Total/NA	Analysis	9056A		5	469989	ZRI4	EET CF	10/13/25 15:04
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 14:51
Total/NA	Analysis	350.1		1	470267	WZC8	EET CF	10/15/25 12:27
Total/NA	Analysis	I-3765-85		1	469455	DGU1	EET CF	10/09/25 10:38
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Eurofins Cedar Falls

Lab Chronicle

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Client Sample ID: RB-1025

Lab Sample ID: 310-317576-15

Date Collected: 10/07/25 15:40

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 18:07
Total/NA	Analysis	9056A		5	469989	ZRI4	EET CF	10/13/25 15:18
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 14:53
Total/NA	Analysis	350.1		1	470267	WZC8	EET CF	10/15/25 12:30
Total/NA	Analysis	I-3765-85		1	469455	DGU1	EET CF	10/09/25 10:38
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Client Sample ID: FB-1025

Lab Sample ID: 310-317576-16

Date Collected: 10/08/25 07:30

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 11:50
Total/NA	Analysis	9056A		1	469989	ZRI4	EET CF	10/13/25 15:32
Total/NA	Prep	3005A			470065	QTZ5	EET CF	10/15/25 08:30
Total/NA	Analysis	6020B		1	470574	NFT2	EET CF	10/18/25 14:56
Total/NA	Analysis	350.1		1	470267	WZC8	EET CF	10/15/25 12:33
Total/NA	Analysis	I-3765-85		1	469455	DGU1	EET CF	10/09/25 10:38
Total/NA	Analysis	SM 5220D		5	469865	ENB7	EET CF	10/13/25 12:11

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-317576-17

Date Collected: 10/08/25 00:00

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 12:12

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-317576-18

Date Collected: 10/08/25 00:00

Matrix: Water

Date Received: 10/08/25 15:56

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	469547	FE5V	EET CF	10/10/25 12:34

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401

Eurofins Cedar Falls

Accreditation/Certification Summary

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

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

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

Method Summary

Client: GHD Services Inc.
Project/Site: MW/SW Semi-Annual - Fall

Job ID: 310-317576-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
350.1	Nitrogen, Ammonia	EPA	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 5220D	COD	SM	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

EPA = US Environmental Protection Agency

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



Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>GHD</u>			
City/State	CITY <u>DES MOINES</u>	STATE <u>IA</u>	Project
Receipt Information			
Date/Time Received:	DATE <u>10-6-25</u>	TIME <u>1556</u>	Received By: <u>PH</u>
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 # <u>1</u> of <u>4</u>			
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? ↓			
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>CC</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>2.1</u>		Corrected Temp (°C): <u>2.1</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1		CONTAINER 2
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			



Environment Testing
America

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here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client <u>GHD</u>			
City/State:	CITY <u>Des Moines</u>	STATE <u>IA</u>	Project
Receipt Information			
Date/Time Received.	DATE <u>10-6-26</u>	TIME <u>1556</u>	Received By <u>PH</u>
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 # <u>2</u> of <u>4</u>
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? ↓
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID. <u>CC</u>		Correction Factor (°C). <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>3.1</u>		Corrected Temp (°C): <u>3.1</u>	
• Sample Container Temperature			
Container(s) used	<u>CONTAINER 1</u>		<u>CONTAINER 2</u>
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			



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Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client. <u>GHD</u>			
City/State	CITY <u>Des Moines</u>	STATE <u>IA</u>	Project.
Receipt Information			
Date/Time Received	DATE <u>10-6-25</u>	TIME <u>1536</u>	Received By <u>PA</u>
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 # <u>3</u> of <u>4</u>
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? ↓
<u>MW-6, 15, 14, DPO1, RB1025</u>			
Temperature Record			
Coolant. ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>CC</u>		Correction Factor (°C). <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C). <u>4.4</u>		Corrected Temp (°C). <u>4.4</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1		CONTAINER 2
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			



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Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client <u>GHD</u>			
City/State:	CITY <u>Des Moines</u>	STATE <u>IA</u>	Project:
Receipt Information			
Date/Time Received.	DATE <u>10-6-25</u>	TIME <u>1536</u>	Received By <u>PH</u>
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 # <u>4</u> of <u>4</u>
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? ↓
<u>MW17R, 11S, 11, 7R</u>			
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>CC</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>1.1</u>		Corrected Temp (°C): <u>1.1</u>	
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>		<u>CONTAINER 2</u>
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			

Chain of Custody Record

Client Information		Sampler: THAO LARSON		Lab PM: Bindert, Zach T		Carrier Tracking No(s):		COC No: 310-111153-28785 1	
Client Contact: Thao Larson		Phone: 515-414-3938		E-Mail: Zach.Bindert@et.eurofinsus.com		State of Origin:		Page: Page 1 of 2	
Company: GHD Services Inc.		PWSID:		Analysis Requested		Job #:		Preservation Codes S - H2SO4 N - None D - HNO3 A - HCL	
Address: 11228 Aurora Avenue		Due Date Requested		Field Filtered Sample (Yes or No)		Ammonia - 350 1, COD - 5220D		9056A, ORGFM, 28D - Chloride	
City: Des Moines		TAT Requested (days):		Sample Type (C=Comp, G=grab)		6020B - Ba,Fe,Cu,Mn,Mo,Pb		8260D - Acetone and Benzene Only	
State/Zip: IA, 50322-7905		Compliance Project: ☐ Yes ☐ No		Sample Time		9056A, ORGFM, 28D - Chloride		I_3765_85 - Residue, Non-Filterable (TSS)	
Phone:		PO #:		Sample Date		6020B - Ba,Fe,Cu,Mn,Mo,Pb		Total Number of Containers	
Email: thao.larson@ghd.com		WO #: 056934		Preservation Code:		9056A, ORGFM, 28D - Chloride		Special Instructions/Note:	
Project Name: MW/SW Semi-Annual - Fall		Project #: 31017275		Matrix (W=water, S=solid, O=oil, B=soil, T=tissue, A=air, D=drinking water)		6020B - Ba,Fe,Cu,Mn,Mo,Pb		Preservation Codes S - H2SO4 N - None D - HNO3 A - HCL	
Site:		SSOW#:		Sample Date		6020B - Ba,Fe,Cu,Mn,Mo,Pb		Other	
Sample Identification		Sample Date		Sample Time		Sample Type (C=Comp, G=grab)		Field Filtered Sample (Yes or No)	
MW5-GW-1025		10/8/25		1155		G		N	
MW7R-GW-1025		10/7/25		1005		G		N	
MW8-GW-1025		10/7/25		1325		G		N	
MW11-GW-1025		10/7/25		1740		G		N	
MW14-GW-1025		10/7/25		1150		G		N	
MW15-GW-1025		10/7/25		1505		G		N	
MW16-GW-1025		10/8/25		1525		G		N	
MW17R-GW-1025		10/7/25		1700		G		N	
MW19-GW-1025		10/8/25		0815		G		N	
MW20-GW-1025		10/7/25		1915		G		N	
MW21-GW-1025		10/8/25		0940		G		N	
Possible Hazard Identification		☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown ☐ Radiological		Date		Time		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)	
Deliverable Requested I, II, III, IV Other (specify)		Empty Kit Relinquished by		Date/Time: 10/8/25 1950		Date/Time: 10/8/25 1516		Archive For Months	
Relinquished by: THAO LARSON		Relinquished by		Date/Time: 10/8/25 1950		Date/Time: 10/8/25 1516		Company	
Relinquished by		Relinquished by		Date/Time: 10/8/25 1950		Date/Time: 10/8/25 1516		Company	
Relinquished by		Relinquished by		Date/Time: 10/8/25 1950		Date/Time: 10/8/25 1516		Company	
Custody Seals Intact: ☐ Yes ☐ No		Custody Seal No		Cooler Temperature(s) °C and Other Remarks:		Cooler Temperature(s) °C and Other Remarks:		Cooler Temperature(s) °C and Other Remarks:	

Login Sample Receipt Checklist

Client: GHD Services Inc.

Job Number: 310-317576-1

Login Number: 317576

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Schaufenbuel, Erin

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ 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 $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix C

December 2024 through October 2025

Leachate Flow Data

2024 LEACHATE DISCHARGE - VIKING PUMP FOUNDRY SAND LANDFILL CEDAR FALLS, IOWA											
DATE	HEAD LEVEL	40 DAILY	90 DAILY	90 GPM CUMULATIVE	NOTES	TOTAL MIN.'S PUMPED	DAILY MIN.'S PUMPED	GPM	MOTOR STARTS	GPMS	AVG GPD
	INCHES	GALLONS	GALLONS	GALLONS							
12/1/2024	25.4		175	15,805,418		160,628	1.0	175.00	8	22	175
12/2/2024	25.0		132	15,805,550		160,630	2.0	66.00	6	22	154
12/3/2024	25.3		130	15,805,680		160,631	1.0	130.00	6	22	146
12/4/2024	25.3		129	15,805,809		160,632	1.0	129.00	6	22	130
12/5/2024	25.9		85	15,805,894		160,634	1.0	85.00	4	21	130
12/6/2024	23.1		168	15,806,062		160,636	2.0	84.00	8	21	137
12/7/2024	25.6		84	15,806,146		160,637	1.0	84.00	4	21	129
12/8/2024	25.5		127	15,806,273		160,638	1.0	127.00	6	21	129
12/9/2024	25.6		125	15,806,398		160,639	1.0	125.00	6	21	128
12/10/2024	25.8		122	15,806,520		160,641	2.0	61.00	6	20	128
12/11/2024	25.5		166	15,806,686		160,642	1.0	166.00	8	21	131
12/12/2024	24.9		316	15,807,002		160,646	4.0	79.00	16	20	147
12/13/2024	25.3		158	15,807,160		160,647	1.0	158.00	8	20	147
12/14/2024	25.1		421	15,807,581		160,652	5.0	84.20	21	20	167
12/15/2024	26.3		369	15,807,950		160,655	3.0	123.00	20	18	180
12/16/2024	25.3		485	15,808,435		160,660	5.0	97.00	26	19	200
12/17/2024	24.9		485	15,808,920		160,666	6.0	80.83	26	19	216
12/18/2024	25.1		455	15,809,375		160,670	4.0	113.75	24	19	230
12/19/2024	25.9		465	15,809,840		160,675	5.0	93.00	24	19	242
12/20/2024	24.9		500	15,810,340		160,680	5.0	100.00	26	19	255
12/21/2024	24.7		538	15,810,878		160,686	6.0	89.67	28	19	268
12/22/2024	24.5		386	15,811,264		160,690	4.0	96.50	20	19	274
12/23/2024	24.8		532	15,811,796		160,696	6.0	88.67	28	19	289
12/24/2024	24.8		381	15,812,177		160,700	4.0	95.25	20	19	297
12/25/2024	24.7		485	15,812,662		160,705	5.0	97.00	26	19	301
12/26/2024	26.4		414	15,813,076		160,709	4.0	103.50	22	19	301
12/27/2024	25.8		513	15,813,589		160,715	6.0	85.50	28	18	309
12/28/2024	25.5		543	15,814,132		160,721	6.0	90.50	32	17	317
12/29/2024	26.0		850	15,814,982		160,729	8.0	106.25	44		
12/30/2024	26.1		917	15,815,899		160,738	9.0	101.89	48	19	361
12/31/2024	26.0		717	15,816,616		160,746	8.0	89.63	38	19	382
Total Gallons Pumped In 12-2024				11,373							
Total Pumped Since 01-01-2015				15,811,867							
Total Pumped In 2015				3,415,648							
Total Pumped In 2016				3,780,646							
Total Pumped In 2017				1,650,925							
Total Pumped In 2018				2,960,728							
Total Pumped In 2019				1,209,557							
Total Pumped In 2020				891,294							
Total Pumped In 2021				245,405							
Total Pumped In 2022				410,178							
Total Pumped In 2023				523,482							
Total Pumped In 2024				718,551							
Total CCF Pumped In 12-2024				15							
Monthly Avg. CCF Pumped - 2024				80							

2025 LEACHATE DISCHARGE - VIKING PUMP FOUNDRY SAND LANDFILL CEDAR FALLS, IOWA									
DATE	HEAD LEVEL	40 DAILY	90 DAILY	90 GPM CUMULATIVE	NOTES	TOTAL MIN.'S PUMPED	DAILY MIN.'S PUMPED	GPM	MOTOR STARTS
	INCHES	GALLONS	GALLONS	GALLONS					
1/1/2025	26.4		607	15,099,121		154,818	6	101.17	32
1/2/2025	25.7		525	15,099,646		154,824	6	87.50	28
1/3/2025	25.0		597	15,100,243		154,830	6	99.50	32
1/4/2025	25.4		339	15,100,582		154,836	4	84.75	18
1/5/2025	24.9		588	15,101,170		154,840	6	98.00	32
1/6/2025	24.8		368	15,101,538		154,844	4	92.00	20
1/7/2025	25.1		406	15,101,944		154,849	5	81.20	22
1/8/2025	24.6		483	15,102,427		154,854	5	96.60	27
1/9/2025	24.6		410	15,102,837		154,858	4	102.50	22
1/10/2025	26.3		443	15,103,280		154,863	5	88.60	24
1/11/2025	24.7		554	15,103,834		154,869	6	92.33	30
1/12/2025	18.3		436	15,104,270		154,874	5	87.20	24
1/13/2025	26.0		508	15,104,778		154,879	5	101.60	28
1/14/2025	25.0		542	15,105,320		154,885	6	90.33	30
1/15/2025	25.9		475	15,105,795		154,890	5	95.00	25
1/16/2025	24.7		479	15,106,274		154,895	5	95.80	26
1/17/2025	25.3		428	15,106,702		154,899	4	107.00	24
1/18/2025	26.0		497	15,107,199		154,905	6	82.83	64
1/19/2025	24.8		374	15,107,573		154,908	3	124.67	20
1/20/2025	26.7		520	15,108,093		154,914	6	86.67	28
1/21/2025	26.1		529	15,108,622		154,919	5	105.80	28
1/22/2025	18.3		487	15,109,109		154,924	5	97.40	26
1/23/2025	23.5		370	15,109,479		154,928	4	92.50	20
1/24/2025	24.9		567	15,110,046		154,934	6	94.50	112
1/25/2025	24.4		413	15,110,459		154,938	4	103.25	22
1/26/2025	24.5		503	15,110,962		154,943	5	100.60	26
1/27/2025	24.5		430	15,111,392		154,948	5	86.00	22
1/28/2025	24.6		618	15,112,010		154,954	6	103.00	41
1/29/2025	23.8		362	15,112,372		154,958	4	90.50	18
1/30/2025	26.1		641	15,113,013		154,964	6	106.83	32
1/31/2025	26.0		286	15,113,299		154,967	3	95.33	14

Total Gallons Pumped In 1-2025	14,785
Total Pumped Since 01-01-2015	15,826,652

Total Pumped In 2015	3,415,648
Total Pumped In 2016	3,780,646
Total Pumped In 2017	1,650,925
Total Pumped In 2018	2,960,728
Total Pumped In 2019	1,209,557
Total Pumped In 2020	891,294
Total Pumped In 2021	245,405
Total Pumped In 2022	410,178
Total Pumped In 2023	526,894
Total Pumped In 2024	718,551
Total Pumped In 2025	14,785

Total CCF Pumped In 1-2025	20
Monthly Avg. CCF Pumped - 2025	20

2025 LEACHATE DISCHARGE - VIKING PUMP FOUNDRY SAND LANDFILL CEDAR FALLS, IOWA									
DATE	HEAD LEVEL	40 DAILY	90 DAILY	90 GPM CUMULATIVE	NOTES	TOTAL MIN.'S PUMPED	DAILY MIN.'S PUMPED	GPM	MOTOR STARTS
	INCHES	GALLONS	GALLONS	GALLONS					
2/1/2025	24.3		331	15,107,378		154,905	3	110.33	16
2/2/2025	24.4		366	15,107,744		154,909	4	91.50	18
2/3/2025	26.1		363	15,108,107		154,913	4	90.75	18
2/4/2025	23.8		640	15,108,747		154,917	6	106.67	32
2/5/2025	23.7		329	15,109,076		154,920	4	82.25	16
2/6/2025	25.0		364	15,109,440		154,923	3	121.33	18
2/7/2025	26.5		407	15,109,847		154,927	4	101.75	20
2/8/2025	26.3		324	15,110,171		154,931	4	81.00	16
2/9/2025	26.1		407	15,110,578		154,935	4	101.75	20
2/10/2025	25.6		325	15,110,903		154,938	3	108.33	16
2/11/2025	25.9		204	15,111,107		154,940	2	102.00	10
2/12/2025	24.0		485	15,111,592		154,945	5	97.00	24
2/13/2025	26.1		367	15,111,959		154,948	3	122.33	18
2/14/2025	24.8		371	15,112,330		154,952	4	92.75	18
2/15/2025	26.3		328	15,112,658		154,955	3	109.33	16
2/16/2025	25.7		325	15,112,983		154,958	3	108.33	16
2/17/2025	25.7		444	15,113,427		154,963	5	88.80	22
2/18/2025	25.0		243	15,113,670		154,965	2	121.50	11
2/19/2025	25.7		435	15,114,105		154,970	5	87.00	22
2/20/2025	25.7		409	15,114,514		154,974	4	102.25	20
2/21/2025	25.9		325	15,114,839		154,977	3	108.33	16
2/22/2025	25.4		363	15,115,202		154,980	3	121.00	18
2/23/2025	25.4		207	15,115,409		154,983	3	69.00	9
2/24/2025	26.0		442	15,115,851		154,987	4	110.50	24
2/25/2025	24.8		657	15,116,508		154,993	6	109.50	39
2/26/2025	24.6		448	15,116,956		154,998	5	89.60	22
2/27/2025	25.6		405	15,117,361		155,002	4	101.25	20
2/28/2025	25.6		456	15,117,817		155,006	4	114.00	22

Total Gallons Pumped In 2-2025	10,770
Total Pumped Since 01-01-2015	15,837,422

Total Pumped In 2015	3,415,648
Total Pumped In 2016	3,780,646
Total Pumped In 2017	1,650,925
Total Pumped In 2018	2,960,728
Total Pumped In 2019	1,209,557
Total Pumped In 2020	891,294
Total Pumped In 2021	245,405
Total Pumped In 2022	410,178
Total Pumped In 2023	522,879
Total Pumped In 2024	19,303
Total Pumped In 2025	25,555

Total CCF Pumped In 2-2025	14
Monthly Avg. CCF Pumped - 2025	17

2025 LEACHATE DISCHARGE - VIKING PUMP FOUNDRY SAND LANDFILL CEDAR FALLS, IOWA									
DATE	HEAD LEVEL	40 DAILY	90 DAILY	90 GPM CUMULATIVE	NOTES	TOTAL MIN.'S PUMPED	DAILY MIN.'S PUMPED	GPM	MOTOR STARTS
	INCHES	GALLONS	GALLONS	GALLONS					
3/1/2025	26.5		414	15,122,154		155,054	4	103.50	20
3/2/2025	26.6		286	15,122,440		155,057	3	95.33	14
3/3/2025	26.6		377	15,122,817		155,061	4	94.25	18
3/4/2025	25.4		171	15,122,988		155,067	1	171.00	8
3/5/2025	25.0		612	15,123,600		155,081	6	102.00	28
3/6/2025	26.0		1,461	15,125,061		155,095	14	104.36	69
3/7/2025	19.8		1,198	15,126,259		155,107	12	99.83	56
3/8/2025	25.4		2,388	15,128,647		155,131	24	99.50	110
3/9/2025	26.0		3,255	15,131,902		155,164	33	98.64	150
3/10/2025	25.8		2,555	15,134,457		155,190	26	98.27	118
3/11/2025	17.6		2,025	15,136,482		155,210	20	101.25	94
3/12/2025	26.3		1,416	15,137,898		155,224	14	101.14	66
3/13/2025	26.0		1,383	15,139,281		155,238	14	98.79	66
3/14/2025	25.7		841	15,140,122		155,247	9	93.44	40
3/15/2025	26.3		208	15,140,330		155,249	2	104.00	10
3/16/2025	25.7		660	15,140,990		155,254	5	132.00	22
3/17/2025	18.8		445	15,141,435		155,258	4	111.25	22
3/18/2025	24.5		1,308	15,142,743		155,263	5	261.60	23
3/19/2025	25.8		2,735	15,145,478		155,268	5	547.00	26
3/20/2025	25.5		3,563	15,149,041		155,275	7	509.00	34
3/21/2025	25.4		1,260	15,150,301		155,280	5	252.00	28
3/22/2025	25.1		2,109	15,152,410		155,285	5	421.80	22
3/23/2025	25.5		1,906	15,154,316		155,289	4	476.50	22
3/24/2025	25.0		2,003	15,156,319		155,295	6	333.83	28
3/25/2025	24.6		1,489	15,157,808		155,299	4	372.25	20
3/26/2025	24.9		2,598	15,160,406		155,303	4	649.50	22
3/27/2025	24.8		5,154	15,165,560		155,308	5	1030.80	22
3/28/2025	19.8		6,732	15,172,292		155,312	4	1683.00	22
3/29/2025	25.9		7,766	15,180,058		155,315	3	2588.67	12
3/30/2025	25.1		15,218	15,195,276		155,320	5	3043.60	26
3/31/2025	24.6		20,366	15,215,642		155,326	6	3394.33	30

Total Gallons Pumped In 3-2025	93,902
Total Pumped Since 01-01-2015	15,931,324

Total Pumped In 2015	3,415,648
Total Pumped In 2016	3,780,646
Total Pumped In 2017	1,650,925
Total Pumped In 2018	2,960,728
Total Pumped In 2019	1,209,557
Total Pumped In 2020	891,294
Total Pumped In 2021	245,405
Total Pumped In 2022	410,178
Total Pumped In 2023	606,011
Total Pumped In 2024	117,128
Total Pumped In 2025	119,457

Total CCF Pumped In 3-2025	126
Monthly Avg. CCF Pumped - 2025	53

2025 LEACHATE DISCHARGE - VIKING PUMP FOUNDRY SAND LANDFILL CEDAR FALLS, IOWA									
DATE	HEAD LEVEL	40 DAILY	90 DAILY	90 GPM CUMULATIVE	NOTES	TOTAL MIN.'S PUMPED	DAILY MIN.'S PUMPED	GPM	MOTOR STARTS
	INCHES	GALLONS	GALLONS	GALLONS					
4/1/2025	25.4		13,481	15,138,648		155,085	3	4493.67	16
4/2/2025	18.8		21,692	15,160,340		155,090	5	4338.40	28
4/3/2025	26.1		24,557	15,184,897		155,097	7	3508.14	36
4/4/2025	26.0		7,213	15,192,110		155,103	4	1803.25	20
4/5/2025	26.0		14480	15,206,590		155,109	6	2413.33	30
4/6/2025	26.1		16,239	15,222,829		155,115	6	2706.50	32
4/7/2025	24.8		17,231	15,240,060		155,122	7	2461.57	38
4/8/2025	24.7		14,786	15,254,846		155,127	5	2957.20	30
4/9/2025	24.8		17,754	15,272,600		155,133	6	2959.00	32
4/10/2025	25.9		10,146	15,282,746		155,136	3	3382.00	14
4/11/2025	24.7		21,673	15,304,419		155,144	8	2709.13	42
4/12/2025	24.6		16,860	15,321,279		155,149	5	3372.00	28
4/13/2025	26.1		12,424	15,333,703		155,154	5	2484.80	24
4/14/2025	25.3		11,549	15,345,252		155,159	5	2309.80	24
4/15/2025	24.5		19,107	15,364,359		155,166	7	2729.57	41
4/16/2025	20.9		13,114	15,377,473		155,170	4	3278.50	20
4/17/2025	24.9		19,525	15,396,998		155,177	7	2789.29	34
4/18/2025	25.5		8,479	15,405,477		155,181	4	2119.75	18
4/19/2025	24.9		27,852	15,433,329		155,189	8	3481.50	42
4/20/2025	25.8		15,678	15,449,007		155,192	3	5226.00	18
4/21/2025	26.3		9,992	15,458,999		155,202	10	999.20	46
4/22/2025	26.1		6,331	15,465,330		155,264	62	102.11	282
4/23/2025	25.5		5,302	15,470,632		155,316	52	101.96	143
4/24/2025	18.5		12,547	15,483,179		155,444	128	98.02	261
4/25/2025	22.5		23,832	15,507,011		155,681	237	100.56	426
4/26/2025	18.2		25,637	15,532,648		155,933	252	101.73	449
4/27/2025	24.0		23,946	15,556,594		156,165	232	103.22	428
4/28/2025	22.8		21,996	15,578,590		156,378	213	103.27	401
4/29/2025	26.1		19,814	15,598,404		156,569	191	103.74	370
4/30/2025	21.6		17,442	15,615,846		156,737	168	103.82	337

Total Gallons Pumped In 4-2025	490,679
Total Pumped Since 01-01-2015	16,422,003

Total Pumped In 2015	3,415,648
Total Pumped In 2016	3,780,646
Total Pumped In 2017	1,650,925
Total Pumped In 2018	2,960,728
Total Pumped In 2019	1,209,557
Total Pumped In 2020	891,294
Total Pumped In 2021	245,405
Total Pumped In 2022	410,178
Total Pumped In 2023	1,002,788
Total Pumped In 2024	517,332
Total Pumped In 2025	610,136

Total CCF Pumped In 4-2024	656
Monthly Avg. CCF Pumped - 2024	204

2025 LEACHATE DISCHARGE - VIKING PUMP FOUNDRY SAND LANDFILL CEDAR FALLS, IOWA									
DATE	HEAD LEVEL	40 DAILY	90 DAILY	90 GPM CUMULATIVE	NOTES	TOTAL MIN.'S PUMPED	DAILY MIN.'S PUMPED	GPM	MOTOR STARTS
	INCHES	GALLONS	GALLONS	GALLONS					
5/1/2025	19.6		15,592	15,170,804		155,407	148	105.35	468
5/2/2025	17.3		14,027	15,184,831		155,541	134	104.68	500
5/3/2025	20.2		12,521	15,197,352		155,660	119	105.22	511
5/4/2025	24.2		11,344	15,208,696		155,756	109	104.07	473
5/5/2025	23.5		9851	15,218,547		155,844	96	102.61	425
5/6/2025	26.3		8,866	15,227,413		155,932	88	100.75	388
5/7/2025	26.0		8,047	15,235,460		156,012	80	100.59	354
5/8/2025	17.4		7,343	15,242,803		156,085	73	100.59	325
5/9/2025	25.8		6,580	15,249,383		156,151	66	99.70	295
5/10/2025	25.8		5,964	15,255,347		156,212	61	97.77	268
5/11/2025	25.9		5,352	15,260,699		156,266	54	99.11	240
5/12/2025	26.3		4,863	15,265,562		156,315	49	99.24	218
5/13/2025	25.8		4,449	15,270,011		156,360	45	98.87	200
5/14/2025	19.9		4,050	15,274,061		156,401	41	98.78	182
5/15/2025	25.8		3,678	15,277,739		156,438	37	99.41	166
5/16/2025	25.7		3,415	15,281,154		156,473	35	97.57	154
5/17/2025	25.6		3,180	15,284,334		156,505	32	99.38	144
5/18/2025	26.1		2,909	15,287,243		156,535	30	96.97	132
5/19/2025	24.7		2,819	15,290,062		156,564	29	97.21	128
5/20/2025	17.3		2,682	15,292,744		156,591	27	99.33	121
5/21/2025	26.3		5,180	15,297,924		156,642	51	101.57	225
5/22/2025	23.1		6,695	15,304,619		156,706	64	104.61	285
5/23/2025	23.4		6,001	15,310,620		156,766	60	100.02	264
5/24/2025	25.8		5,743	15,316,363		156,823	57	100.75	256
5/25/2025	24.9		5,569	15,321,932		156,879	56	99.45	249
5/26/2025	22.4		5,358	15,327,290		156,932	53	101.09	238
5/27/2025	17.1		5,169	15,332,459		156,985	53	97.53	232
5/28/2025	17.5		5,037	15,337,496		157,035	50	100.74	226
5/29/2025	26.4		4,844	15,342,340		157,085	50	96.88	218
5/30/2025	25.9		4,726	15,347,066		157,132	47	100.55	212
5/31/2025	25.3		4,581	15,351,647		157,179	47	97.47	205

Total Gallons Pumped In 5-2025	196,435
Total Pumped Since 01-01-2015	16,618,438

Total Pumped In 2015	3,415,648
Total Pumped In 2016	3,780,646
Total Pumped In 2017	1,650,925
Total Pumped In 2018	2,960,728
Total Pumped In 2019	1,209,557
Total Pumped In 2020	891,294
Total Pumped In 2021	245,405
Total Pumped In 2022	410,178
Total Pumped In 2023	708,544
Total Pumped In 2024	253,133
Total Pumped In 2025	806,571

Total CCF Pumped In 5-2025	263
Monthly Avg. CCF Pumped - 2025	216

2025 LEACHATE DISCHARGE - VIKING PUMP FOUNDRY SAND LANDFILL CEDAR FALLS, IOWA									
DATE	HEAD LEVEL	40 DAILY	90 DAILY	90 GPM CUMULATIVE	NOTES	TOTAL MIN.'S PUMPED	DAILY MIN.'S PUMPED	GPM	MOTOR STARTS
	INCHES	GALLONS	GALLONS	GALLONS					
6/1/2025	22.6		4,421	15,530,457		158,232	45	98.24	199
6/2/2025	22.2		4,301	15,534,758		158,275	43	100.02	194
6/3/2025	22.5		4,166	15,538,924		158,317	42	99.19	188
6/4/2025	24.8		3,971	15,542,895		158,356	41	96.85	177
6/5/2025	25.8		3,865	15,546,760		158,393	39	99.10	173
6/6/2025	26.1		3,734	15,550,494		158,430	37	100.92	169
6/7/2025	22.0		3,721	15,554,215		158,468	38	97.92	168
6/8/2025	26.4		3,559	15,557,774		158,504	36	98.86	160
6/9/2025	25.0		3,456	15,561,230		158,539	35	98.74	156
6/10/2025	26.0		3,291	15,564,521		158,573	34	96.79	148
6/11/2025	26.3		3,189	15,567,710		158,605	32	99.66	145
6/12/2025	26.1		3,067	15,570,777		158,636	31	98.94	138
6/13/2025	25.8		3,010	15,573,787		158,666	30	100.33	133
6/14/2025	25.4		2,926	15,576,713		158,696	30	97.53	130
6/15/2025	24.7		2,829	15,579,542		158,724	28	101.04	126
6/16/2025	25.9		2,767	15,582,309		158,752	28	98.82	124
6/17/2025	25.0		2,767	15,585,076		158,780	28	98.82	123
6/18/2025	25.9		2,646	15,587,722		158,806	26	101.77	117
6/19/2025	26.0		3,138	15,590,860		158,838	32	98.06	140
6/20/2025	25.4		3,422	15,594,282		158,872	34	100.65	152
6/21/2025	19.9		15,434	15,609,716		159,019	147	104.99	312
6/22/2025	19.3		18,194	15,627,910		159,192	173	105.17	335
6/23/2025	25.7		14,591	15,642,501		159,332	140	104.22	281
6/24/2025	23.6		13,141	15,655,642		159,457	125	105.13	309
6/25/2025	23.9		12,041	15,667,683		159,571	114	105.62	397
6/26/2025	25.3		11,047	15,678,730		159,676	105	105.21	415
6/27/2025	24.7		10,259	15,688,989		159,775	99	103.63	424
6/28/2025	17.3		9,650	15,698,639		159,867	92	104.89	391
6/29/2025	27.3		8,752	15,707,391		159,950	83	105.45	359
6/30/2025	25.8		8,067	15,715,458		160,028	78	103.42	335

Total Gallons Pumped In 6-2025	189,422
Total Pumped Since 01-01-2015	16,807,860

Total Pumped In 2015	3,415,648
Total Pumped In 2016	3,780,646
Total Pumped In 2017	1,650,925
Total Pumped In 2018	2,960,728
Total Pumped In 2019	1,209,557
Total Pumped In 2020	891,294
Total Pumped In 2021	245,405
Total Pumped In 2022	410,178
Total Pumped In 2023	701,531
Total Pumped In 2024	616,944
Total Pumped In 2025	995,993

Total CCF Pumped In 6-2025	253
Monthly Avg. CCF Pumped - 2025	222

2025 LEACHATE DISCHARGE - VIKING PUMP FOUNDRY SAND LANDFILL CEDAR FALLS, IOWA									
DATE	HEAD LEVEL	40 DAILY	90 DAILY	90 GPM CUMULATIVE	NOTES	TOTAL MIN.'S PUMPED	DAILY MIN.'S PUMPED	GPM	MOTOR STARTS
	INCHES	GALLONS	GALLONS	GALLONS					
7/1/2025	24.7		7,466	15,631,576		159,079	71	105.15	312
7/2/2025	17.7		6,871	15,638,447		159,145	66	104.11	292
7/3/2025	26.4		6,481	15,644,928		159,207	62	104.53	276
7/4/2025	26.4		6,172	15,651,100		159,265	60	102.87	266
7/5/2025	26.4		5963	15,657,063		159,323	58	102.81	258
7/6/2025	17.4		5,964	15,663,027		159,381	58	102.83	256
7/7/2025	25.0		5,938	15,668,965		159,438	57	104.18	256
7/8/2025	26.4		5,893	15,674,858		159,495	57	103.39	252
7/9/2025	26.4		5,666	15,680,524		159,549	54	104.93	242
7/10/2025	26.3		5,661	15,686,185		159,604	55	102.93	240
7/11/2025	17.2		5,581	15,691,766		159,658	54	103.35	239
7/12/2025	23.6		9,789	15,701,555		159,752	94	104.14	273
7/13/2025	18.4		17,101	15,718,656		159,914	162	105.56	286
7/14/2025	22.9		17,199	15,735,855		160,078	164	104.87	300
7/15/2025	22.6		17,202	15,753,057		160,242	164	104.89	309
7/16/2025	22.6		15,867	15,768,924		160,395	153	103.71	293
7/17/2025	26.0		13,996	15,782,920		160,531	136	102.91	272
7/18/2025	24.3		11,985	15,794,905		160,648	117	102.44	243
7/19/2025	23.9		10,423	15,805,328		160,750	102	102.19	225
7/20/2025	18.1		9,793	15,815,121		160,847	97	100.96	216
7/21/2025	25.6		9,107	15,824,228		160,937	90	101.19	205
7/22/2025	21.2		8,403	15,832,631		161,020	83	101.24	200
7/23/2025	26.4		7,499	15,840,130		161,094	74	101.34	269
7/24/2025	22.7		8,982	15,849,112		161,183	89	100.92	229
7/25/2025	18.5		10,807	15,859,919		161,290	107	101.00	249
7/26/2025	18.8		10,208	15,870,127		161,392	102	100.08	250
7/27/2025	24.7		9,852	15,879,979		161,491	99	99.52	235
7/28/2025	20.0		9,413	15,889,392		161,585	94	100.14	217
7/29/2025	18.7		8,461	15,897,853		161,669	84	100.73	195
7/30/2025	18.8		8,231	15,906,084		161,751	82	100.38	191
7/31/2025	23.6		12,582	15,918,666		161,876	125	100.66	266

Total Gallons Pumped In 7-2025	294,556
Total Pumped Since 01-01-2015	17,102,416

Total Pumped In 2015	3,415,648
Total Pumped In 2016	3,780,646
Total Pumped In 2017	1,650,925
Total Pumped In 2018	2,960,728
Total Pumped In 2019	1,209,557
Total Pumped In 2020	891,294
Total Pumped In 2021	245,405
Total Pumped In 2022	410,178
Total Pumped In 2023	806,665
Total Pumped In 2024	820,152
Total Pumped In 2025	1,290,549

Total CCF Pumped In 1-2025	394
Monthly Avg. CCF Pumped - 2025	246

2025 LEACHATE DISCHARGE - VIKING PUMP FOUNDRY SAND LANDFILL CEDAR FALLS, IOWA									
DATE	HEAD LEVEL	40 DAILY	90 DAILY	90 GPM CUMULATIVE	NOTES	TOTAL MIN.'S PUMPED	DAILY MIN.'S PUMPED	GPM	MOTOR STARTS
	INCHES	GALLONS	GALLONS	GALLONS					
8/1/2025	26.3		12,785	15,740,461		160,006	127	100.67	277
8/2/2025	23.9		11,706	15,752,167		160,124	118	99.20	263
8/3/2025	24.8		10,645	15,762,812		160,231	107	99.49	254
8/4/2025	21.4		9,612	15,772,424		160,318	97	99.09	244
8/5/2025	24.3		8,628	15,781,052		160,397	87	99.17	226
8/6/2025	24.2		7,765	15,788,817		160,476	79	98.29	204
8/7/2025	24.6		6,967	15,795,784		160,547	71	98.13	188
8/8/2025	20.9		6,525	15,802,309		160,613	66	98.86	182
8/9/2025	23.8		6,164	15,808,473		160,677	64	96.31	240
8/10/2025	26.0		5,556	15,814,029		160,733	56	99.21	306
8/11/2025	21.5		5,701	15,819,730		160,791	58	98.29	295
8/12/2025	25.0		6,785	15,826,515		160,860	69	98.33	344
8/13/2025	23.0		6,277	15,832,792		160,924	64	98.08	297
8/14/2025	24.0		5,732	15,838,524		160,983	59	97.15	286
8/15/2025	18.4		5,318	15,843,842		161,038	55	96.69	278
8/16/2025	26.3		4,919	15,848,761		161,089	51	96.45	260
8/17/2025	18.9		5,004	15,853,765		161,141	52	96.23	283
8/18/2025	25.7		4,811	15,858,576		161,191	50	96.22	266
8/19/2025	21.8		6,942	15,865,518		161,263	72	96.42	370
8/20/2025	25.6		7,770	15,873,288		161,344	81	95.93	420
8/21/2025	26.1		7,073	15,880,361		161,418	74	95.58	388
8/22/2025	19.2		6,499	15,886,860		161,486	68	95.57	296
8/23/2025	23.1		6,008	15,892,868		161,549	63	95.37	360
8/24/2025	26.5		5,509	15,898,377		161,607	58	94.98	328
8/25/2025	20.9		5,074	15,903,451		161,660	53	95.74	304
8/26/2025	25.8		4,789	15,908,240		161,710	50	95.78	282
8/27/2025	25.4		4,663	15,912,903		161,760	50	93.26	271
8/28/2025	25.7		4,595	15,917,498		161,808	48	95.73	252
8/29/2025	25.8		4,361	15,921,859		161,853	45	96.91	234
8/30/2025	20.6		4,225	15,926,084		161,898	45	93.89	225
8/31/2025	24.6		3,876	15,921,374		161,848	40	96.90	182

Total Gallons Pumped In 8-2025	202,284
Total Pumped Since 01-01-2015	17,304,700

Total Pumped In 2015	3,415,648
Total Pumped In 2016	3,780,646
Total Pumped In 2017	1,650,925
Total Pumped In 2018	2,960,728
Total Pumped In 2019	1,209,557
Total Pumped In 2020	891,294
Total Pumped In 2021	245,405
Total Pumped In 2022	410,178
Total Pumped In 2023	714,393
Total Pumped In 2024	831,446
Total Pumped In 2025	1,492,833

Total CCF Pumped In 8-2025	270
Monthly Avg. CCF Pumped - 2025	249

2025 LEACHATE DISCHARGE - VIKING PUMP FOUNDRY SAND LANDFILL CEDAR FALLS, IOWA									
DATE	HEAD LEVEL	40 DAILY	90 DAILY	90 GPM CUMULATIVE	NOTES	TOTAL MIN.'S PUMPED	DAILY MIN.'S PUMPED	GPM	MOTOR STARTS
	INCHES	GALLONS	GALLONS	GALLONS					
9/1/2025	25.5		3,694	15,751,159		160,091	38	97.21	166
9/2/2025	18.8		3,647	15,754,806		160,129	38	95.97	163
9/3/2025	25.7		3,512	15,758,318		160,165	36	97.56	156
9/4/2025	22.5		3,477	15,761,795		160,201	36	96.58	156
9/5/2025	18.8		3358	15,765,153		160,234	36	93.28	208
9/6/2025	24.8		3,095	15,768,248		160,267	33	93.79	191
9/7/2025	25.8		2,837	15,771,085		160,298	31	91.52	170
9/8/2025	19.7		2,572	15,773,657		160,325	27	95.26	150
9/9/2025	19.7		2,306	15,775,963		160,350	25	92.24	138
9/10/2025	26.3		2,007	15,777,970		160,371	21	95.57	116
9/11/2025	26.3		1,811	15,779,781		160,391	20	90.55	98
9/12/2025	26.0		1,598	15,781,379		160,408	17	94.00	90
9/13/2025	25.6		1,561	15,782,940		160,425	17	91.82	93
9/14/2025	26.1		1,638	15,784,578		160,442	17	96.35	96
9/15/2025	26.1		1,437	15,786,015		160,458	16	89.81	80
9/16/2025	24.0		1,349	15,787,364		160,472	14	96.36	73
9/17/2025	26.1		1,172	15,788,536		160,485	13	90.15	64
9/18/2025	22.6		1,330	15,789,866		160,499	14	95.00	72
9/19/2025	26.0		1,168	15,791,034		160,512	13	89.85	64
9/20/2025	26.5		898	15,791,932		160,522	10	89.80	48
9/21/2025	24.9		1,294	15,793,226		160,536	14	92.43	72
9/22/2025	26.0		832	15,794,058		160,545	9	92.44	46
9/23/2025	24.8		1,165	15,795,223		160,558	13	89.62	66
9/24/2025	25.0		976	15,796,199		160,569	11	88.73	54
9/25/2025	25.8		616	15,796,815		160,576	7	88.00	34
9/26/2025	25.9		617	15,797,432		160,583	7	88.14	34
9/27/2025	26.0		750	15,798,182		160,591	8	93.75	41
9/28/2025	26.0		758	15,798,940		160,599	8	94.75	42
9/29/2025	26.0		691	15,799,631		160,607	8	86.38	38
9/30/2025	25.7		758	15,800,389		160,615	8	94.75	42

