

OR

PROJECT: WC,CY24 Env Comp&On-Call,Loess Hills,IA 27224020.00 DATE: 1/30/2025

SUBJECT: Loess Hills Regional Sanitary Landfill - 65-SDP-01-72P - 2024 AWQR, LCSPER, and MMR TRANSMITTAL ID: 00004

PURPOSE: For Record VIA: Info Exchange

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TO

NAME	COMPANY	EMAIL	PHONE
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REMARKS: Good afternoon,

SCS Engineers, on behalf of Iowa Waste Services, LLC., is submitting the attached 2024 Annual Water Quality Report, Leachate Control System Performance Evaluation Report, and Landfill Gas Annual Report for the Loess Hills Regional Sanitary Landfill, permit number 65-SDP-01-72P. If you have any questions or comments regarding the submittal, you may contact me using the information below. Additionally, if there is an issue with the document transmittal, let me know and I will resend the document as soon as possible.

Thank you,
Benjamin Madson
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DESCRIPTION OF CONTENTS

QTY	DATED	TITLE	NOTES
1	1/30/2025	Loess Hills Regional Sanitary Landfill- 65-SDP-01-72P - 2024 AWQR, LCSPER, MMR.pdf	

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Transmittal

DATE: 1/30/2025
TRANSMITTAL ID: 00004

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January 30, 2025
File No. 27224020.00

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

**Re: 2024 Annual Water Quality Report, Leachate Control System Performance Evaluation Report, and Landfill Gas Annual Report
Loess Hills Regional Sanitary Landfill
Permit No. 65-SDP-01-72P**

Dear Mr. Smith:

SCS Engineers, on behalf of Iowa Waste Services, LLC. (IWS), has completed the required groundwater monitoring and statistical analyses for the Loess Hills municipal solid waste landfill unit at the Loess Hills Regional Sanitary Landfill for the year 2024. Services were performed in general accordance with Iowa Administrative Code (IAC) 567-113 and the current requirements for implementation of the Hydrologic Monitoring System Plan for the site. Please find attached a copy of the 2024 Annual Water Quality Report.

Additionally, the 2024 Leachate Control System Performance Evaluation Report, prepared by SCS, and the 2024 Landfill Gas Annual Report, prepared by IWS, for the site are included as appendices to the Annual Water Quality Report.

Should you have any questions or need clarification, please contact us at (515) 631-6160.

Sincerely,



Semir Omerovic
Technical Associate
SCS Engineers



Timothy C. Buelow, P.E.
Senior Project Advisor
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Enclosure

copy: Ms. Rachel Hanigan, Iowa Waste Services, LLC.
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2024 Annual Water Quality Report, Leachate Control System Performance Evaluation Report, and Landfill Gas Annual Report

Loess Hills Regional Sanitary Landfill
Malvern, Iowa
Solid Waste Permit No. 65-SDP-01-72P

Prepared for:

Iowa Waste Services, LLC

SCS ENGINEERS

27224020.00 | January 30, 2025

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CERTIFICATION

Prepared by:  Date: 1/30/25

Typed: Semir Omerovic

Reviewed by:  Date: 1/30/2025

Typed: Timothy C. Buelow, P.E.

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

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

EXECUTIVE SUMMARY

ES.1 PERIOD OF REPORT COVERAGE

The period of report coverage is from January – December 2024 and includes the June and November 2024 semi-annual sampling events.

ES.2 REPORT PRIORITY

The following summarizes report priorities associated with groundwater compliance at the Loess Hills Regional Sanitary Landfill (Landfill).

- Department review urgency: None.
- Department review impact on rules schedule: None.
- Actions or activities on hold pending Department review or comment: None.
- Actions and/or permit amendments needed: None.

ES.3 SITE STATUS AND APPLICABLE RULES

- Landfill Status: Active
- Types of waste accepted: MSW, C&D, Special Wastes
- Applicable IAC rules: 2009 567-113.10

ES.4 COMMENTS

The following summarizes points of special emphasis:

- Elevated total suspended solids concentrations in monitoring wells MW-26R and MW-11R may have influenced the increase of inorganic constituent concentrations during the November 2024 sampling event.
- Trending of the SSL (statistically significant level) constituents, as shown in **Appendix D – Statistical Methodology and Statistical Output**, are generally decreasing, however, numerous volatile organic compound (VOC) concentrations in monitoring well MW-27R were increasing. In the last eight sampling events, arsenic in monitoring well MW-8R has eight non-detects resulting in a stable trend. Cobalt in monitoring wells MW-11R, MW-26R, MW-27R, and MW-28 exhibited decreasing trends during the 2nd 2024 semi-annual statistical evaluation. Vinyl chloride had a decreasing trend in monitoring well MW-11R. This is a further indication that natural attenuation is likely occurring. The decreasing trends in the SSL parameters also may be an indication that the installed GCCS (gas collection and control system) is successful in contributing to a decrease in gas migration. In the three subsurface methane monitoring points on the south side of the unlined area of the Landfill, methane was only detected during the 3rd quarterly monitoring event, and methane concentrations above 100% of the LEL were not detected.