Total Gallons Pumped In 9-2025	52,924
Total Pumped Since 01-01-2015	17,357,624

Total Pumped In 2015	3,415,648
Total Pumped In 2016	3,780,646
Total Pumped In 2017	1,650,925
Total Pumped In 2018	2,960,728
Total Pumped In 2019	1,209,557
Total Pumped In 2020	891,294
Total Pumped In 2021	245,405
Total Pumped In 2022	410,178
Total Pumped In 2023	565,033
Total Pumped In 2024	702,324
Total Pumped In 2025	1,545,757

Total CCF Pumped In 9-2025	71
Monthly Avg. CCF Pumped - 2025	230

2025 LEACHATE DISCHARGE - VIKING PUMP FOUNDRY SAND LANDFILL CEDAR FALLS, IOWA									
DATE	HEAD LEVEL	40 DAILY	90 DAILY	90 GPM CUMULATIVE	NOTES	TOTAL MIN.'S PUMPED	DAILY MIN.'S PUMPED	GPM	MOTOR STARTS
	INCHES	GALLONS	GALLONS	GALLONS					
10/1/2025	25.3		721	15,751,305		160,091	8.0	90.13	40
10/2/2025	24.8		182	15,751,487		160,093	2.0	91.00	6
10/3/2025	25.1		137	15,751,624		160,095	2.0	68.50	6
10/4/2025	25.4		446	15,752,070		160,102	5.0	89.20	19
10/5/2025	16.7		688	15,752,758		160,113	7.0	98.29	30
10/6/2025	24.5		1063	15,753,821		160,124	11.0	96.64	46
10/7/2025	26.0		925	15,754,746		160,134	10.0	92.50	40
10/8/2025	25.9		1107	15,755,853		160,145	11.0	100.64	48
10/9/2025	26.3		923	15,756,776		160,155	10.0	92.30	40
10/10/2025	26.0		961	15,757,737		160,165	10.0	96.10	42
10/11/2025	25.8		905	15,758,642		160,175	10.0	90.50	40
10/12/2025	25.6		901	15,759,543		160,184	9.0	100.11	39
10/13/2025	26.1		895	15,760,438		160,194	10.0	89.50	40
10/14/2025	17.9		710	15,761,148		160,202	8.0	88.75	32
10/15/2025	25.9		572	15,761,720		160,208	6.0	95.33	26
10/16/2025	25.5		660	15,762,380		160,215	7.0	94.29	30
10/17/2025	24.4		698	15,763,078		160,223	8.0	87.25	32
10/18/2025	25.9		697	15,763,775		160,231	8.0	87.13	32
10/19/2025	26.3		697	15,764,472		160,238	7.0	99.57	32
10/20/2025	25.9		566	15,765,038		160,245	7.0	80.86	26
10/21/2025	26.4		608	15,765,646		160,251	6.0	101.33	28
10/22/2025	26.0		609	15,766,255		160,258	7.0	87.00	28
10/23/2025	25.7		566	15,766,821		160,264	6.0	94.33	26
10/24/2025	26.3		392	15,767,213		160,269	5.0	78.40	18
10/25/2025	24.7		520	15,767,733		160,274	5.0	104.00	24
10/26/2025	25.9		387	15,768,120		160,279	5.0	77.40	18
10/27/2025	25.5		566	15,768,686		160,285	6.0	94.33	26
10/28/2025	25.9		394	15,769,080		160,289	4.0	98.50	18
10/29/2025	24.2		294	15,769,374		160,293	4.0	73.50	14
10/30/2025	24.2		169	15,769,543		160,294	1.0	169.00	8
10/31/2025	23.5		434	15,769,977		160,299	5.0	86.80	20

Total Gallons Pumped In 10-2025	19,393
Total Pumped Since 01-01-2015	17,377,017

Total Pumped In 2015	3,415,648
Total Pumped In 2016	3,780,646
Total Pumped In 2017	1,650,925
Total Pumped In 2018	2,960,728
Total Pumped In 2019	1,209,557
Total Pumped In 2020	891,294
Total Pumped In 2021	245,405
Total Pumped In 2022	410,178
Total Pumped In 2023	531,502
Total Pumped In 2024	671,912
Total Pumped In 2025	1,565,150

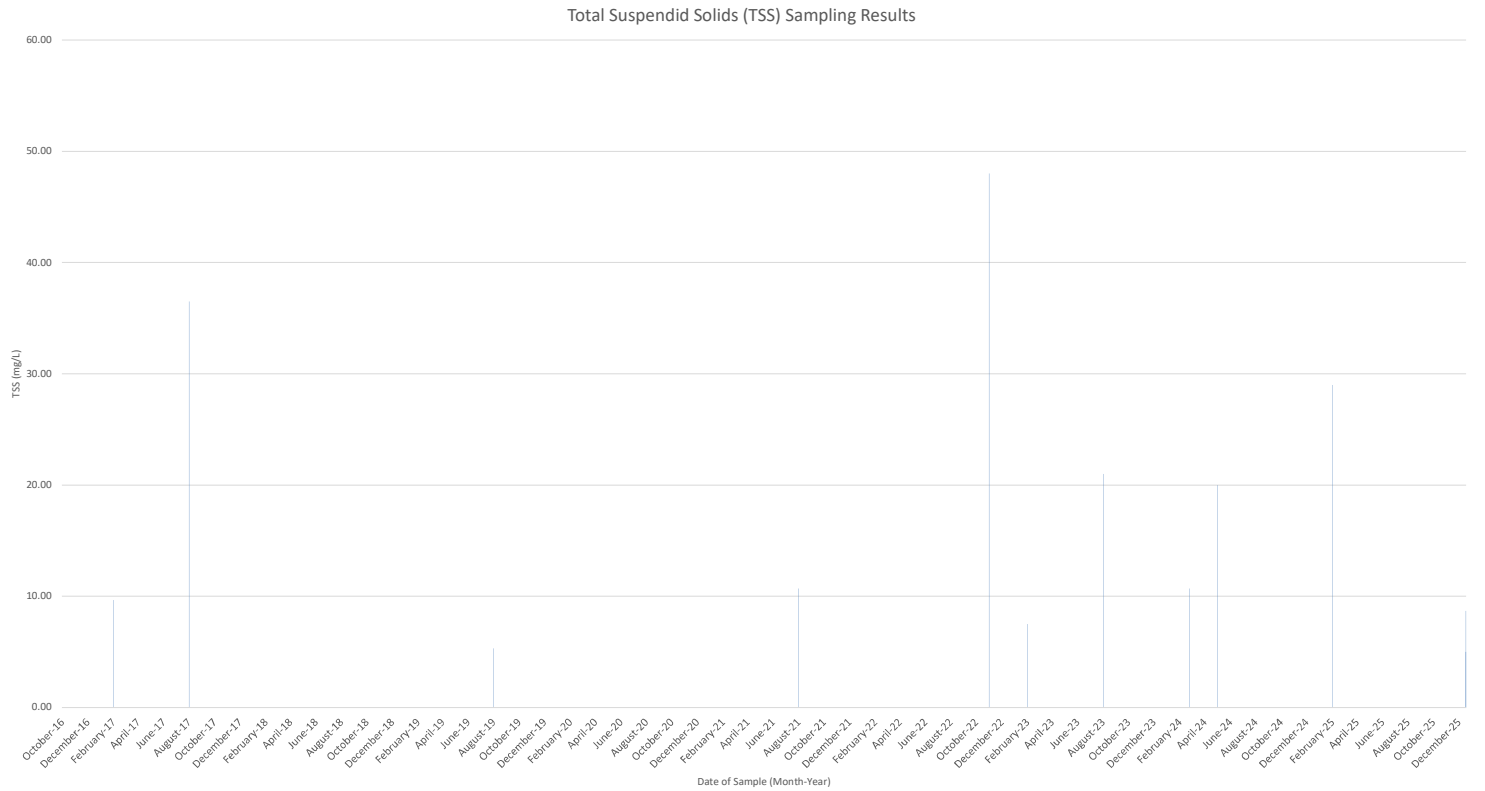
Total CCF Pumped In 10-2025	26
Monthly Avg. CCF Pumped - 2025	209

LEACHATE TOTAL SUSPENDED SOLIDS - VIKING PUMP FOUNDRY SAND LANDFILL

CEDAR FALLS, IOWA

Submit bi-annually with BCR report to the City of Cedar Falls

MONTH-YR.	GRAB / COMPOSITE	DATE SAMPLED	DATE TESTED	TOTAL SUSPENDED SOLIDS (MG/L)
October-16	G	10/03/16	10/07/16	9.67
November-16	G	11/07/16	11/10/16	8.75
February-17	G	02/23/17	02/23/17	9.67
May-17	G	05/18/17	05/19/17	6.00
August-17	G	08/17/17	08/17/17	36.50
November-17	G	11/07/17	11/08/17	< 5.00
February-18	G	02/26/18	02/27/18	8.67
May-18	G	05/18/18	05/21/18	< 5.00
August-18	G	09/17/18	09/19/18	9.33
November-18	G	11/08/18	11/12/18	7.40
February-19	G	03/26/19	03/26/19	10.00
May-19	G	05/06/19	05/07/19	8.00
August-19	G	09/23/19	09/24/19	5.33
November-19	G	11/22/20	11/25/20	<5.00
February-20	G	03/11/20	03/12/20	21.30
May-20	G	05/13/20	05/14/20	42.00
August-20	G	09/02/20	09/03/20	9.33
November-20	G	11/02/20	11/02/20	<5.00
February-21	G	02/23/21	02/25/21	<5.00
May-21	G	05/03/21	05/04/21	<5.00
August-21	G	10/15/21	10/22/21	10.70
November-21	G	11/05/21	11/05/21	<5.00
February-22	G	02/08/22	02/08/22	<5.00
May-22	G	05/06/22	05/06/22	<5.00
August-22	G	08/04/22	08/05/22	<5.00
November-22	G	01/25/22	01/25/22	48.00
February-23	G	02/21/23	02/21/23	7.50
May-23	G	05/11/23	05/11/23	22.00
August-23	G	08/02/23	08/03/23	21.00
November-23	G	11/06/23	11/02/23	<5.00
February-24	G	02/21/24	02/22/24	10.70
May-24	G	05/29/24	05/30/24	20.00
August-24	G	08/28/24	08/29/24	18.00
January-25	G	01/27/25	01/28/25	10.00
February-25	G	02/24/25	02/25/25	29.00
March-25	24hr	03/20/25	03/20/25	<5.00
March-25	G	03/21/25	03/21/25	<5.00
April-25	G	04/29/25	05/01/25	<5.00
May-25	24hr	05/21/25	05/23/25	<5.00
June-25	G	06/19/25	06/20/25	6.33
August-25	G	08/28/25	08/29/25	<5.00
September-25	24hr	09/17/25	09/19/25	5.00
September-25	G	09/30/25	09/30/25	9.00
October-25	G	10/29/25	10/31/25	5.00
December-25	G	12/18/25	12/18/25	5.00
December-25	24hr	12/18/25	12/19/25	8.67

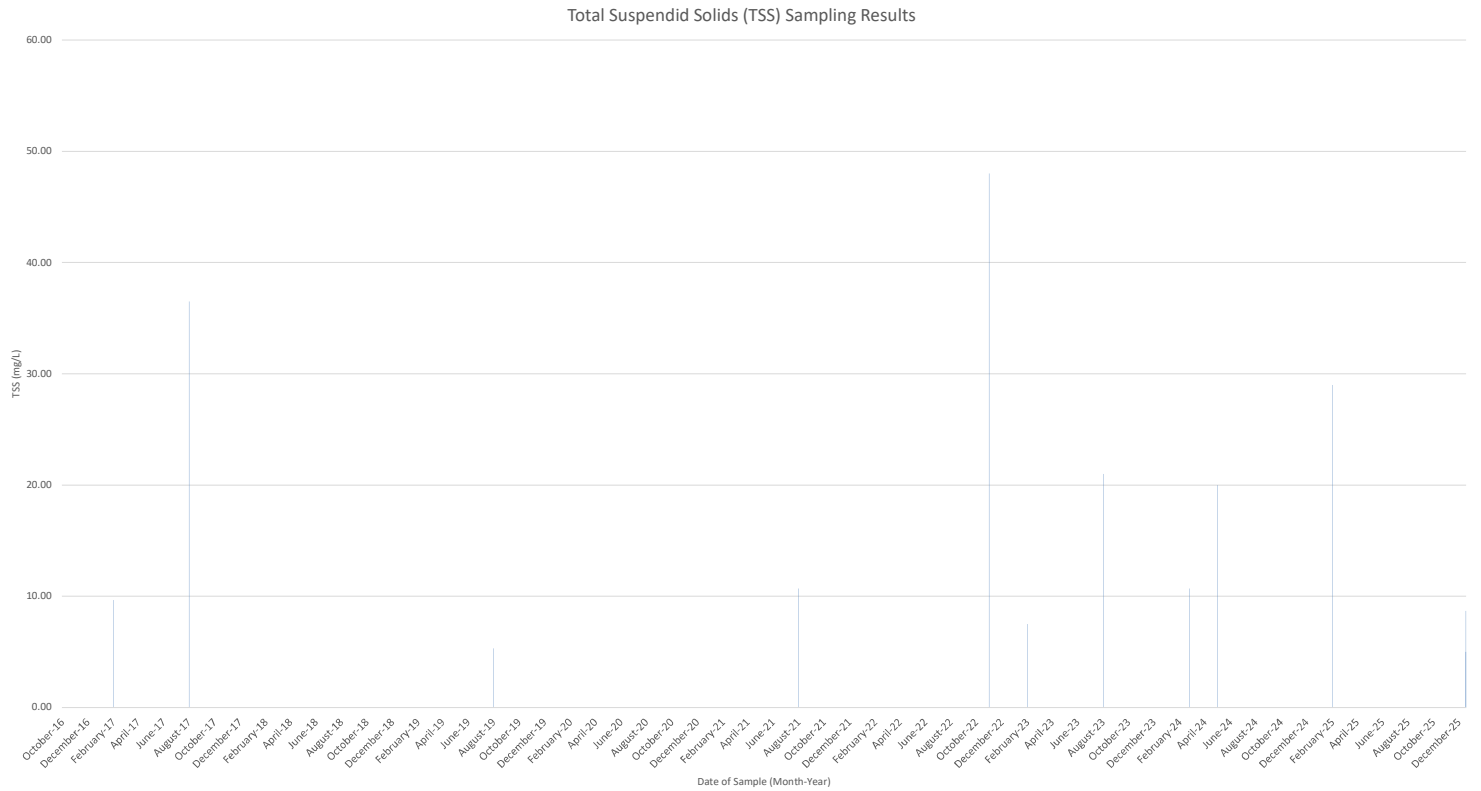


LEACHATE TOTAL SUSPENDED SOLIDS - VIKING PUMP FOUNDRY SAND LANDFILL

CEDAR FALLS, IOWA

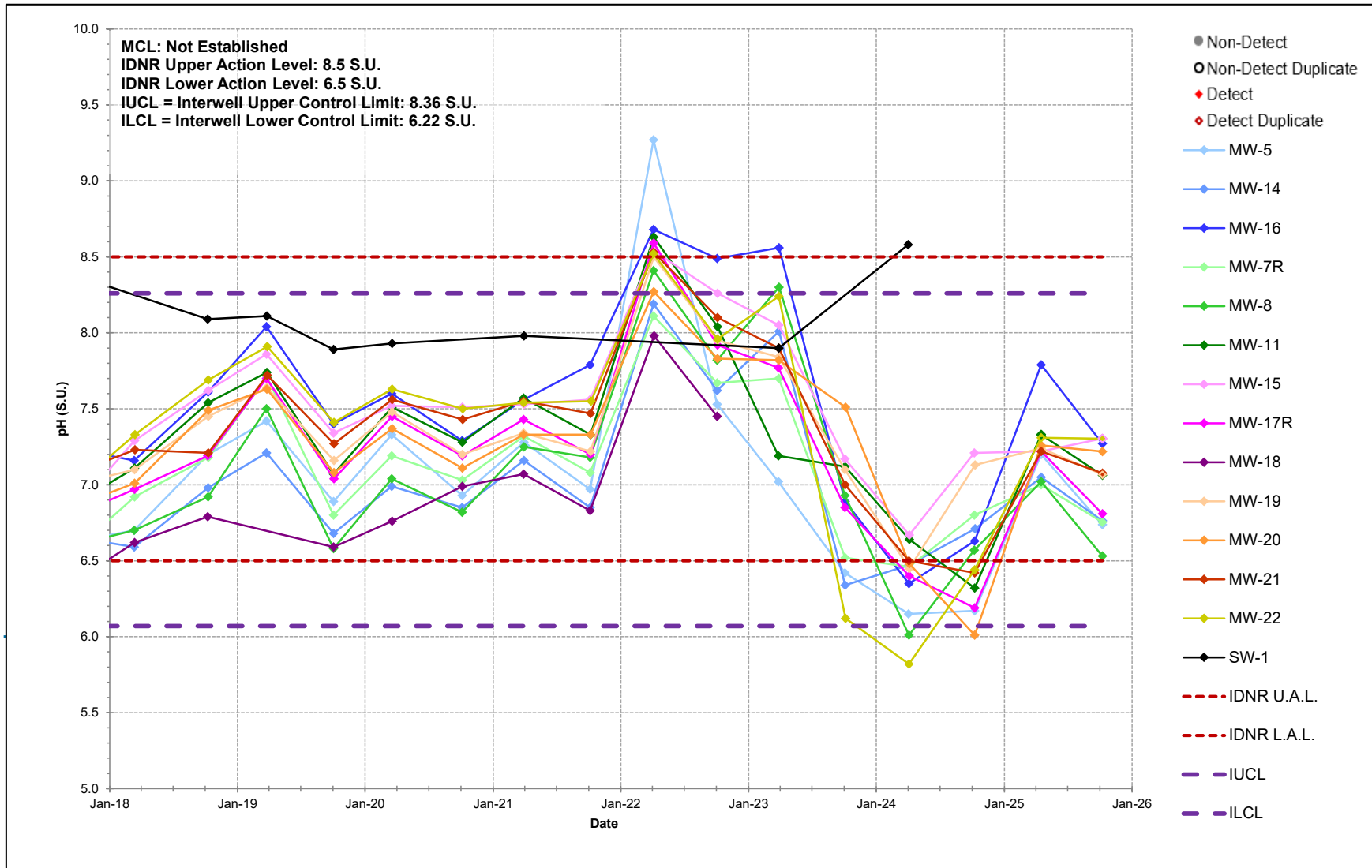
Submit bi-annually with BCR report to the City of Cedar Falls

MONTH-YR.	GRAB / COMPOSITE	DATE SAMPLED	DATE TESTED	TOTAL SUSPENDED SOLIDS (MG/L)
October-16	G	10/03/16	10/07/16	9.67
November-16	G	11/07/16	11/10/16	8.75
February-17	G	02/23/17	02/23/17	9.67
May-17	G	05/18/17	05/19/17	6.00
August-17	G	08/17/17	08/17/17	36.50
November-17	G	11/07/17	11/08/17	< 5.00
February-18	G	02/26/18	02/27/18	8.67
May-18	G	05/18/18	05/21/18	< 5.00
August-18	G	09/17/18	09/19/18	9.33
November-18	G	11/08/18	11/12/18	7.40
February-19	G	03/26/19	03/26/19	10.00
May-19	G	05/06/19	05/07/19	8.00
August-19	G	09/23/19	09/24/19	5.33
November-19	G	11/22/20	11/25/20	<5.00
February-20	G	03/11/20	03/12/20	21.30
May-20	G	05/13/20	05/14/20	42.00
August-20	G	09/02/20	09/03/20	9.33
November-20	G	11/02/20	11/02/20	<5.00
February-21	G	02/23/21	02/25/21	<5.00
May-21	G	05/03/21	05/04/21	<5.00
August-21	G	10/15/21	10/22/21	10.70
November-21	G	11/05/21	11/05/21	<5.00
February-22	G	02/08/22	02/08/22	<5.00
May-22	G	05/06/22	05/06/22	<5.00
August-22	G	08/04/22	08/05/22	<5.00
November-22	G	01/25/22	01/25/22	48.00
February-23	G	02/21/23	02/21/23	7.50
May-23	G	05/11/23	05/11/23	22.00
August-23	G	08/02/23	08/03/23	21.00
November-23	G	11/06/23	11/02/23	<5.00
February-24	G	02/21/24	02/22/24	10.70
May-24	G	05/29/24	05/30/24	20.00
August-24	G	08/28/24	08/29/24	18.00
January-25	G	01/27/25	01/28/25	10.00
February-25	G	02/24/25	02/25/25	29.00
March-25	24hr	03/20/25	03/20/25	<5.00
March-25	G	03/21/25	03/21/25	<5.00
April-25	G	04/29/25	05/01/25	<5.00
May-25	24hr	05/21/25	05/23/25	<5.00
June-25	G	06/19/25	06/20/25	6.33
August-25	G	08/28/25	08/29/25	<5.00
September-25	24hr	09/17/25	09/19/25	5.00
September-25	G	09/30/25	09/30/25	9.00
October-25	G	10/29/25	10/31/25	5.00
December-25	G	12/18/25	12/18/25	5.00
December-25	24hr	12/18/25	12/19/25	8.67