ACRONYMS/ABBREVIATIONS

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

1.0 SITE BACKGROUND

1.1 SITE LOCATION

The Landfill property is depicted in **Figure 1**, Approved Monitoring Network. The Landfill is located approximately three miles west-northwest of Malvern; more specifically described as the NW $\frac{1}{4}$ of the SE $\frac{1}{4}$, the NE $\frac{1}{4}$ of the SE $\frac{1}{4}$, and the South $\frac{1}{2}$ of the NE $\frac{1}{4}$, and the SE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 23, Township 72 North, Range 42 West, in Mills County, Iowa.

1.2 FACILITY

The Landfill property has been used for waste disposal since 1972. According to the county assessor's website, the property is currently zoned Industrial. The northern portion of the current property was purchased by Iowa Waste Systems, Inc. after acquiring the original landfill property owned by Nishna Sanitary Services, Inc. The Landfill was subsequently acquired by Iowa Waste Services, LLC, additional property to the east was purchased, and an east expansion of the Landfill was permitted. No development of the east expansion has occurred to date and landfilling activities continue in the western portion of the Landfill property. Prior to landfilling activities, the land was used for agricultural purposes.

1.3 GEOLOGY AND HYDROGEOLOGY OF THE SITE

Previous assessments indicate that the regional stratigraphy located within the Landfill area is Wisconsin age Peorian loess underlain by Illinoian age Loveland loess. The loess is approximately 60 feet thick and ranges up to 150 feet thick near the Missouri River bluffs. Below the loess, glacial drift of Kansan and Nebraskan age is present. The glacial drift sequence consists of Kansan age deposits overlying Nebraskan age deposits. The first bedrock encountered is of the Pennsylvanian period at an approximate elevation of 875 to 950 feet above mean sea level (ft. amsl). The bedrock surface generally consists of the Pennsylvanian age Waubonsie group of the Virgil series. The lithology of the Waubonsie group generally includes shale with some limestone, siltstone, and minor sandstone units.

A notable feature in the area is the Fremont Channel, an erosional drainage channel that was filled with glacial deposits to a thickness of 500 feet and may be a useful groundwater source. The United States Geological Survey (USGS) bedrock topographic map indicates this structure is located approximately two miles east of the Landfill (Terracon, 1992).

The area near the Landfill consists of relatively well-drained, hilly terrain resulting primarily from fluvial erosion of loess deposits. The drainage of the area surrounding the Landfill is generally to the unnamed creek located to the south of the Landfill property. This creek discharges into Silver Creek approximately two miles to the east. Silver Creek then discharges into the West Nishnabotna River at a point approximately four miles south of Malvern or approximately six miles from the Landfill property.

The ground surface and upland divides range from approximately 1,180 ft. amsl in the western portion of the Landfill property to approximately 1,010 ft. amsl in the eastern portion of the Landfill property.

The geology of the Landfill property was described in the Mills County Landfill Hydrogeologic Assessment, Malvern, Iowa, (July 6, 1992, prepared by Terracon Environmental, Inc.). In general, the soil borings in the report indicated that the upland areas of the Landfill property are covered with a

loess mantle from the Wisconsin and Illinoian ages, with thicknesses ranging from 8 to 43 feet. The loess deposits are generally thickest at the borings advanced in the higher elevation areas of the property. The loess deposits were generally described as light brown clay silt with a trace of sand. The loess is underlain by glacial till mainly from the Kansan and Nebraskan ages. The till was described as brown and gray, lean to fat clay containing varying amounts of sand and gravel. Sand and gravel seams were observed in several of the borings.

The Hydrologic Monitoring System Plan (1992 HMSP by Terracon Environmental, Inc.) stated that the water table surface is generally coincidental with the uppermost aquifer across the Landfill property. It was observed in the hydrogeologic study that the lower unoxidized glacial till unit has a horizontal conductivity significantly lower than the overlying oxidized glacial till and loess soils, thereby resulting in significant horizontal versus vertical flow above the unoxidized glacial till unit.

2.0 FIGURES DISCUSSION

The following figures are attached.

2.1 FIGURE 1 – APPROVED MONITORING NETWORK

The western portion of the Landfill property, hydrological monitoring system plan (HMSP) monitoring network, and impact delineation monitoring points are depicted on **Figure 1**. **Figure 1** indicates the respective monitoring programs of the HMSP monitoring points as of the beginning of this reporting period.

2.2 FIGURE 2 – GROUNDWATER CONTOURS

A groundwater contour map based on groundwater levels measured during the November 2024 sampling event is included as **Figure 2**. Groundwater gradients beneath the Landfill have remained generally consistent over the last several reporting periods. Review of groundwater contours indicate the gradient is generally to the southeast toward natural ravines south and southeast of the Landfill property boundary. A southwesterly flow component is present in the southwest corner of the property.

2.3 FIGURE 3 – REPORTING PERIOD DETECTION SUMMARY

Figure 3 shows the range of measured concentrations by monitoring point for the HMSP monitoring wells. Further discussion of the detected constituents is included in Section 5.0 – Analytical Data Evaluation and Summary of this report.

2.4 FIGURE 4 – ARSENIC CONCENTRATION MAP

The elevated arsenic concentrations appear to be localized south of the Landfill around corrective action monitoring well MW-26R. Monitoring well MW-26R, located south of the Landfill, was installed during the 2020 reporting period. Arsenic was measured at an SSL initially in monitoring well MW-26R during the 1st 2022 semi-annual statistical evaluation. It should be noted that the installation of bracketing wells downgradient of monitoring well MW-26R was unable to be completed due to denied property access for installation. The other monitoring well with an SSL for arsenic is monitoring well MW-8R. Arsenic concentrations in monitoring well MW-8R are below the laboratory reporting limit.

2.5 FIGURE 5 – COBALT CONCENTRATION MAP

The elevated cobalt concentrations at the Landfill are generally located south and east of the Landfill in monitoring wells MW-11R, MW-26R, and MW-27R. Monitoring well MW-28 was reported as dry during both semi-annual sampling events. Monitoring well MW-11 was replaced with monitoring well MW-11R, which was installed with a pre-pack screen in September 2020. The sampling events since installation of MW-11R measured cobalt concentrations generally lower than concentrations previously measured in MW-11. Monitoring well MW-29, located northeast of monitoring well MW-11/MW-11R, measured non-detect cobalt concentrations during the most recent four sampling events.

Monitoring well MW-26R, located between monitoring wells MW-8R and MW-11R, measured cobalt at an SSL initially during the 1st 2022 semi-annual statistical evaluation. Monitoring well MW-10R, located generally east of monitoring well MW-26R, measured non-detect cobalt concentrations since the 2nd 2017 sampling event.

Cobalt in monitoring well MW-28 was first measured at an SSL during the 2nd 2019 semi-annual statistical evaluation. Bracketing well MW-31 was installed in September 2020 to bracket southeast of MW-28. Since installation, five samples have been obtained from bracketing monitoring well MW-31, all of which have measured above the groundwater protection standard (GWPS). However, as noted in the 2021 AWQR (Doc #102166), the location of monitoring well MW-31 near a lowland area that accumulates standing water. This area appears to have other geochemical influences occurring based on the concentrations of the natural attenuation constituents, which may be influencing cobalt concentrations as well.

It should be noted that monitoring well MW-27R, located on the south side of the Landfill property, was installed during the 2020 reporting period. A majority of cobalt concentrations in monitoring well MW-27R since installation have been above the GWPS. A sufficient dataset had been collected after the September 2023 sampling event, and assessment monitoring statistical analysis was performed, resulting in cobalt concentrations at an SSL in monitoring well MW-27R.

2.6 FIGURE 6 – VINYL CHLORIDE CONCENTRATION MAP

Corrective action monitoring well MW-11R measured non-detect vinyl chloride concentrations during the 2024 reporting period. It should be noted that all vinyl chloride concentrations measured in corrective action monitoring well MW-11R since installation in September 2020 have been below the GWPS. Additionally, monitoring wells located southwest and northeast of MW-11/MW-11R have consistently measured non-detect vinyl chloride concentrations. The decrease in vinyl chloride concentrations in monitoring well MW-11R indicates the improvement of water quality in the vicinity of MW-11R.