Appendix D

Aquifer Testing Calculations and Raw Data



VIKING PUMP
 FOUNDRY SAND LANDFILL
 CEDAR FALLS, IOWA

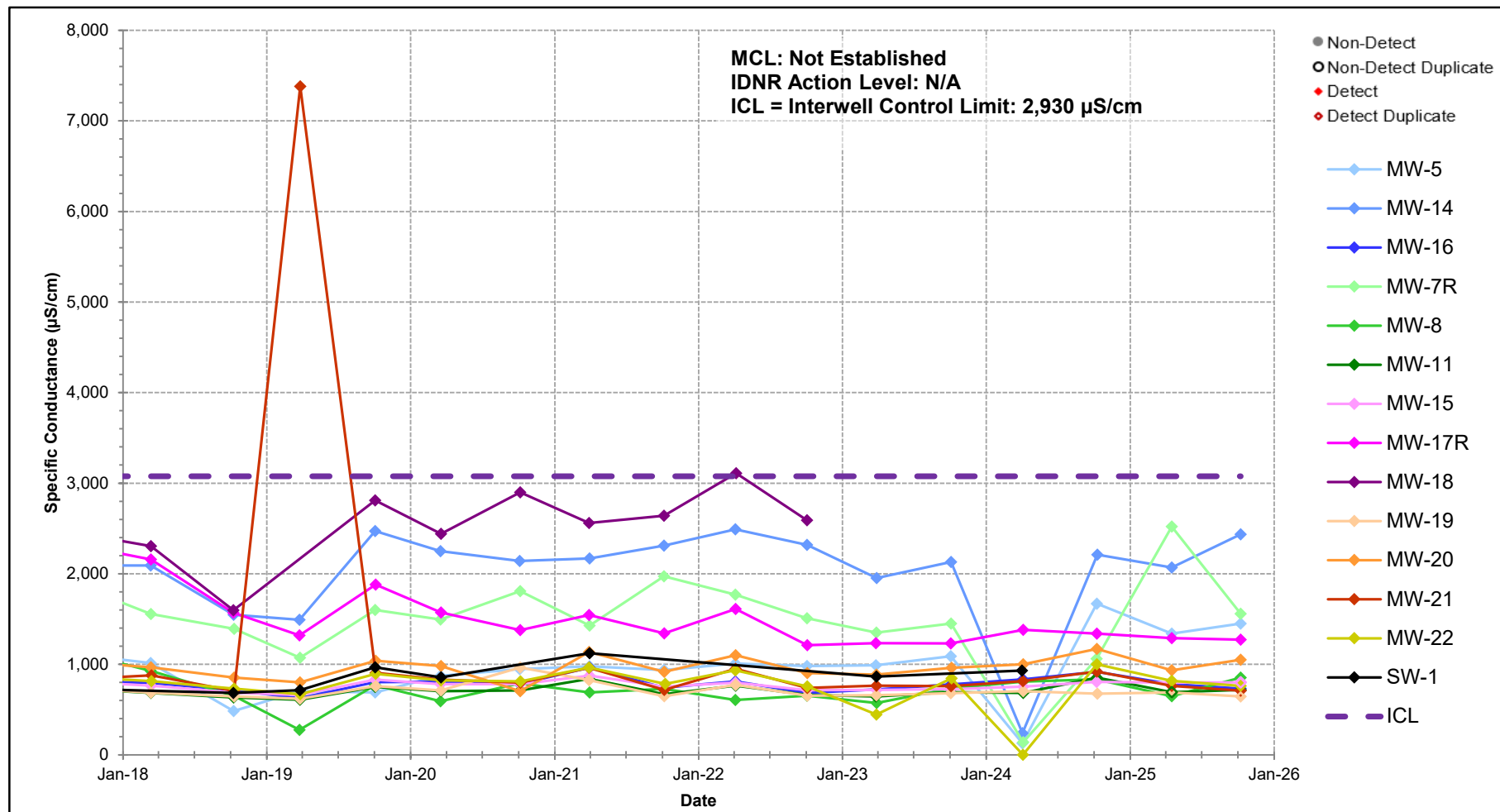
pH VS. TIME

Upgradient Wells: MW-5, MW-14, and MW-16

12666637

1/27/2026

FIGURE D-1



VIKING PUMP
FOUNDRY SAND LANDFILL
CEDAR FALLS, IOWA

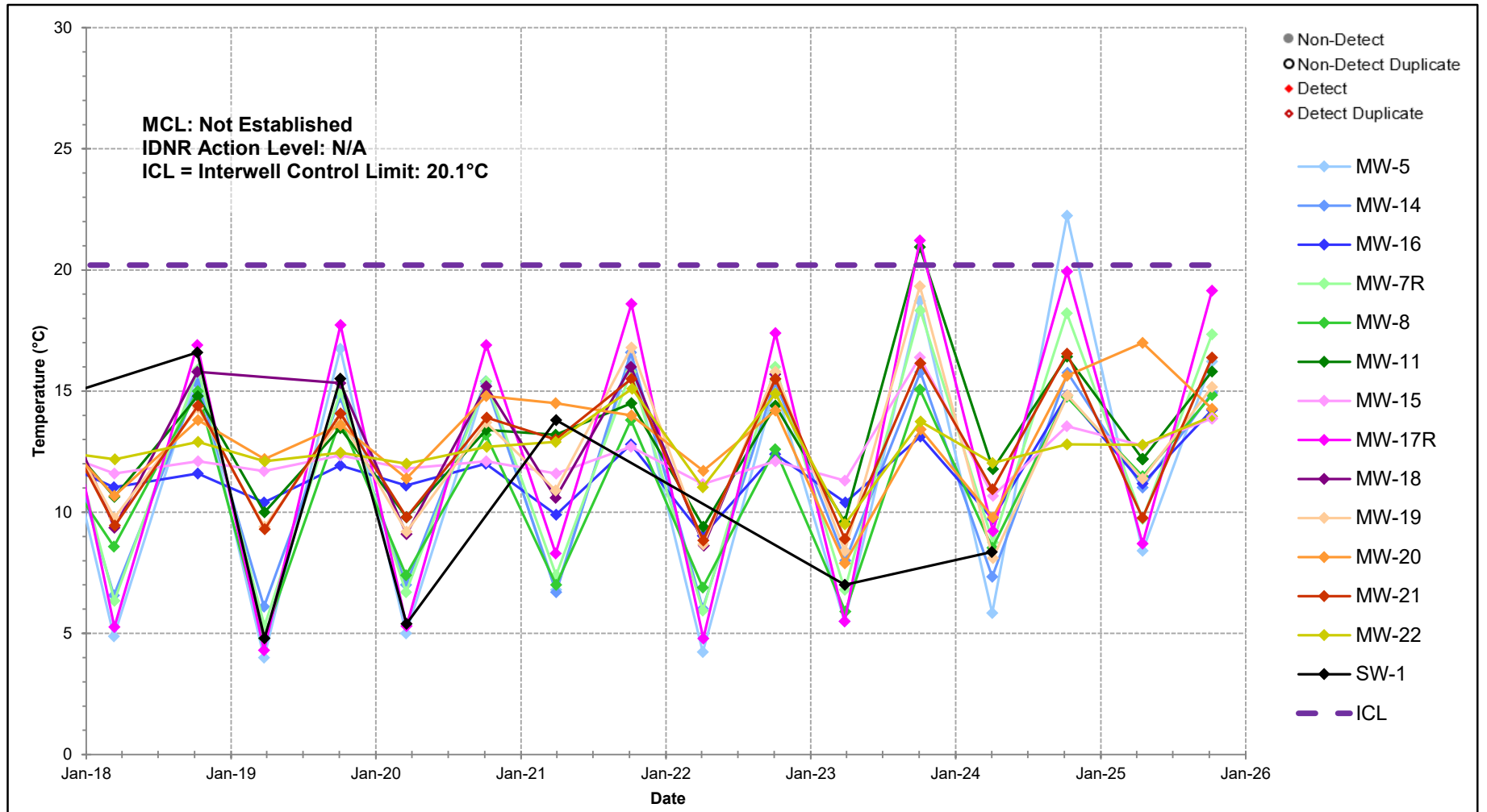
SPECIFIC CONDUCTANCE VS. TIME

Upgradient Wells: MW-5, MW-14, and MW-16

12666637

1/27/2026

FIGURE D-2



VIKING PUMP
 FOUNDRY SAND LANDFILL
 CEDAR FALLS, IOWA

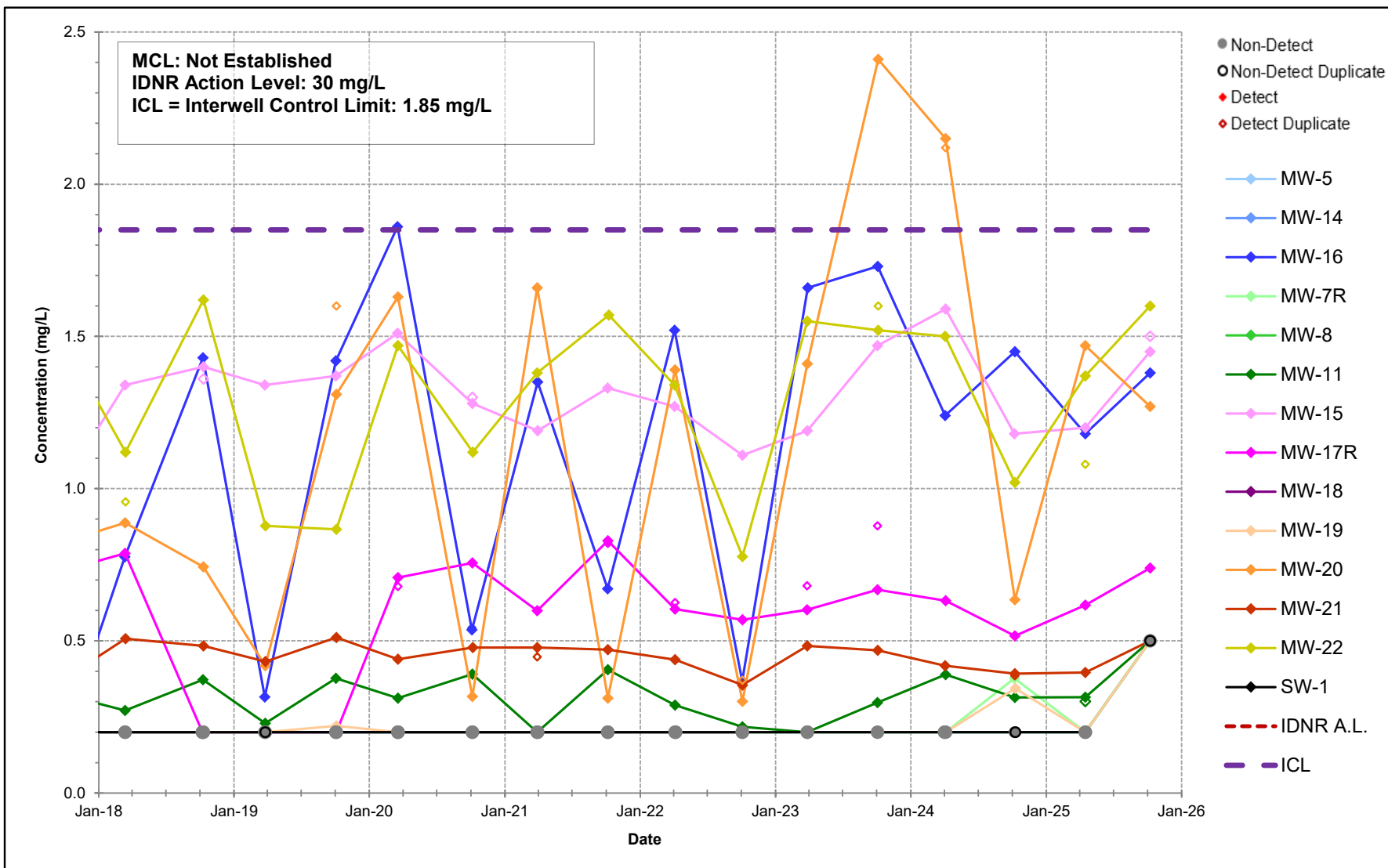
TEMPERATURE VS. TIME

Upgradient Wells: MW-5, MW-14, and MW-16

12666637

1/27/2026

FIGURE D-3

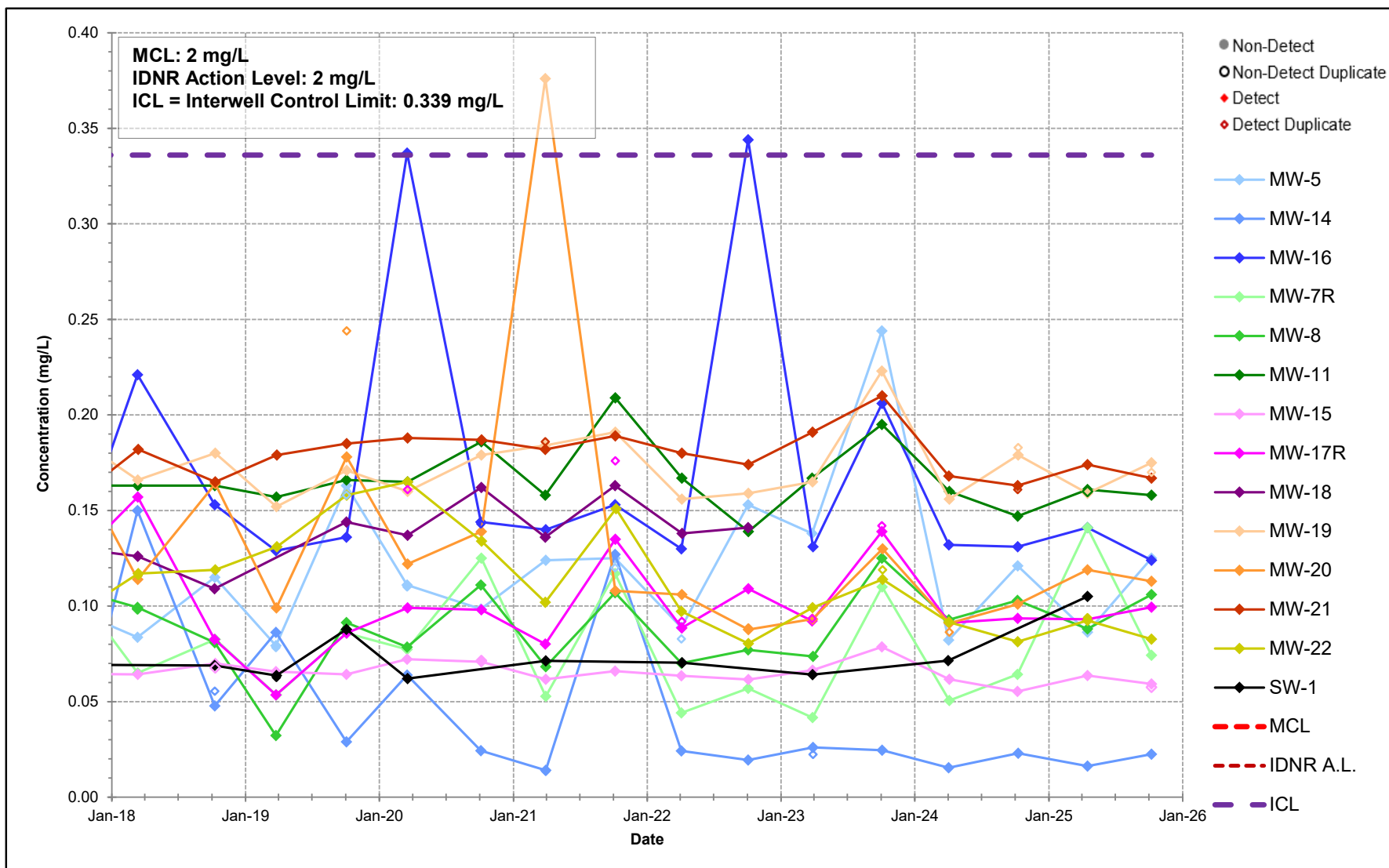


VIKING PUMP
 FOUNDRY SAND LANDFILL
 CEDAR FALLS, IOWA

AMMONIA (as N) CONCENTRATION VS. TIME
 Upgradient Wells: MW-5, MW-14, and MW-16

12666637
 1/27/2026

FIGURE D-4

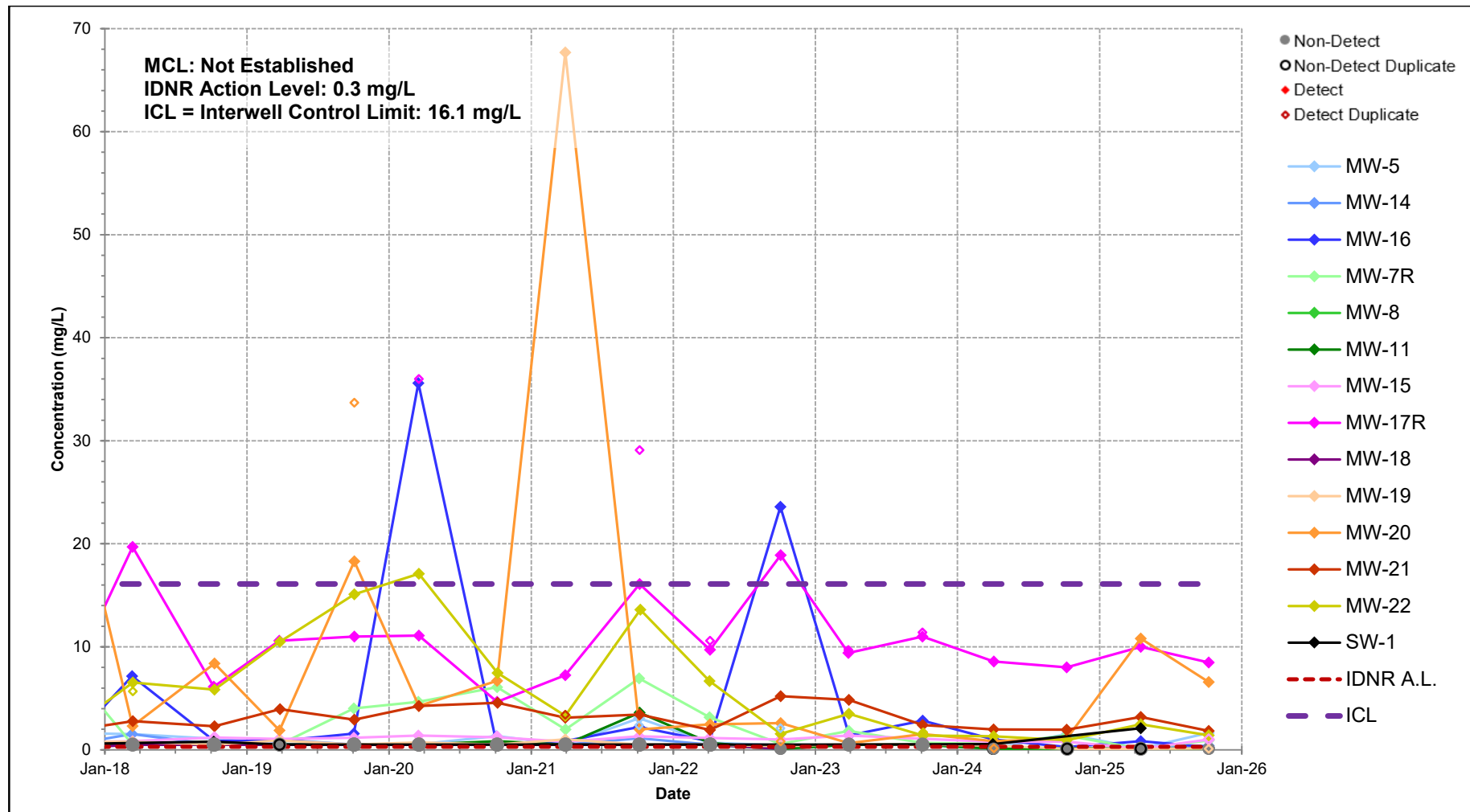


VIKING PUMP
 FOUNDRY SAND LANDFILL
 CEDAR FALLS, IOWA

BARIUM CONCENTRATION VS. TIME
 Upgradient Wells: MW-5, MW-14, and MW-16

12666637
 1/27/2026

FIGURE D-5



VIKING PUMP
 FOUNDRY SAND LANDFILL
 CEDAR FALLS, IOWA

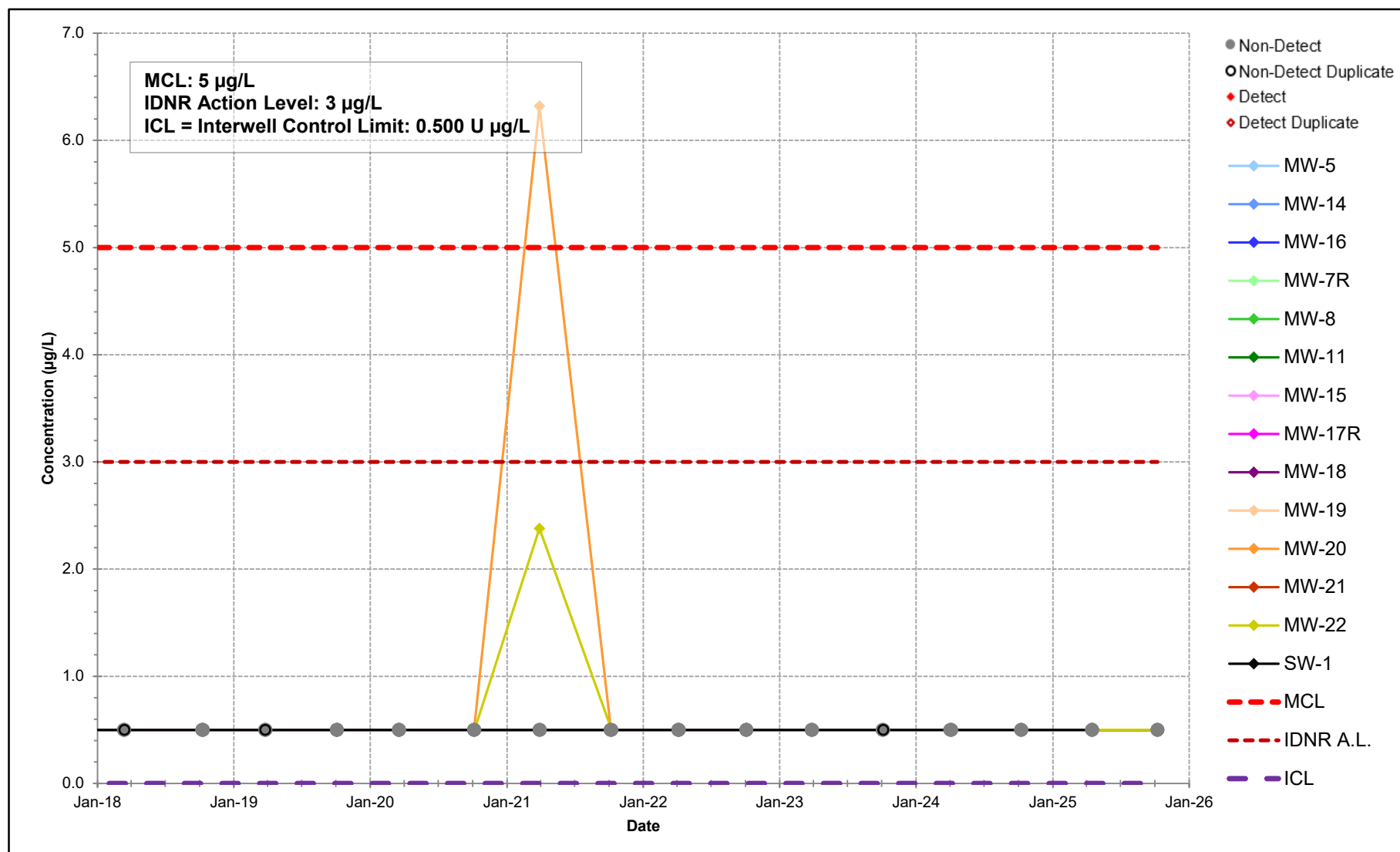
IRON CONCENTRATION VS. TIME

Upgradient Wells: MW-5, MW-14, and MW-16

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FIGURE D-6

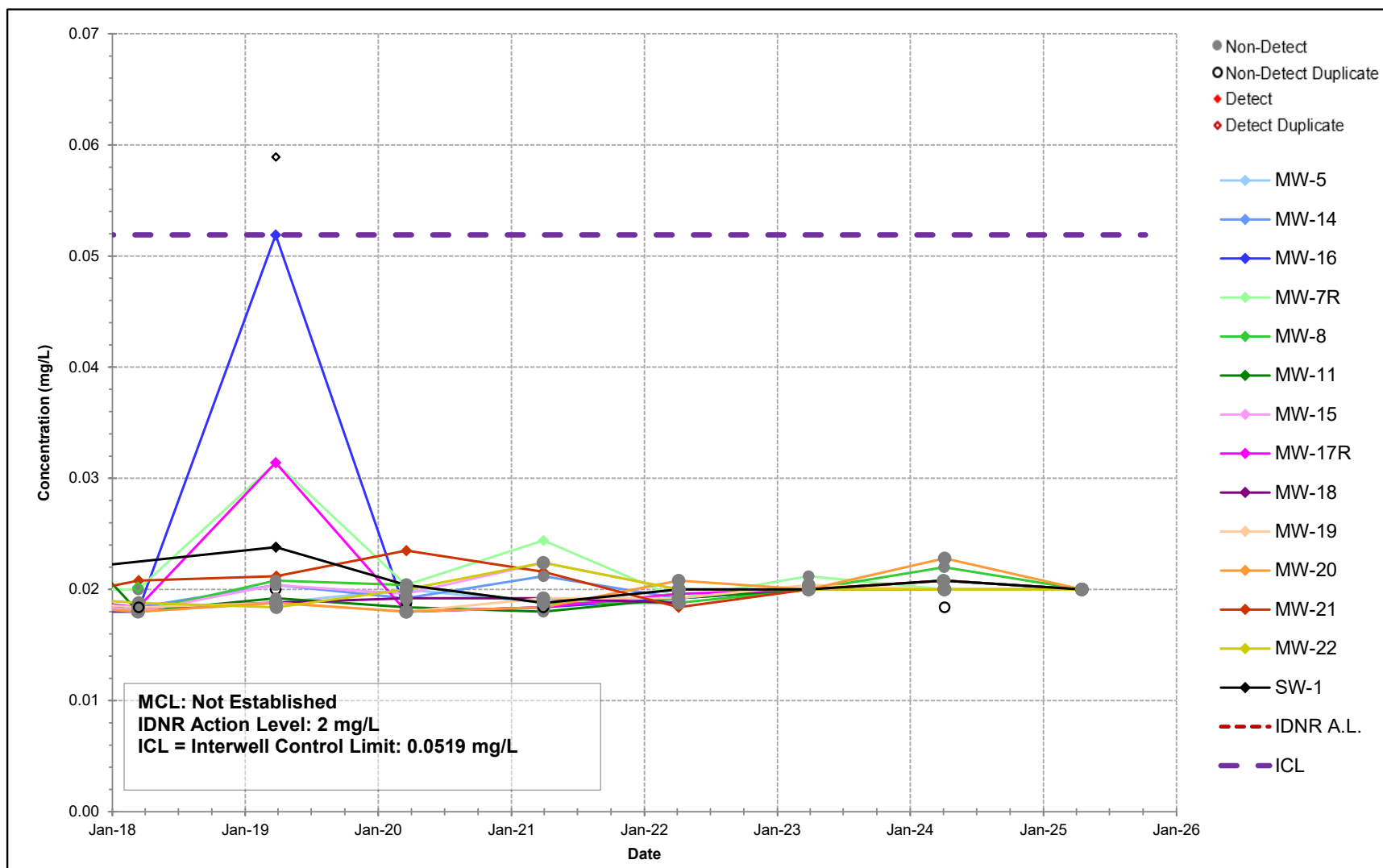


VIKING PUMP
 FOUNDRY SAND LANDFILL
 CEDAR FALLS, IOWA

BENZENE CONCENTRATION VS. TIME
 Upgradient Wells: MW-5, MW-14, and MW-16

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FIGURE D-7



VIKING PUMP
 FOUNDRY SAND LANDFILL
 CEDAR FALLS, IOWA

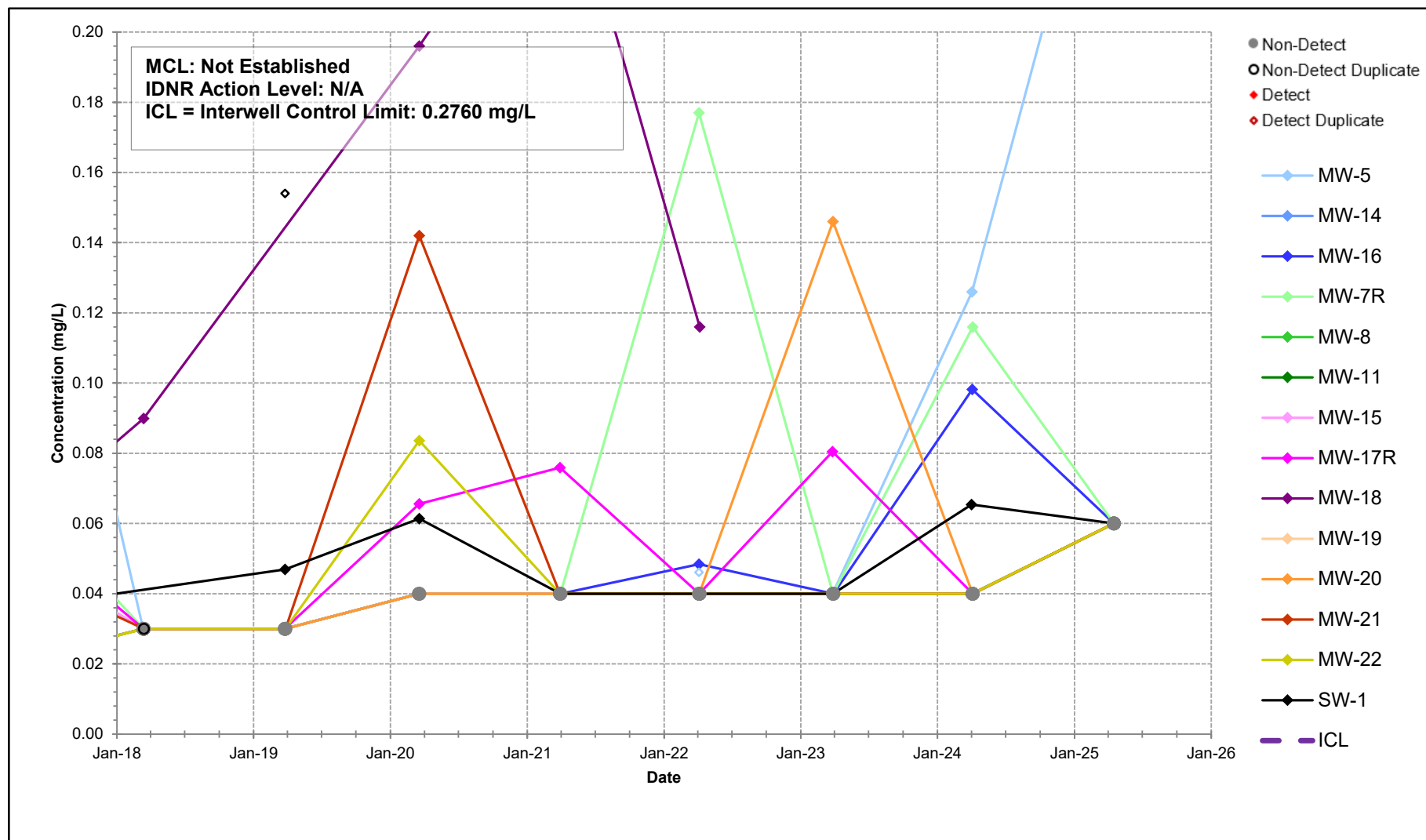
TOTAL PHENOLS CONCENTRATION VS. TIME

Upgradient Wells: MW-5, MW-14, and MW-16

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1/27/2026

FIGURE D-8

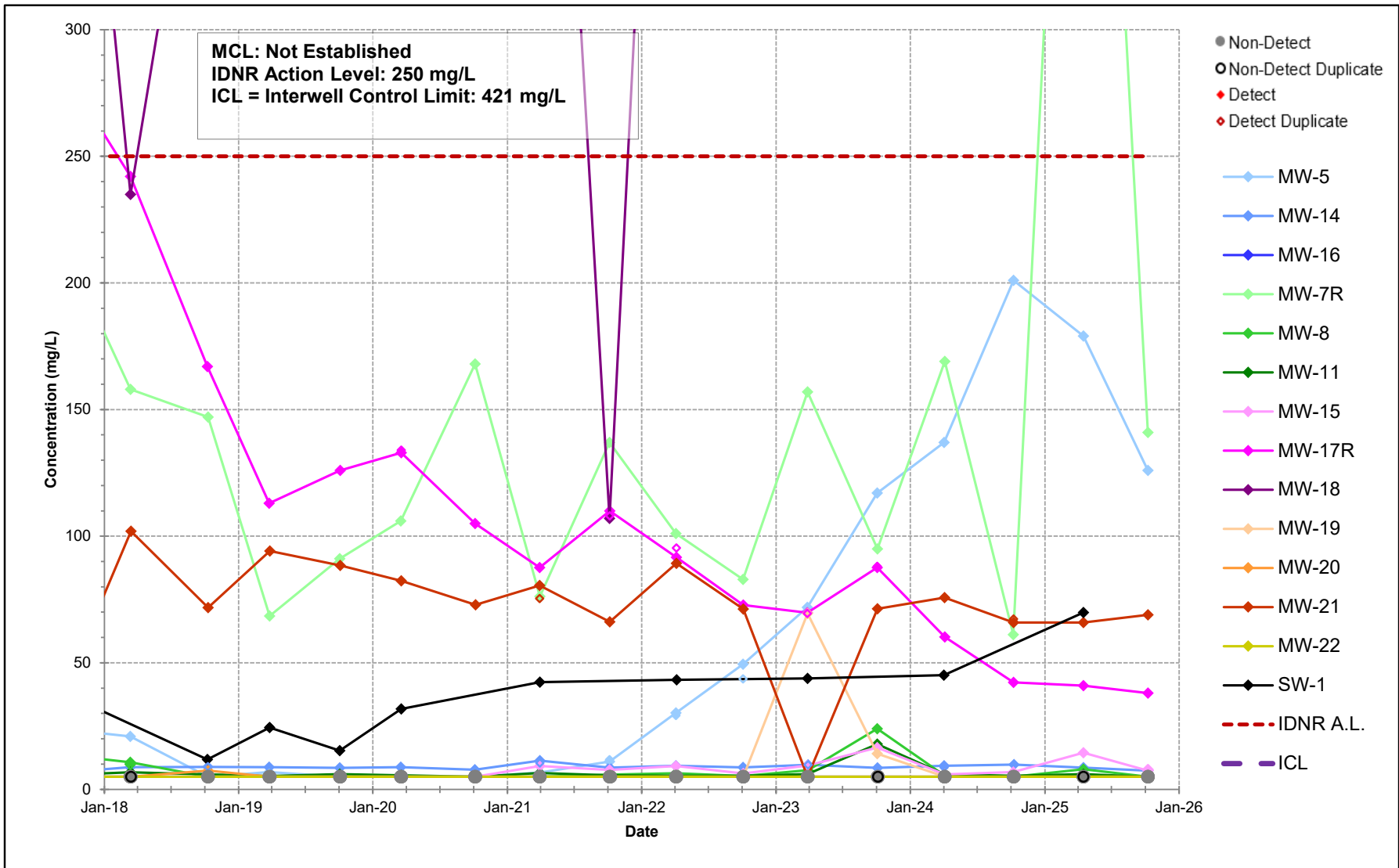


VIKING PUMP
 FOUNDRY SAND LANDFILL
 CEDAR FALLS, IOWA

TOX CONCENTRATION VS. TIME
 Upgradient Wells: MW-5, MW-14, and MW-16

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FIGURE D-9



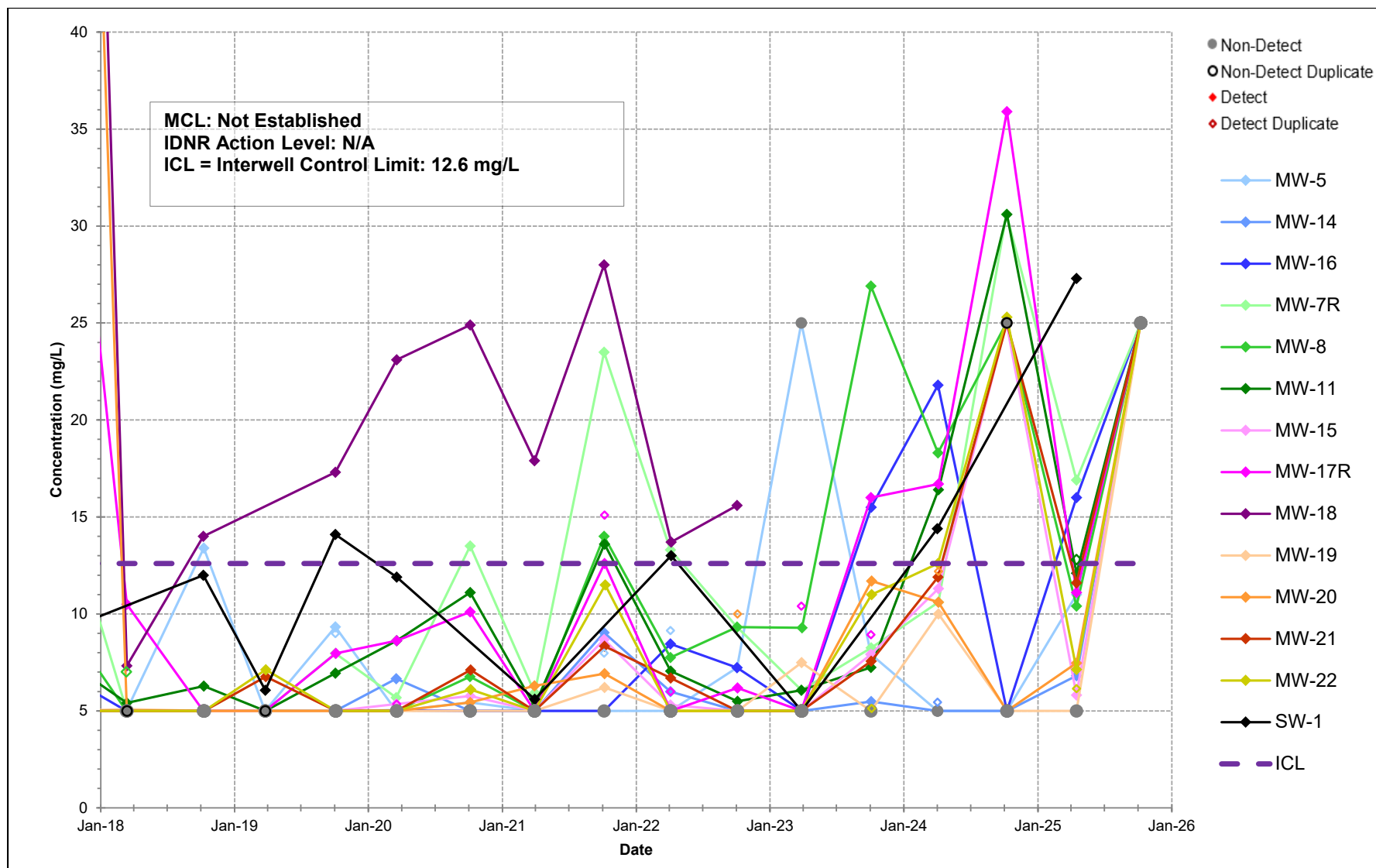
VIKING PUMP
 FOUNDRY SAND LANDFILL
 CEDAR FALLS, IOWA

CHLORIDE CONCENTRATION VS. TIME
 Upgradient Wells: MW-5, MW-14, and MW-16

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FIGURE D-10



VIKING PUMP
 FOUNDRY SAND LANDFILL
 CEDAR FALLS, IOWA

COD CONCENTRATION VS. TIME
 Upgradient Wells: MW-5, MW-14, and MW-16

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FIGURE D-11

Appendix E

Historical Groundwater and Surface Water Quality Figures

Table E.1
Upgradient Well Data Used for Inter-Well Control Limit Calculations
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Group	Well Name	Sample Date	Specific Conductance (µS/cm)				pH, field (s.u.)		Temperature, field (°C)				Barium, total or dissolved (mg/L)				Iron, total or dissolved (mg/L)				Benzene (µg/L)			
			Lab	Value	Gamma	Ln	Field	Value	Field	Value	Ln	Field	Value	D Value	Gamma	Ln	Lab	Value	D Value	Ln	Lab	Value	D Value	Ln
Upgradient	MW-5	7/1/1995	640.0	640	8.62	6.46	6.70	6.7	23.00	23	3.135494	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	8/1/1995	670.0	670	8.75	6.51	7.22	7.22	20.00	20	2.995732	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	11/1/1995	1110.0	1110	10.35	7.01	6.26	6.26	10.00	10	2.302585	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	2/1/1996	492.0	492	7.89	6.20	7.56	7.56	6.00	6	1.791759	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	5/1/1996	580.0	580	8.34	6.36	7.44	7.44	11.10	11.1	2.406945	-	-	-	-	-	-	-	-	-	-	-	-	-
Upgradient	MW-5	11/1/1996	608.0	608	8.47	6.41	7.48	7.48	13.00	13	2.564949	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	4/1/1997	645.0	645	8.64	6.47	8.33	8.33	15.00	15	2.70805	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	11/1/1997	675.0	675	8.77	6.51	7.65	7.65	6.90	6.9	1.931521	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	5/1/1998	536.0	536	8.12	6.28	6.21	6.21	11.10	11.1	2.406945	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	11/1/1998	617.0	617	8.51	6.42	6.96	6.96	11.20	11.2	2.415914	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	5/1/1999	710.0	710	8.92	6.57	9.93	9.93	9.40	9.4	2.24071	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	11/1/1999	690.0	690	8.84	6.54	7.02	7.02	14.40	14.4	2.667228	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	5/1/2000	644.0	644	8.64	6.47	7.13	7.13	11.60	11.6	2.451005	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	12/1/2000	710.0	710	8.92	6.57	4.85	4.85	5.00	5	1.609438	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	6/1/2001	622.0	622	8.54	6.43	8.09	8.09	14.20	14.2	2.653242	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	11/1/2001	683.4	683.4	8.81	6.53	7.24	7.24	10.10	10.1	2.312535	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	5/2/2002	636.0	636	8.60	6.46	7.50	7.5	13.90	13.9	2.631889	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	11/2/2002	689.0	689	8.83	6.54	7.49	7.49	10.20	10.2	2.322388	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	5/3/2003	502.0	502	7.95	6.22	7.76	7.76	18.60	18.6	2.923162	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	5/1/2004	306.0	306	6.74	5.72	7.66	7.66	18.90	18.9	2.939162	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	5/5/2005	552.0	552	8.20	6.31	7.98	7.98	12.50	12.5	2.525729	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	5/6/2006	989.0	989	9.96	6.90	7.42	7.42	13.10	13.1	2.572612	-	-	-	-	-	1.51	1.51	1	0.41211	-	-	-	-
Upgradient	MW-5	4/7/2007	532.0	532	8.10	6.28	8.32	8.32	12.70	12.7	2.541602	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	10/7/2007	645.0	645	8.64	6.47	7.75	7.75	15.50	15.5	2.74084	-	-	-	-	-	0.31	0.31	1	-1.17118	-	-	-	-
Upgradient	MW-5	4/1/2008	535.0	535	8.12	6.28	7.95	7.95	12.40	12.4	2.517696	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	10/1/2008	993.0	993	9.98	6.90	7.08	7.08	12.10	12.1	2.493205	-	-	-	-	-	1.13	1.13	1	0.122218	-	-	-	-
Upgradient	MW-5	10/29/2009	984.0	984	9.95	6.89	7.06	7.06	10.20	10.2	2.322388	-	-	-	-	-	0.100 U	0.1	0	-2.30259	-	-	-	-
Upgradient	MW-5	3/30/2010	797.0	797	9.27	6.68	7.18	7.18	6.00	6	1.791759	0.1460	0.146	1	0.526564	-1.92415	0.99	0.99	1	0.01005	1.00 U	1	0	0
Upgradient	MW-5	4/22/2010	724.0	724	8.98	6.58	6.96	6.96	9.70	9.7	2.272126	0.1550	0.155	1	0.537169	-1.86433	1.03	1.03	1	0.029559	1.00 U	1	0	0
Upgradient	MW-5	10/16/2010	984.0	984	9.95	6.89	6.87	6.87	12.90	12.9	2.557227	0.1690	0.169	1	0.552877	-1.77786	1.15	1.15	1	0.139762	1.00 U	1	0	0
Upgradient	MW-5	4/28/2011	678.0	678	8.79	6.52	7.03	7.03	7.50	7.5	2.014903	0.1370	0.137	1	0.515514	-1.98777	0.28	0.28	1	-1.27297	1.00 U	1	0	0
Upgradient	MW-5	10/18/2011	816.0	816	9.34	6.70	7.04	7.04	13.80	13.8	2.624669	0.1280	0.128	1	0.503968	-2.05573	1.61	1.61	1	0.476234	1.00 U	1	0	0
Upgradient	MW-5	4/25/2012	813.0	813	9.33	6.70	7.11	7.11	11.80	11.8	2.4681	0.1620	0.162	1	0.545136	-1.82016	0.80	0.8	1	-0.22314	1.00 U	1	0	0
Upgradient	MW-5	4/16/2013	539.0	539	8.14	6.29	6.61	6.61	6.90	6.9	1.931521	0.1320	0.132	1	0.509164	-2.02495	0.100 U	0.1	0	-2.30259	0.500 U	0.5	0	-0.69315
Upgradient	MW-5	4/14/201																						

Table E.1
Upgradient Well Data Used for Inter-Well Control Limit Calculations
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Well Group	Well Name	Sample Date	Specific Conductance (µS/cm)				pH, field (s.u.)		Temperature, field (°C)			Barium, total or dissolved (mg/L)					Iron, total or dissolved (mg/L)				Benzene (µg/L)			
			Lab	Value	Gamma	Ln	Field	Value	Field	Value	Ln	Lab	Value	D_Value	Gamma	Ln	Lab	Value	D_Value	Ln	Lab	Value	D_Value	Ln
Upgradient	MW-16	4/4/2022	811.0	811	9.33	6.70	8.68	8.68	9.03	9.03	2.200552	0.1300	0.13	1	0.50658	-2.04022	0.852	0.852	1	-0.16017	0.500 U	0.5	0	-0.69315
Upgradient	MW-16	10/3/2022	682.7	682.7	8.81	6.53	8.49	8.49	12.40	12.4	2.517696	0.3440	0.344	1	0.70068	-1.06711	23.6	23.6	1	3.161247	0.500 U	0.5	0	-0.69315
Upgradient	MW-16	3/29/2023	722.0	722	8.97	6.58	8.56	8.56	8.56	8.56	2.1471	0.1310	0.131	1	0.507875	-2.03256	1.42	1.42	1	0.350657	0.500 U	0.5	0	-0.69315
Upgradient	MW-16	10/4/2023	779.0	779	9.20	6.66	6.89	6.89	13.13	13.13	2.5749	0.2060	0.206	1	0.590594	-1.57988	2.83	2.83	1	1.040277	0.500 U	0.5	0	-0.69315
Upgradient	MW-16	4/3/2024	833	833	9.41	6.73	6.35	6.35	9.73	9.73	2.275214	0.132	0.132	1	0.509164	-2.02495	1.02	1.02	1	0.019803	0.500 U	0.5	0	-0.69315
Upgradient	MW-16	10/8/2024	916	916	9.71	6.82	6.63	6.63	14.83	14.83	2.696652	0.131	0.131	1	0.507875	-2.03256	0.262	0.262	1	-1.33941	0.500 U	0.5	0	-0.69315
Upgradient	MW-16	4/16/2025	782	782	9.21	6.66	7.79	7.79	11.18	11.18	2.414126	0.141	0.141	1	0.520483	-1.959	0.850	0.85	1	-0.16252	0.500 U	0.5	0	-0.69315
Upgradient	MW-16	10/8/2025	732.2	732.2	9.01	6.60	7.271	7.271	14.22	14.22	2.654649	0.124	0.124	1	0.498663	-2.08747	0.281	0.281	1	-1.2694	0.500 U	0.5	0	-0.69315

Notes:

Lab = Originally formatted results from laboratory
Field = Originally formatted result recorded in the field
Value = Numeric value used in the statistical calculation
D_Value = Code used by EPA's ProUCL to identify a detect (1) or a non-detect (0)

Notes (continued):

Gamma = Gamma-transformed value (cube root, applying the Wilson-Hilferty approximation)
Ln = Natural logarithm-transformed value
0.125/0.120 = Field duplicate results; averaged prior to statistical calculations

Table E.1
Upgradient Well Data Used for Inter-Well Control Limit Calculations
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Group	Well Name	Sample Date	Ammonia-N (mg/L)				Chemical oxygen demand (COD) (mg/L)				Phenolics, total (mg/L)				Sodium chloride, soluble salts (mg/L)				Total organic halides (TOX) (mg/L)			
			Lab	Value	D Value	Ln	Lab	Value	D Value	Ln	Lab	Value	D Value	Ln	Lab	Value	D Value	Ln	Lab	Value	D Value	Ln
Upgradient	MW-5	7/1/1995	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0200 U	0.02	0	-3.91202	6.7	6.7	1	1.902108	-	-	-	-
Upgradient	MW-5	8/1/1995	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0200 U	0.02	0	-3.91202	5.00 U	5	0	1.609438	-	-	-	-
Upgradient	MW-5	11/1/1995	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0200 U	0.02	0	-3.91202	5.8	5.8	1	1.757858	0.0100 U	0.01	0	-4.60517
Upgradient	MW-5	2/1/1996	0.200 U	0.2	0	-1.60944	12.0	12	1	2.484907	0.0200 U	0.02	0	-3.91202	7.7	7.7	1	2.04122	-	-	-	-
Upgradient	MW-5	5/1/1996	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	-	-	-	-	5.00 U	5	0	1.609438	-	-	-	-
Upgradient	MW-5	11/1/1996	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0200 U	0.02	0	-3.91202	6.3	6.3	1	1.84055	0.0100 U	0.01	0	-4.60517
Upgradient	MW-5	4/1/1997	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	-	-	-	-	5.00 U	5	0	1.609438	-	-	-	-
Upgradient	MW-5	11/1/1997	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0200 U	0.02	0	-3.91202	5.9	5.9	1	1.774952	0.0100 U	0.01	0	-4.60517
Upgradient	MW-5	5/1/1998	0.200 U	0.2	0	-1.60944	7.3	7.3	1	1.987874	-	-	-	-	6.0	6	1	1.791759	-	-	-	-
Upgradient	MW-5	11/1/1998	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0200 U	0.02	0	-3.91202	8.5	8.5	1	2.140066	0.0100 U	0.01	0	-4.60517
Upgradient	MW-5	5/1/1999	0.200 U	0.2	0	-1.60944	24.0	24	1	3.178054	-	-	-	-	6.2	6.2	1	1.824549	-	-	-	-
Upgradient	MW-5	11/1/1999	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0200 U	0.02	0	-3.91202	5.1	5.1	1	1.629241	0.0100 U	0.01	0	-4.60517
Upgradient	MW-5	5/1/2000	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	-	-	-	-	5.2	5.2	1	1.648659	-	-	-	-
Upgradient	MW-5	12/1/2000	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0200 U	0.02	0	-3.91202	5.9	5.9	1	1.774952	0.0100 U	0.01	0	-4.60517
Upgradient	MW-5	6/1/2001	0.200 U	0.2	0	-1.60944	7.4	7.4	1	2.00148	-	-	-	-	7.4	7.4	1	2.00148	-	-	-	-
Upgradient	MW-5	11/1/2001	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0200 U	0.02	0	-3.91202	5.00 U	5	0	1.609438	0.0100 U	0.01	0	-4.60517
Upgradient	MW-5	5/2/2002	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	-	-	-	-	11.8	11.8	1	2.4681	-	-	-	-
Upgradient	MW-5	11/2/2002	0.200 U	0.2	0	-1.60944	8.3	8.3	1	2.116256	0.0200 U	0.02	0	-3.91202	6.1	6.1	1	1.808289	0.0100 U	0.01	0	-4.60517
Upgradient	MW-5	5/3/2003	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	-	-	-	-	6.5	6.5	1	1.871802	-	-	-	-
Upgradient	MW-5	5/1/2004	0.200 U	0.2	0	-1.60944	10.0	10	1	2.302585	-	-	-	-	5.1	5.1	1	1.629241	-	-	-	-
Upgradient	MW-5	5/5/2005	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	-	-	-	-	12.0	12	1	2.484907	-	-	-	-
Upgradient	MW-5	5/6/2006	0.200 U	0.2	0	-1.60944	18.5	18.5	1	2.917771	-	-	-	-	27.0	27	1	3.295837	-	-	-	-
Upgradient	MW-5	4/7/2007	0.200 U	0.2	0	-1.60944	5.2	5.2	1	1.648659	-	-	-	-	33.8	33.8	1	3.520461	-	-	-	-
Upgradient	MW-5	10/7/2007	0.200 U	0.2	0	-1.60944	9.3	9.3	1	2.230014	0.0180 U	0.018	0	-4.01738	10.2	10.2	1	2.322388	0.0100 U	0.01	0	-4.60517
Upgradient	MW-5	4/1/2008	0.200 U	0.2	0	-1.60944	12.6	12.6	1	2.533697	-	-	-	-	11.9	11.9	1	2.476538	-	-	-	-
Upgradient	MW-5	10/1/2008	0.200 U	0.2	0	-1.60944	9.3	9.3	1	2.230014	0.0180 U	0.018	0	-4.01738	26.1	26.1	1	3.261935	0.0100 U	0.01	0	-4.60517
Upgradient	MW-5	10/29/2009	0.200 U	0.2	0	-1.60944	5.6	5.6	1	1.722767	0.0180 U	0.018	0	-4.01738	12.1	12.1	1	2.493205	0.0232	0.0232	1	-3.7636
Upgradient	MW-5	3/30/2010	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0200 U	0.02	0	-3.91202	8.5	8.5	1	2.140066	0.0100 U	0.01	0	-4.60517
Upgradient	MW-5	4/22/2010	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0180 U	0.018	0	-4.01738	10.6	10.6	1	2.360854	0.0138	0.0138	1	-4.28309
Upgradient	MW-5	10/16/2010	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0200 U	0.02	0	-3.91202	6.8	6.8	1	1.916923	0.0230	0.023	1	-3.77226
Upgradient	MW-5	4/28/2011	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0200 U	0.02	0	-3.91202	5.5	5.5	1	1.704748	0.0114	0.0114	1	-4.47414
Upgradient	MW-5	10/18/2011	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0200 U	0.02	0	-3.91202	13.2	13.2	1	2.580217	0.0100 U	0.01	0	-4.60517
Upgradient	MW-5	4/25/2012	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0200 U	0.02	0	-3.91202	5.6	5.6	1	1.722767	0.0144	0.0144	1	-2.4053
Upgradient	MW-5	4/16/2013	0.200 U	0.2	0	-1.60944	7.9	7.9	1	2.066863	0.0200 U	0.02	0	-3.91202	5.00 U	5	0	1.609438	0.0300 U	0.03	0	-3.50656
Upgradient	MW-5	4/14/2014	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0100 U	0.01	0	-4.60517	24.4	24.4	1	3.194583	0.0			

Table E.1
Upgradient Well Data Used for Inter-Well Control Limit Calculations
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

Well Group	Well Name	Sample Date	Ammonia-N (mg/L)				Chemical oxygen demand (COD) (mg/L)				Phenolics, total (mg/L)				Sodium chloride, soluble salts (mg/L)				Total organic halides (TOX) (mg/L)			
			Lab	Value	D_Value	Ln	Lab	Value	D_Value	Ln	Lab	Value	D_Value	Ln	Lab	Value	D_Value	Ln	Lab	Value	D_Value	Ln
Upgradient	MW-16	4/4/2022	1.520	1.52	1	0.41871	8.45	8.45	1	2.134166	0.0192 U	0.0192	0	-3.95284	5.00 U	5	0	1.609438	0.0484	0.0484	1	-3.02826
Upgradient	MW-16	10/3/2022	0.368	0.368	1	-0.99967	7.23	7.23	1	1.978239	-	-	-	-	5.00 U	5	0	1.609438	-	-	-	-
Upgradient	MW-16	3/29/2023	1.660	1.66	1	0.506818	5.00 U	5	0	1.609438	0.200 U	0.2	0	-1.60944	5.00 U	5	0	1.609438	0.0400 U	0.04	0	-3.21888
Upgradient	MW-16	10/4/2023	1.760	1.76	1	0.565314	15.5	15.5	1	2.74084	-	-	-	-	5.00 U	5	0	1.609438	-	-	-	-
Upgradient	MW-16	4/3/2024	1.24	1.24	1	0.215111	21.8	21.8	1	3.08191	0.0200 U	0.02	0	-3.91202	5.00 U	5	0	1.609438	0.0982	0.0928	1	-2.37731
Upgradient	MW-16	10/8/2024	1.45	1.45	1	0.371564	5.00 U	5	0	1.609438	-	-	-	-	5.00 U	5	0	1.609438	-	-	-	-
Upgradient	MW-16	4/16/2025	1.18 J-	1.18	1	0.165514	16.0	16	1	2.772589	0.0200 U	0.02	0	-3.91202	5.00 U	5	0	1.609438	-	-	-	-
Upgradient	MW-16	10/8/2025	1.38 J-	1.38	1	0.322083	25.0 U	25	0	3.218876	-	-	-	-	5.00 U	5	0	1.609438	-	-	-	-

Notes:

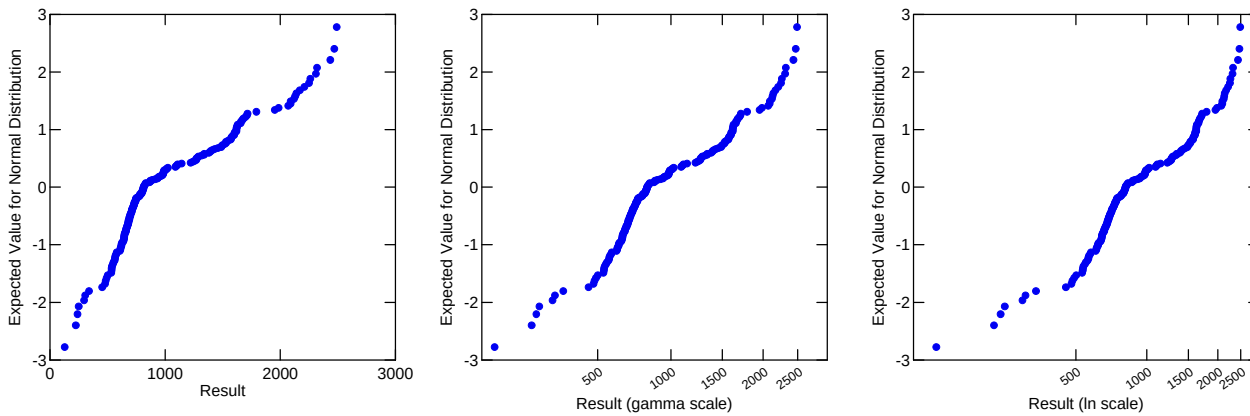
Lab = Originally formatted results from laboratory
Field = Originally formatted result recorded in the field
Value = Numeric value used in the statistical calculation
D_Value = Code used by EPA's ProUCL to identify a detect (1) or a non-detect (0)

Notes (continued):

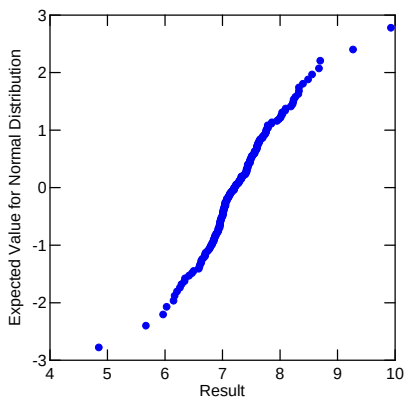
Gamma = Gamma-transformed value (cube root, applying the Wilson-Hilferty approximation)
Ln = Natural logarithm-transformed value
0.125/0.120 = Field duplicate results; averaged prior to statistical calculations

12666637-RPT-01-Appendix-E.2 (PPlots by Analyte)

Conductance ($\mu\text{S}/\text{cm}$) in Upgradient Groundwater (MW-5, MW-14, MW-16)

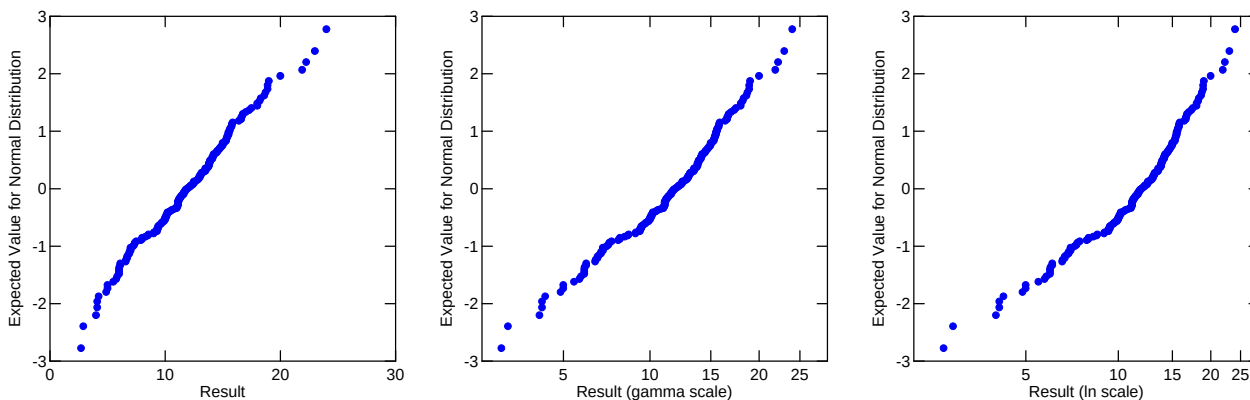


pH, field (s.u.) in Upgradient Groundwater (MW-5, MW-14, MW-16)



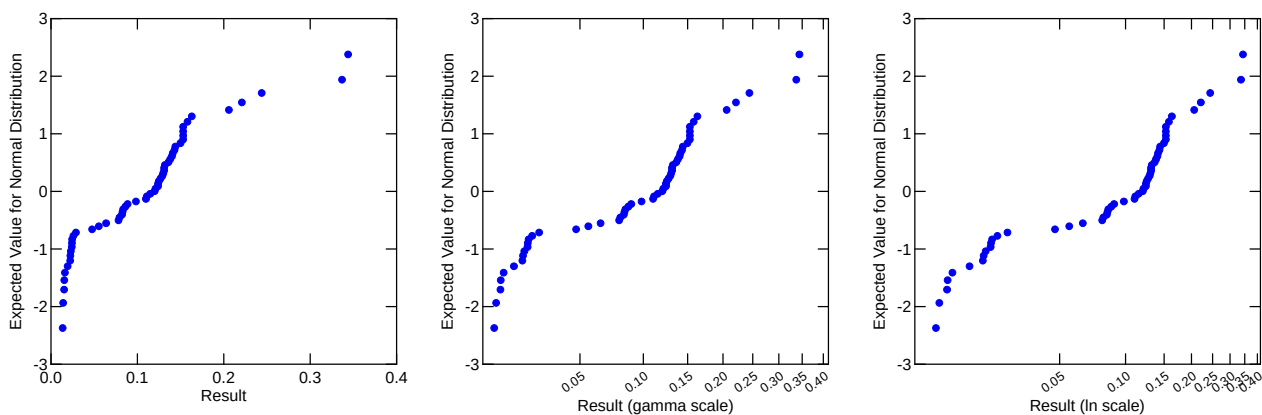
Note: pH is already a log-based measurement (negative log of hydronium ion)

Temperature ($^{\circ}\text{C}$) in Upgradient Groundwater (MW-5, MW-14, MW-16)

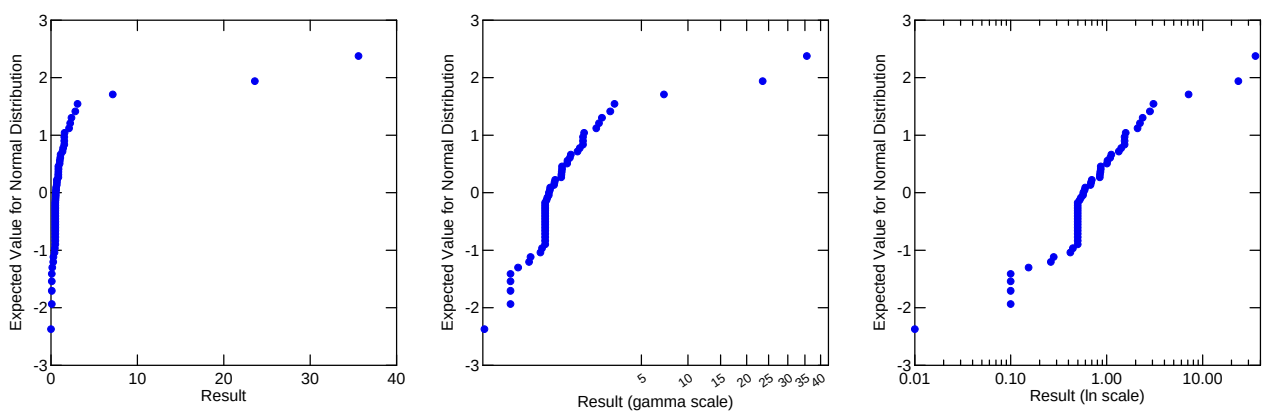


12666637-RPT-01-Appendix-E.2 (PPlots by Analyte)

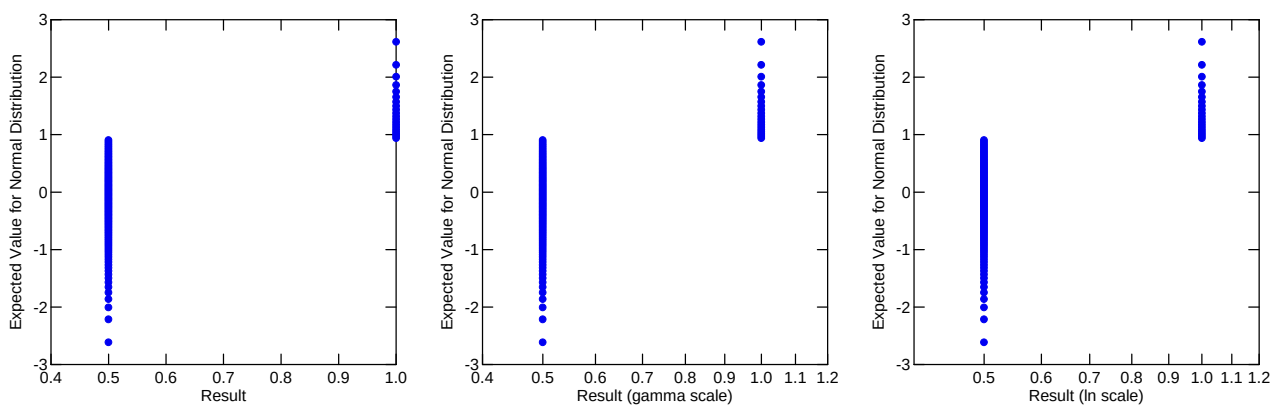
Barium, total or dissolved (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)



Iron, total or dissolved (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)

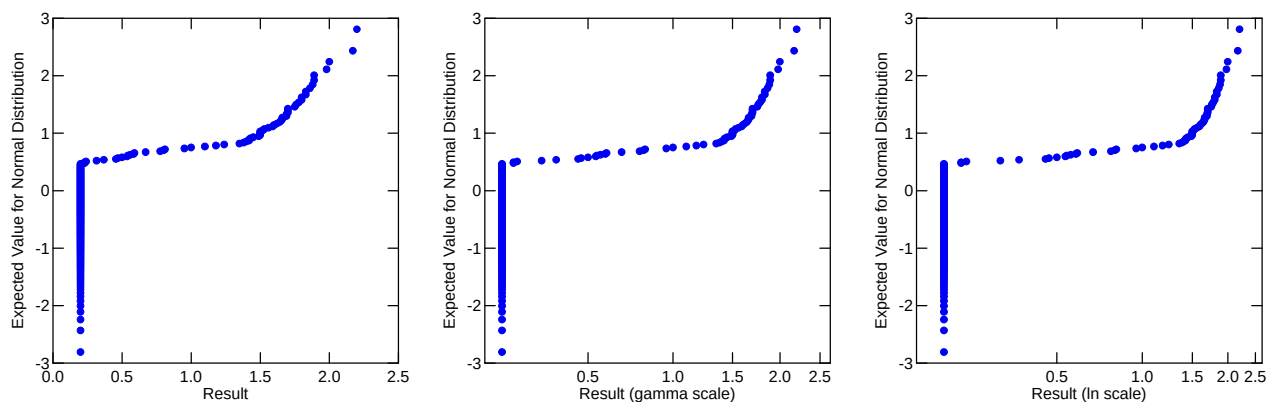


Benzene ($\mu\text{g/L}$) in Upgradient Groundwater (MW-5, MW-14, MW-16)

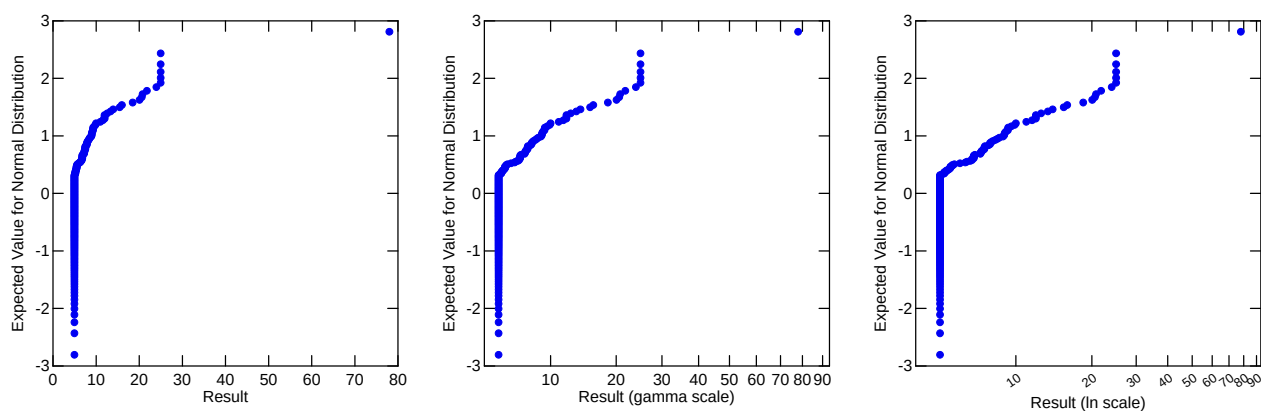


12666637-RPT-01-Appendix-E.2 (PPlots by Analyte)

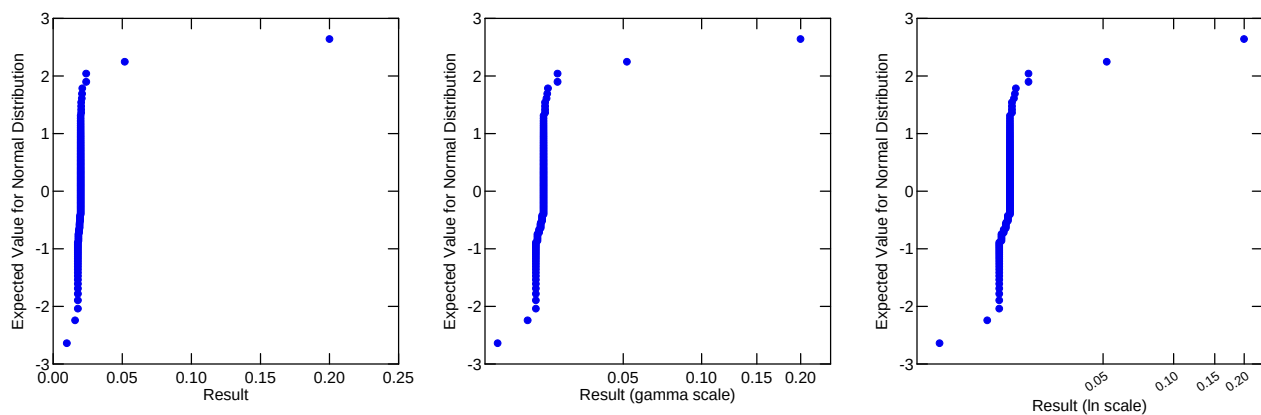
Ammonia as N (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)



Chemical Oxygen Demand (COD) (mg/L); Upgradient (MW-5, MW-14, MW-16)

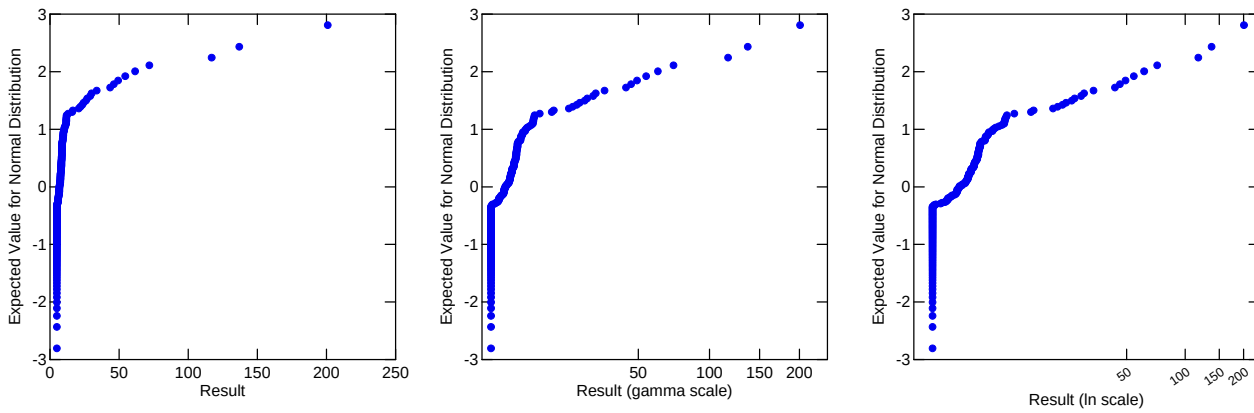


Phenolics (Total) (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)

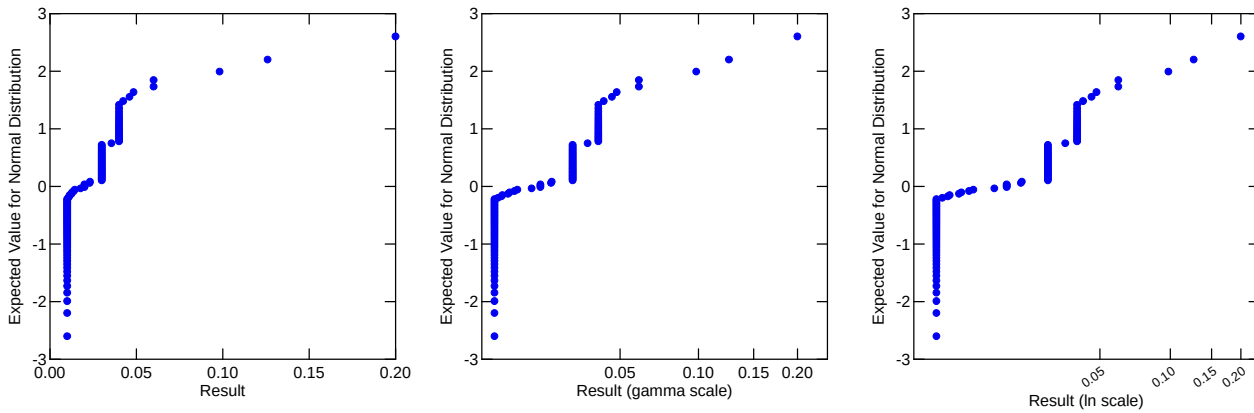


12666637-RPT-01-Appendix-E.2 (PPlots by Analyte)

Chloride (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)



Total Organic Halides (TOX) (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)



Appendix E.3a -- Outlier Tests for Data Sets Without Non-Detects

Outlier Tests for Selected Uncensored Variables

User Selected Options

Date/Time of Computation ProUCL 5.2 1/19/2026 10:55:57 AM

From File 056934 Upgradient ProUCL data 2025.xls

Full Precision OFF

Rosner's Outlier Test for Sp. Cond. ($\mu\text{S/cm}$)

Mean 1052

Standard Deviation 528.7

Number of data 185

Number of suspected outliers 10

#	Mean	sd	Potential	Obs.	Test	Critical	Critical
			outlier	Number	value	value (5%)	value (1%)
1	1052	527.3	2490	115	2.728	3.583	3.953
2	1044	519.4	2470	110	2.746	3.573	3.953
3	1036	509.9	2435	122	2.744	3.573	3.946
4	1028	500.5	2320	116	2.58	3.573	3.943
5	1021	492.6	2310	114	2.616	3.573	3.943
6	1014	484.4	2261	105	2.574	3.571	3.941
7	1007	476.6	2250	111	2.608	3.569	3.939
8	1000	468.7	2210	120	2.581	3.567	3.937
9	993.3	461	2170	113	2.552	3.565	3.935
10	986.6	453.7	2140	112	2.542	3.563	3.933

For 5% Significance Level, there is no Potential Outlier

For 1% Significance Level, there is no Potential Outlier

Appendix E.3a -- Outlier Tests for Data Sets Without Non-Detects

Outlier Tests for Selected Uncensored Variables

User Selected Options

Date/Time of Computation ProUCL 5.2 1/19/2026 10:55:57 AM

From File 056934 Upgradient ProUCL data 2025.xls

Full Precision OFF

Rosner's Outlier Test for pH (s.u.)

Mean 7.274
Standard Deviation 0.615
Number of data 183
Number of suspected outliers 10

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	7.274	0.613	9.93	11	4.331	3.579	3.949
2	7.259	0.584	4.85	14	4.125	3.569	3.949
3	7.273	0.557	9.27	51	3.585	3.569	3.943
4	7.261	0.538	5.67	129	2.956	3.569	3.939
5	7.27	0.526	8.7	164	2.716	3.569	3.939
6	7.262	0.517	8.68	176	2.743	3.567	3.937
7	7.254	0.507	8.56	178	2.575	3.565	3.935
8	7.247	0.499	5.97	67	2.56	3.563	3.933
9	7.254	0.491	8.49	177	2.518	3.561	3.931
10	7.247	0.483	6.03	61	2.52	3.559	3.929

For 5% significance level, there are 3 Potential Outliers

Potential outliers are:

9.93, 4.85, 9.27

For 1% Significance Level, there are 2 Potential Outliers

Potential outliers are:

9.93, 4.85

Appendix E.3a -- Outlier Tests for Data Sets Without Non-Detects

Outlier Tests for Selected Uncensored Variables

User Selected Options

Date/Time of Computation ProUCL 5.2 1/19/2026 10:55:57 AM

From File 056934 Upgradient ProUCL data 2025.xls

Full Precision OFF

Rosner's Outlier Test for Temp (deg.C)

Mean 11.94
Standard Deviation 4.083
Number of data 181
Number of suspected outliers 10

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	11.94	4.072	24	120	2.963	3.576	3.946
2	11.87	3.994	23	1	2.787	3.566	3.946
3	11.81	3.917	22.24	55	2.664	3.566	3.94
4	11.75	3.848	21.9	72	2.638	3.566	3.936
5	11.69	3.782	2.7	40	2.377	3.566	3.936
6	11.74	3.731	2.9	100	2.37	3.564	3.934
7	11.79	3.681	20	2	2.23	3.562	3.932
8	11.74	3.638	4	44	2.129	3.56	3.93
9	11.79	3.6	4.1	89	2.136	3.558	3.928
10	11.83	3.562	4.1	104	2.171	3.556	3.926

For 5% Significance Level, there is no Potential Outlier

For 1% Significance Level, there is no Potential Outlier

Appendix E.3b -- Outlier Tests for Data Sets With Non-Detects

Outlier Tests for Selected Variables replacing nondetects with 1/2 the Detection Limit

User Selected Options

Date/Time of Computation ProUCL 5.2 1/19/2026 10:57:26 AM

From File 056934 Upgradient ProUCL data 2025.xls

Full Precision OFF

Rosner's Outlier Test for 10 Outliers in Ln_Barium (mg/L)

Total N 97
 Number NDs 0
 Number Detects 97
 Mean with NDs=DL/2 -2.501
 SD with NDs=DL/2 0.874
 Number of data 97
 Number of suspected outliers 10
 NDs replaced with half value.

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	-2.501	0.869	-4.298	32	2.067	3.371	3.741
2	-2.482	0.858	-4.279	55	2.094	3.368	3.738
3	-2.463	0.843	-4.177	61	2.033	3.368	3.738
4	-2.445	0.828	-4.154	33	2.064	3.361	3.728
5	-2.427	0.813	-4.123	63	2.086	3.358	3.728
6	-2.408	0.798	-3.942	58	1.923	3.354	3.724
7	-2.391	0.786	-3.887	35	1.905	3.35	3.72
8	-2.375	0.774	-3.887	41	1.955	3.346	3.716
9	-2.358	0.761	-3.863	39	1.979	3.342	3.712
10	-2.34	0.748	-3.835	45	1.998	3.338	3.708

For 5% Significance Level, there is no Potential Outlier

For 1% Significance Level, there is no Potential Outlier

Appendix E.3b -- Outlier Tests for Data Sets With Non-Detects

Outlier Tests for Selected Variables replacing nondetects with 1/2 the Detection Limit

User Selected Options

Date/Time of Computation ProUCL 5.2 1/19/2026 10:57:26 AM

From File 056934 Upgradient ProUCL data 2025.xls

Full Precision OFF

Rosner's Outlier Test for 10 Outliers in Ln_Barium (mg/L)

Rosner's Outlier Test for 10 Outliers in Ln_Iron (mg/L)

Total N 183
 Number NDs 115
 Number Detects 183
 Mean with NDs=DL/2 -0.723
 SD with NDs=DL/2 0.877
 Number of data 183
 Number of suspected outliers 10
 NDs replaced with half value.

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	-0.723	0.874	3.572	172	4.914	3.579	3.949
2	-0.747	0.819	3.161	177	4.774	3.569	3.949
3	-0.768	0.767	2.109	163	3.75	3.569	3.943
4	-0.784	0.738	1.967	168	3.726	3.569	3.939
5	-0.8	0.711	1.823	165	3.688	3.569	3.939
6	-0.814	0.685	1.587	37	3.505	3.567	3.937
7	-0.828	0.663	1.163	68	3.004	3.565	3.935
8	-0.839	0.647	1.04	179	2.904	3.563	3.933
9	-0.85	0.633	1.004	49	2.929	3.561	3.931
10	-0.861	0.619	0.967	35	2.952	3.559	3.929

For 5% significance level, there are 5 Potential Outliers

3.572, 3.161, 2.109, 1.967, 1.823

Note: Outliers in original units (mg/L) are exp(#):

35.6, 23.6, 8.24, 7.15, 6.19

For 1% Significance Level, there are 2 Potential Outliers

3.572, 3.161

Appendix E.3b -- Outlier Tests for Data Sets With Non-Detects

Outlier Tests for Selected Variables replacing nondetects with 1/2 the Detection Limit

User Selected Options

Date/Time of Computation ProUCL 5.2 1/19/2026 10:57:26 AM

From File 056934 Upgradient ProUCL data 2025.xls

Full Precision OFF

Rosner's Outlier Test for 10 Outliers in Ln_Barium (mg/L)

Rosner's Outlier Test for 10 Outliers in Ammonia-N (mg/L)

Total N 186
 Number NDs 125
 Number Detects 186
 Mean with NDs=DL/2 0.513
 SD with NDs=DL/2 0.665
 Number of data 186
 Number of suspected outliers 10
 NDs replaced with half value.

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	0.513	0.663	2.2	126	2.543	3.585	3.955
2	0.504	0.655	2.17	159	2.543	3.575	3.955
3	0.495	0.645	2	158	2.333	3.575	3.948
4	0.487	0.637	1.98	135	2.343	3.575	3.945
5	0.479	0.629	1.89	157	2.243	3.575	3.945
6	0.471	0.622	1.89	161	2.281	3.573	3.943
7	0.463	0.615	1.88	165	2.305	3.571	3.941
8	0.455	0.607	1.86	175	2.314	3.569	3.939
9	0.447	0.599	1.83	155	2.306	3.567	3.937
10	0.44	0.592	1.83	156	2.349	3.565	3.935

For 5% Significance Level, there is no Potential Outlier

For 1% Significance Level, there is no Potential Outlier

Appendix E.3b -- Outlier Tests for Data Sets With Non-Detects

Outlier Tests for Selected Variables replacing nondetects with 1/2 the Detection Limit

User Selected Options

Date/Time of Computation ProUCL 5.2 1/19/2026 10:57:26 AM

From File 056934 Upgradient ProUCL data 2025.xls

Full Precision OFF

Rosner's Outlier Test for 10 Outliers in Ln_Barium (mg/L)

Rosner's Outlier Test for 10 Outliers in Ln_COD (mg/L)

Total N 186
 Number NDs 116
 Number Detects 186
 Mean with NDs=DL/2 1.343
 SD with NDs=DL/2 0.719
 Number of data 186
 Number of suspected outliers 10
 NDs replaced with half value.

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	1.343	0.717	4.357	69	4.201	3.585	3.955
2	1.327	0.686	3.178	11	2.699	3.575	3.955
3	1.317	0.674	3.082	183	2.619	3.575	3.948
4	1.307	0.663	3.035	87	2.606	3.575	3.945
5	1.298	0.652	3.025	151	2.649	3.575	3.945
6	1.288	0.641	3.001	168	2.671	3.573	3.943
7	1.279	0.63	2.918	22	2.602	3.571	3.941
8	1.27	0.62	2.773	185	2.426	3.569	3.939
9	1.261	0.611	2.741	182	2.422	3.567	3.937
10	1.253	0.602	2.639	125	2.301	3.565	3.935

For 5% Significance Level, there is 1 Potential Outlier

Note: Outlier in original units (mg/L) is exp(#):

Therefore, Observation 4.357 is a Potential Statistical Outlier 78.0

For 1% Significance Level, there is 1 Potential Outlier

Appendix E.3b -- Outlier Tests for Data Sets With Non-Detects

Outlier Tests for Selected Variables replacing nondetects with 1/2 the Detection Limit

User Selected Options

Date/Time of Computation ProUCL 5.2 1/19/2026 10:57:26 AM

From File 056934 Upgradient ProUCL data 2025.xls

Full Precision OFF

Rosner's Outlier Test for 10 Outliers in Ln_Barium (mg/L)

Rosner's Outlier Test for 10 Outliers in Ln_Chloride (mg/L)

Total N 186
 Number NDs 70
 Number Detects 186
 Mean with NDs=DL/2 1.784
 SD with NDs=DL/2 0.974
 Number of data 186
 Number of suspected outliers 10
 NDs replaced with half value.

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	1.784	0.971	5.303	56	3.624	3.585	3.955
2	1.765	0.941	5.187	57	3.637	3.575	3.955
3	1.747	0.909	4.92	55	3.492	3.575	3.948
4	1.729	0.88	4.836	58	3.53	3.575	3.945
5	1.712	0.852	4.762	54	3.581	3.575	3.945
6	1.695	0.823	4.275	53	3.134	3.573	3.943
7	1.681	0.802	4.121	38	3.04	3.571	3.941
8	1.667	0.784	3.998	37	2.975	3.569	3.939
9	1.654	0.766	3.839	52	2.853	3.567	3.937
10	1.642	0.75	3.833	36	2.921	3.565	3.935

For 5% significance level, there are 5 Potential Outliers

5.303, 5.187, 4.92, 4.836, 4.762

Note: Outliers in original units (mg/L) are exp(#):
201, 179, 137, 126, 117

For 1% Significance Level, there is no Potential Outlier

Outlier Tests for Selected Uncensored Variables

User Selected Options

Date/Time of Computation ProUCL 5.2 1/20/2026 4:14:38 PM

From File 056934 Upgradient ProUCL data 2025.xls

Full Precision OFF

Rosner's Outlier Test for Trim_Gamma_Sp. Cond. ($\mu\text{S/cm}$)

Mean 10.45

Standard Deviation 1.913

Number of data 57

Number of suspected outliers 10

#	Mean	sd	Potential	Obs.	Test	Critical	Critical
			outlier	Number	value	value (5%)	value (1%)
1	10.45	1.896	5.04	16	2.852	3.179	3.536
2	10.54	1.785	6.214	35	2.426	3.169	3.526
3	10.62	1.7	13.55	31	1.723	3.166	3.523
4	10.57	1.668	13.52	26	1.768	3.156	3.516
5	10.51	1.632	13.45	38	1.801	3.146	3.506
6	10.46	1.595	13.24	32	1.744	3.139	3.497
7	10.4	1.561	13.22	30	1.804	3.133	3.488
8	10.35	1.524	13.13	21	1.824	3.126	3.478
9	10.29	1.485	13.1	27	1.895	3.12	3.469
10	10.23	1.442	13.03	36	1.938	3.113	3.46

For 5% Significance Level, there is no Potential Outlier

For 1% Significance Level, there is no Potential Outlier

Outlier Tests for Selected Uncensored Variables

User Selected Options

Date/Time of Computation ProUCL 5.2 1/20/2026 4:14:38 PM

From File 056934 Upgradient ProUCL data 2025.xls

Full Precision OFF

Rosner's Outlier Test for Trim_pH (s.u.)

Mean 7.19

Standard Deviation 0.573

Number of data 95

Number of suspected outliers 10

#	Mean	sd	Potential	Obs.	Test	Critical	Critical
			outlier	Number	value	value (5%)	value (1%)
1	7.19	0.57	9.27	24	3.653	3.365	3.735
2	7.168	0.533	8.7	76	2.874	3.36	3.73
3	7.151	0.511	8.68	88	2.989	3.36	3.73
4	7.134	0.488	8.56	90	2.919	3.355	3.72
5	7.119	0.467	8.49	89	2.935	3.35	3.72
6	7.104	0.447	8.19	57	2.433	3.346	3.716
7	7.091	0.434	8.04	67	2.187	3.342	3.712
8	7.081	0.424	8.04	82	2.263	3.338	3.708
9	7.07	0.414	8.02	73	2.298	3.334	3.704
10	7.058	0.403	8.01	59	2.362	3.33	3.7

For 5% Significance Level, there is 1 Potential Outlier

Potential outliers is: 9.27

For 1% Significance Level, there is no Potential Outlier

Outlier Tests for Selected Variables replacing nondetects with 1/2 the Detection Limit

User Selected Options

Date/Time of Computation ProUCL 5.2 1/20/2026 4:15:52 PM

From File 056934 Upgradient ProUCL data 2025.xls

Full Precision OFF

Rosner's Outlier Test for 10 Outliers in Trim_Ln_Iron (mg/L)

Total N 97
Number NDs 39
Number Detects 97
Mean with NDs=DL/2 -0.401
SD with NDs=DL/2 1.055
Number of data 97
Number of suspected outliers 10
NDs replaced with half value.

#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	-0.401	1.05	3.572	86	3.785	3.371	3.741
2	-0.442	0.978	3.161	91	3.683	3.368	3.738
3	-0.48	0.91	2.109	77	2.846	3.368	3.738
4	-0.508	0.874	1.967	82	2.831	3.361	3.728
5	-0.534	0.84	1.823	79	2.807	3.358	3.728
6	-0.56	0.807	1.587	11	2.661	3.354	3.724
7	-0.583	0.779	-2.303	63	2.208	3.35	3.72
8	-0.564	0.761	-2.293	78	2.27	3.346	3.716
9	-0.545	0.743	-2.207	71	2.238	3.342	3.712
10	-0.526	0.725	-2.12	66	2.198	3.338	3.708

For 5% significance level, there are 2 Potential Outliers

3.572, 3.161

For 1% Significance Level, there is 1 Potential Outlier

Outlier Tests for Selected Variables replacing nondetects with 1/2 the Detection Limit

User Selected Options

Date/Time of Computation ProUCL 5.2 1/20/2026 4:15:52 PM

From File 056934 Upgradient ProUCL data 2025.xls

Full Precision OFF

Rosner's Outlier Test for 10 Outliers in Trim_Ln_Chloride (mg/L)

Total N 26
Number NDs 10
Number Detects 26
Mean with NDs=DL/2 2.384
SD with NDs=DL/2 1.631
Number of data 26
Number of suspected outliers 10
NDs replaced with half value.

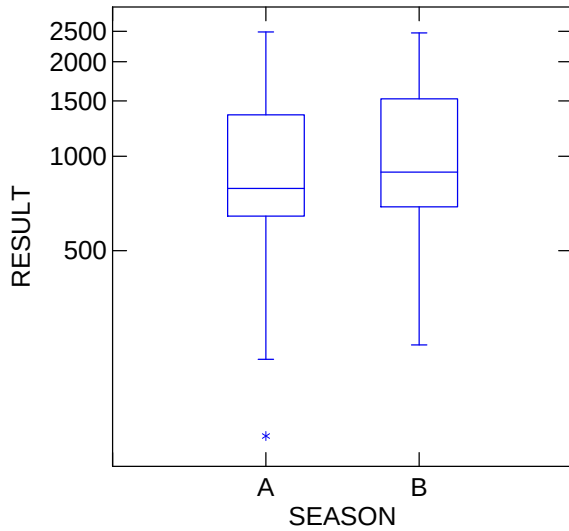
#	Mean	sd	Potential outlier	Obs. Number	Test value	Critical value (5%)	Critical value (1%)
1	2.384	1.6	5.303	6	1.825	2.84	3.16
2	2.268	1.55	5.187	7	1.884	2.82	3.14
3	2.146	1.456	4.92	5	1.905	2.8	3.11
4	2.025	1.361	4.836	8	2.065	2.78	3.09
5	1.898	1.244	4.762	4	2.303	2.76	3.06
6	1.761	1.093	4.275	3	2.3	2.732	3.026
7	1.635	0.953	3.839	2	2.312	2.704	2.992
8	1.519	0.822	3.391	1	2.278	2.676	2.958
9	1.415	0.705	2.28	14	1.227	2.648	2.924
10	1.365	0.692	2.272	11	1.311	2.62	2.89

For 5% Significance Level, there is no Potential Outlier

For 1% Significance Level, there is no Potential Outlier

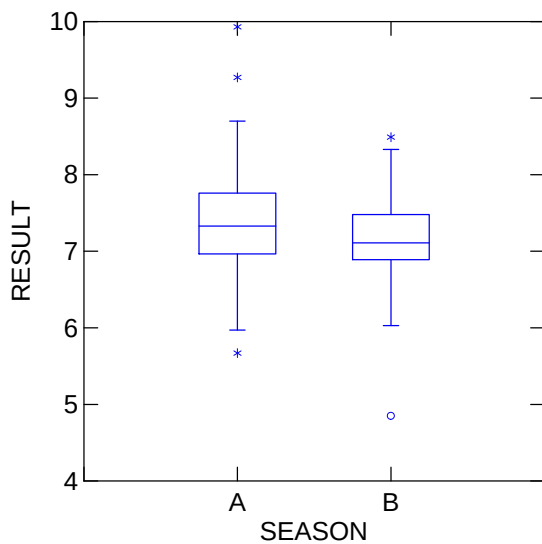
Appendix E.4 (Box-Whisker Plots Comparing Seasons)

Conductance ($\mu\text{S}/\text{cm}$) in Upgradient Groundwater (MW-5, MW-14, MW-16)



(A = Spring Samples; B = Fall samples)

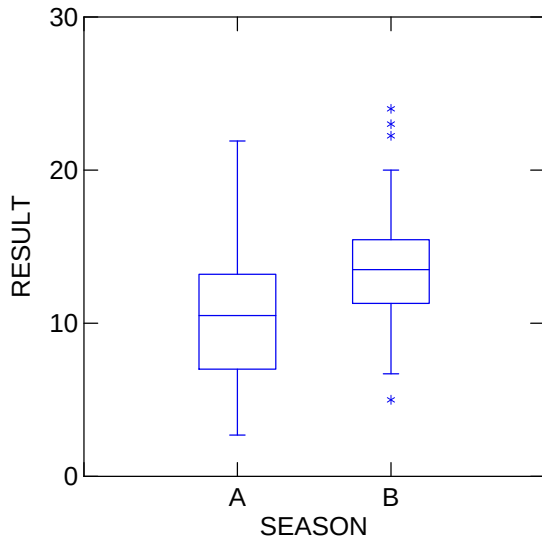
pH, field (s.u.) in Upgradient Groundwater (MW-5, MW-14, MW-16)



(A = Spring Samples; B = Fall samples)

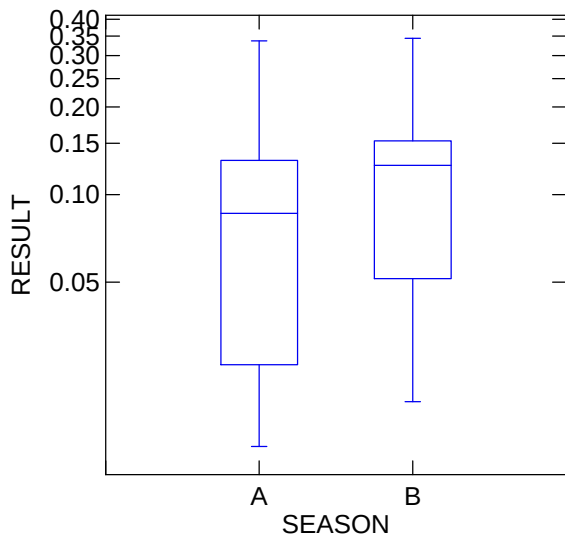
Appendix E.4 (Box-Whisker Plots Comparing Seasons)

Temperature (°C) in Upgradient Groundwater (MW-5, MW-14, MW-16)



(A = Spring Samples; B = Fall samples)

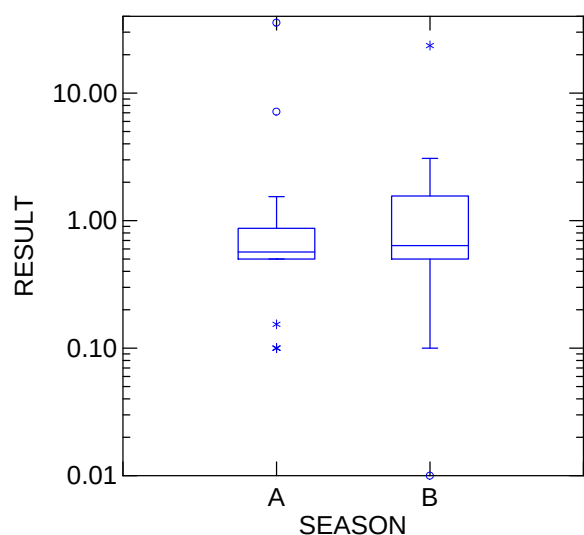
Barium, total or dissolved (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)



(A = Spring Samples; B = Fall samples)

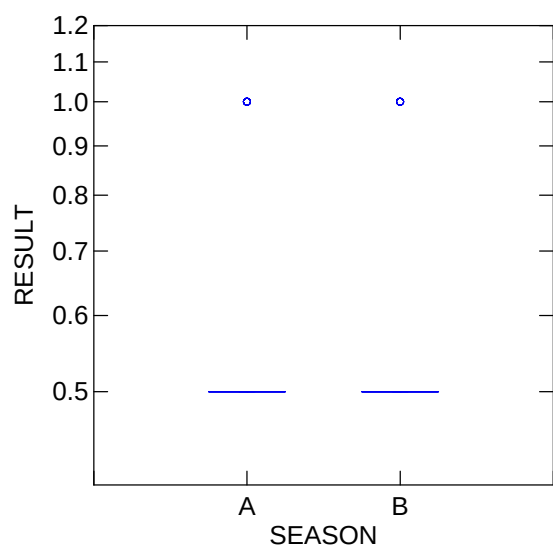
Appendix E.4 (Box-Whisker Plots Comparing Seasons)

Iron, total or dissolved (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)



(A = Spring Samples; B = Fall samples)

Benzene ($\mu\text{g/L}$) in Upgradient Groundwater (MW-5, MW-14, MW-16)

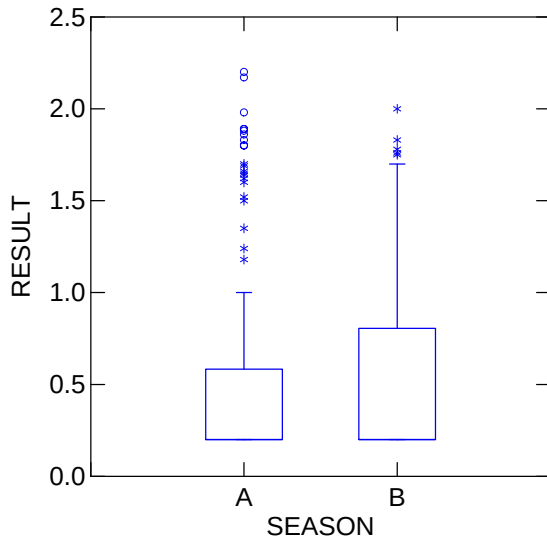


(A = Spring Samples; B = Fall samples)

Note: All results are non-detects

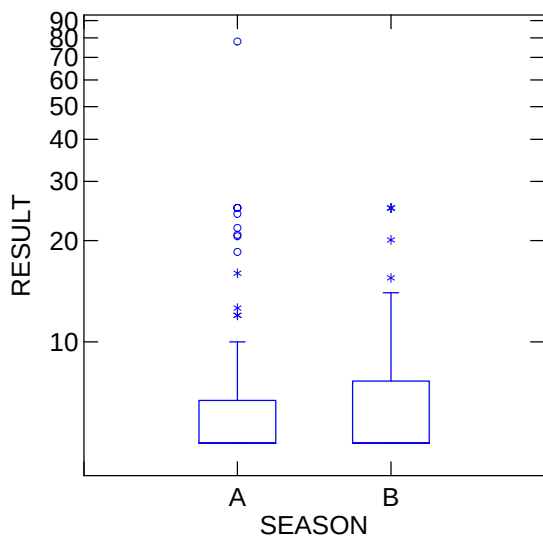
Appendix E.4 (Box-Whisker Plots Comparing Seasons)

Ammonia as N (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)



(A = Spring Samples; B = Fall samples)

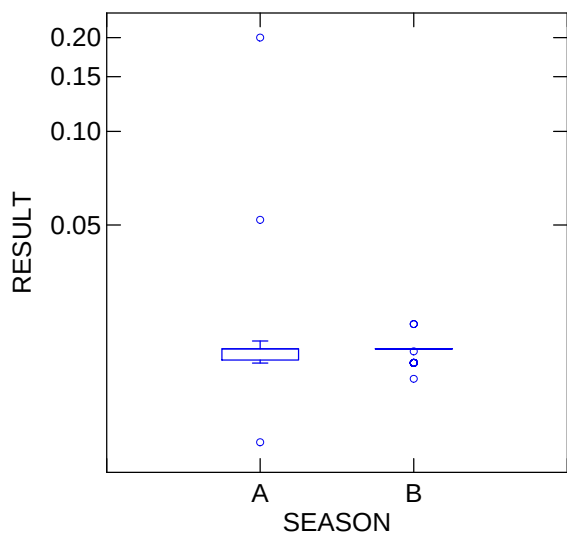
Chemical Oxygen Demand (COD) (mg/L); Upgradient (MW-5, MW-14, MW-16)