3.0 STANDARDS HISTORY GRAPHS

Standards history graphs are included in **Appendix G**. Standards history graphs for the following parameters are included:

- Antimony
- Arsenic
- Barium
- Beryllium
- Cadmium
- Chromium
- Cobalt
- Copper
- Lead
- Nickel
- Selenium
- Silver
- Vanadium
- Zinc

In all instances the prediction limit was below the GWPS.

4.0 QA/QC SUMMARY

The quality assurance/quality control (QA/QC) program for the Landfill follows similar protocols as included in the HMSP. Data validation procedures were performed on analytical results for laboratory quality control samples and a quality assurance assessment of the data was conducted as the data were generated. The QA review procedure provided documentation of the accuracy and precision of the analytical data and confirmed that the analyses were sufficiently sensitive to detect constituents at levels below regulatory standards when technically feasible with the laboratory method utilized. SCS then conducted QA/QC data validation of the produced data, which included review of sample handling, analytical sensitivity, and blanks, accuracy, and precision. A summary of the laboratory QA/QC and data validation can be found in **Appendices B-1**, Laboratory Data, and **B-2**, Data Validation, respectively. The QA/QC review indicated that the data was acceptable.

5.0 ANALYTICAL DATA EVALUATION AND SUMMARY

Assessment/corrective action monitoring statistical analyses in accordance with the requirements of IAC 567-113.10(6) were conducted for the groundwater analytical data collected during the 2024 reporting period sampling events. The statistical evaluation for samples collected during this reporting period are located in Attachments A and B (1st and 2nd 2024 Semi-Annual Statistical outputs) of **Appendix D**, Statistical Methodology and Statistical Output of this report.

Groundwater monitoring for the Landfill consists of thirteen monitoring points, with background wells MW-14 and MW-17 located northwest of the Landfill. Compliance monitoring points are located along the east, southeast, south, and southwest boundaries. The range of measured concentrations for the detected constituents is shown in **Figure 3**, Reporting Period Detection Summary.

5.1 ANALYTICAL DATA EVALUATION

Multiple volatile organic compounds (VOCs) and metals were detected during the 2024 semi-annual sampling events. GWPS exceedances at SSLs occurred in monitoring wells south, southeast, and east of the Landfill. A majority of the site-wide maximum inorganic concentrations were measured in monitoring well MW-26R, located south of the Landfill with six, followed by monitoring well MW-11R with three. It should be noted that these two monitoring wells measured significantly elevated TSS during the November 2024 sampling event, which is the likely cause of the sitewide maximum concentrations measured in these wells. Inorganic GWPS exceedances for cobalt were measured in monitoring wells south, and southeast of the Landfill and for arsenic in two monitoring wells south and southeast of the Landfill.

A majority of the site-wide maximum VOC concentrations were measured in monitoring well MW-27R, located south of the Landfill with six, followed by monitoring well MW-11R with two. VOCs were detected in monitoring wells along the south-southeastern side of the unlined closed portion of the Landfill; however, all measured VOC concentrations were below their respective GWPSs.

5.2 TRENDING IN ASSESSMENT/CORRECTIVE ACTION MONITORING WELLS

Statistical trend evaluations were completed for monitoring well – constituent pairs by Mann-Kendall analysis during this reporting period. The trend evaluations are included in the 1st and 2nd 2024

Semi-Annual Statistical Outputs included as Attachments A and B, respectively, in **Appendix D**. The statistically significant trends were as follows:

Monitoring Point	Constituent	Trend
1st 2024 Semi-Annual		
MW-26R	1,1-Dichloroethane	Decreasing
MW-27R	1,1-Dichloroethane	Increasing
	cis-1,2-Dichloroethene	Increasing
	Trichloroethene	Increasing
2nd 2024 Semi-Annual		
MW-26R	1,1-Dichloroethane	Decreasing
	cis-1,2-Dichloroethene	Decreasing
MW-27R	1,1-Dichloroethane	Increasing
	cis-1,2-Dichloroethene	Increasing
	Trichloroethene	Increasing