(A = Spring Samples; B = Fall samples)

Appendix E.4 (Box-Whisker Plots Comparing Seasons)

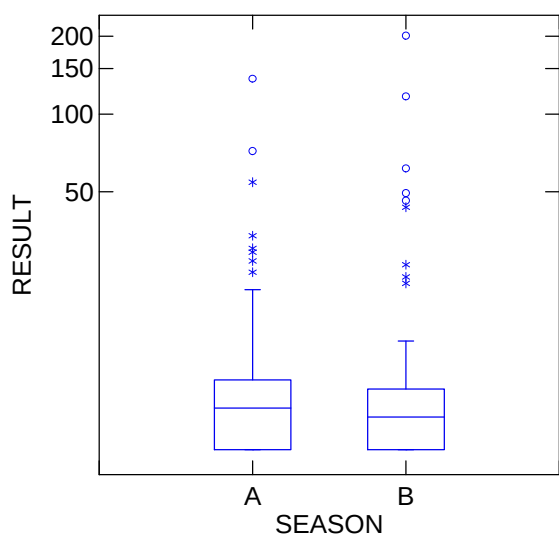
Phenolics (Total) (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)



(A = Spring Samples; B = Fall samples)

Note: Results are 95 percent non-detects

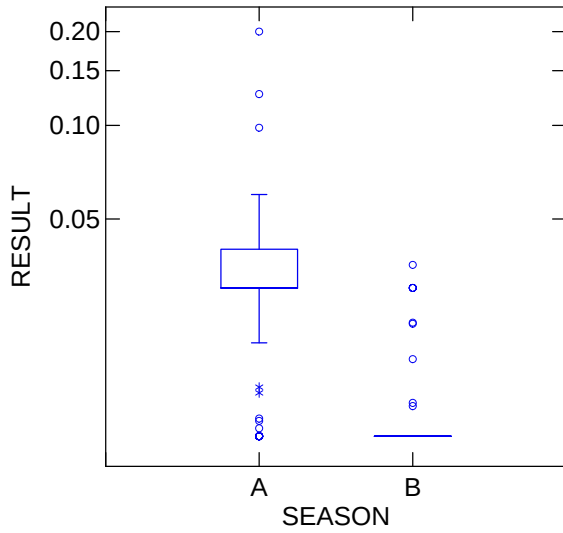
Chloride (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)



(A = Spring Samples; B = Fall samples)

Appendix E.4 (Box-Whisker Plots Comparing Seasons)

Total Organic Halides (TOX) (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)



(A = Spring Samples; B = Fall samples)

Note: Results are 83 percent non-detects

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Conductance

Regional Test

Sum of ND	0
Total %ND	0%
Total N	185
Total S	1637
Pooled sigma	283.6241645
Z	5.768196808
Prob	8.01242E-09
M-K result	Increasing trend

Per-Well Calcs

N	58	64	63
Number ND	0	0	0
%ND	0%	0%	0%
M-K S	566	778	293
M-K sigma	149.08	172.60	168.60
M-K sigma^2	22224	29792	28427

Input Data

MW-05		MW-14		MW-16	
7/1/1995	640.0	7/1/1995	1274.0	7/1/1995	670.0
8/1/1995	670.0	8/1/1995	1340.0	8/1/1995	660.0
11/1/1995	1110.0	11/1/1995	1460.0	11/1/1995	820.0
2/1/1996	492.0	2/1/1996	1271.0	2/1/1996	940.0
5/1/1996	580.0	5/1/1996	1530.0	5/1/1996	730.0
11/1/1996	608.0	11/1/1996	1270.0	11/1/1996	654.0
4/1/1997	645.0	4/1/1997	1530.0	4/1/1997	698.0
11/1/1997	675.0	11/1/1997	1576.0	11/1/1997	747.0
5/1/1998	536.0	5/1/1998	1520.0	5/1/1998	698.0
11/1/1998	617.0	11/1/1998	1380.0	11/1/1998	613.0
5/1/1999	710.0	5/1/1999	1630.0	5/1/1999	750.0
11/1/1999	690.0	11/1/1999	1585.0	11/1/1999	733.0
5/1/2000	644.0	5/1/2000	1604.0	5/1/2000	682.0
12/1/2000	710.0	12/1/2000	1620.0	12/1/2000	1570.0
6/1/2001	622.0	6/1/2001	1600.0	6/1/2001	700.0
11/1/2001	683.4	11/1/2001	1627.0	11/1/2001	760.0
5/2/2002	636.0	5/2/2002	1657.0	5/2/2002	720.0
11/2/2002	689.0	11/2/2002	1620.0	11/2/2002	712.0
5/3/2003	502.0	5/3/2003	1602.0	5/3/2003	707.0
5/1/2004	306.0	11/3/2003	1658.0	11/3/2003	745.0
5/5/2005	552.0	5/1/2004	1105.0	5/1/2004	479.0
5/6/2006	989.0	12/1/2004	1285.0	12/1/2004	570.0
4/7/2007	532.0	5/5/2005	1144.0	5/5/2005	577.0
10/7/2007	645.0	11/5/2005	1290.0	11/5/2005	565.0
4/1/2008	535.0	5/6/2006	1432.0	5/6/2006	665.0
10/1/2008	993.0	10/6/2006	1502.0	10/6/2006	-
10/29/2009	984.0	4/7/2007	1412.0	4/7/2007	662.0
3/30/2010	797.0	10/7/2007	1489.0	10/7/2007	622.0
4/22/2010	724.0	4/1/2008	1392.0	4/1/2008	648.0
10/16/2010	984.0	10/1/2008	1222.0	10/1/2008	743.0
4/28/2011	678.0	10/29/2009	1620.0	10/29/2009	454.0
10/18/2011	816.0	3/25/2010	1623.0	3/30/2010	660.0
4/25/2012	813.0	4/22/2010	1318.0	4/22/2010	642.0
4/16/2013	539.0	10/16/2010	1699.0	10/16/2010	805.0
4/14/2014	802.0	4/28/2011	1573.0	4/28/2011	693.0
10/9/2014	1340.0	10/19/2011	1398.0	10/18/2011	561.0
4/17/2015	297.0	4/25/2012	1711.0	4/25/2012	736.0
10/16/2015	612.0	10/10/2012	1716.0	10/10/2012	771.0
3/17/2016	339.0	4/16/2013	1255.0	4/17/2013	679.0
9/29/2016	830.0	10/29/2013	1986.0	10/30/2013	826.0
3/8/2017	1025.0	4/14/2014	1793.0	4/14/2014	728.0
10/4/2017	1096.0	10/8/2014	2120.0	10/9/2014	864.0
3/12/2018	1013.0	4/16/2015	566.0	4/17/2015	225.0
10/9/2018	484.0	10/14/2015	890.0	10/16/2015	250.0
3/25/2019	703.8	3/16/2016	1240.0	3/17/2016	546.0
10/3/2019	690.0	9/27/2016	1680.0	9/29/2016	650.0
3/17/2020	872.2	3/7/2017	2261.0	3/8/2017	872.0
10/4/2020	948.1	10/4/2017	2090.0	10/4/2017	812.0
3/30/2021	977.0	3/12/2018	2091.0	3/12/2018	796.0
10/5/2021	935.8	10/9/2018	1548.0	10/9/2018	714.0
4/4/2022	1010.0	3/25/2019	1492.0	3/25/2019	626.1
10/3/2022	981.7	10/3/2019	2470.0	10/3/2019	803.0
3/27/2023	989.4	3/17/2020	2250.0	3/17/2020	808.7
10/3/2023	1090.0	10/4/2020	2140.0	10/4/2020	783.1
4/2/2024	128	3/30/2021	2170.0	3/30/2021	964.0
10/8/2024	1670	10/5/2021	2310.0	10/5/2021	742.7
4/16/2025	1340	4/4/2022	2490.0	4/4/2022	811.0
10/8/2025	1450	10/3/2022	2320.0	10/3/2022	682.7
		3/29/2023	1953.0	3/29/2023	722.0
		10/4/2023	2130.0	10/4/2023	779.0
		4/2/2024	240	4/3/2024	833
		10/9/2024	2210	10/8/2024	916
		04/17/2025	2070	04/16/2025	782
		10/07/2025	2435	10/08/2025	732.2

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pH	
Regional Test	
Sum of ND	0
Total %ND	0%
Total N	182
Total S	-742
Pooled sigma	277.8380823
Z	-2.667020999
Prob	0.007652689
M-K result	Decreasing trend

Per-Well Calcs			
N	55	64	63
Number ND	0	0	0
%ND	0%	0%	0%
M-K S	-382	-495	135
M-K sigma	137.75	172.60	168.60
M-K sigma^2	18975	29792	28427

Input Data	MW-05	MW-14	MW-16
7/1/1995	6.70	7/1/1995 7.05	7/1/1995 7.58
8/1/1995	7.22	8/1/1995 7.05	8/1/1995 7.41
11/1/1995	6.26	11/1/1995 6.03	11/1/1995 6.93
2/1/1996	7.56	2/1/1996 7.60	2/1/1996 7.14
5/1/1996	7.44	5/1/1996 6.97	5/1/1996 7.44
11/1/1996	7.48	11/1/1996 7.30	11/1/1996 7.54
4/1/1997	8.33	4/1/1997 8.23	4/1/1997 8.24
11/1/1997	7.65	11/1/1997 7.20	11/1/1997 7.64
5/1/1998	6.21	5/1/1998 5.97	5/1/1998 5.67
11/1/1998	6.96	11/1/1998 6.82	11/1/1998 6.78
5/1/1999	Outlier	5/1/1999 7.33	5/1/1999 7.76
11/1/1999	7.02	11/1/1999 6.82	11/1/1999 7.10
5/1/2000	7.13	5/1/2000 7.12	5/1/2000 7.62
12/1/2000	Outlier	12/1/2000 7.60	12/1/2000 7.08
6/1/2001	8.09	6/1/2001 8.10	6/1/2001 8.27
11/1/2001	7.24	11/1/2001 7.01	11/1/2001 7.42
5/2/2002	7.50	5/2/2002 7.24	5/2/2002 7.42
11/2/2002	7.49	11/2/2002 7.44	11/2/2002 7.40
5/3/2003	7.76	5/3/2003 7.64	5/3/2003 7.03
5/1/2004	7.66	11/3/2003 7.38	11/3/2003 7.56
5/5/2005	7.98	5/1/2004 7.01	5/1/2004 7.36
5/6/2006	7.42	12/1/2004 7.01	12/1/2004 7.59
4/7/2007	8.32	5/5/2005 7.05	5/5/2005 7.47
10/7/2007	7.75	11/5/2005 7.11	11/5/2005 7.48
4/1/2008	7.95	5/6/2006 7.33	5/6/2006 7.86
10/1/2008	7.08	10/6/2006 7.79	10/6/2006 -
10/29/2009	7.06	4/7/2007 6.95	4/7/2007 8.40
3/30/2010	7.18	10/7/2007 7.72	10/7/2007 7.45
4/22/2010	6.96	4/1/2008 7.01	4/1/2008 8.22
10/16/2010	6.87	10/1/2008 7.13	10/1/2008 7.77
4/28/2011	7.03	10/29/2009 7.08	10/29/2009 8.33
10/18/2011	7.04	3/25/2010 6.95	3/30/2010 7.85
4/25/2012	7.11	4/22/2010 6.87	4/22/2010 7.49
4/16/2013	6.61	10/16/2010 7.02	10/16/2010 7.70
4/14/2014	7.51	4/28/2011 6.93	4/28/2011 7.70
10/9/2014	7.20	10/19/2011 6.92	10/18/2011 8.04
4/17/2015	6.96	4/25/2012 7.00	4/25/2012 7.48
10/16/2015	7.29	10/10/2012 6.74	10/10/2012 7.33
3/17/2016	6.60	4/16/2013 6.79	4/17/2013 6.95
9/29/2016	6.98	10/29/2013 6.86	10/30/2013 7.44
3/8/2017	7.00	4/14/2014 6.91	4/14/2014 7.51
10/4/2017	6.63	10/8/2014 7.05	10/9/2014 8.02
3/12/2018	6.70	4/16/2015 6.50	4/17/2015 6.96
10/9/2018	7.20	10/14/2015 7.07	10/16/2015 7.74
3/25/2019	7.42	3/16/2016 6.29	3/17/2016 8.70
10/3/2019	6.89	9/27/2016 6.84	9/29/2016 7.43
3/17/2020	7.33	3/7/2017 6.80	3/8/2017 7.31
10/4/2020	6.93	10/4/2017 6.65	10/4/2017 7.23
3/30/2021	7.28	3/12/2018 6.59	3/12/2018 7.16
10/5/2021	6.97	10/9/2018 6.98	10/9/2018 7.61
4/4/2022	Outlier	3/25/2019 7.21	3/25/2019 8.04
10/3/2022	7.53	10/3/2019 6.68	10/3/2019 7.40
3/27/2023	7.02	3/17/2020 6.99	3/17/2020 7.60
10/3/2023	6.42	10/4/2020 6.85	10/4/2020 7.29
4/2/2024	6.15	3/30/2021 7.16	3/30/2021 7.56
10/8/2024	6.17	10/5/2021 6.85	10/5/2021 7.79
04/16/2025	7.2	4/4/2022 8.19	4/4/2022 8.68
10/08/2025	6.737	10/3/2022 7.62	10/3/2022 8.49
		3/29/2023 8.01	3/29/2023 8.56
		10/4/2023 6.34	10/4/2023 6.89
		4/2/2024 6.47	4/3/2024 6.35
		10/9/2024 6.71	10/8/2024 6.63
		04/17/2025 7.05	04/16/2025 7.79
		10/07/2025 6.763	10/08/2025 7.271

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Cedar Falls, Iowa

Temperature

Regional Test

Sum of ND	0
Total %ND	0%
Total N	183
Total S	-254
Pooled sigma	279.2830106
Z	-0.905891123
Prob	0.364993484
M-K result	No trend identified

Per-Well Calcs

N	57	64	62
Number ND	0	0	0
%ND	0%	0%	0%
M-K S	-61	-51	-142
M-K sigma	145.27	172.60	164.63
M-K sigma^2	21103	29792	27104

Input Data

MW-05		MW-14		MW-16	
7/1/1995	23.00	7/1/1995	18.00	7/1/1995	24.00
8/1/1995	20.00	8/1/1995	19.00	8/1/1995	17.00
11/1/1995	10.00	11/1/1995	8.00	11/1/1995	9.00
2/1/1996	6.00	2/1/1996	7.00	2/1/1996	10.00
5/1/1996	11.10	5/1/1996	9.40	5/1/1996	11.10
11/1/1996	13.00	11/1/1996	13.00	11/1/1996	13.00
4/1/1997	15.00	4/1/1997	15.00	4/1/1997	13.90
11/1/1997	6.90	11/1/1997	7.30	11/1/1997	7.00
5/1/1998	11.10	5/1/1998	12.20	5/1/1998	11.10
11/1/1998	11.20	11/1/1998	11.70	11/1/1998	9.60
5/1/1999	9.40	5/1/1999	9.40	5/1/1999	10.00
11/1/1999	14.40	11/1/1999	15.00	11/1/1999	15.60
5/1/2000	11.60	5/1/2000	10.60	5/1/2000	11.50
12/1/2000	5.00	12/1/2000	8.30	12/1/2000	6.70
6/1/2001	14.20	6/1/2001	21.90	6/1/2001	17.30
11/1/2001	10.10	11/1/2001	11.60	11/1/2001	8.50
5/2/2002	13.90	5/2/2002	12.50	5/2/2002	15.50
11/2/2002	10.20	11/2/2002	11.30	11/2/2002	10.10
5/3/2003	18.60	5/3/2003	16.60	5/3/2003	17.50
5/1/2004	18.90	11/3/2003	11.40	11/3/2003	10.50
5/5/2005	12.50	5/1/2004	18.30	5/1/2004	18.90
5/6/2006	13.10	12/1/2004	14.70	12/1/2004	13.50
4/7/2007	12.70	5/5/2005	13.80	5/5/2005	13.20
10/7/2007	15.50	11/5/2005	13.80	11/5/2005	13.40
4/1/2008	12.40	5/6/2006	14.50	5/6/2006	13.70
10/1/2008	12.10	10/6/2006	15.60	10/6/2006	-
10/29/2009	10.20	4/7/2007	14.10	4/7/2007	14.10
3/30/2010	6.00	10/7/2007	14.50	10/7/2007	13.90
4/22/2010	9.70	4/1/2008	13.50	4/1/2008	13.50
10/16/2010	12.90	10/1/2008	14.00	10/1/2008	12.50
4/28/2011	7.50	10/29/2009	10.80	10/29/2009	9.30
10/18/2011	13.80	3/25/2010	4.10	3/30/2010	9.30
4/25/2012	11.80	4/22/2010	9.90	4/22/2010	11.70
4/16/2013	6.90	10/16/2010	13.80	10/16/2010	9.50
4/14/2014	6.10	4/28/2011	7.90	4/28/2011	9.30
10/9/2014	13.76	10/19/2011	14.20	10/18/2011	11.30
4/17/2015	-	4/25/2012	11.00	4/25/2012	14.60
10/16/2015	14.10	10/10/2012	15.50	10/10/2012	11.80
3/17/2016	5.76	4/16/2013	6.60	4/17/2013	11.40
9/29/2016	18.00	10/29/2013	13.50	10/30/2013	11.20
3/8/2017	2.70	4/14/2014	6.00	4/14/2014	11.10
10/4/2017	15.87	10/8/2014	15.66	10/9/2014	13.12
3/12/2018	4.88	4/16/2015	2.90	4/17/2015	-
10/9/2018	15.80	10/14/2015	18.20	10/16/2015	10.10
3/25/2019	4.00	3/16/2016	7.38	3/17/2016	10.19
10/3/2019	16.75	9/27/2016	16.70	9/29/2016	12.90
3/17/2020	5.00	3/7/2017	4.10	3/8/2017	7.20
10/4/2020	15.30	10/4/2017	15.34	10/4/2017	12.21
3/30/2021	6.80	3/12/2018	6.57	3/12/2018	11.03
10/5/2021	16.40	10/9/2018	15.30	10/9/2018	11.60
4/4/2022	4.23	3/25/2019	6.10	3/25/2019	10.40
10/3/2022	15.20	10/3/2019	14.75	10/3/2019	11.93
3/27/2023	5.50	3/17/2020	7.00	3/17/2020	11.10
10/3/2023	18.72	10/4/2020	15.40	10/4/2020	12.00
4/2/2024	5.84	3/30/2021	6.70	3/30/2021	9.90
10/8/2024	22.24	10/5/2021	16.60	10/5/2021	12.80
04/16/2025	8.41	4/4/2022	6.02	4/4/2022	9.03
10/08/2025	16.22	10/3/2022	15.40	10/3/2022	12.40
		3/29/2023	8.01	3/29/2023	8.56
		10/4/2023	15.79	10/4/2023	13.13
		4/2/2024	7.34	4/3/2024	9.73
		10/9/2024	15.76	10/8/2024	14.83
		04/17/2025	11.02	04/16/2025	11.18
		10/07/2025	14.93	10/08/2025	14.22

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Barium

Regional Test

Sum of ND	0
Total %ND	0%
Total N	97
Total S	-168
Pooled sigma	108.5925105
Z	-1.53785928
Prob	0.124083025
M-K result	No trend identified

Per-Well Calcs

N	31	33	33
Number ND	0	0	0
%ND	0%	0%	0%
M-K S	-98	7	-77
M-K sigma	58.84	64.54	64.54
M-K sigma^2	3462	4165	4165

Input Data

MW-05		MW-14		MW-16	
7/1/1995	-	7/1/1995	-	7/1/1995	-
8/1/1995	-	8/1/1995	-	8/1/1995	-
11/1/1995	-	11/1/1995	-	11/1/1995	-
2/1/1996	-	2/1/1996	-	2/1/1996	-
5/1/1996	-	5/1/1996	-	5/1/1996	-
11/1/1996	-	11/1/1996	-	11/1/1996	-
4/1/1997	-	4/1/1997	-	4/1/1997	-
11/1/1997	-	11/1/1997	-	11/1/1997	-
5/1/1998	-	5/1/1998	-	5/1/1998	-
11/1/1998	-	11/1/1998	-	11/1/1998	-
5/1/1999	-	5/1/1999	-	5/1/1999	-
11/1/1999	-	11/1/1999	-	11/1/1999	-
5/1/2000	-	5/1/2000	-	5/1/2000	-
12/1/2000	-	12/1/2000	-	12/1/2000	-
6/1/2001	-	6/1/2001	-	6/1/2001	-
11/1/2001	-	11/1/2001	-	11/1/2001	-
5/2/2002	-	5/2/2002	-	5/2/2002	-
11/2/2002	-	11/2/2002	-	11/2/2002	-
5/3/2003	-	5/3/2003	-	5/3/2003	-
5/1/2004	-	11/3/2003	-	11/3/2003	-
5/5/2005	-	5/1/2004	-	5/1/2004	-
5/6/2006	-	12/1/2004	-	12/1/2004	-
4/7/2007	-	5/5/2005	-	5/5/2005	-
10/7/2007	-	11/5/2005	-	11/5/2005	-
4/1/2008	-	5/6/2006	-	5/6/2006	-
10/1/2008	-	10/6/2006	-	10/6/2006	-
10/29/2009	-	4/7/2007	-	4/7/2007	-
3/30/2010	0.1460	10/7/2007	-	10/7/2007	-
4/22/2010	0.1550	4/1/2008	-	4/1/2008	-
10/16/2010	0.1690	10/1/2008	-	10/1/2008	-
4/28/2011	0.1370	10/29/2009	-	10/29/2009	-
10/18/2011	0.1280	3/25/2010	0.0136	3/30/2010	0.1400
4/25/2012	0.1620	4/22/2010	0.0157	4/22/2010	0.1380
4/16/2013	0.1320	10/16/2010	0.0252	10/16/2010	0.1390
4/14/2014	0.0878	4/28/2011	0.0205	4/28/2011	0.1320
10/9/2014	0.1490	10/19/2011	0.0231	10/18/2011	0.1700
4/17/2015	0.0894	4/25/2012	0.1580	4/25/2012	0.1770
10/16/2015	0.1480	10/10/2012	0.0255	10/10/2012	0.1650
3/17/2016	0.0858	4/16/2013	0.0210	4/17/2013	0.1750
9/29/2016	0.1340	10/29/2013	0.025/0.0256	10/30/2013	0.1530
3/8/2017	0.1200	4/14/2014	0.0205	4/14/2014	0.1580
10/4/2017	0.0967	10/8/2014	0.0217	10/9/2014	0.1410
3/12/2018	0.0836	4/16/2015	0.026/0.0382	4/17/2015	0.2560
10/9/2018	0.1150	10/14/2015	0.0256	10/16/2015	0.2300
3/25/2019	0.0793/0.0783	3/16/2016	0.0213/0.0219	3/17/2016	0.139/0.142
10/3/2019	0.158/0.163	9/27/2016	0.0255/0.0247	9/29/2016	0.2200
3/17/2020	0.11/0.111	3/7/2017	0.0272/0.0313	3/8/2017	0.1410
10/4/2020	0.0984	10/4/2017	0.0294	10/4/2017	0.1340
3/30/2021	0.124	3/12/2018	0.1500	3/12/2018	0.2210
10/5/2021	0.125/0.120	10/9/2018	0.0477/0.0554	10/9/2018	0.1530
4/4/2022	0.0828/0.0888	3/25/2019	0.0862	3/25/2019	0.1290
10/3/2022	0.153/0.153	10/3/2019	0.0289	10/3/2019	0.1360
3/27/2023	0.1380	3/17/2020	0.0639	3/17/2020	0.3370
10/3/2023	0.2440	10/4/2020	0.0243	10/4/2020	0.144/0.143
4/2/2024	0.0822	3/30/2021	0.0141/0.0136	3/30/2021	0.140
10/8/2024	0.121	10/5/2021	0.127	10/5/2021	0.153
04/16/2025	0.0864	4/4/2022	0.0242	4/4/2022	0.1300
10/08/2025	0.125	10/3/2022	0.0194	10/3/2022	0.3440
		3/29/2023	0.0223/0.0260	3/29/2023	0.1310
		10/4/2023	0.0246	10/4/2023	0.2060
		4/2/2024	0.0154/0.0153	4/3/2024	0.132
		10/9/2024	0.023	10/8/2024	0.131
		04/17/2025	0.0162	04/16/2025	0.141
		10/07/2025	0.0225	10/08/2025	0.124

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Iron

Regional Test

Sum of ND	115
Total %ND	63%
Total N	182
Total S	1419
Pooled sigma	276.8284667
Z	5.12230558
Prob	3.01822E-07
M-K result	Increasing trend

Per-Well Calcs

N	57	63	62
Number ND	30	55	30
%ND	53%	87%	48%
M-K S	570	140	709
M-K sigma	145.27	168.60	164.63
M-K sigma^2	21103	28427	27104

Input Data

MW-05		MW-14		MW-16	
7/1/1995	0.100 U	7/1/1995	0.100 U	7/1/1995	1.30
8/1/1995	0.100 U	8/1/1995	0.100 U	8/1/1995	0.100 U
11/1/1995	0.100 U	11/1/1995	0.100 U	11/1/1995	0.100 U
2/1/1996	0.100 U	2/1/1996	0.100 U	2/1/1996	0.16
5/1/1996	-	5/1/1996	-	5/1/1996	-
11/1/1996	0.100 U	11/1/1996	0.100 U	11/1/1996	0.100 U
4/1/1997	0.100 U	4/1/1997	0.100 U	4/1/1997	0.100 U
11/1/1997	0.100 U	11/1/1997	0.17	11/1/1997	0.21
5/1/1998	0.100 U	5/1/1998	0.100 U	5/1/1998	0.100 U
11/1/1998	0.100 U	11/1/1998	0.100 U	11/1/1998	0.54
5/1/1999	0.100 U	5/1/1999	0.100 U	5/1/1999	0.100 U
11/1/1999	0.100 U	11/1/1999	3.20	11/1/1999	0.100 U
5/1/2000	0.100 U	5/1/2000	0.100 U	5/1/2000	0.100 U
12/1/2000	0.100 U	12/1/2000	0.100 U	12/1/2000	0.100 U
6/1/2001	0.100 U	6/1/2001	0.100 U	6/1/2001	0.17
11/1/2001	0.100 U	11/1/2001	0.100 U	11/1/2001	0.100 U
5/2/2002	0.100 U	5/2/2002	0.100 U	5/2/2002	0.100 U
11/2/2002	0.100 U	11/2/2002	0.100 U	11/2/2002	0.100 U
5/3/2003	0.100 U	5/3/2003	0.100 U	5/3/2003	0.100 U
5/1/2004	0.100 U	11/3/2003	0.100 U	11/3/2003	0.100 U
5/5/2005	0.100 U	5/1/2004	0.100 U	5/1/2004	0.100 U
5/6/2006	1.51	12/1/2004	0.100 U	12/1/2004	0.100 U
4/7/2007	0.100 U	5/5/2005	0.100 U	5/5/2005	0.100 U
10/7/2007	0.31	11/5/2005	0.100 U	11/5/2005	0.23
4/1/2008	0.100 U	5/6/2006	0.100 U	5/6/2006	0.100 U
10/1/2008	1.13	10/6/2006	0.100 U	10/6/2006	0.100 U
10/29/2009	0.100 U	4/7/2007	0.100 U	4/7/2007	0.100 U
3/30/2010	0.99	10/7/2007	0.100 U	10/7/2007	0.100 U
4/22/2010	1.03	4/1/2008	0.100 U	4/1/2008	0.100 U
10/16/2010	1.15	10/1/2008	0.100 U	10/1/2008	0.100 U
4/28/2011	0.28	10/29/2009	0.100 U	10/29/2009	0.100 U
10/18/2011	1.61	3/25/2010	0.100 U	3/30/2010	0.100 U
4/25/2012	0.80	4/22/2010	0.100 U	4/22/2010	0.12
4/16/2013	0.100 U	10/16/2010	0.100 U	10/16/2010	0.51
4/14/2014	0.100 U	4/28/2011	0.100 U	4/28/2011	0.18
10/9/2014	2.63	10/19/2011	0.100 U	10/18/2011	1.77
4/17/2015	0.39	4/25/2012	0.100 U	4/25/2012	1.10
10/16/2015	4.89	10/10/2012	0.100 U	10/10/2012	0.11
3/17/2016	0.100 U	4/16/2013	0.100 U	4/17/2013	0.100 U
9/29/2016	0.91	10/29/2013	0.100 U/0.100 U	10/30/2013	0.13
3/8/2017	0.68	4/14/2014	0.100 U	4/14/2014	0.100 U
10/4/2017	1.62	10/8/2014	0.100 U	10/9/2014	0.100 U
3/12/2018	1.54	4/16/2015	0.100 U/0.3	4/17/2015	0.100 U
10/9/2018	1.09	10/14/2015	0.100 U	10/16/2015	8.24
3/25/2019	0.59/0.567	3/16/2016	0.100 U/0.100 U	3/17/2016	0.100 U/0.101
10/3/2019	0.500 U/0.500 U	9/27/2016	0.100 U/0.100 U	9/29/2016	6.19
3/17/2020	0.54/0.571	3/7/2017	0.500 U/0.500 U	3/8/2017	0.500 U
10/4/2020	1.34	10/4/2017	0.500 U	10/4/2017	0.69
3/30/2021	0.500 U	3/12/2018	1.54	3/12/2018	7.15
10/5/2021	2.38/3.08	10/9/2018	0.702/0.500 U	10/9/2018	0.87
4/4/2022	0.524/0.689	3/25/2019	1.01	3/25/2019	0.87
10/3/2022	2.10/0.446	10/3/2019	0.500 U	10/3/2019	1.58
3/27/2023	0.500 U	3/17/2020	0.500 U	3/17/2020	Outlier
10/3/2023	0.500 U	10/4/2020	0.500 U	10/4/2020	0.679/0.598
4/2/2024	0.154	3/30/2021	0.500 U/0.500 U	3/30/2021	0.861
10/8/2024	1.54	10/5/2021	1.12	10/5/2021	2.23
04/16/2025	0.13	4/4/2022	0.500 U	4/4/2022	0.852
10/08/2025	1.65	10/3/2022	0.100 U	10/3/2022	23.6
		3/29/2023	0.500 U/0.500 U	3/29/2023	1.42
		10/4/2023	0.500 U	10/4/2023	2.83
		4/2/2024	0.100 U/0.100 U	4/3/2024	1.02
		10/9/2024	0.0100 U	10/8/2024	0.262
		04/17/2025	0.100 U	04/16/2025	0.85
		10/07/2025	0.419	10/08/2025	0.281

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Benzene

Regional Test

Sum of ND	97
Total %ND	100%
Total N	97
Total S	0
Pooled sigma	108.5925105
Z	0
Prob	1
M-K result	>90% ND

Per-Well Calcs

N	31	33	33
Number ND	31	33	33
%ND	100%	100%	100%
M-K S	0	0	0
M-K sigma	58.84	64.54	64.54
M-K sigma^2	3462	4165	4165

Input Data

MW-05		MW-14		MW-16	
7/1/1995	-	7/1/1995	-	7/1/1995	-
8/1/1995	-	8/1/1995	-	8/1/1995	-
11/1/1995	-	11/1/1995	-	11/1/1995	-
2/1/1996	-	2/1/1996	-	2/1/1996	-
5/1/1996	-	5/1/1996	-	5/1/1996	-
11/1/1996	-	11/1/1996	-	11/1/1996	-
4/1/1997	-	4/1/1997	-	4/1/1997	-
11/1/1997	-	11/1/1997	-	11/1/1997	-
5/1/1998	-	5/1/1998	-	5/1/1998	-
11/1/1998	-	11/1/1998	-	11/1/1998	-
5/1/1999	-	5/1/1999	-	5/1/1999	-
11/1/1999	-	11/1/1999	-	11/1/1999	-
5/1/2000	-	5/1/2000	-	5/1/2000	-
12/1/2000	-	12/1/2000	-	12/1/2000	-
6/1/2001	-	6/1/2001	-	6/1/2001	-
11/1/2001	-	11/1/2001	-	11/1/2001	-
5/2/2002	-	5/2/2002	-	5/2/2002	-
11/2/2002	-	11/2/2002	-	11/2/2002	-
5/3/2003	-	5/3/2003	-	5/3/2003	-
5/1/2004	-	11/3/2003	-	11/3/2003	-
5/5/2005	-	5/1/2004	-	5/1/2004	-
5/6/2006	-	12/1/2004	-	12/1/2004	-
4/7/2007	-	5/5/2005	-	5/5/2005	-
10/7/2007	-	11/5/2005	-	11/5/2005	-
4/1/2008	-	5/6/2006	-	5/6/2006	-
10/1/2008	-	10/6/2006	-	10/6/2006	-
10/29/2009	-	4/7/2007	-	4/7/2007	-
3/30/2010	1.00 U	10/7/2007	-	10/7/2007	-
4/22/2010	1.00 U	4/1/2008	-	4/1/2008	-
10/16/2010	1.00 U	10/1/2008	-	10/1/2008	-
4/28/2011	1.00 U	10/29/2009	-	10/29/2009	-
10/18/2011	1.00 U	3/25/2010	1.00 U	3/30/2010	1.00 U
4/25/2012	1.00 U	4/22/2010	1.00 U	4/22/2010	1.00 U
4/16/2013	0.500 U	10/16/2010	1.00 U	10/16/2010	1.00 U
4/14/2014	0.500 U	4/28/2011	1.00 U	4/28/2011	1.00 U
10/9/2014	0.500 U	10/19/2011	1.00 U	10/18/2011	1.00 U
4/17/2015	0.500 U	4/25/2012	1.00 U	4/25/2012	1.00 U
10/16/2015	0.500 U	10/10/2012	1.00 U	10/10/2012	1.00 U
3/17/2016	0.500 U	4/16/2013	0.500 U	4/17/2013	0.500 U
9/29/2016	0.500 U	10/29/2013	0.500 U/0.500 U	10/30/2013	0.500 U
3/8/2017	0.500 U	4/14/2014	0.500 U	4/14/2014	0.500 U
10/4/2017	0.500 U	10/8/2014	0.500 U	10/9/2014	0.500 U
3/12/2018	0.500 U	4/16/2015	0.500 U/0.500 U	4/17/2015	0.500 U
10/9/2018	0.500 U	10/14/2015	0.500 U	10/16/2015	0.500 U
3/25/2019	0.500 U/0.500 U	3/16/2016	0.500 U/0.500 U	3/17/2016	0.500 U/0.500 U
10/3/2019	0.500 U/0.500 U	9/27/2016	0.500 U/0.500 U	9/29/2016	0.500 U
3/17/2020	0.500 U/0.500 U	3/7/2017	0.500 U/0.500 U	3/8/2017	0.500 U
10/4/2020	0.500 U	10/4/2017	0.500 U	10/4/2017	0.500 U
3/30/2021	0.500 U	3/12/2018	0.500 U	3/12/2018	0.500 U
10/5/2021	0.500 U/0.500 U	10/9/2018	0.500 U/0.500 U	10/9/2018	0.500 U
4/4/2022	0.500 U/0.500 U	3/25/2019	0.500 U	3/25/2019	0.500 U
10/3/2022	0.500 U/0.500 U	10/3/2019	0.500 U	10/3/2019	0.500 U
3/27/2023	0.500 U	3/17/2020	0.500 U	3/17/2020	0.500 U
10/3/2023	0.500 U	10/4/2020	0.500 U	10/4/2020	0.500 U/0.500 U
4/2/2024	0.500 U	3/30/2021	0.500 U/0.500 U	3/30/2021	0.500 U
10/8/2024	0.500 U	10/5/2021	0.500 U	10/5/2021	0.500 U
04/16/2025	0.500 U	4/4/2022	0.500 U	4/4/2022	0.500 U
10/08/2025	0.500 U	10/3/2022	0.500 U	10/3/2022	0.500 U
		3/29/2023	0.500 U/0.500 U	3/29/2023	0.500 U
		10/4/2023	0.500 U	10/4/2023	0.500 U
		4/2/2024	0.500 U/0.500 U	4/3/2024	0.500 U
		10/9/2024	0.500 U	10/8/2024	0.500 U
		04/17/2025	0.500 U	04/16/2025	0.500 U
		10/07/2025	0.500 U	10/08/2025	0.500 U

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Ammonia-N

Regional Test

Sum of ND	125
Total %ND	67%
Total N	186
Total S	-411
Pooled sigma	286.0203955
Z	-1.433464209
Prob	0.15172522
M-K result	No trend identified

Per-Well Calcs

N	58	64	64
Number ND	58	60	7
%ND	100%	94%	11%
M-K S	0	-199	-212
M-K sigma	149.08	172.60	172.60
M-K sigma^2	22224	29792	29792

Input Data

MW-05		MW-14		MW-16	
7/1/1995	0.200 U	7/1/1995	0.560	7/1/1995	1.500
8/1/1995	0.200 U	8/1/1995	0.200 U	8/1/1995	1.700
11/1/1995	0.200 U	11/1/1995	0.200 U	11/1/1995	1.500
2/1/1996	0.200 U	2/1/1996	0.200 U	2/1/1996	2.200
5/1/1996	0.200 U	5/1/1996	0.200 U	5/1/1996	1.700
11/1/1996	0.200 U	11/1/1996	0.230	11/1/1996	0.800
4/1/1997	0.200 U	4/1/1997	0.200 U	4/1/1997	1.000
11/1/1997	0.200 U	11/1/1997	0.200 U	11/1/1997	0.200 U
5/1/1998	0.200 U	5/1/1998	0.200 U	5/1/1998	0.200 U
11/1/1998	0.200 U	11/1/1998	0.200 U	11/1/1998	1.500
5/1/1999	0.200 U	5/1/1999	0.230	5/1/1999	1.800
11/1/1999	0.200 U	11/1/1999	0.200 U	11/1/1999	1.700
5/1/2000	0.200 U	5/1/2000	0.240	5/1/2000	1.980
12/1/2000	0.200 U	12/1/2000	0.200 U	12/1/2000	1.780
6/1/2001	0.200 U	6/1/2001	0.200 U	6/1/2001	1.620
11/1/2001	0.200 U	11/1/2001	0.200 U	11/1/2001	1.400
5/2/2002	0.200 U	5/2/2002	0.200 U	5/2/2002	1.640
11/2/2002	0.200 U	11/2/2002	0.200 U	11/2/2002	1.420
5/3/2003	0.200 U	5/3/2003	0.200 U	5/3/2003	1.650
5/1/2004	0.200 U	11/3/2003	0.200 U	11/3/2003	1.750
5/5/2005	0.200 U	5/1/2004	0.200 U	5/1/2004	1.600
5/6/2006	0.200 U	12/1/2004	0.200 U	12/1/2004	1.590
4/7/2007	0.200 U	5/5/2005	0.200 U	5/5/2005	1.500
10/7/2007	0.200 U	11/5/2005	0.200 U	11/5/2005	0.200 U
4/1/2008	0.200 U	5/6/2006	0.200 U	5/6/2006	0.469
10/1/2008	0.200 U	10/6/2006	0.200 U	10/6/2006	1.660
10/29/2009	0.200 U	4/7/2007	0.200 U	4/7/2007	0.200 U
3/30/2010	0.200 U	10/7/2007	0.200 U	10/7/2007	1.100
4/22/2010	0.200 U	4/1/2008	0.200 U	4/1/2008	0.200 U
10/16/2010	0.200 U	10/1/2008	0.200 U	10/1/2008	1.490
4/28/2011	0.200 U	10/29/2009	0.200 U	10/29/2009	0.200 U
10/18/2011	0.200 U	3/25/2010	0.200 U	3/30/2010	1.800
4/25/2012	0.200 U	4/22/2010	0.200 U	4/22/2010	1.830
4/16/2013	0.200 U	10/16/2010	0.200 U	10/16/2010	1.830
4/14/2014	0.200 U	4/28/2011	0.200 U	4/28/2011	1.890
10/9/2014	0.200 U	10/19/2011	0.200 U	10/18/2011	2.000
4/17/2015	0.200 U	4/25/2012	0.200 U	4/25/2012	2.170
10/16/2015	0.200 U	10/10/2012	0.200 U	10/10/2012	1.690
3/17/2016	0.200 U	4/16/2013	0.200 U	4/17/2013	1.890
9/29/2016	0.200 U	10/29/2013	0.200 U/0.200 U	10/30/2013	0.952
3/8/2017	0.200 U	4/14/2014	0.200 U	4/14/2014	1.690
10/4/2017	0.200 U	10/8/2014	0.200 U	10/9/2014	0.811
3/12/2018	0.200 U	4/16/2015	0.200 U/0.200 U	4/17/2015	1.880
10/9/2018	0.200 U	10/14/2015	0.200 U	10/16/2015	1.560
3/25/2019	0.200 U/0.200 U	3/16/2016	0.200 U/0.200 U	3/17/2016	0.59/0.456
10/3/2019	0.200 U/0.200 U	9/27/2016	0.200 U/0.200 U	9/29/2016	1.530
3/17/2020	0.200 U/0.200 U	3/7/2017	0.200 U/0.200 U	3/8/2017	0.584
10/4/2020	0.200 U	10/4/2017	0.200 U	10/4/2017	0.200 U
3/30/2021	0.200 U	3/12/2018	0.200 U	3/12/2018	0.776
10/5/2021	0.200 U/0.200 U	10/9/2018	0.200 U/0.200 U	10/9/2018	1.430
4/4/2022	0.200 U/0.200 U	3/25/2019	0.200 U	3/25/2019	0.316
10/3/2022	0.200 U/0.200 U	10/3/2019	0.200 U	10/3/2019	1.420
3/27/2023	0.200 U	3/17/2020	0.200 U	3/17/2020	1.860
10/3/2023	0.200 U	10/4/2020	0.200 U	10/4/2020	0.536/0.542
4/2/2024	0.200 U	3/30/2021	0.200 U/0.200 U	3/30/2021	1.35
10/8/2024	0.200 U	10/5/2021	0.200 U	10/5/2021	0.671
04/16/2025	0.200 UJ	4/4/2022	0.200 U	4/4/2022	1.520
10/08/2025	0.500 UJ	10/3/2022	0.200 U	10/3/2022	0.368
		3/29/2023	0.200 U/0.200 U	3/29/2023	1.660
		10/4/2023	0.200 U	10/4/2023	1.760
		4/2/2024	0.200 U/0.200 U	4/3/2024	1.24
		10/9/2024	0.200 U	10/8/2024	1.45
		04/17/2025	0.200 UJ	04/16/2025	1.18 J-
		10/07/2025	0.500 UJ	10/08/2025	1.38 J-

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COD

Regional Test

Sum of ND	116
Total %ND	63%
Total N	185
Total S	128
Pooled sigma	283.6241645
Z	0.447775669
Prob	0.654315105
M-K result	No trend identified

Per-Well Calcs

N	58	63	64
Number ND	33	48	35
%ND	57%	76%	55%
M-K S	81	127	-80
M-K sigma	149.08	168.60	172.60
M-K sigma^2	22224	28427	29792

Input Data

MW-05		MW-14		MW-16	
7/1/1995	5.00 U	7/1/1995	5.00 U	7/1/1995	6.8
8/1/1995	5.00 U	8/1/1995	5.00 U	8/1/1995	8.9
11/1/1995	5.00 U	11/1/1995	5.2	11/1/1995	14.0
2/1/1996	12.0	2/1/1996	7.3	2/1/1996	5.00 U
5/1/1996	5.00 U	5/1/1996	5.00 U	5/1/1996	7.5
11/1/1996	5.00 U	11/1/1996	5.00 U	11/1/1996	11.0
4/1/1997	5.00 U	4/1/1997	5.00 U	4/1/1997	5.00 U
11/1/1997	5.00 U	11/1/1997	5.00 U	11/1/1997	5.00 U
5/1/1998	7.3	5/1/1998	5.00 U	5/1/1998	5.00 U
11/1/1998	5.00 U	11/1/1998	5.00 U	11/1/1998	8.6
5/1/1999	24.0	5/1/1999	Outlier	5/1/1999	5.2
11/1/1999	5.00 U	11/1/1999	5.00 U	11/1/1999	5.00 U
5/1/2000	5.00 U	5/1/2000	5.00 U	5/1/2000	12.0
12/1/2000	5.00 U	12/1/2000	5.00 U	12/1/2000	5.00 U
6/1/2001	7.4	6/1/2001	5.00 U	6/1/2001	6.4
11/1/2001	5.00 U	11/1/2001	5.00 U	11/1/2001	6.7
5/2/2002	5.00 U	5/2/2002	5.00 U	5/2/2002	5.00 U
11/2/2002	8.3	11/2/2002	12.0	11/2/2002	7.8
5/3/2003	5.00 U	5/3/2003	5.00 U	5/3/2003	5.00 U
5/1/2004	10.0	11/3/2003	5.00 U	11/3/2003	5.00 U
5/5/2005	5.00 U	5/1/2004	5.3	5/1/2004	5.00 U
5/6/2006	18.5	12/1/2004	5.00 U	12/1/2004	5.00 U
4/7/2007	5.2	5/5/2005	5.00 U	5/5/2005	6.8
10/7/2007	9.3	11/5/2005	5.00 U	11/5/2005	5.00 U
4/1/2008	12.6	5/6/2006	5.00 U	5/6/2006	5.00 U
10/1/2008	9.3	10/6/2006	8.1	10/6/2006	9.0
10/29/2009	5.6	4/7/2007	5.00 U	4/7/2007	5.00 U
3/30/2010	5.00 U	10/7/2007	5.00 U	10/7/2007	5.00 U
4/22/2010	5.00 U	4/1/2008	20.8	4/1/2008	20.6
10/16/2010	5.00 U	10/1/2008	5.00 U	10/1/2008	9.9
4/28/2011	5.00 U	10/29/2009	5.00 U	10/29/2009	25.0 U
10/18/2011	5.00 U	3/25/2010	25.0 U	3/30/2010	5.00 U
4/25/2012	5.00 U	4/22/2010	5.00 U	4/22/2010	5.00 U
4/16/2013	7.9	10/16/2010	7.5	10/16/2010	5.00 U
4/14/2014	5.00 U	4/28/2011	5.00 U	4/28/2011	5.5
10/9/2014	5.00 U	10/19/2011	5.6	10/18/2011	6.6
4/17/2015	5.00 U	4/25/2012	5.00 U	4/25/2012	5.00 U
10/16/2015	11.6	10/10/2012	5.00 U	10/10/2012	5.00 U
3/17/2016	7.5	4/16/2013	5.00 U	4/17/2013	5.00 U
9/29/2016	9.6	10/29/2013	5.00 U/5.00 U	10/30/2013	6.3
3/8/2017	5.5	4/14/2014	5.00 U	4/14/2014	5.00 U
10/4/2017	5.00 U	10/8/2014	5.00 U	10/9/2014	5.00 U
3/12/2018	5.00 U	4/16/2015	5.00 U/5.00 U	4/17/2015	5.7
10/9/2018	13.4	10/14/2015	5.00 U	10/16/2015	5.3
3/25/2019	5.00 U/5.00 U	3/16/2016	7.54/6.88	3/17/2016	5.00 U/5.00 U
10/3/2019	8.99/9.33	9/27/2016	5.00 U/5.00 U	9/29/2016	20.1
3/17/2020	5.00 U/5.00 U	3/7/2017	5.00 U/5.00 U	3/8/2017	5.00 U
10/4/2020	5.4	10/4/2017	5.00 U	10/4/2017	6.8
3/30/2021	5.00 U	3/12/2018	5.00 U	3/12/2018	5.00 U
10/5/2021	5.00 U/7.98	10/9/2018	5.00 U/5.00 U	10/9/2018	5.00 U
4/4/2022	5.00 U/9.14	3/25/2019	5.00 U	3/25/2019	5.00 U
10/3/2022	5.00 U/7.23	10/3/2019	5.00 U	10/3/2019	5.00 U
3/27/2023	25.0 U	3/17/2020	6.7	3/17/2020	5.0
10/3/2023	7.9	10/4/2020	5.00 U	10/4/2020	5.00 U/5.1
4/2/2024	5.00 U	3/30/2021	5.00 U/5.00 U	3/30/2021	5.00 U
10/8/2024	5.00 U	10/5/2021	9.04	10/5/2021	5.00 U
04/16/2025	11	4/4/2022	6.0	4/4/2022	8.45
10/08/2025	25.0 U	10/3/2022	5.00 U	10/3/2022	7.23
		3/29/2023	5.00 U/5.00 U	3/29/2023	5.00 U
		10/4/2023	5.5	10/4/2023	15.5
		4/2/2024	5.00 U/5.45	4/3/2024	21.8
		10/9/2024	5.00 U	10/8/2024	5.00 U
		04/17/2025	6.81	04/16/2025	16
		10/07/2025	25.0 U	10/08/2025	25.0 U

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Phenolics

Regional Test

Sum of ND	106
Total %ND	95%
Total N	111
Total S	-40
Pooled sigma	133.539008
Z	-0.292049496
Prob	0.77024878
M-K result	>90% ND

Per-Well Calcs

N	33	39	39
Number ND	32	37	37
%ND	97%	95%	95%
M-K S	16	-47	-9
M-K sigma	64.54	82.67	82.67
M-K sigma^2	4165	6834	6834

Input Data

MW-05		MW-14		MW-16	
7/1/1995	0.0200 U	7/1/1995	0.0200 U	7/1/1995	0.0200 U
8/1/1995	0.0200 U	8/1/1995	0.0240	8/1/1995	0.0240
11/1/1995	0.0200 U	11/1/1995	0.0200 U	11/1/1995	0.0200 U
2/1/1996	0.0200 U	2/1/1996	0.0200 U	2/1/1996	0.0200 U
5/1/1996	-	5/1/1996	-	5/1/1996	-
11/1/1996	0.0200 U	11/1/1996	0.0200 U	11/1/1996	0.0200 U
4/1/1997	-	4/1/1997	-	4/1/1997	-
11/1/1997	0.0200 U	11/1/1997	0.0200 U	11/1/1997	0.0200 U
5/1/1998	-	5/1/1998	-	5/1/1998	-
11/1/1998	0.0200 U	11/1/1998	0.0200 U	11/1/1998	0.0200 U
5/1/1999	-	5/1/1999	-	5/1/1999	-
11/1/1999	0.0200 U	11/1/1999	0.0200 U	11/1/1999	0.0200 U
5/1/2000	-	5/1/2000	-	5/1/2000	-
12/1/2000	0.0200 U	12/1/2000	0.0200 U	12/1/2000	0.0200 U
6/1/2001	-	6/1/2001	-	6/1/2001	-
11/1/2001	0.0200 U	11/1/2001	0.0200 U	11/1/2001	0.0200 U
5/2/2002	-	5/2/2002	-	5/2/2002	-
11/2/2002	0.0200 U	11/2/2002	0.0200 U	11/2/2002	0.0200 U
5/3/2003	-	5/3/2003	-	5/3/2003	-
5/1/2004	-	11/3/2003	0.0200 U	11/3/2003	0.0200 U
5/5/2005	-	5/1/2004	-	5/1/2004	-
5/6/2006	-	12/1/2004	0.0200 U	12/1/2004	0.0200 U
4/7/2007	-	5/5/2005	-	5/5/2005	-
10/7/2007	0.0180 U	11/5/2005	0.0200 U	11/5/2005	0.0200 U
4/1/2008	-	5/6/2006	-	5/6/2006	-
10/1/2008	0.0180 U	10/6/2006	0.0160	10/6/2006	0.0180 U
10/29/2009	0.0180 U	4/7/2007	-	4/7/2007	-
3/30/2010	0.0200 U	10/7/2007	0.0180 U	10/7/2007	0.0200 U
4/22/2010	0.0180 U	4/1/2008	-	4/1/2008	-
10/16/2010	0.0200 U	10/1/2008	0.0200 U	10/1/2008	0.0200 U
4/28/2011	0.0200 U	10/29/2009	0.0180 U	10/29/2009	0.0180 U
10/18/2011	0.0200 U	3/25/2010	0.0180 U	3/30/2010	0.0200 U
4/25/2012	0.0200 U	4/22/2010	0.0180 U	4/22/2010	0.0180 U
4/16/2013	0.0200 U	10/16/2010	0.0200 U	10/16/2010	0.0200 U
4/14/2014	0.0100 U	4/28/2011	0.0200 U	4/28/2011	0.0200 U
10/9/2014	-	10/19/2011	0.0200 U	10/18/2011	0.0200 U
4/17/2015	0.0184 U	4/25/2012	0.0200 U	4/25/2012	0.0200 U
10/16/2015	-	10/10/2012	0.0200 U	10/10/2012	0.0200 U
3/17/2016	0.0196 U	4/16/2013	0.0192 U	4/17/2013	0.0210 U
9/29/2016	-	10/29/2013	0.0196 U/0.0180 U	10/30/2013	0.0180 U
3/8/2017	0.0193	4/14/2014	0.0180 U	4/14/2014	0.0196 U
10/4/2017	-	10/8/2014	-	10/9/2014	-
3/12/2018	0.0180 U	4/16/2015	0.0180 U/0.0200 U	4/17/2015	0.0200 U
10/9/2018	-	10/14/2015	-	10/16/2015	-
3/25/2019	0.0200 U/0.0188 U	3/16/2016	0.0196 U/0.0204 U	3/17/2016	0.0204 U/0.0180 U
10/3/2019	-	9/27/2016	-	9/29/2016	-
3/17/2020	0.0200 U/0.0184 U	3/7/2017	0.0180 U/0.0188 U	3/8/2017	0.0180 U
10/4/2020	-	10/4/2017	-	10/4/2017	-
3/30/2021	0.0188 U	3/12/2018	0.0184 U	3/12/2018	0.0180 U
10/5/2021	-	10/9/2018	-	10/9/2018	-
4/4/2022	0.0200 U/0.0196 U	3/25/2019	0.0204 U	3/25/2019	0.0519
10/3/2022	-	10/3/2019	-	10/3/2019	-
3/27/2023	0.0200 U	3/17/2020	0.0192 U	3/17/2020	0.0180 U
10/3/2023	-	10/4/2020	-	10/4/2020	-
4/2/2024	0.0200 U	3/30/2021	0.0212 U/0.0184 U	3/30/2021	0.0184 U
10/8/2024	-	10/5/2021	-	10/5/2021	-
04/16/2025	0.0200 U	4/4/2022	0.0192 U	4/4/2022	0.0192 U
10/08/2025	-	10/3/2022	-	10/3/2022	-
		3/29/2023	0.0204 U/0.0200 U	3/29/2023	0.200 U
		10/4/2023	-	10/4/2023	-
		4/2/2024	0.0208 U/0.0200 U	4/3/2024	0.0200 U
		10/9/2024	-	10/8/2024	-
		04/17/2025	0.0200 U	04/16/2025	0.0200 U
		10/07/2025	-	10/08/2025	-

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Chloride

Regional Test

Sum of ND	70
Total %ND	39%
Total N	181
Total S	455
Pooled sigma	276.7297117
Z	1.640590008
Prob	0.10088255
M-K result	No trend identified

Per-Well Calcs

N	53	64	64
Number ND	9	0	61
%ND	17%	0%	95%
M-K S	397	126	-68
M-K sigma	130.37	172.60	172.60
M-K sigma^2	16995	29792	29792

Input Data

MW-05		MW-14		MW-16	
7/1/1995	6.7	7/1/1995	6.7	7/1/1995	5.00 U
8/1/1995	5.00 U	8/1/1995	6.0	8/1/1995	6.0
11/1/1995	5.8	11/1/1995	7.7	11/1/1995	5.00 U
2/1/1996	7.7	2/1/1996	7.7	2/1/1996	5.00 U
5/1/1996	5.00 U	5/1/1996	8.3	5/1/1996	5.00 U
11/1/1996	6.3	11/1/1996	8.1	11/1/1996	5.00 U
4/1/1997	5.00 U	4/1/1997	9.4	4/1/1997	5.00 U
11/1/1997	5.9	11/1/1997	8.7	11/1/1997	5.00 U
5/1/1998	6.0	5/1/1998	11.7	5/1/1998	5.00 U
11/1/1998	8.5	11/1/1998	8.4	11/1/1998	5.00 U
5/1/1999	6.2	5/1/1999	9.3	5/1/1999	5.00 U
11/1/1999	5.1	11/1/1999	8.8	11/1/1999	5.00 U
5/1/2000	5.2	5/1/2000	9.4	5/1/2000	5.00 U
12/1/2000	5.9	12/1/2000	8.2	12/1/2000	5.00 U
6/1/2001	7.4	6/1/2001	8.6	6/1/2001	5.00 U
11/1/2001	5.00 U	11/1/2001	8.6	11/1/2001	6.7
5/2/2002	11.8	5/2/2002	8.7	5/2/2002	5.00 U
11/2/2002	6.1	11/2/2002	7.9	11/2/2002	5.00 U
5/3/2003	6.5	5/3/2003	10.2	5/3/2003	5.00 U
5/1/2004	5.1	11/3/2003	8.6	11/3/2003	5.00 U
5/5/2005	12.0	5/1/2004	9.6	5/1/2004	5.00 U
5/6/2006	27.0	12/1/2004	7.9	12/1/2004	5.00 U
4/7/2007	33.8	5/5/2005	8.4	5/5/2005	5.00 U
10/7/2007	10.2	11/5/2005	8.6	11/5/2005	5.00 U
4/1/2008	11.9	5/6/2006	8.2	5/6/2006	5.00 U
10/1/2008	26.1	10/6/2006	8.2	10/6/2006	5.00 U
10/29/2009	12.1	4/7/2007	7.9	4/7/2007	5.00 U
3/30/2010	8.5	10/7/2007	7.8	10/7/2007	5.00 U
4/22/2010	10.6	4/1/2008	7.6	4/1/2008	5.00 U
10/16/2010	6.8	10/1/2008	6.9	10/1/2008	5.00 U
4/28/2011	5.5	10/29/2009	6.7	10/29/2009	5.00 U
10/18/2011	13.2	3/25/2010	6.8	3/30/2010	5.00 U
4/25/2012	5.6	4/22/2010	7.1	4/22/2010	5.00 U
4/16/2013	5.00 U	10/16/2010	6.6	10/16/2010	5.00 U
4/14/2014	24.4	4/28/2011	7.1	4/28/2011	5.00 U
10/9/2014	46.2	10/19/2011	7.6	10/18/2011	5.00 U
4/17/2015	54.5	4/25/2012	6.6	4/25/2012	5.00 U
10/16/2015	61.6	10/10/2012	7.4	10/10/2012	5.00 U
3/17/2016	16.1	4/16/2013	7.6	4/17/2013	5.00 U
9/29/2016	22.1	10/29/2013	7.89/7.89	10/30/2013	5.00 U
3/8/2017	16.6	4/14/2014	7.5	4/14/2014	5.00 U
10/4/2017	23.4	10/8/2014	7.2	10/9/2014	5.00 U
3/12/2018	20.9	4/16/2015	7.55/7.61	4/17/2015	5.00 U
10/9/2018	5.00 U	10/14/2015	11.8	10/16/2015	7.5
3/25/2019	6.87/6.28	3/16/2016	8.11/7.97	3/17/2016	5.00 U/5.00 U
10/3/2019	5.00 U/5.00 U	9/27/2016	8.79/8.2	9/29/2016	5.00 U
3/17/2020	5.00 U/5.00 U	3/7/2017	8.26/8.26	3/8/2017	5.00 U
10/4/2020	5.00 U	10/4/2017	6.9	10/4/2017	5.00 U
3/30/2021	6.65	3/12/2018	8.8	3/12/2018	5.00 U
10/5/2021	11.0/11.7	10/9/2018	8.95/8.91	10/9/2018	5.00 U
4/4/2022	29.2/30.2	3/25/2019	8.8	3/25/2019	5.00 U
10/3/2022	49.4/43.6	10/3/2019	8.5	10/3/2019	5.00 U
3/27/2023	71.9	3/17/2020	8.8	3/17/2020	5.00 U
10/3/2023	Outlier	10/4/2020	7.7	10/4/2020	5.00 U/5.00 U
4/2/2024	Outlier	3/30/2021	10.4/11.4	3/30/2021	5.00 U
10/8/2024	Outlier	10/5/2021	8.63	10/5/2021	5.00 U
04/16/2025	Outlier	4/4/2022	9.34	4/4/2022	5.00 U
10/08/2025	Outlier	10/3/2022	8.68	10/3/2022	5.00 U
		3/29/2023	9.69/9.7	3/29/2023	5.00 U
		10/4/2023	8.5	10/4/2023	5.00 U
		4/2/2024	9.32/8.66	4/3/2024	5.00 U
		10/9/2024	9.78	10/8/2024	5.00 U
		04/17/2025	8.59	04/16/2025	5.00 U
		10/07/2025	7.37	10/08/2025	5.00 U

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TOX

Regional Test

Sum of ND	81
Total %ND	83%
Total N	98
Total S	123
Pooled sigma	111.0600438
Z	1.098504879
Prob	0.271984088
M-K result	No trend identified

Per-Well Calcs

N	30	32	36
Number ND	22	28	31
%ND	73%	88%	86%
M-K S	76	-14	61
M-K sigma	56.05	61.67	73.42
M-K sigma^2	3142	3803	5390

Input Data

MW-05		MW-14		MW-16	
7/1/1995	-	7/1/1995	-	7/1/1995	-
8/1/1995	-	8/1/1995	-	8/1/1995	-
11/1/1995	0.0100 U	11/1/1995	0.0100 U	11/1/1995	0.0100 U
2/1/1996	-	2/1/1996	-	2/1/1996	-
5/1/1996	-	5/1/1996	-	5/1/1996	-
11/1/1996	0.0100 U	11/1/1996	0.0100 U	11/1/1996	0.0100 U
4/1/1997	-	4/1/1997	-	4/1/1997	-
11/1/1997	0.0100 U	11/1/1997	0.0100 U	11/1/1997	0.0100 U
5/1/1998	-	5/1/1998	-	5/1/1998	-
11/1/1998	0.0100 U	11/1/1998	0.0100 U	11/1/1998	0.0100 U
5/1/1999	-	5/1/1999	-	5/1/1999	-
11/1/1999	0.0100 U	11/1/1999	0.0100 U	11/1/1999	0.0100 U
5/1/2000	-	5/1/2000	-	5/1/2000	-
12/1/2000	0.0100 U	12/1/2000	0.0100 U	12/1/2000	0.0100 U
6/1/2001	-	6/1/2001	-	6/1/2001	-
11/1/2001	0.0100 U	11/1/2001	0.0100 U	11/1/2001	0.0100 U
5/2/2002	-	5/2/2002	-	5/2/2002	-
11/2/2002	0.0100 U	11/2/2002	0.0100 U	11/2/2002	0.0100 U
5/3/2003	-	5/3/2003	-	5/3/2003	-
5/1/2004	-	11/3/2003	-	11/3/2003	0.0100 U
5/5/2005	-	5/1/2004	-	5/1/2004	-
5/6/2006	-	12/1/2004	-	12/1/2004	0.0100 U
4/7/2007	-	5/5/2005	-	5/5/2005	-
10/7/2007	0.0100 U	11/5/2005	-	11/5/2005	0.0100 U
4/1/2008	-	5/6/2006	-	5/6/2006	-
10/1/2008	0.0100 U	10/6/2006	-	10/6/2006	0.0100 U
10/29/2009	0.0232	4/7/2007	-	4/7/2007	-
3/30/2010	0.0100 U	10/7/2007	0.0100 U	10/7/2007	0.0100 U
4/22/2010	0.0138	4/1/2008	-	4/1/2008	-
10/16/2010	0.0230	10/1/2008	0.0100 U	10/1/2008	0.0100 U
4/28/2011	0.0114	10/29/2009	0.0177	10/29/2009	0.0125
10/18/2011	0.0100 U	3/25/2010	0.0100 U	3/30/2010	0.0424
4/25/2012	0.0144	4/22/2010	0.0100 U	4/22/2010	0.0100 U
4/16/2013	0.0300 U	10/16/2010	0.0356	10/16/2010	0.0100 U
4/14/2014	0.0300 U	4/28/2011	0.0100 U	4/28/2011	0.0100 U
10/9/2014	-	10/19/2011	0.0100 U	10/18/2011	0.0100 U
4/17/2015	0.0300 U	4/25/2012	0.0112	4/25/2012	0.0106
10/16/2015	-	10/10/2012	0.0128	10/10/2012	0.0100 U
3/17/2016	0.0300 U	4/16/2013	0.0300 U	4/17/2013	0.0300 U
9/29/2016	-	10/29/2013	0.0300 U/0.0300 U	10/30/2013	0.0300 U
3/8/2017	0.200 U	4/14/2014	0.0300 U	4/14/2014	0.0300 U
10/4/2017	-	10/8/2014	-	10/9/2014	-
3/12/2018	0.0300 U	4/16/2015	0.0300 U/0.0300 U	4/17/2015	0.0300 U
10/9/2018	-	10/14/2015	-	10/16/2015	-
3/25/2019	0.0300 U/0.0300 U	3/16/2016	0.0300 U/0.0300 U	3/17/2016	0.0300 U/0.0300 U
10/3/2019	-	9/27/2016	-	9/29/2016	-
3/17/2020	0.0400 U/0.0400 U	3/7/2017	0.0200 U/0.0200 U	3/8/2017	0.0200 U
10/4/2020	-	10/4/2017	-	10/4/2017	-
3/30/2021	0.0400 U	3/12/2018	0.0300 U	3/12/2018	0.0300 U
10/5/2021	-	10/9/2018	-	10/9/2018	-
4/4/2022	0.0400 U/0.0461	3/25/2019	0.0300 U	3/25/2019	0.0300 U
10/3/2022	-	10/3/2019	-	10/3/2019	-
3/27/2023	0.0400 U	3/17/2020	0.0400 U	3/17/2020	0.0400 U
10/3/2023	-	10/4/2020	-	10/4/2020	-
4/2/2024	0.126	3/30/2021	0.0400 U/0.0400 U	3/30/2021	0.0400 U
10/8/2024	-	10/5/2021	-	10/5/2021	-
04/16/2025	0.276	4/4/2022	0.0400 U	4/4/2022	0.0484
10/08/2025	-	10/3/2022	-	10/3/2022	-
		3/29/2023	0.0400 U/0.0400 U	3/29/2023	0.0400 U
		10/4/2023	-	10/4/2023	-
		4/2/2024	0.0400 U/0.0400 U	4/3/2024	0.0982
		10/9/2024	-	10/8/2024	-
		04/17/2025	0.0600 U	04/16/2025	0.0600 U
		10/07/2025	-	10/08/2025	-

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Conductance

Regional Test

Sum of ND	0
Total %ND	0%
Total N	57
Total S	81
Pooled sigma	49.50757518
Z	1.615914326
Prob	0.106112838
M-K result	No trend identified

Per-Well Calcs

N	19	19	19
Number ND	0	0	0
%ND	0%	0%	0%
M-K S	55	21	5
M-K sigma	28.58	28.58	28.58
M-K sigma^2	817	817	817

Input Data

[illegible]

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pH

Regional Test

Sum of ND	0
Total %ND	0%
Total N	105
Total S	-220
Pooled sigma	123.1002302
Z	-1.779038103
Prob	0.075233515
M-K result	No trend identified

Per-Well Calcs

N	31	37	37
Number ND	0	0	0
%ND	0%	0%	0%
M-K S	-23	-96	-101
M-K sigma	58.84	76.46	76.46
M-K sigma^2	3462	5846	5846

Input Data

MW-05		MW-14		MW-16	
3/30/2010	7.18	10/7/2007	7.72	10/7/2007	7.45
4/22/2010	6.96	4/1/2008	7.01	4/1/2008	8.22
10/16/2010	6.87	10/1/2008	7.13	10/1/2008	7.77
4/28/2011	7.03	10/29/2009	7.08	10/29/2009	8.33
10/18/2011	7.04	3/25/2010	6.95	3/30/2010	7.85
4/25/2012	7.11	4/22/2010	6.87	4/22/2010	7.49
4/16/2013	6.61	10/16/2010	7.02	10/16/2010	7.70
4/14/2014	7.51	4/28/2011	6.93	4/28/2011	7.70
10/9/2014	7.20	10/19/2011	6.92	10/18/2011	8.04
4/17/2015	6.96	4/25/2012	7.00	4/25/2012	7.48
10/16/2015	7.29	10/10/2012	6.74	10/10/2012	7.33
3/17/2016	6.60	4/16/2013	6.79	4/17/2013	6.95
9/29/2016	6.98	10/29/2013	6.86	10/30/2013	7.44
3/8/2017	7.00	4/14/2014	6.91	4/14/2014	7.51
10/4/2017	6.63	10/8/2014	7.05	10/9/2014	8.02
3/12/2018	6.70	4/16/2015	6.50	4/17/2015	6.96
10/9/2018	7.20	10/14/2015	7.07	10/16/2015	7.74
3/25/2019	7.42	3/16/2016	6.29	3/17/2016	8.70
10/3/2019	6.89	9/27/2016	6.84	9/29/2016	7.43
3/17/2020	7.33	3/7/2017	6.80	3/8/2017	7.31
10/4/2020	6.93	10/4/2017	6.65	10/4/2017	7.23
3/30/2021	7.28	3/12/2018	6.59	3/12/2018	7.16
10/5/2021	6.97	10/9/2018	6.98	10/9/2018	7.61
4/4/2022	9.27	3/25/2019	7.21	3/25/2019	8.04
10/3/2022	7.53	10/3/2019	6.68	10/3/2019	7.40
3/27/2023	7.02	3/17/2020	6.99	3/17/2020	7.60
10/3/2023	6.42	10/4/2020	6.85	10/4/2020	7.29
4/2/2024	6.15	3/30/2021	7.16	3/30/2021	7.56
10/8/2024	6.17	10/5/2021	6.85	10/5/2021	7.79
04/16/2025	7.2	4/4/2022	8.19	4/4/2022	8.68
10/08/2025	6.737	10/3/2022	7.62	10/3/2022	8.49
		3/29/2023	8.01	3/29/2023	8.56
		10/4/2023	6.34	10/4/2023	6.89
		4/2/2024	6.47	4/3/2024	6.35
		10/9/2024	6.71	10/8/2024	6.63
		04/17/2025	7.05	04/16/2025	7.79
		10/07/2025	6.763	10/08/2025	7.271

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Iron

Regional Test

Sum of ND	40
Total %ND	42%
Total N	96
Total S	150
Pooled sigma	106.9096191
Z	1.393700597
Prob	0.163408036
M-K result	No trend identified

Per-Well Calcs

N	31	33	32
Number ND	7	27	6
%ND	23%	82%	19%
M-K S	-25	53	122
M-K sigma	58.84	64.54	61.67
M-K sigma^2	3462	4165	3803

Input Data

MW-05		MW-14		MW-16	
3/30/2010	0.99				
4/22/2010	1.03				
10/16/2010	1.15				
4/28/2011	0.28				
10/18/2011	1.61	3/25/2010	0.100 U	3/30/2010	0.100 U
4/25/2012	0.80	4/22/2010	0.100 U	4/22/2010	0.12
4/16/2013	0.100 U	10/16/2010	0.100 U	10/16/2010	0.51
4/14/2014	0.100 U	4/28/2011	0.100 U	4/28/2011	0.18
10/9/2014	2.63	10/19/2011	0.100 U	10/18/2011	1.77
4/17/2015	0.39	4/25/2012	0.100 U	4/25/2012	1.10
10/16/2015	4.89	10/10/2012	0.100 U	10/10/2012	0.11
3/17/2016	0.100 U	4/16/2013	0.100 U	4/17/2013	0.100 U
9/29/2016	0.91	10/29/2013	0.100 U/0.100 U	10/30/2013	0.13
3/8/2017	0.68	4/14/2014	0.100 U	4/14/2014	0.100 U
10/4/2017	1.62	10/8/2014	0.100 U	10/9/2014	0.100 U
3/12/2018	1.54	4/16/2015	0.100 U/0.3	4/17/2015	0.100 U
10/9/2018	1.09	10/14/2015	0.100 U	10/16/2015	8.24
3/25/2019	0.59/0.567	3/16/2016	0.100 U/0.100 U	3/17/2016	0.100 U/0.101
10/3/2019	0.500 U/0.500 U	9/27/2016	0.100 U/0.100 U	9/29/2016	6.19
3/17/2020	0.54/0.571	3/7/2017	0.500 U/0.500 U	3/8/2017	0.500 U
10/4/2020	1.34	10/4/2017	0.500 U	10/4/2017	0.69
3/30/2021	0.500 U	3/12/2018	1.54	3/12/2018	7.15
10/5/2021	2.38/3.08	10/9/2018	0.702/0.500 U	10/9/2018	0.87
4/4/2022	0.524/0.689	3/25/2019	1.01	3/25/2019	0.87
10/3/2022	2.10/0.446	10/3/2019	0.500 U	10/3/2019	1.58
3/27/2023	0.500 U	3/17/2020	0.500 U	3/17/2020	Outlier
10/3/2023	0.500 U	10/4/2020	0.500 U	10/4/2020	0.679/0.598
4/2/2024	0.154	3/30/2021	0.500 U/0.500 U	3/30/2021	0.861
10/8/2024	1.54	10/5/2021	1.12	10/5/2021	2.23
04/16/2025	0.13	4/4/2022	0.500 U	4/4/2022	0.852
10/08/2025	1.65	10/3/2022	0.100 U	10/3/2022	23.6
		3/29/2023	0.500 U/0.500 U	3/29/2023	1.42
		10/4/2023	0.500 U	10/4/2023	2.83
		4/2/2024	0.100 U/0.100 U	4/3/2024	1.02
		10/9/2024	0.0100 U	10/8/2024	0.262
		04/17/2025	0.100 U	04/16/2025	0.85
		10/07/2025	0.419	10/08/2025	0.281

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Chloride

Regional Test

Sum of ND	8
Total %ND	33%
Total N	24
Total S	12
Pooled sigma	14
Z	0.785714286
Prob	0.432034892
M-K result	No trend identified

Per-Well Calcs

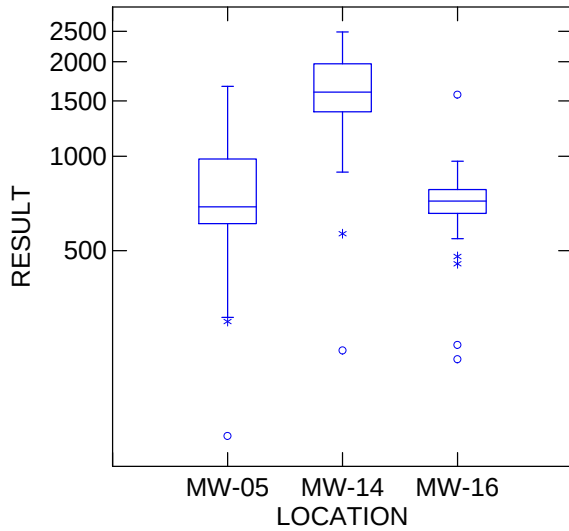
N	8	8	8
Number ND	0	0	8
%ND	0%	0%	100%
M-K S	20	-8	0
M-K sigma	8.08	8.08	8.08
M-K sigma^2	65	65	65

Input Data

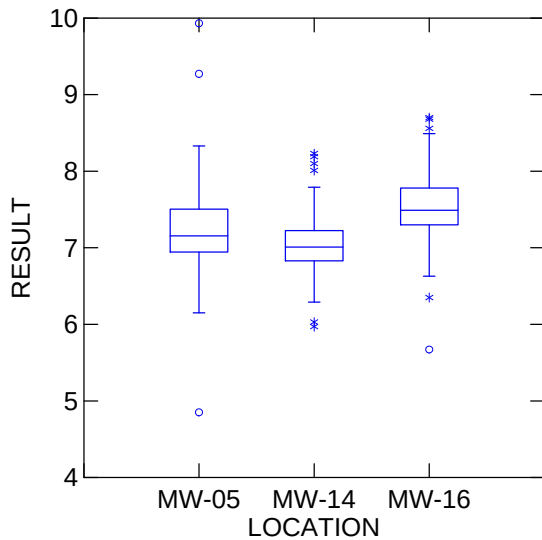
[illegible]

Appendix E.7 (Box-Whisker Plots Comparing Upgradient Wells)

Conductance ($\mu\text{S}/\text{cm}$) in Upgradient Groundwater (MW-5, MW-14, MW-16)

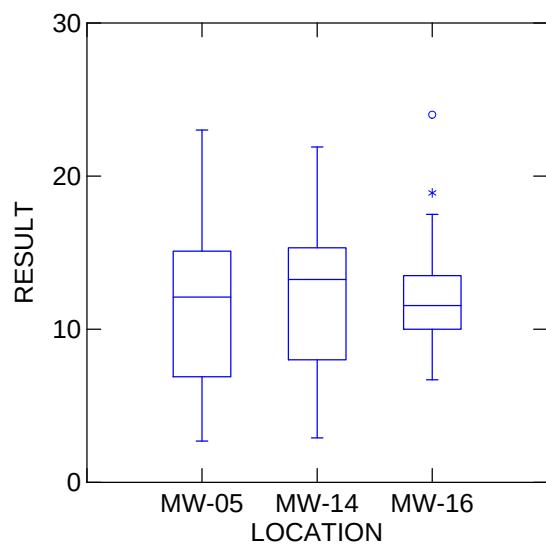


pH, field (s.u.) in Upgradient Groundwater (MW-5, MW-14, MW-16)

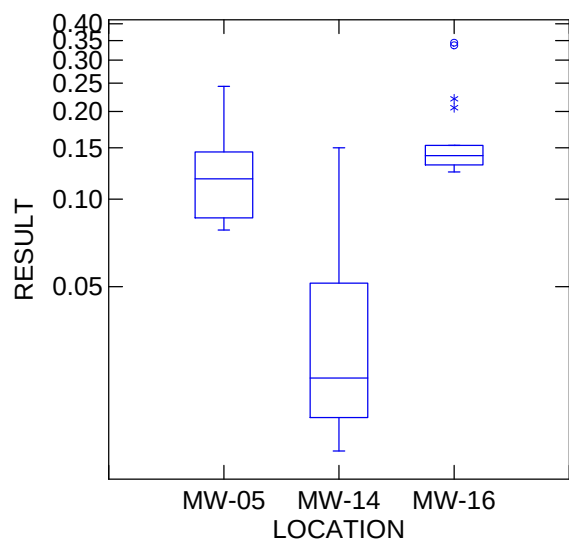


Appendix E.7 (Box-Whisker Plots Comparing Upgradient Wells)

Temperature (°C) in Upgradient Groundwater (MW-5, MW-14, MW-16)

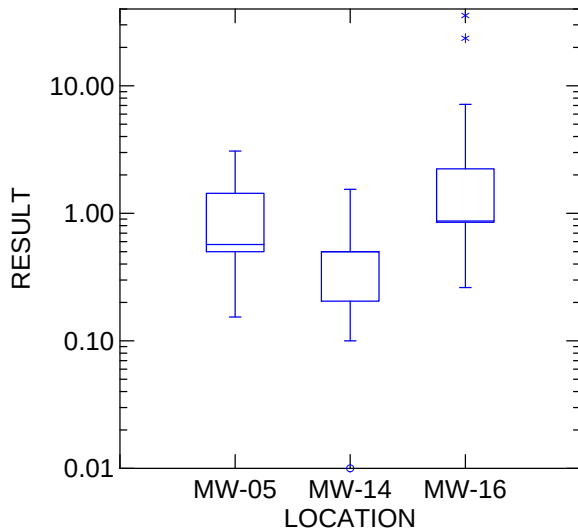


Barium, total or dissolved (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)

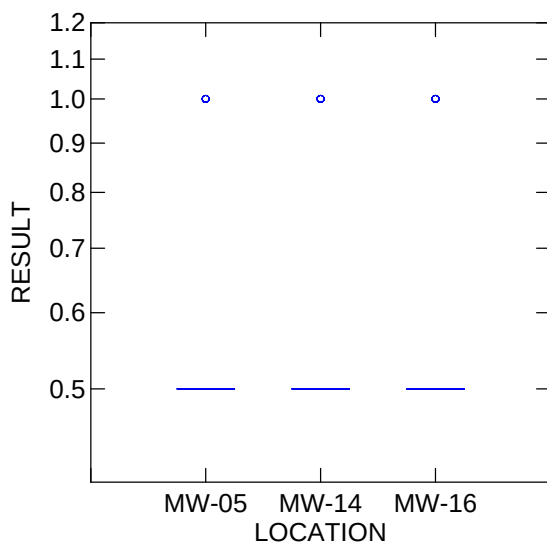


Appendix E.7 (Box-Whisker Plots Comparing Upgradient Wells)

Iron, total or dissolved (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)



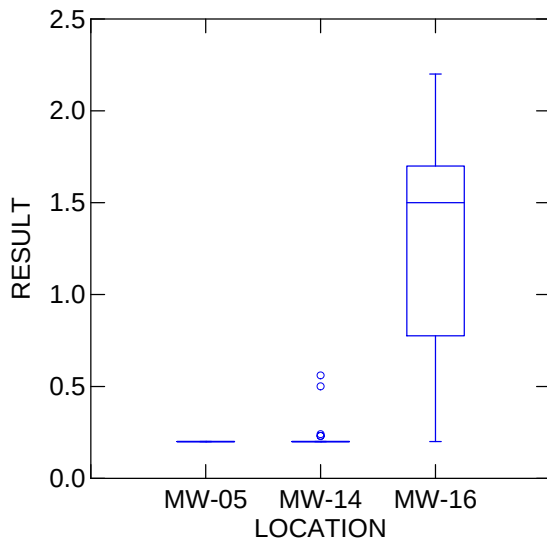
Benzene ($\mu\text{g/L}$) in Upgradient Groundwater (MW-5, MW-14, MW-16)



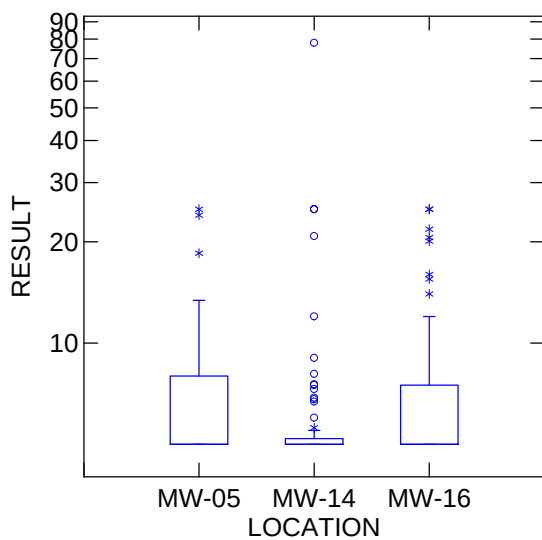
Note: All results are non-detects

Appendix E.7 (Box-Whisker Plots Comparing Upgradient Wells)

Ammonia as N (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)

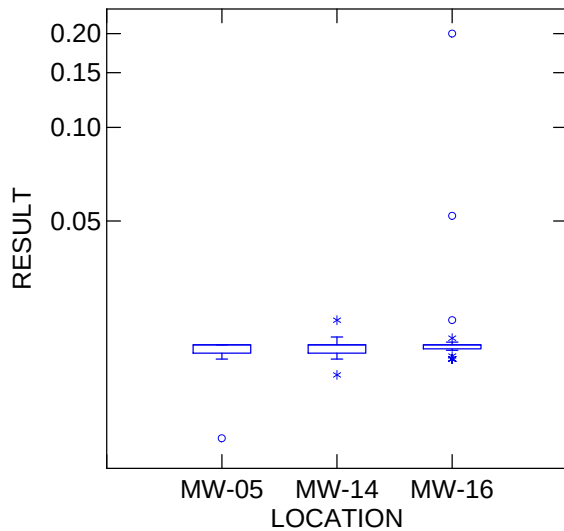


Chemical Oxygen Demand (COD) (mg/L); Upgradient (MW-5, MW-14, MW-16)



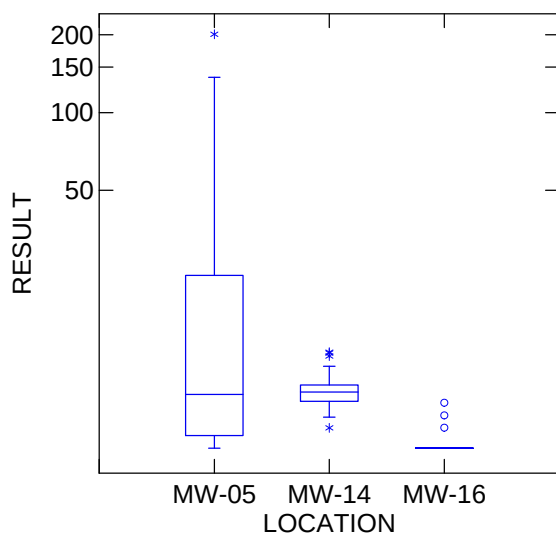
Appendix E.7 (Box-Whisker Plots Comparing Upgradient Wells)

Phenolics (Total) (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)



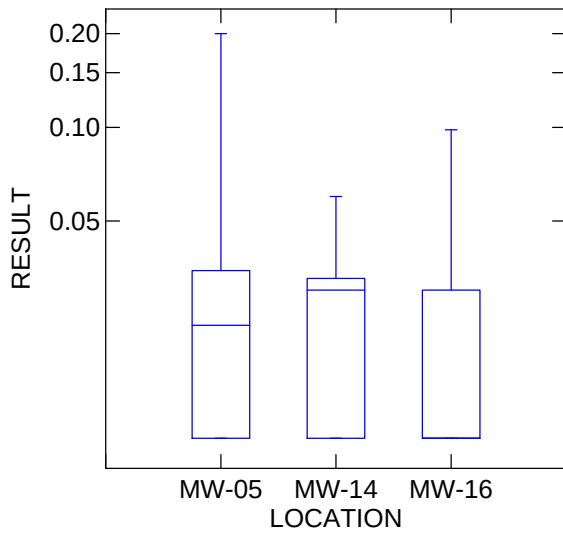
Note: Results are 95 percent non-detects

Chloride (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)



Appendix E.7 (Box-Whisker Plots Comparing Upgradient Wells)

Total Organic Halides (TOX) (mg/L) in Upgradient Groundwater (MW-5, MW-14, MW-16)



Note: Results are 83 percent non-detects

Interwell Control Limit Calculations -- Statistical Prediction Limits
2025 Annual Water Quality Report
Viking Pump Foundry Sand Landfill
Permit No. 07-SDP-12-89P-FSL
Cedar Falls, Iowa

DATA SUMMARY	Conductance		pH		Temperature
Observations (n)	185	57	185	96	183
Earliest Sample	1995-07-01	2016-09-27	1995-07-01	2010-03-25	1995-07-01
Latest Sample	2025-10-08	2025-10-08	2025-10-08	2025-10-08	2025-10-08
Detects	185	57	185	96	183
Non-Detects	0	0	0	0	0
Percent ND	0%	0%	0%	0%	0%
Maximum	2490	2490	9.93	8.7	24
Minimum (for pH only)			4.85	6.15	
Distribution		Gamma		Normal	Normal
UPL METHOD:		Log UPL		Normal PLs	Normal UPL
UPL CALCULATION					
Mean		10.448		7.162	11.947
Standard Deviation		1.913		0.529	4.068
Site-Wide False Positive Rate		0.1		0.1	0.1
Compliance wells (w)		10		10	10
Constituents (c)		10		10	10
Sampling Frequency		2x/year		2x/year	2x/year
Resampling Strategy		1-of-2		1-of-2	1-of-2
Factor K (USEPA Table 19-1)		2.14		2.07	2.035
Upper Prediction Limit (UPL)		3076		8.26	20.2
Lower Prediction Limit (LPL)				6.07	

UPGRADIENT DATA		Conductance			pH		Temperature
Well	Date	Original	Trimmed	Gamma-transform	Original	Trimmed	Original
MW-05	7/1/1995	640.0	Trimmed	Trimmed	6.70	Trimmed	23.00
MW-05	8/1/1995	670.0	Trimmed	Trimmed	7.22	Trimmed	20.00
MW-05	11/1/1995	1110.0	Trimmed	Trimmed	6.26	Trimmed	10.00
MW-05	2/1/1996	492.0	Trimmed	Trimmed	7.56	Trimmed	6.00
MW-05	5/1/1996	580.0	Trimmed	Trimmed	7.44	Trimmed	11.10
MW-05	11/1/1996	608.0	Trimmed	Trimmed	7.48	Trimmed	13.00
MW-05	4/1/1997	645.0	Trimmed	Trimmed	8.33	Trimmed	15.00
MW-05	11/1/1997	675.0	Trimmed	Trimmed	7.65	Trimmed	6.90
MW-05	5/1/1998	536.0	Trimmed	Trimmed	6.21	Trimmed	11.10
MW-05	11/1/1998	617.0	Trimmed	Trimmed	6.96	Trimmed	11.20
MW-05	5/1/1999	710.0	Trimmed	Trimmed	9.93	Trimmed	9.40
MW-05	11/1/1999	690.0	Trimmed	Trimmed	7.02	Trimmed	14.40
MW-05	5/1/2000	644.0	Trimmed	Trimmed	7.13	Trimmed	11.60
MW-05	12/1/2000	710.0	Trimmed	Trimmed	4.85	Trimmed	5.00
MW-05	6/1/2001	622.0	Trimmed	Trimmed	8.09	Trimmed	14.20
MW-05	11/1/2001	683.4	Trimmed	Trimmed	7.24	Trimmed	10.10
MW-05	5/2/2002	636.0	Trimmed	Trimmed	7.50	Trimmed	13.90
MW-05	11/2/2002	689.0	Trimmed	Trimmed	7.49	Trimmed	10.20
MW-05	5/3/2003	502.0	Trimmed	Trimmed	7.76	Trimmed	18.60
MW-05	5/1/2004	306.0	Trimmed	Trimmed	7.66	Trimmed	18.90
MW-05	5/5/2005	552.0	Trimmed	Trimmed	7.98	Trimmed	12.50
MW-05	5/6/2006	989.0	Trimmed	Trimmed	7.42	Trimmed	13.10
MW-05	4/7/2007	532.0	Trimmed	Trimmed	8.32	Trimmed	12.70
MW-05	10/7/2007	645.0	Trimmed	Trimmed	7.75	Trimmed	15.50
MW-05	4/1/2008	535.0	Trimmed	Trimmed	7.95	Trimmed	12.40
MW-05	10/1/2008	993.0	Trimmed	Trimmed	7.08	Trimmed	12.10
MW-05	10/29/2009	984.0	Trimmed	Trimmed	7.06	Trimmed	10.20
MW-05	3/30/2010	797.0	Trimmed	Trimmed	7.18	7.18	6.00
MW-05	4/22/2010	724.0	Trimmed	Trimmed	6.96	6.96	9.70
MW-05	10/16/2010	984.0	Trimmed	Trimmed	6.87	6.87	12.90
MW-05	4/28/2011	678.0	Trimmed	Trimmed	7.03	7.03	7.50
MW-05	10/18/2011	816.0	Trimmed	Trimmed	7.04	7.04	13.80
MW-05	4/25/2012	813.0	Trimmed	Trimmed	7.11	7.11	11.80
MW-05	4/16/2013	539.0	Trimmed	Trimmed	6.61	6.61	6.90
MW-05	4/14/2014	802.0	Trimmed	Trimmed	7.51	7.51	6.10
MW-05	10/9/2014	1340.0	Trimmed	Trimmed	7.20	7.20	13.76
MW-05	4/17/2015	297.0	Trimmed	Trimmed	6.96	6.96	-
MW-05	10/16/2015	612.0	Trimmed	Trimmed	7.29	7.29	14.10
MW-05	3/17/2016	339.0	Trimmed	Trimmed	6.60	6.60	5.76
MW-05	9/29/2016	830.0	830.0	9.397796375	6.98	6.98	18.00
MW-05	3/8/2017	1025.0	1025.0	10.08264838	7.00	7.00	2.70
MW-05	10/4/2017	1096.0	1096.0	10.31027347	6.63	6.63	15.87
MW-05	3/12/2018	1013.0	1013.0	10.0431469	6.70	6.70	4.88
MW-05	10/9/2018	484.0	484.0	7.851424411	7.20	7.20	15.80
MW-05	3/25/2019	703.8	703.8	8.895077866	7.42	7.42	4.00
MW-05	10/3/2019	690.0	690.0	8.836555922	6.89	6.89	16.75
MW-05	3/17/2020	872.2	872.2	9.554442712	7.33	7.33	5.00
MW-05	10/4/2020	948.1	948.1	9.8239177	6.93	6.93	15.30
MW-05	3/30/2021	977.0	977.0	9.922737928	7.28	7.28	6.80
MW-05	10/5/2021	935.8	935.8	9.781249724	6.97	6.97	16.40
MW-05	4/4/2022	1010.0	1010.0	10.03322284	9.27	Outlier	4.23
MW-05	10/3/2022	981.7	981.7	9.93862407	7.53	7.53	15.20
MW-05	3/27/2023	989.4	989.4	9.964541082	7.02	7.02	5.50
MW-05	10/3/2023	1090.0	1090.0	10.29142467	6.42	6.42	18.72
MW-05	4/2/2024	128	128	5.0396842	6.15	6.15	5.84
MW-05	10/8/2024	1670	1670	11.86420996	6.17	6.17	22.24
MW-05	04/16/2025	1340	1340	11.02473771	7.2	7.2	8.41
MW-05	10/08/2025	1450	1450	11.31851196	6.737	6.737	16.22
MW-14	7/1/1995	1274.0	Trimmed	Trimmed	7.05	Trimmed	18.00
MW-14	8/1/1995	1340.0	Trimmed	Trimmed	7.05	Trimmed	19.00

Interwell Control Limit Calculations -- Statistical Prediction Limits
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	Conductance		pH		Temperature
DATA SUMMARY					
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Earliest Sample	1995-07-01	2016-09-27	1995-07-01	2010-03-25	1995-07-01
Latest Sample	2025-10-08	2025-10-08	2025-10-08	2025-10-08	2025-10-08
Detects	185	57	185	96	183
Non-Detects	0	0	0	0	0
Percent ND	0%	0%	0%	0%	0%
Maximum	2490	2490	9.93	8.7	24
Minimum (for pH only)			4.85	6.15	
Distribution		Gamma		Normal	Normal
UPL METHOD:		Log UPL		Normal PLs	Normal UPL
UPL CALCULATION					
Mean		10.448		7.162	11.947
Standard Deviation		1.913		0.529	4.068
Site-Wide False Positive Rate		0.1		0.1	0.1
Compliance wells (w)		10		10	10
Constituents (c)		10		10	10
Sampling Frequency		2x/year		2x/year	2x/year
Resampling Strategy		1-of-2		1-of-2	1-of-2
Factor K (USEPA Table 19-1)		2.14		2.07	2.035
Upper Prediction Limit (UPL)		3076		8.26	20.2
Lower Prediction Limit (LPL)				6.07	

UPGRADIENT DATA							
Well	Date	Original	Trimmed	Gamma-transform	Original	Trimmed	Original
MW-14	11/1/1995	1460.0	Trimmed	Trimmed	6.03	Trimmed	8.00
MW-14	2/1/1996	1271.0	Trimmed	Trimmed	7.60	Trimmed	7.00
MW-14	5/1/1996	1530.0	Trimmed	Trimmed	6.97	Trimmed	9.40
MW-14	11/1/1996	1270.0	Trimmed	Trimmed	7.30	Trimmed	13.00
MW-14	4/1/1997	1530.0	Trimmed	Trimmed	8.23	Trimmed	15.00
MW-14	11/1/1997	1576.0	Trimmed	Trimmed	7.20	Trimmed	7.30
MW-14	5/1/1998	1520.0	Trimmed	Trimmed	5.97	Trimmed	12.20
MW-14	11/1/1998	1380.0	Trimmed	Trimmed	6.82	Trimmed	11.70
MW-14	5/1/1999	1630.0	Trimmed	Trimmed	7.33	Trimmed	9.40
MW-14	11/1/1999	1585.0	Trimmed	Trimmed	6.82	Trimmed	15.00
MW-14	5/1/2000	1604.0	Trimmed	Trimmed	7.12	Trimmed	10.60
MW-14	12/1/2000	1620.0	Trimmed	Trimmed	7.60	Trimmed	8.30
MW-14	6/1/2001	1600.0	Trimmed	Trimmed	8.10	Trimmed	21.90
MW-14	11/1/2001	1627.0	Trimmed	Trimmed	7.01	Trimmed	11.60
MW-14	5/2/2002	1657.0	Trimmed	Trimmed	7.24	Trimmed	12.50
MW-14	11/2/2002	1620.0	Trimmed	Trimmed	7.44	Trimmed	11.30
MW-14	5/3/2003	1602.0	Trimmed	Trimmed	7.64	Trimmed	16.60
MW-14	11/3/2003	1658.0	Trimmed	Trimmed	7.38	Trimmed	11.40
MW-14	5/1/2004	1105.0	Trimmed	Trimmed	7.01	Trimmed	18.30
MW-14	12/1/2004	1285.0	Trimmed	Trimmed	7.01	Trimmed	14.70
MW-14	5/5/2005	1144.0	Trimmed	Trimmed	7.05	Trimmed	13.80
MW-14	11/5/2005	1290.0	Trimmed	Trimmed	7.11	Trimmed	13.80
MW-14	5/6/2006	1432.0	Trimmed	Trimmed	7.33	Trimmed	14.50
MW-14	10/6/2006	1502.0	Trimmed	Trimmed	7.79	Trimmed	15.60
MW-14	4/7/2007	1412.0	Trimmed	Trimmed	6.95	Trimmed	14.10
MW-14	10/7/2007	1489.0	Trimmed	Trimmed	7.72	Trimmed	14.50
MW-14	4/1/2008	1392.0	Trimmed	Trimmed	7.01	Trimmed	13.50
MW-14	10/1/2008	1222.0	Trimmed	Trimmed	7.13	Trimmed	14.00
MW-14	10/29/2009	1620.0	Trimmed	Trimmed	7.08	Trimmed	10.80
MW-14	3/25/2010	1623.0	Trimmed	Trimmed	6.95	6.95	4.10
MW-14	4/22/2010	1318.0	Trimmed	Trimmed	6.87	6.87	9.90
MW-14	10/16/2010	1699.0	Trimmed	Trimmed	7.02	7.02	13.80
MW-14	4/28/2011	1573.0	Trimmed	Trimmed	6.93	6.93	7.90
MW-14	10/19/2011	1398.0	Trimmed	Trimmed	6.92	6.92	14.20
MW-14	4/25/2012	1711.0	Trimmed	Trimmed	7.00	7.00	11.00
MW-14	10/10/2012	1716.0	Trimmed	Trimmed	6.74	6.74	15.50
MW-14	4/16/2013	1255.0	Trimmed	Trimmed	6.79	6.79	6.60
MW-14	10/29/2013	1986.0	Trimmed	Trimmed	6.86	6.86	13.50
MW-14	4/14/2014	1793.0	Trimmed	Trimmed	6.91	6.91	6.00
MW-14	10/8/2014	2120.0	Trimmed	Trimmed	7.05	7.05	15.66
MW-14	4/16/2015	566.0	Trimmed	Trimmed	6.50	6.50	2.90
MW-14	10/14/2015	890.0	Trimmed	Trimmed	7.07	7.07	18.20
MW-14	3/16/2016	1240.0	Trimmed	Trimmed	6.29	6.29	7.38
MW-14	9/27/2016	1680.0	1680.0	11.88784391	6.84	6.84	16.70
MW-14	3/7/2017	2261.0	2261.0	13.12502645	6.80	6.80	4.10
MW-14	10/4/2017	2090.0	2090.0	12.78543265	6.65	6.65	15.34
MW-14	3/12/2018	2091.0	2091.0	12.78747147	6.59	6.59	6.57
MW-14	10/9/2018	1548.0	1548.0	11.56796552	6.98	6.98	15.30
MW-14	3/25/2019	1492.0	1492.0	11.42675566	7.21	7.21	6.10
MW-14	10/3/2019	2470.0	2470.0	13.51758112	6.68	6.68	14.75
MW-14	3/17/2020	2250.0	2250.0	13.10370697	6.99	6.99	7.00
MW-14	10/4/2020	2140.0	2140.0	12.88658743	6.85	6.85	15.40
MW-14	3/30/2021	2170.0	2170.0	12.9465259	7.16	7.16	6.70
MW-14	10/5/2021	2310.0	2310.0	13.21916408	6.85	6.85	16.60
MW-14	4/4/2022	2490.0	2490.0	13.55396778	8.19	8.19	6.02
MW-14	10/3/2022	2320.0	2320.0	13.2382119	7.62	7.62	15.40
MW-14	3/29/2023	1953.0	1953.0	12.49973333	8.01	8.01	8.01
MW-14	10/4/2023	2130.0	2130.0	12.86648351	6.34	6.34	15.79
MW-14	4/2/2024	240	240	6.214465012	6.47	6.47	7.34
MW-14	10/9/2024	2210	2210	13.02559062	6.71	6.71	15.76

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Detects	185	57	185	96	183
Non-Detects	0	0	0	0	0
Percent ND	0%	0%	0%	0%	0%
Maximum	2490	2490	9.93	8.7	24
Minimum (for pH only)			4.85	6.15	
Distribution		Gamma		Normal	Normal
UPL METHOD:		Log UPL		Normal PLs	Normal UPL
UPL CALCULATION					
Mean		10.448		7.162	11.947
Standard Deviation		1.913		0.529	4.068
Site-Wide False Positive Rate		0.1		0.1	0.1
Compliance wells (w)		10		10	10
Constituents (c)		10		10	10
Sampling Frequency		2x/year		2x/year	2x/year
Resampling Strategy		1-of-2		1-of-2	1-of-2
Factor K (USEPA Table 19-1)		2.14		2.07	2.035
Upper Prediction Limit (UPL)		3076		8.26	20.2
Lower Prediction Limit (LPL)				6.07	

UPGRADIENT DATA							
Well	Date	Original	Trimmed	Gamma-transform	Original	Trimmed	Original
MW-14	4/17/2025	2070	2070	12.74451898	7.05	7.05	11.02
MW-14	10/7/2025	2435	2435	13.45342892	6.763	6.763	14.93
MW-16	7/1/1995	670.0	Trimmed	Trimmed	7.58	Trimmed	24.00
MW-16	8/1/1995	660.0	Trimmed	Trimmed	7.41	Trimmed	17.00
MW-16	11/1/1995	820.0	Trimmed	Trimmed	6.93	Trimmed	9.00
MW-16	2/1/1996	940.0	Trimmed	Trimmed	7.14	Trimmed	10.00
MW-16	5/1/1996	730.0	Trimmed	Trimmed	7.44	Trimmed	11.10
MW-16	11/1/1996	654.0	Trimmed	Trimmed	7.54	Trimmed	13.00
MW-16	4/1/1997	698.0	Trimmed	Trimmed	8.24	Trimmed	13.90
MW-16	11/1/1997	747.0	Trimmed	Trimmed	7.64	Trimmed	7.00
MW-16	5/1/1998	698.0	Trimmed	Trimmed	5.67	Trimmed	11.10
MW-16	11/1/1998	613.0	Trimmed	Trimmed	6.78	Trimmed	9.60
MW-16	5/1/1999	750.0	Trimmed	Trimmed	7.76	Trimmed	10.00
MW-16	11/1/1999	733.0	Trimmed	Trimmed	7.10	Trimmed	15.60
MW-16	5/1/2000	682.0	Trimmed	Trimmed	7.62	Trimmed	11.50
MW-16	12/1/2000	1570.0	Trimmed	Trimmed	7.08	Trimmed	6.70
MW-16	6/1/2001	700.0	Trimmed	Trimmed	8.27	Trimmed	17.30
MW-16	11/1/2001	760.0	Trimmed	Trimmed	7.42	Trimmed	8.50
MW-16	5/2/2002	720.0	Trimmed	Trimmed	7.42	Trimmed	15.50
MW-16	11/2/2002	712.0	Trimmed	Trimmed	7.40	Trimmed	10.10
MW-16	5/3/2003	707.0	Trimmed	Trimmed	7.03	Trimmed	17.50
MW-16	11/3/2003	745.0	Trimmed	Trimmed	7.56	Trimmed	10.50
MW-16	5/1/2004	479.0	Trimmed	Trimmed	7.36	Trimmed	18.90
MW-16	12/1/2004	570.0	Trimmed	Trimmed	7.59	Trimmed	13.50
MW-16	5/5/2005	577.0	Trimmed	Trimmed	7.47	Trimmed	13.20
MW-16	11/5/2005	565.0	Trimmed	Trimmed	7.48	Trimmed	13.40
MW-16	5/6/2006	665.0	Trimmed	Trimmed	7.86	Trimmed	13.70
MW-16	10/6/2006	-	Trimmed	Trimmed	-	Trimmed	-
MW-16	4/7/2007	662.0	Trimmed	Trimmed	8.40	Trimmed	14.10
MW-16	10/7/2007	622.0	Trimmed	Trimmed	7.45	Trimmed	13.90
MW-16	4/1/2008	648.0	Trimmed	Trimmed	8.22	Trimmed	13.50
MW-16	10/1/2008	743.0	Trimmed	Trimmed	7.77	Trimmed	12.50
MW-16	10/29/2009	454.0	Trimmed	Trimmed	8.33	Trimmed	9.30
MW-16	3/30/2010	660.0	Trimmed	Trimmed	7.85	7.85	9.30
MW-16	4/22/2010	642.0	Trimmed	Trimmed	7.49	7.49	11.70
MW-16	10/16/2010	805.0	Trimmed	Trimmed	7.70	7.70	9.50
MW-16	4/28/2011	693.0	Trimmed	Trimmed	7.70	7.70	9.30
MW-16	10/18/2011	561.0	Trimmed	Trimmed	8.04	8.04	11.30
MW-16	4/25/2012	736.0	Trimmed	Trimmed	7.48	7.48	14.60
MW-16	10/10/2012	771.0	Trimmed	Trimmed	7.33	7.33	11.80
MW-16	4/17/2013	679.0	Trimmed	Trimmed	6.95	6.95	11.40
MW-16	10/30/2013	826.0	Trimmed	Trimmed	7.44	7.44	11.20
MW-16	4/14/2014	728.0	Trimmed	Trimmed	7.51	7.51	11.10
MW-16	10/9/2014	864.0	Trimmed	Trimmed	8.02	8.02	13.12
MW-16	4/17/2015	225.0	Trimmed	Trimmed	6.96	6.96	-
MW-16	10/16/2015	250.0	Trimmed	Trimmed	7.74	7.74	10.10
MW-16	3/17/2016	546.0	Trimmed	Trimmed	8.70	8.70	10.19
MW-16	9/29/2016	650.0	650.0	8.662391053	7.43	7.43	12.90
MW-16	3/8/2017	872.0	872.0	9.553712362	7.31	7.31	7.20
MW-16	10/4/2017	812.0	812.0	9.329363391	7.23	7.23	12.21
MW-16	3/12/2018	796.0	796.0	9.267679846	7.16	7.16	11.03
MW-16	10/9/2018	714.0	714.0	8.937843321	7.61	7.61	11.60
MW-16	3/25/2019	626.1	626.1	8.554892723	8.04	8.04	10.40
MW-16	10/3/2019	803.0	803.0	9.294767164	7.40	7.40	11.93
MW-16	3/17/2020	808.7	808.7	9.316707931	7.60	7.60	11.10
MW-16	10/4/2020	783.1	783.1	9.217342838	7.29	7.29	12.00
MW-16	3/30/2021	964.0	964.0	9.87853049	7.56	7.56	9.90
MW-16	10/5/2021	742.7	742.7	9.056029071	7.79	7.79	12.80
MW-16	4/4/2022	811.0	811.0	9.32553203	8.68	8.68	9.03
MW-16	10/3/2022	682.7	682.7	8.805282641	8.49	8.49	12.40

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		Conductance		pH		Temperature
DATA SUMMARY						
Observations (n)	185	57	185	96	183	
Earliest Sample	1995-07-01	2016-09-27	1995-07-01	2010-03-25	1995-07-01	
Latest Sample	2025-10-08	2025-10-08	2025-10-08	2025-10-08	2025-10-08	
Detects	185	57	185	96	183	
Non-Detects	0	0	0	0	0	
Percent ND	0%	0%	0%	0%	0%	
Maximum	2490	2490	9.93	8.7	24	
Minimum (for pH only)			4.85	6.15		
Distribution		Gamma		Normal	Normal	
UPL METHOD:		Log UPL		Normal PLs	Normal UPL	
UPL CALCULATION						
Mean		10.448		7.162	11.947	
Standard Deviation		1.913		0.529	4.068	
Site-Wide False Positive Rate		0.1		0.1	0.1	
Compliance wells (w)		10		10	10	
Constituents (c)		10		10	10	
Sampling Frequency		2x/year		2x/year	2x/year	
Resampling Strategy		1-of-2		1-of-2	1-of-2	
Factor K (USEPA Table 19-1)		2.14		2.07	2.035	
Upper Prediction Limit (UPL)		3076		8.26	20.2	
Lower Prediction Limit (LPL)				6.07		

UPGRADIENT DATA							
Well	Date	Original	Trimmed	Gamma-transform	Original	Trimmed	Original
MW-16	3/29/2023	722.0	722.0	8.971100718	8.56	8.56	8.56
MW-16	10/4/2023	779.0	779.0	9.201228569	6.89	6.89	13.13
MW-16	4/3/2024	833	833	9.409105407	6.35	6.35	9.73
MW-16	10/8/2024	916	916	9.711772294	6.63	6.63	14.83
MW-16	4/16/2025	782	782	9.213025029	7.79	7.79	11.18
MW-16	10/8/2025	732.2	732.2	9.013149503	7.271	7.271	14.22

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	Barium	Iron	Benzene
DATA SUMMARY			
Observations (n)	97	183	97
Earliest Sample	2010-03-25	1995-07-01	2010-03-25
Latest Sample	2025-10-08	2025-10-08	2025-10-08
Detects	97	68	0
Non-Detects	0	115	97
Percent ND	0%	63%	100%
Maximum	0.344	35.6	0.500 U
Minimum (for pH only)			
Distribution	Gamma	Lognormal	Non-detect
UPL METHOD:	Gamma UPL	KM Log UPL	Reporting Limit

UPL CALCULATION			
Mean	0.452	-1.895	n/a
Standard Deviation	0.118	2.251	n/a
Site-Wide False Positive Rate	0.1	0.1	0.1
Compliance wells (w)	10	10	10
Constituents (c)	10	10	10
Sampling Frequency	2x/year	2x/year	2x/year
Resampling Strategy	1-of-2	1-of-2	1-of-2
Factor K (USEPA Table 19-1)	2.07	2.075	n/a
Upper Prediction Limit (UPL)	0.336	16.1	n/a
Lower Prediction Limit (LPL)			

UPGRADIENT DATA							
Well	Date	Original	Gamma-transformed	Original	Trimmed	Ln-transformed	Original
MW-05	7/1/1995	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	8/1/1995	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	11/1/1995	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	2/1/1996	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	5/1/1996	-	-	-	Trimmed	Trimmed	-
MW-05	11/1/1996	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	4/1/1997	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	11/1/1997	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	5/1/1998	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	11/1/1998	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	5/1/1999	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	11/1/1999	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	5/1/2000	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	12/1/2000	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	6/1/2001	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	11/1/2001	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	5/2/2002	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	11/2/2002	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	5/3/2003	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	5/1/2004	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	5/5/2005	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	5/6/2006	-	-	1.51	Trimmed	Trimmed	-
MW-05	4/7/2007	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	10/7/2007	-	-	0.31	Trimmed	Trimmed	-
MW-05	4/1/2008	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	10/1/2008	-	-	1.13	Trimmed	Trimmed	-
MW-05	10/29/2009	-	-	0.100 U	Trimmed	Trimmed	-
MW-05	3/30/2010	0.1460	0.526563743	0.99	0.99	-0.010050336	1.00 U
MW-05	4/22/2010	0.1550	0.537168535	1.03	1.03	0.029558802	1.00 U
MW-05	10/16/2010	0.1690	0.552877481	1.15	1.15	0.139761942	1.00 U
MW-05	4/28/2011	0.1370	0.515513674	0.28	0.28	-1.272965676	1.00 U
MW-05	10/18/2011	0.1280	0.50396842	1.61	1.61	0.476234179	1.00 U
MW-05	4/25/2012	0.1620	0.545136178	0.80	0.80	-0.223143551	1.00 U
MW-05	4/16/2013	0.1320	0.509164337	0.100 U	0.100 U	-2.302585093	0.500 U
MW-05	4/14/2014	0.0878	0.444458796	0.100 U	0.100 U	-2.302585093	0.500 U
MW-05	10/9/2014	0.1490	0.530145919	2.63	2.63	0.966983846	0.500 U
MW-05	4/17/2015	0.0894	0.447142386	0.39	0.39	-0.94160854	0.500 U
MW-05	10/16/2015	0.1480	0.528957247	4.89	4.89	1.587192303	0.500 U
MW-05	3/17/2016	0.0858	0.44105806	0.100 U	0.100 U	-2.302585093	0.500 U
MW-05	9/29/2016	0.1340	0.511722995	0.91	0.91	-0.094310679	0.500 U
MW-05	3/8/2017	0.1200	0.493242415	0.68	0.68	-0.385662481	0.500 U
MW-05	10/4/2017	0.0967	0.45899592	1.62	1.62	0.482426149	0.500 U
MW-05	3/12/2018	0.0836	0.437255646	1.54	1.54	0.431782416	0.500 U
MW-05	10/9/2018	0.1150	0.486294413	1.09	1.09	0.086177696	0.500 U
MW-05	3/25/2019	0.0793/0.0783	0.42872164	0.59/0.567	0.59/0.567	-0.547316732	0.500 U/0.500 U
MW-05	10/3/2019	0.158/0.163	0.543448439	0.500 U/0.500 U	0.500 U/0.500 U	-0.693147181	0.500 U/0.500 U
MW-05	3/17/2020	0.11/0.111	0.479866861	0.54/0.571	0.54/0.571	-0.58788667	0.500 U/0.500 U
MW-05	10/4/2020	0.0984	0.461670048	1.34	1.34	0.292669614	0.500 U
MW-05	3/30/2021	0.124	0.498663095	0.500 U	0.500 U	-0.693147181	0.500 U
MW-05	10/5/2021	0.125/0.120	0.496644194	2.38/3.08	2.38/3.08	1.004301609	0.500 U/0.500 U
MW-05	4/4/2022	0.0828/0.0888	0.44105806	0.524/0.689	0.524/0.689	-0.500050551	0.500 U/0.500 U
MW-05	10/3/2022	0.153/0.153	0.534848124	2.10/0.446	2.10/0.446	0.24137632	0.500 U/0.500 U
MW-05	3/27/2023	0.1380	0.516764925	0.500 U	0.500 U	-0.693147181	0.500 U
MW-05	10/3/2023	0.2440	0.624879977	0.500 U	0.500 U	-0.693147181	0.500 U
MW-05	4/2/2024	0.0822	0.434801072	0.154	0.154	-1.870802677	0.500 U
MW-05	10/8/2024	0.121	0.494608744	1.54	1.54	0.431782416	0.500 U
MW-05	04/16/2025	0.0864	0.44208378	0.13	0.13	-2.040220829	0.500 U
MW-05	10/08/2025	0.125	0.5	1.65	1.65	0.500775288	0.500 U
MW-14	7/1/1995	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	8/1/1995	-	-	0.100 U	Trimmed	Trimmed	-

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	Barium	Iron	Benzene
DATA SUMMARY			
Observations (n)	97	183	97
Earliest Sample	2010-03-25	1995-07-01	2010-03-25
Latest Sample	2025-10-08	2025-10-08	2025-10-08
Detects	97	68	0
Non-Detects	0	115	97
Percent ND	0%	63%	100%
Maximum	0.344	35.6	0.500 U
Minimum (for pH only)			
Distribution	Gamma	Lognormal	Non-detect
UPL METHOD:	Gamma UPL	KM Log UPL	Reporting Limit

UPL CALCULATION			
Mean	0.452	-1.895	n/a
Standard Deviation	0.118	2.251	n/a
Site-Wide False Positive Rate	0.1	0.1	0.1
Compliance wells (w)	10	10	10
Constituents (c)	10	10	10
Sampling Frequency	2x/year	2x/year	2x/year
Resampling Strategy	1-of-2	1-of-2	1-of-2
Factor K (USEPA Table 19-1)	2.07	2.075	n/a
Upper Prediction Limit (UPL)	0.336	16.1	n/a
Lower Prediction Limit (LPL)			

UPGRADIENT DATA							
Well	Date	Original	Gamma-transformed	Original	Trimmed	Ln-transformed	Original
MW-14	11/1/1995	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	2/1/1996	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	5/1/1996	-	-	-	Trimmed	Trimmed	-
MW-14	11/1/1996	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	4/1/1997	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	11/1/1997	-	-	0.17	Trimmed	Trimmed	-
MW-14	5/1/1998	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	11/1/1998	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	5/1/1999	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	11/1/1999	-	-	3.20	Trimmed	Trimmed	-
MW-14	5/1/2000	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	12/1/2000	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	6/1/2001	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	11/1/2001	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	5/2/2002	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	11/2/2002	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	5/3/2003	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	11/3/2003	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	5/1/2004	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	12/1/2004	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	5/5/2005	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	11/5/2005	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	5/6/2006	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	10/6/2006	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	4/7/2007	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	10/7/2007	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	4/1/2008	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	10/1/2008	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	10/29/2009	-	-	0.100 U	Trimmed	Trimmed	-
MW-14	3/25/2010	0.0136	0.238696638	0.100 U	0.100 U	-2.302585093	1.00 U
MW-14	4/22/2010	0.0157	0.250399362	0.100 U	0.100 U	-2.302585093	1.00 U
MW-14	10/16/2010	0.0252	0.293179442	0.100 U	0.100 U	-2.302585093	1.00 U
MW-14	4/28/2011	0.0205	0.273685184	0.100 U	0.100 U	-2.302585093	1.00 U
MW-14	10/19/2011	0.0231	0.284798257	0.100 U	0.100 U	-2.302585093	1.00 U
MW-14	4/25/2012	0.1580	0.540612018	0.100 U	0.100 U	-2.302585093	1.00 U
MW-14	10/10/2012	0.0255	0.294338266	0.100 U	0.100 U	-2.302585093	1.00 U
MW-14	4/16/2013	0.0210	0.275892418	0.100 U	0.100 U	-2.302585093	0.500 U
MW-14	10/29/2013	0.025/0.0256	0.293566733	0.100 U/0.100 U	0.100 U/0.100 U	-2.302585093	0.500 U/0.500 U
MW-14	4/14/2014	0.0205	0.273685184	0.100 U	0.100 U	-2.302585093	0.500 U
MW-14	10/8/2014	0.0217	0.278924445	0.100 U	0.100 U	-2.302585093	0.500 U
MW-14	4/16/2015	0.026/0.0382	0.317810575	0.100 U/0.3	0.100 U/0.3	-1.203972804	0.500 U/0.500 U
MW-14	10/14/2015	0.0256	0.29472252	0.100 U	0.100 U	-2.302585093	0.500 U
MW-14	3/16/2016	0.0213/0.0219	0.27849533	0.100 U/0.100 U	0.100 U/0.100 U	-2.302585093	0.500 U/0.500 U
MW-14	9/27/2016	0.0255/0.0247	0.292791124	0.100 U/0.100 U	0.100 U/0.100 U	-2.302585093	0.500 U/0.500 U
MW-14	3/7/2017	0.0272/0.0313	0.308112007	0.500 U/0.500 U	0.500 U/0.500 U	-0.693147181	0.500 U/0.500 U
MW-14	10/4/2017	0.0294	0.308637797	0.500 U	0.500 U	-0.693147181	0.500 U
MW-14	3/12/2018	0.1500	0.531329285	1.54	1.54	0.431782416	0.500 U
MW-14	10/9/2018	0.0477/0.0554	0.372171309	0.702/0.500 U	0.702/0.500 U	-0.353821875	0.500 U/0.500 U
MW-14	3/25/2019	0.0862	0.441742402	1.01	1.01	0.009950331	0.500 U
MW-14	10/3/2019	0.0289	0.306878136	0.500 U	0.500 U	-0.693147181	0.500 U
MW-14	3/17/2020	0.0639	0.399791558	0.500 U	0.500 U	-0.693147181	0.500 U
MW-14	10/4/2020	0.0243	0.289646815	0.500 U	0.500 U	-0.693147181	0.500 U
MW-14	3/30/2021	0.0141/0.0136	0.240150369	0.500 U/0.500 U	0.500 U/0.500 U	-0.693147181	0.500 U/0.500 U
MW-14	10/5/2021	0.127	0.50265257	1.12	1.12	0.113328685	0.500 U
MW-14	4/4/2022	0.0242	0.289248948	0.500 U	0.500 U	-0.693147181	0.500 U
MW-14	10/3/2022	0.0194	0.268699738	0.100 U	0.100 U	-2.302585093	0.500 U
MW-14	3/29/2023	0.0223/0.0260	0.289049604	0.500 U/0.500 U	0.500 U/0.500 U	-0.693147181	0.500 U/0.500 U
MW-14	10/4/2023	0.0246	0.290833906	0.500 U	0.500 U	-0.693147181	0.500 U
MW-14	4/2/2024	0.0154/0.0153	0.248524644	0.100 U/0.100 U	0.100 U/0.100 U	-2.302585093	0.500 U/0.500 U
MW-14	10/9/2024	0.023	0.284386698	0.0100 U	0.0100 U	-4.605170186	0.500 U

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Non-Detects	0	115	97
Percent ND	0%	63%	100%
Maximum	0.344	35.6	0.500 U
Minimum (for pH only)			
Distribution	Gamma	Lognormal	Non-detect
UPL METHOD:	Gamma UPL	KM Log UPL	Reporting Limit

UPL CALCULATION			
Mean	0.452	-1.895	n/a
Standard Deviation	0.118	2.251	n/a
Site-Wide False Positive Rate	0.1	0.1	0.1
Compliance wells (w)	10	10	10
Constituents (c)	10	10	10
Sampling Frequency	2x/year	2x/year	2x/year
Resampling Strategy	1-of-2	1-of-2	1-of-2
Factor K (USEPA Table 19-1)	2.07	2.075	n/a
Upper Prediction Limit (UPL)	0.336	16.1	n/a
Lower Prediction Limit (LPL)			

UPGRADIENT DATA							
Well	Date	Original	Gamma-transformed	Original	Trimmed	Ln-transformed	Original
MW-14	4/17/2025	0.0162	0.2530298	0.100 U	0.100 U	-4.605170186	0.500 U
MW-14	10/7/2025	0.0225	0.282310809	0.419	0.419	-0.869884359	0.500 U
MW-16	7/1/1995	-	-	1.30	Trimmed	Trimmed	-
MW-16	8/1/1995	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	11/1/1995	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	2/1/1996	-	-	0.16	Trimmed	Trimmed	-
MW-16	5/1/1996	-	-	-	Trimmed	Trimmed	-
MW-16	11/1/1996	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	4/1/1997	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	11/1/1997	-	-	0.21	Trimmed	Trimmed	-
MW-16	5/1/1998	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	11/1/1998	-	-	0.54	Trimmed	Trimmed	-
MW-16	5/1/1999	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	11/1/1999	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	5/1/2000	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	12/1/2000	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	6/1/2001	-	-	0.17	Trimmed	Trimmed	-
MW-16	11/1/2001	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	5/2/2002	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	11/2/2002	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	5/3/2003	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	11/3/2003	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	5/1/2004	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	12/1/2004	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	5/5/2005	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	11/5/2005	-	-	0.23	Trimmed	Trimmed	-
MW-16	5/6/2006	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	10/6/2006	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	4/7/2007	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	10/7/2007	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	4/1/2008	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	10/1/2008	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	10/29/2009	-	-	0.100 U	Trimmed	Trimmed	-
MW-16	3/30/2010	0.1400	0.51924941	0.100 U	0.100 U	-2.302585093	1.00 U
MW-16	4/22/2010	0.1380	0.516764925	0.12	0.12	-2.120263536	1.00 U
MW-16	10/16/2010	0.1390	0.518010147	0.51	0.51	-0.673344553	1.00 U
MW-16	4/28/2011	0.1320	0.509164337	0.18	0.18	-1.714798428	1.00 U
MW-16	10/18/2011	0.1700	0.553965826	1.77	1.77	0.570979547	1.00 U
MW-16	4/25/2012	0.1770	0.561467241	1.10	1.10	0.09531018	1.00 U
MW-16	10/10/2012	0.1650	0.548480655	0.11	0.11	-2.207274913	1.00 U
MW-16	4/17/2013	0.1750	0.559344471	0.100 U	0.100 U	-2.302585093	0.500 U
MW-16	10/30/2013	0.1530	0.534848124	0.13	0.13	-2.040220829	0.500 U
MW-16	4/14/2014	0.1580	0.540612018	0.100 U	0.100 U	-2.302585093	0.500 U
MW-16	10/9/2014	0.1410	0.520482786	0.100 U	0.100 U	-2.302585093	0.500 U
MW-16	4/17/2015	0.2560	0.634960421	0.100 U	0.100 U	-2.302585093	0.500 U
MW-16	10/16/2015	0.2300	0.612692568	8.24	8.24	2.109000344	0.500 U
MW-16	3/17/2016	0.139/0.142	0.51986683	0.100 U/0.101	0.100 U/0.101	-2.292634762	0.500 U/0.500 U
MW-16	9/29/2016	0.2200	0.603681074	6.19	6.19	1.822935087	0.500 U
MW-16	3/8/2017	0.1410	0.520482786	0.500 U	0.500 U	-0.693147181	0.500 U
MW-16	10/4/2017	0.1340	0.511722995	0.69	0.69	-0.371063681	0.500 U
MW-16	3/12/2018	0.2210	0.60459436	7.15	7.15	1.967112357	0.500 U
MW-16	10/9/2018	0.1530	0.534848124	0.87	0.87	-0.139262067	0.500 U
MW-16	3/25/2019	0.1290	0.505277435	0.87	0.87	-0.139262067	0.500 U
MW-16	10/3/2019	0.1360	0.514256318	1.58	1.58	0.457424847	0.500 U
MW-16	3/17/2020	0.3370	0.695894334	35.6	Outlier	Outlier	0.500 U
MW-16	10/4/2020	0.144/0.143	0.523540922	0.679/0.598	0.679/0.598	-0.448633604	0.500 U/0.500 U
MW-16	3/30/2021	0.140	0.51924941	0.861	0.861	-0.149660775	0.500 U
MW-16	10/5/2021	0.153	0.534848124	2.23	2.23	0.802001585	0.500 U
MW-16	4/4/2022	0.1300	0.506579702	0.852	0.852	-0.160168752	0.500 U
MW-16	10/3/2022	0.3440	0.700679612	23.6	Outlier	Outlier	0.500 U

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		Barium		Iron		Benzene	
DATA SUMMARY							
Observations (n)		97		183		95	
Earliest Sample		2010-03-25		1995-07-01		2010-03-25	
Latest Sample		2025-10-08		2025-10-08		2025-10-08	
Detects		97		68		55	
Non-Detects		0		115		40	
Percent ND		0%		63%		42%	
Maximum		0.344		35.6		8.24	
Minimum (for pH only)							
Distribution		Gamma		Lognormal		Non-detect	
UPL METHOD:		Gamma UPL		KM Log UPL		Reporting Limit	
UPL CALCULATION							
Mean		0.452		-1.895		n/a	
Standard Deviation		0.118		2.251		n/a	
Site-Wide False Positive Rate		0.1		0.1		0.1	
Compliance wells (w)		10		10		10	
Constituents (c)		10		10		10	
Sampling Frequency		2x/year		2x/year		2x/year	
Resampling Strategy		1-of-2		1-of-2		1-of-2	
Factor K (USEPA Table 19-1)		2.07		2.075		n/a	
Upper Prediction Limit (UPL)		0.336		16.1		n/a	
Lower Prediction Limit (LPL)							
UPGRADIENT DATA							
Well	Date	Original	Gamma-transformed	Original	Trimmed	Ln-transformed	Original
MW-16	3/29/2023	0.1310	0.507875308	1.42	1.42	0.350656872	0.500 U
MW-16	10/4/2023	0.2060	0.590594058	2.83	2.83	1.040276712	0.500 U
MW-16	4/3/2024	0.132	0.509164337	1.02	1.02	0.019802627	0.500 U
MW-16	10/8/2024	0.131	0.507875308	0.262	0.262	-1.339410775	0.500 U
MW-16	4/16/2025	0.141	0.520482786	0.85	0.85	-0.162518929	0.500 U
MW-16	10/8/2025	0.124	0.498663095	0.281	0.281	-1.26940061	0.500 U

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	Ammonia-N	COD	Phenolics
DATA SUMMARY			
Observations (n)	186	185	110
Earliest Sample	1995-07-01	1995-07-01	1995-07-01
Latest Sample	2025-10-08	2025-10-08	2025-04-17
Detects	61	69	5
Non-Detects	125	116	105
Percent ND	67%	63%	95%
Maximum	2.2	25	0.0519
Minimum (for pH only)			
Distribution	Normal	Lognormal	95% Non-detect
UPL METHOD:	KM Normal UPL	KM Log UPL	Nonparametric

UPL CALCULATION			
Mean	0.583	1.812	n/a
Standard Deviation	0.621	0.356	n/a
Site-Wide False Positive Rate	0.1	0.1	0.1
Compliance wells (w)	10	10	10
Constituents (c)	10	10	10
Sampling Frequency	2x/year	2x/year	1x/year
Resampling Strategy	1-of-2	1-of-2	1-of-2
Factor K (USEPA Table 19-1)	2.035	2.035	n/a
Upper Prediction Limit (UPL)	1.85	12.6	n/a
Lower Prediction Limit (LPL)			

UPGRADIENT DATA					
Well	Date	Original	Original	Ln-transformed	Original
MW-05	7/1/1995	0.200 U	5.00 U	1.609437912	0.0200 U
MW-05	8/1/1995	0.200 U	5.00 U	1.609437912	0.0200 U
MW-05	11/1/1995	0.200 U	5.00 U	1.609437912	0.0200 U
MW-05	2/1/1996	0.200 U	12.0	2.48490665	0.0200 U
MW-05	5/1/1996	0.200 U	5.00 U	1.609437912	-
MW-05	11/1/1996	0.200 U	5.00 U	1.609437912	0.0200 U
MW-05	4/1/1997	0.200 U	5.00 U	1.609437912	-
MW-05	11/1/1997	0.200 U	5.00 U	1.609437912	0.0200 U
MW-05	5/1/1998	0.200 U	7.3	1.987874348	-
MW-05	11/1/1998	0.200 U	5.00 U	1.609437912	0.0200 U
MW-05	5/1/1999	0.200 U	24.0	3.17805383	-
MW-05	11/1/1999	0.200 U	5.00 U	1.609437912	0.0200 U
MW-05	5/1/2000	0.200 U	5.00 U	1.609437912	-
MW-05	12/1/2000	0.200 U	5.00 U	1.609437912	0.0200 U
MW-05	6/1/2001	0.200 U	7.4	2.00148	-
MW-05	11/1/2001	0.200 U	5.00 U	1.609437912	0.0200 U
MW-05	5/2/2002	0.200 U	5.00 U	1.609437912	-
MW-05	11/2/2002	0.200 U	8.3	2.116255515	0.0200 U
MW-05	5/3/2003	0.200 U	5.00 U	1.609437912	-
MW-05	5/1/2004	0.200 U	10.0	2.302585093	-
MW-05	5/5/2005	0.200 U	5.00 U	1.609437912	-
MW-05	5/6/2006	0.200 U	18.5	2.917770732	-
MW-05	4/7/2007	0.200 U	5.2	1.648658626	-
MW-05	10/7/2007	0.200 U	9.3	2.2300144	0.0180 U
MW-05	4/1/2008	0.200 U	12.6	2.533696814	-
MW-05	10/1/2008	0.200 U	9.3	2.2300144	0.0180 U
MW-05	10/29/2009	0.200 U	5.6	1.722766598	0.0180 U
MW-05	3/30/2010	0.200 U	5.00 U	1.609437912	0.0200 U
MW-05	4/22/2010	0.200 U	5.00 U	1.609437912	0.0180 U
MW-05	10/16/2010	0.200 U	5.00 U	1.609437912	0.0200 U
MW-05	4/28/2011	0.200 U	5.00 U	1.609437912	0.0200 U
MW-05	10/18/2011	0.200 U	5.00 U	1.609437912	0.0200 U
MW-05	4/25/2012	0.200 U	5.00 U	1.609437912	0.0200 U
MW-05	4/16/2013	0.200 U	7.9	2.066862759	0.0200 U
MW-05	4/14/2014	0.200 U	5.00 U	1.609437912	0.0100 U
MW-05	10/9/2014	0.200 U	5.00 U	1.609437912	-
MW-05	4/17/2015	0.200 U	5.00 U	1.609437912	0.0184 U
MW-05	10/16/2015	0.200 U	11.6	2.451005098	-
MW-05	3/17/2016	0.200 U	7.5	2.014903021	0.0196 U
MW-05	9/29/2016	0.200 U	9.6	2.261763098	-
MW-05	3/8/2017	0.200 U	5.5	1.704748092	0.0193
MW-05	10/4/2017	0.200 U	5.00 U	1.609437912	-
MW-05	3/12/2018	0.200 U	5.00 U	1.609437912	0.0180 U
MW-05	10/9/2018	0.200 U	13.4	2.595254707	-
MW-05	3/25/2019	0.200 U/0.200 U	5.00 U/5.00 U	1.609437912	0.0200 U/0.0188 U
MW-05	10/3/2019	0.200 U/0.200 U	8.99/9.33	2.214846179	-
MW-05	3/17/2020	0.200 U/0.200 U	5.00 U/5.00 U	1.609437912	0.0200 U/0.0184 U
MW-05	10/4/2020	0.200 U	5.4	1.686398954	-
MW-05	3/30/2021	0.200 U	5.00 U	1.609437912	0.0188 U
MW-05	10/5/2021	0.200 U/0.200 U	5.00 U/7.98	2.076938411	-
MW-05	4/4/2022	0.200 U/0.200 U	5.00 U/9.14	2.212660385	0.0200 U/0.0196 U
MW-05	10/3/2022	0.200 U/0.200 U	5.00 U/7.23	1.978239036	-
MW-05	3/27/2023	0.200 U	25.0 U	3.218875825	0.0200 U
MW-05	10/3/2023	0.200 U	7.9	2.066862759	-
MW-05	4/2/2024	0.200 U	5.00 U	1.609437912	0.0200 U
MW-05	10/8/2024	0.200 U	5.00 U	1.609437912	-
MW-05	04/16/2025	0.200 UJ	11	2.397895273	0.0200 U
MW-05	10/08/2025	0.500 UJ	25.0 U	3.218875825	-
MW-14	7/1/1995	0.560	5.00 U	1.609437912	0.0200 U
MW-14	8/1/1995	0.200 U	5.00 U	1.609437912	0.0240

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	Ammonia-N	COD	Phenolics
DATA SUMMARY			
Observations (n)	186	185	110
Earliest Sample	1995-07-01	1995-07-01	1995-07-01
Latest Sample	2025-10-08	2025-10-08	2025-04-17
Detects	61	69	5
Non-Detects	125	116	105
Percent ND	67%	63%	95%
Maximum	2.2	25	0.0519
Minimum (for pH only)			
Distribution	Normal	Lognormal	95% Non-detect
UPL METHOD:	KM Normal UPL	KM Log UPL	Nonparametric

UPL CALCULATION			
Mean	0.583	1.812	n/a
Standard Deviation	0.621	0.356	n/a
Site-Wide False Positive Rate	0.1	0.1	0.1
Compliance wells (w)	10	10	10
Constituents (c)	10	10	10
Sampling Frequency	2x/year	2x/year	1x/year
Resampling Strategy	1-of-2	1-of-2	1-of-2
Factor K (USEPA Table 19-1)	2.035	2.035	n/a
Upper Prediction Limit (UPL)	1.85	12.6	n/a
Lower Prediction Limit (LPL)			

UPGRADIENT DATA					
Well	Date	Original	Original	Ln-transformed	Original
MW-14	11/1/1995	0.200 U	5.2	1.648658626	0.0200 U
MW-14	2/1/1996	0.200 U	7.3	1.987874348	0.0200 U
MW-14	5/1/1996	0.200 U	5.00 U	1.609437912	-
MW-14	11/1/1996	0.230	5.00 U	1.609437912	0.0200 U
MW-14	4/1/1997	0.200 U	5.00 U	1.609437912	-
MW-14	11/1/1997	0.200 U	5.00 U	1.609437912	0.0200 U
MW-14	5/1/1998	0.200 U	5.00 U	1.609437912	-
MW-14	11/1/1998	0.200 U	5.00 U	1.609437912	0.0200 U
MW-14	5/1/1999	0.230	Outlier	Outlier	-
MW-14	11/1/1999	0.200 U	5.00 U	1.609437912	0.0200 U
MW-14	5/1/2000	0.240	5.00 U	1.609437912	-
MW-14	12/1/2000	0.200 U	5.00 U	1.609437912	0.0200 U
MW-14	6/1/2001	0.200 U	5.00 U	1.609437912	-
MW-14	11/1/2001	0.200 U	5.00 U	1.609437912	0.0200 U
MW-14	5/2/2002	0.200 U	5.00 U	1.609437912	-
MW-14	11/2/2002	0.200 U	12.0	2.48490665	0.0200 U
MW-14	5/3/2003	0.200 U	5.00 U	1.609437912	-
MW-14	11/3/2003	0.200 U	5.00 U	1.609437912	0.0200 U
MW-14	5/1/2004	0.200 U	5.3	1.667706821	-
MW-14	12/1/2004	0.200 U	5.00 U	1.609437912	0.0200 U
MW-14	5/5/2005	0.200 U	5.00 U	1.609437912	-
MW-14	11/5/2005	0.200 U	5.00 U	1.609437912	0.0200 U
MW-14	5/6/2006	0.200 U	5.00 U	1.609437912	-
MW-14	10/6/2006	0.200 U	8.1	2.091864062	0.0160
MW-14	4/7/2007	0.200 U	5.00 U	1.609437912	-
MW-14	10/7/2007	0.200 U	5.00 U	1.609437912	0.0180 U
MW-14	4/1/2008	0.200 U	20.8	3.034952987	-
MW-14	10/1/2008	0.200 U	5.00 U	1.609437912	0.0200 U
MW-14	10/29/2009	0.200 U	5.00 U	1.609437912	0.0180 U
MW-14	3/25/2010	0.200 U	25.0 U	3.218875825	0.0180 U
MW-14	4/22/2010	0.200 U	5.00 U	1.609437912	0.0180 U
MW-14	10/16/2010	0.200 U	7.5	2.014903021	0.0200 U
MW-14	4/28/2011	0.200 U	5.00 U	1.609437912	0.0200 U
MW-14	10/19/2011	0.200 U	5.6	1.722766598	0.0200 U
MW-14	4/25/2012	0.200 U	5.00 U	1.609437912	0.0200 U
MW-14	10/10/2012	0.200 U	5.00 U	1.609437912	0.0200 U
MW-14	4/16/2013	0.200 U	5.00 U	1.609437912	0.0192 U
MW-14	10/29/2013	0.200 U/0.200 U	5.00 U/5.00 U	1.609437912	0.0196 U/0.0180 U
MW-14	4/14/2014	0.200 U	5.00 U	1.609437912	0.0180 U
MW-14	10/8/2014	0.200 U	5.00 U	1.609437912	-
MW-14	4/16/2015	0.200 U/0.200 U	5.00 U/5.00 U	1.609437912	0.0180 U/0.0200 U
MW-14	10/14/2015	0.200 U	5.00 U	1.609437912	-
MW-14	3/16/2016	0.200 U/0.200 U	7.54/6.88	1.975468951	0.0196 U/0.0204 U
MW-14	9/27/2016	0.200 U/0.200 U	5.00 U/5.00 U	1.609437912	-
MW-14	3/7/2017	0.200 U/0.200 U	5.00 U/5.00 U	1.609437912	0.0180 U/0.0188 U
MW-14	10/4/2017	0.200 U	5.00 U	1.609437912	-
MW-14	3/12/2018	0.200 U	5.00 U	1.609437912	0.0184 U
MW-14	10/9/2018	0.200 U/0.200 U	5.00 U/5.00 U	1.609437912	-
MW-14	3/25/2019	0.200 U	5.00 U	1.609437912	0.0204 U
MW-14	10/3/2019	0.200 U	5.00 U	1.609437912	-
MW-14	3/17/2020	0.200 U	6.7	1.902107526	0.0192 U
MW-14	10/4/2020	0.200 U	5.00 U	1.609437912	-
MW-14	3/30/2021	0.200 U/0.200 U	5.00 U/5.00 U	1.609437912	0.0212 U/0.0184 U
MW-14	10/5/2021	0.200 U	9.04	2.201659174	-
MW-14	4/4/2022	0.200 U	6.0	1.791759469	0.0192 U
MW-14	10/3/2022	0.200 U	5.00 U	1.609437912	-
MW-14	3/29/2023	0.200 U/0.200 U	5.00 U/5.00 U	1.609437912	0.0204 U/0.0200 U
MW-14	10/4/2023	0.200 U	5.5	1.704748092	-
MW-14	4/2/2024	0.200 U/0.200 U	5.00 U/5.45	1.695615609	0.0208 U/0.0200 U
MW-14	10/9/2024	0.200 U	5.00 U	1.609437912	-

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	Ammonia-N	COD	Phenolics
DATA SUMMARY			
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Latest Sample	2025-10-08	2025-10-08	2025-04-17
Detects	61	69	5
Non-Detects	125	116	105
Percent ND	67%	63%	95%
Maximum	2.2	25	0.0519
Minimum (for pH only)			
Distribution	Normal	Lognormal	95% Non-detect
UPL METHOD:	KM Normal UPL	KM Log UPL	Nonparametric

UPL CALCULATION			
Mean	0.583	1.812	n/a
Standard Deviation	0.621	0.356	n/a
Site-Wide False Positive Rate	0.1	0.1	0.1
Compliance wells (w)	10	10	10
Constituents (c)	10	10	10
Sampling Frequency	2x/year	2x/year	1x/year
Resampling Strategy	1-of-2	1-of-2	1-of-2
Factor K (USEPA Table 19-1)	2.035	2.035	n/a
Upper Prediction Limit (UPL)	1.85	12.6	n/a
Lower Prediction Limit (LPL)			

UPGRADIENT DATA					
Well	Date	Original	Original	Ln-transformed	Original
MW-14	4/17/2025	0.200 UJ	6.81	1.91839212	0.0200 U
MW-14	10/7/2025	0.500 UJ	25.0 U	3.218875825	-
MW-16	7/1/1995	1.500	6.8	1.916922612	0.0200 U
MW-16	8/1/1995	1.700	8.9	2.186051277	0.0240
MW-16	11/1/1995	1.500	14.0	2.63905733	0.0200 U
MW-16	2/1/1996	2.200	5.00 U	1.609437912	0.0200 U
MW-16	5/1/1996	1.700	7.5	2.014903021	-
MW-16	11/1/1996	0.800	11.0	2.397895273	0.0200 U
MW-16	4/1/1997	1.000	5.00 U	1.609437912	-
MW-16	11/1/1997	0.200 U	5.00 U	1.609437912	0.0200 U
MW-16	5/1/1998	0.200 U	5.00 U	1.609437912	-
MW-16	11/1/1998	1.500	8.6	2.151762203	0.0200 U
MW-16	5/1/1999	1.800	5.2	1.648658626	-
MW-16	11/1/1999	1.700	5.00 U	1.609437912	0.0200 U
MW-16	5/1/2000	1.980	12.0	2.48490665	-
MW-16	12/1/2000	1.780	5.00 U	1.609437912	0.0200 U
MW-16	6/1/2001	1.620	6.4	1.85629799	-
MW-16	11/1/2001	1.400	6.7	1.902107526	0.0200 U
MW-16	5/2/2002	1.640	5.00 U	1.609437912	-
MW-16	11/2/2002	1.420	7.8	2.054123734	0.0200 U
MW-16	5/3/2003	1.650	5.00 U	1.609437912	-
MW-16	11/3/2003	1.750	5.00 U	1.609437912	0.0200 U
MW-16	5/1/2004	1.600	5.00 U	1.609437912	-
MW-16	12/1/2004	1.590	5.00 U	1.609437912	0.0200 U
MW-16	5/5/2005	1.500	6.8	1.916922612	-
MW-16	11/5/2005	0.200 U	5.00 U	1.609437912	0.0200 U
MW-16	5/6/2006	0.469	5.00 U	1.609437912	-
MW-16	10/6/2006	1.660	9.0	2.197224577	0.0180 U
MW-16	4/7/2007	0.200 U	5.00 U	1.609437912	-
MW-16	10/7/2007	1.100	5.00 U	1.609437912	0.0200 U
MW-16	4/1/2008	0.200 U	20.6	3.025291076	-
MW-16	10/1/2008	1.490	9.9	2.292534757	0.0200 U
MW-16	10/29/2009	0.200 U	25.0 U	3.218875825	0.0180 U
MW-16	3/30/2010	1.800	5.00 U	1.609437912	0.0200 U
MW-16	4/22/2010	1.830	5.00 U	1.609437912	0.0180 U
MW-16	10/16/2010	1.830	5.00 U	1.609437912	0.0200 U
MW-16	4/28/2011	1.890	5.5	1.704748092	0.0200 U
MW-16	10/18/2011	2.000	6.6	1.887069649	0.0200 U
MW-16	4/25/2012	2.170	5.00 U	1.609437912	0.0200 U
MW-16	10/10/2012	1.690	5.00 U	1.609437912	0.0200 U
MW-16	4/17/2013	1.890	5.00 U	1.609437912	0.0210 U
MW-16	10/30/2013	0.952	6.3	1.840549633	0.0180 U
MW-16	4/14/2014	1.690	5.00 U	1.609437912	0.0196 U
MW-16	10/9/2014	0.811	5.00 U	1.609437912	-
MW-16	4/17/2015	1.880	5.7	1.740466175	0.0200 U
MW-16	10/16/2015	1.560	5.3	1.667706821	-
MW-16	3/17/2016	0.59/0.456	5.00 U/5.00 U	1.609437912	0.0204 U/0.0180 U
MW-16	9/29/2016	1.530	20.1	3.000719815	-
MW-16	3/8/2017	0.584	5.00 U	1.609437912	0.0180 U
MW-16	10/4/2017	0.200 U	6.8	1.916922612	-
MW-16	3/12/2018	0.776	5.00 U	1.609437912	0.0180 U
MW-16	10/9/2018	1.430	5.00 U	1.609437912	-
MW-16	3/25/2019	0.316	5.00 U	1.609437912	0.0519
MW-16	10/3/2019	1.420	5.00 U	1.609437912	-
MW-16	3/17/2020	1.860	5.0	1.609437912	0.0180 U
MW-16	10/4/2020	0.536/0.542	5.00 U/5.1	1.62924054	-
MW-16	3/30/2021	1.35	5.00 U	1.609437912	0.0184 U
MW-16	10/5/2021	0.671	5.00 U	1.609437912	-
MW-16	4/4/2022	1.520	8.45	2.134166441	0.0192 U
MW-16	10/3/2022	0.368	7.23	1.978239036	-

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	Ammonia-N	COD	Phenolics
DATA SUMMARY			
Observations (n)	186	185	110
Earliest Sample	1995-07-01	1995-07-01	1995-07-01
Latest Sample	2025-10-08	2025-10-08	2025-04-17
Detects	61	69	5
Non-Detects	125	116	105
Percent ND	67%	63%	95%
Maximum	2.2	25	0.0519
Minimum (for pH only)			
Distribution	Normal	Lognormal	95% Non-detect
UPL METHOD:	KM Normal UPL	KM Log UPL	Nonparametric
UPL CALCULATION			
Mean	0.583	1.812	n/a
Standard Deviation	0.621	0.356	n/a
Site-Wide False Positive Rate	0.1	0.1	0.1
Compliance wells (w)	10	10	10
Constituents (c)	10	10	10
Sampling Frequency	2x/year	2x/year	1x/year
Resampling Strategy	1-of-2	1-of-2	1-of-2
Factor K (USEPA Table 19-1)	2.035	2.035	n/a
Upper Prediction Limit (UPL)	1.85	12.6	n/a
Lower Prediction Limit (LPL)			

UPGRADIENT DATA					
Well	Date	Original	Original	Ln-transformed	Original
MW-16	3/29/2023	1.660	5.00 U	1.609437912	High RL excluded
MW-16	10/4/2023	1.760	15.5	2.740840024	-
MW-16	4/3/2024	1.24	21.8	3.08190997	0.0200 U
MW-16	10/8/2024	1.45	5.00 U	1.609437912	-
MW-16	4/16/2025	1.18 J-	16	2.772588722	0.0200 U
MW-16	10/8/2025	1.38 J-	25.0 U	3.218875825	-

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	Chloride	TOX
DATA SUMMARY		
Observations (n)	186	97
Earliest Sample	1995-07-01	1995-11-01
Latest Sample	2025-10-08	2025-04-17
Detects	116	17
Non-Detects	70	80
Percent ND	38%	82%
Maximum	201	0.276
Minimum (for pH only)		
Distribution	Lognormal	85% Non-detect
UPL METHOD:	KM Log UPL	Nonparametric

UPL CALCULATION		
Mean	2.784	n/a
Standard Deviation	1.331	n/a
Site-Wide False Positive Rate	0.1	0.1
Compliance wells (w)	10	10
Constituents (c)	10	10
Sampling Frequency	2x/year	1x/year
Resampling Strategy	1-of-2	1-of-2
Factor K (USEPA Table 19-1)	2.4475	n/a
Upper Prediction Limit (UPL)	421	n/a
Lower Prediction Limit (LPL)		

UPGRADIENT DATA					
Well	Date	Original	Trimmed	Ln-transformed	Original
MW-05	7/1/1995	6.7	Trimmed	Trimmed	-
MW-05	8/1/1995	5.00 U	Trimmed	Trimmed	-
MW-05	11/1/1995	5.8	Trimmed	Trimmed	0.0100 U
MW-05	2/1/1996	7.7	Trimmed	Trimmed	-
MW-05	5/1/1996	5.00 U	Trimmed	Trimmed	-
MW-05	11/1/1996	6.3	Trimmed	Trimmed	0.0100 U
MW-05	4/1/1997	5.00 U	Trimmed	Trimmed	-
MW-05	11/1/1997	5.9	Trimmed	Trimmed	0.0100 U
MW-05	5/1/1998	6.0	Trimmed	Trimmed	-
MW-05	11/1/1998	8.5	Trimmed	Trimmed	0.0100 U
MW-05	5/1/1999	6.2	Trimmed	Trimmed	-
MW-05	11/1/1999	5.1	Trimmed	Trimmed	0.0100 U
MW-05	5/1/2000	5.2	Trimmed	Trimmed	-
MW-05	12/1/2000	5.9	Trimmed	Trimmed	0.0100 U
MW-05	6/1/2001	7.4	Trimmed	Trimmed	-
MW-05	11/1/2001	5.00 U	Trimmed	Trimmed	0.0100 U
MW-05	5/2/2002	11.8	Trimmed	Trimmed	-
MW-05	11/2/2002	6.1	Trimmed	Trimmed	0.0100 U
MW-05	5/3/2003	6.5	Trimmed	Trimmed	-
MW-05	5/1/2004	5.1	Trimmed	Trimmed	-
MW-05	5/5/2005	12.0	Trimmed	Trimmed	-
MW-05	5/6/2006	27.0	Trimmed	Trimmed	-
MW-05	4/7/2007	33.8	Trimmed	Trimmed	-
MW-05	10/7/2007	10.2	Trimmed	Trimmed	0.0100 U
MW-05	4/1/2008	11.9	Trimmed	Trimmed	-
MW-05	10/1/2008	26.1	Trimmed	Trimmed	0.0100 U
MW-05	10/29/2009	12.1	Trimmed	Trimmed	0.0232
MW-05	3/30/2010	8.5	Trimmed	Trimmed	0.0100 U
MW-05	4/22/2010	10.6	Trimmed	Trimmed	0.0138
MW-05	10/16/2010	6.8	Trimmed	Trimmed	0.0230
MW-05	4/28/2011	5.5	Trimmed	Trimmed	0.0114
MW-05	10/18/2011	13.2	Trimmed	Trimmed	0.0100 U
MW-05	4/25/2012	5.6	Trimmed	Trimmed	0.0144
MW-05	4/16/2013	5.00 U	Trimmed	Trimmed	0.0300 U
MW-05	4/14/2014	24.4	Trimmed	Trimmed	0.0300 U
MW-05	10/9/2014	46.2	Trimmed	Trimmed	-
MW-05	4/17/2015	54.5	Trimmed	Trimmed	0.0300 U
MW-05	10/16/2015	61.6	Trimmed	Trimmed	-
MW-05	3/17/2016	16.1	Trimmed	Trimmed	0.0300 U
MW-05	9/29/2016	22.1	Trimmed	Trimmed	-
MW-05	3/8/2017	16.6	Trimmed	Trimmed	High RL removed
MW-05	10/4/2017	23.4	Trimmed	Trimmed	-
MW-05	3/12/2018	20.9	Trimmed	Trimmed	0.0300 U
MW-05	10/9/2018	5.00 U	Trimmed	Trimmed	-
MW-05	3/25/2019	6.87/6.28	Trimmed	Trimmed	0.0300 U/0.0300 U
MW-05	10/3/2019	5.00 U/5.00 U	Trimmed	Trimmed	-
MW-05	3/17/2020	5.00 U/5.00 U	Trimmed	Trimmed	0.0400 U/0.0400 U
MW-05	10/4/2020	5.00 U	Trimmed	Trimmed	-
MW-05	3/30/2021	6.65	Trimmed	Trimmed	0.0400 U
MW-05	10/5/2021	11.0/11.7	Trimmed	Trimmed	-
MW-05	4/4/2022	29.2/30.2	29.2/30.2	3.391147046	0.0400 U/0.0461
MW-05	10/3/2022	49.4/43.6	49.4/43.6	3.839452313	-
MW-05	3/27/2023	71.9	71.9	4.275276265	0.0400 U
MW-05	10/3/2023	117.0	117.0	4.762173935	-
MW-05	4/2/2024	137	137	4.919980926	0.126
MW-05	10/8/2024	201	201	5.303304908	-
MW-05	04/16/2025	179	179	5.187385806	0.276
MW-05	10/08/2025	126	126	4.836281907	-
MW-14	7/1/1995	6.7	Trimmed	Trimmed	-
MW-14	8/1/1995	6.0	Trimmed	Trimmed	-

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	Chloride	TOX
DATA SUMMARY		
Observations (n)	186	97
Earliest Sample	1995-07-01	1995-11-01
Latest Sample	2025-10-08	2025-04-17
Detects	116	17
Non-Detects	70	80
Percent ND	38%	82%
Maximum	201	0.276
Minimum (for pH only)		
Distribution	Lognormal	85% Non-detect
UPL METHOD:	KM Log UPL	Nonparametric

UPL CALCULATION		
Mean	2.784	n/a
Standard Deviation	1.331	n/a
Site-Wide False Positive Rate	0.1	0.1
Compliance wells (w)	10	10
Constituents (c)	10	10
Sampling Frequency	2x/year	1x/year
Resampling Strategy	1-of-2	1-of-2
Factor K (USEPA Table 19-1)	2.4475	n/a
Upper Prediction Limit (UPL)	421	n/a
Lower Prediction Limit (LPL)		

UPGRADIENT DATA					
Well	Date	Original	Trimmed	Ln-transformed	Original
MW-14	11/1/1995	7.7	Trimmed	Trimmed	0.0100 U
MW-14	2/1/1996	7.7	Trimmed	Trimmed	-
MW-14	5/1/1996	8.3	Trimmed	Trimmed	-
MW-14	11/1/1996	8.1	Trimmed	Trimmed	0.0100 U
MW-14	4/1/1997	9.4	Trimmed	Trimmed	-
MW-14	11/1/1997	8.7	Trimmed	Trimmed	0.0100 U
MW-14	5/1/1998	11.7	Trimmed	Trimmed	-
MW-14	11/1/1998	8.4	Trimmed	Trimmed	0.0100 U
MW-14	5/1/1999	9.3	Trimmed	Trimmed	-
MW-14	11/1/1999	8.8	Trimmed	Trimmed	0.0100 U
MW-14	5/1/2000	9.4	Trimmed	Trimmed	-
MW-14	12/1/2000	8.2	Trimmed	Trimmed	0.0100 U
MW-14	6/1/2001	8.6	Trimmed	Trimmed	-
MW-14	11/1/2001	8.6	Trimmed	Trimmed	0.0100 U
MW-14	5/2/2002	8.7	Trimmed	Trimmed	-
MW-14	11/2/2002	7.9	Trimmed	Trimmed	0.0100 U
MW-14	5/3/2003	10.2	Trimmed	Trimmed	-
MW-14	11/3/2003	8.6	Trimmed	Trimmed	-
MW-14	5/1/2004	9.6	Trimmed	Trimmed	-
MW-14	12/1/2004	7.9	Trimmed	Trimmed	-
MW-14	5/5/2005	8.4	Trimmed	Trimmed	-
MW-14	11/5/2005	8.6	Trimmed	Trimmed	-
MW-14	5/6/2006	8.2	Trimmed	Trimmed	-
MW-14	10/6/2006	8.2	Trimmed	Trimmed	-
MW-14	4/7/2007	7.9	Trimmed	Trimmed	-
MW-14	10/7/2007	7.8	Trimmed	Trimmed	0.0100 U
MW-14	4/1/2008	7.6	Trimmed	Trimmed	-
MW-14	10/1/2008	6.9	Trimmed	Trimmed	0.0100 U
MW-14	10/29/2009	6.7	Trimmed	Trimmed	0.0177
MW-14	3/25/2010	6.8	Trimmed	Trimmed	0.0100 U
MW-14	4/22/2010	7.1	Trimmed	Trimmed	0.0100 U
MW-14	10/16/2010	6.6	Trimmed	Trimmed	0.0356
MW-14	4/28/2011	7.1	Trimmed	Trimmed	0.0100 U
MW-14	10/19/2011	7.6	Trimmed	Trimmed	0.0100 U
MW-14	4/25/2012	6.6	Trimmed	Trimmed	0.0112
MW-14	10/10/2012	7.4	Trimmed	Trimmed	0.0128
MW-14	4/16/2013	7.6	Trimmed	Trimmed	0.0300 U
MW-14	10/29/2013	7.89/7.89	Trimmed	Trimmed	0.0300 U/0.0300 U
MW-14	4/14/2014	7.5	Trimmed	Trimmed	0.0300 U
MW-14	10/8/2014	7.2	Trimmed	Trimmed	-
MW-14	4/16/2015	7.55/7.61	Trimmed	Trimmed	0.0300 U/0.0300 U
MW-14	10/14/2015	11.8	Trimmed	Trimmed	-
MW-14	3/16/2016	8.11/7.97	Trimmed	Trimmed	0.0300 U/0.0300 U
MW-14	9/27/2016	8.79/8.2	Trimmed	Trimmed	-
MW-14	3/7/2017	8.26/8.26	Trimmed	Trimmed	0.0200 U/0.0200 U
MW-14	10/4/2017	6.9	Trimmed	Trimmed	-
MW-14	3/12/2018	8.8	Trimmed	Trimmed	0.0300 U
MW-14	10/9/2018	8.95/8.91	Trimmed	Trimmed	-
MW-14	3/25/2019	8.8	Trimmed	Trimmed	0.0300 U
MW-14	10/3/2019	8.5	Trimmed	Trimmed	-
MW-14	3/17/2020	8.8	Trimmed	Trimmed	0.0400 U
MW-14	10/4/2020	7.7	Trimmed	Trimmed	-
MW-14	3/30/2021	10.4/11.4	Trimmed	Trimmed	0.0400 U/0.0400 U
MW-14	10/5/2021	8.63	Trimmed	Trimmed	-
MW-14	4/4/2022	9.34	9.34	2.234306252	0.0400 U
MW-14	10/3/2022	8.68	8.68	2.161021529	-
MW-14	3/29/2023	9.69/9.7	9.69/9.7	2.271610289	0.0400 U/0.0400 U
MW-14	10/4/2023	8.5	8.5	2.140066163	-
MW-14	4/2/2024	9.32/8.66	9.32/8.66	2.196112848	0.0400 U/0.0400 U
MW-14	10/9/2024	9.78	9.78	2.280339484	-

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	Chloride	TOX
DATA SUMMARY		
Observations (n)	186	97
Earliest Sample	1995-07-01	1995-11-01
Latest Sample	2025-10-08	2025-04-17
Detects	116	17
Non-Detects	70	80
Percent ND	38%	82%
Maximum	201	0.276
Minimum (for pH only)		
Distribution	Lognormal	85% Non-detect
UPL METHOD:	KM Log UPL	Nonparametric

UPL CALCULATION		
Mean	2.784	n/a
Standard Deviation	1.331	n/a
Site-Wide False Positive Rate	0.1	0.1
Compliance wells (w)	10	10
Constituents (c)	10	10
Sampling Frequency	2x/year	1x/year
Resampling Strategy	1-of-2	1-of-2
Factor K (USEPA Table 19-1)	2.4475	n/a
Upper Prediction Limit (UPL)	421	n/a
Lower Prediction Limit (LPL)		

UPGRADIENT DATA					
Well	Date	Original	Trimmed	Ln-transformed	Original
MW-14	4/17/2025	8.59	8.59	2.150598736	0.0600 U
MW-14	10/7/2025	7.37	7.37	1.997417706	-
MW-16	7/1/1995	5.00 U	Trimmed	Trimmed	-
MW-16	8/1/1995	6.0	Trimmed	Trimmed	-
MW-16	11/1/1995	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	2/1/1996	5.00 U	Trimmed	Trimmed	-
MW-16	5/1/1996	5.00 U	Trimmed	Trimmed	-
MW-16	11/1/1996	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	4/1/1997	5.00 U	Trimmed	Trimmed	-
MW-16	11/1/1997	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	5/1/1998	5.00 U	Trimmed	Trimmed	-
MW-16	11/1/1998	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	5/1/1999	5.00 U	Trimmed	Trimmed	-
MW-16	11/1/1999	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	5/1/2000	5.00 U	Trimmed	Trimmed	-
MW-16	12/1/2000	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	6/1/2001	5.00 U	Trimmed	Trimmed	-
MW-16	11/1/2001	6.7	Trimmed	Trimmed	0.0100 U
MW-16	5/2/2002	5.00 U	Trimmed	Trimmed	-
MW-16	11/2/2002	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	5/3/2003	5.00 U	Trimmed	Trimmed	-
MW-16	11/3/2003	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	5/1/2004	5.00 U	Trimmed	Trimmed	-
MW-16	12/1/2004	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	5/5/2005	5.00 U	Trimmed	Trimmed	-
MW-16	11/5/2005	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	5/6/2006	5.00 U	Trimmed	Trimmed	-
MW-16	10/6/2006	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	4/7/2007	5.00 U	Trimmed	Trimmed	-
MW-16	10/7/2007	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	4/1/2008	5.00 U	Trimmed	Trimmed	-
MW-16	10/1/2008	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	10/29/2009	5.00 U	Trimmed	Trimmed	0.0125
MW-16	3/30/2010	5.00 U	Trimmed	Trimmed	0.0424
MW-16	4/22/2010	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	10/16/2010	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	4/28/2011	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	10/18/2011	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	4/25/2012	5.00 U	Trimmed	Trimmed	0.0106
MW-16	10/10/2012	5.00 U	Trimmed	Trimmed	0.0100 U
MW-16	4/17/2013	5.00 U	Trimmed	Trimmed	0.0300 U
MW-16	10/30/2013	5.00 U	Trimmed	Trimmed	0.0300 U
MW-16	4/14/2014	5.00 U	Trimmed	Trimmed	0.0300 U
MW-16	10/9/2014	5.00 U	Trimmed	Trimmed	-
MW-16	4/17/2015	5.00 U	Trimmed	Trimmed	0.0300 U
MW-16	10/16/2015	7.5	Trimmed	Trimmed	-
MW-16	3/17/2016	5.00 U/5.00 U	Trimmed	Trimmed	0.0300 U/0.0300 U
MW-16	9/29/2016	5.00 U	Trimmed	Trimmed	-
MW-16	3/8/2017	5.00 U	Trimmed	Trimmed	0.0200 U
MW-16	10/4/2017	5.00 U	Trimmed	Trimmed	-
MW-16	3/12/2018	5.00 U	Trimmed	Trimmed	0.0300 U
MW-16	10/9/2018	5.00 U	Trimmed	Trimmed	-
MW-16	3/25/2019	5.00 U	Trimmed	Trimmed	0.0300 U
MW-16	10/3/2019	5.00 U	Trimmed	Trimmed	-
MW-16	3/17/2020	5.00 U	Trimmed	Trimmed	0.0400 U
MW-16	10/4/2020	5.00 U/5.00 U	Trimmed	Trimmed	-
MW-16	3/30/2021	5.00 U	Trimmed	Trimmed	0.0400 U
MW-16	10/5/2021	5.00 U	Trimmed	Trimmed	-
MW-16	4/4/2022	5.00 U	5.00 U	1.609437912	0.0484
MW-16	10/3/2022	5.00 U	5.00 U	1.609437912	-

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	Chloride	TOX
DATA SUMMARY		
Observations (n)	186	97
Earliest Sample	1995-07-01	1995-11-01
Latest Sample	2025-10-08	2025-04-17
Detects	116	17
Non-Detects	70	80
Percent ND	38%	82%
Maximum	201	0.276
Minimum (for pH only)		
Distribution	Lognormal	85% Non-detect
UPL METHOD:	KM Log UPL	Nonparametric

UPL CALCULATION		
Mean	2.784	n/a
Standard Deviation	1.331	n/a
Site-Wide False Positive Rate	0.1	0.1
Compliance wells (w)	10	10
Constituents (c)	10	10
Sampling Frequency	2x/year	1x/year
Resampling Strategy	1-of-2	1-of-2
Factor K (USEPA Table 19-1)	2.4475	n/a
Upper Prediction Limit (UPL)	421	n/a
Lower Prediction Limit (LPL)		

UPGRADIENT DATA		Original	Trimmed	Ln-transformed	Original
Well	Date				
MW-16	3/29/2023	5.00 U	5.00 U	1.609437912	0.0400 U
MW-16	10/4/2023	5.00 U	5.00 U	1.609437912	-
MW-16	4/3/2024	5.00 U	5.00 U	1.609437912	0.0982
MW-16	10/8/2024	5.00 U	5.00 U	1.609437912	-
MW-16	4/16/2025	5.00 U	5.00 U	1.609437912	0.0600 U
MW-16	10/8/2025	5.00 U	5.00 U	1.609437912	-



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