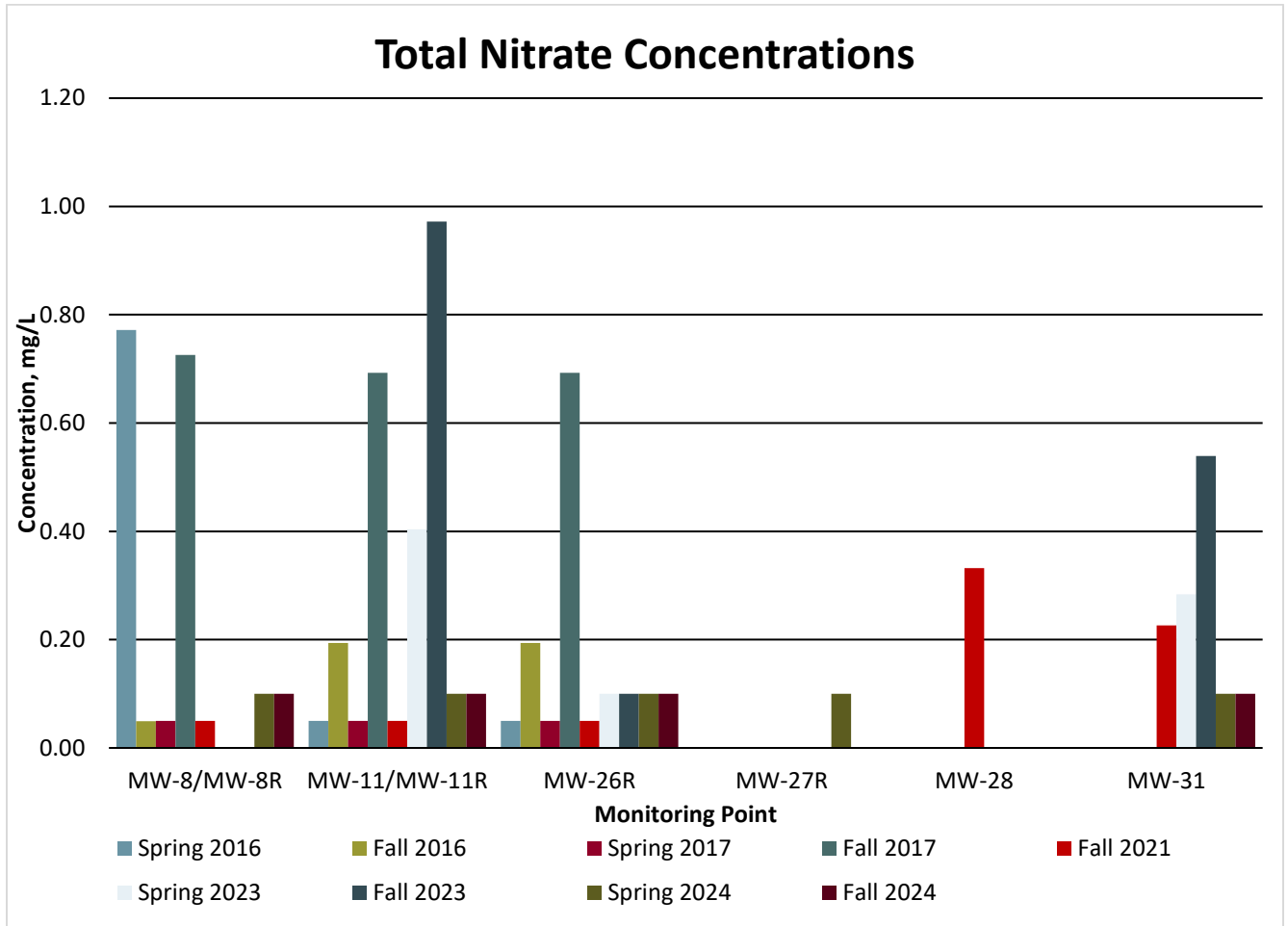
5.3 CORRECTIVE ACTION GROUNDWATER MONITORING PROGRAM REMEDY DISCUSSION

An Assessment of Corrective Measures (ACM) Report was submitted on December 20, 2019 (Doc #96653) and approved in permit correspondence dated June 29, 2020 (Doc #97988). The Selection of Remedy and Corrective Action Groundwater Monitoring Program (CAMP) were submitted on October 30, 2020 (Doc #98833) and approved in the permit renewal documentation dated December 10, 2020 (Doc #99104). The selected remedy was source control by landfill gas venting and monitored natural attenuation. The 2nd Quarter 2021 Methane Monitoring Exceedance notification submitted by SCS Engineers dated June 22, 2021 (Doc #100718) requested to utilize the gas collection and control system (GCCS) installed in fall 2020 as the source control portion of the remedy and was approved in permit correspondence dated June 24, 2021 (Doc #100735).

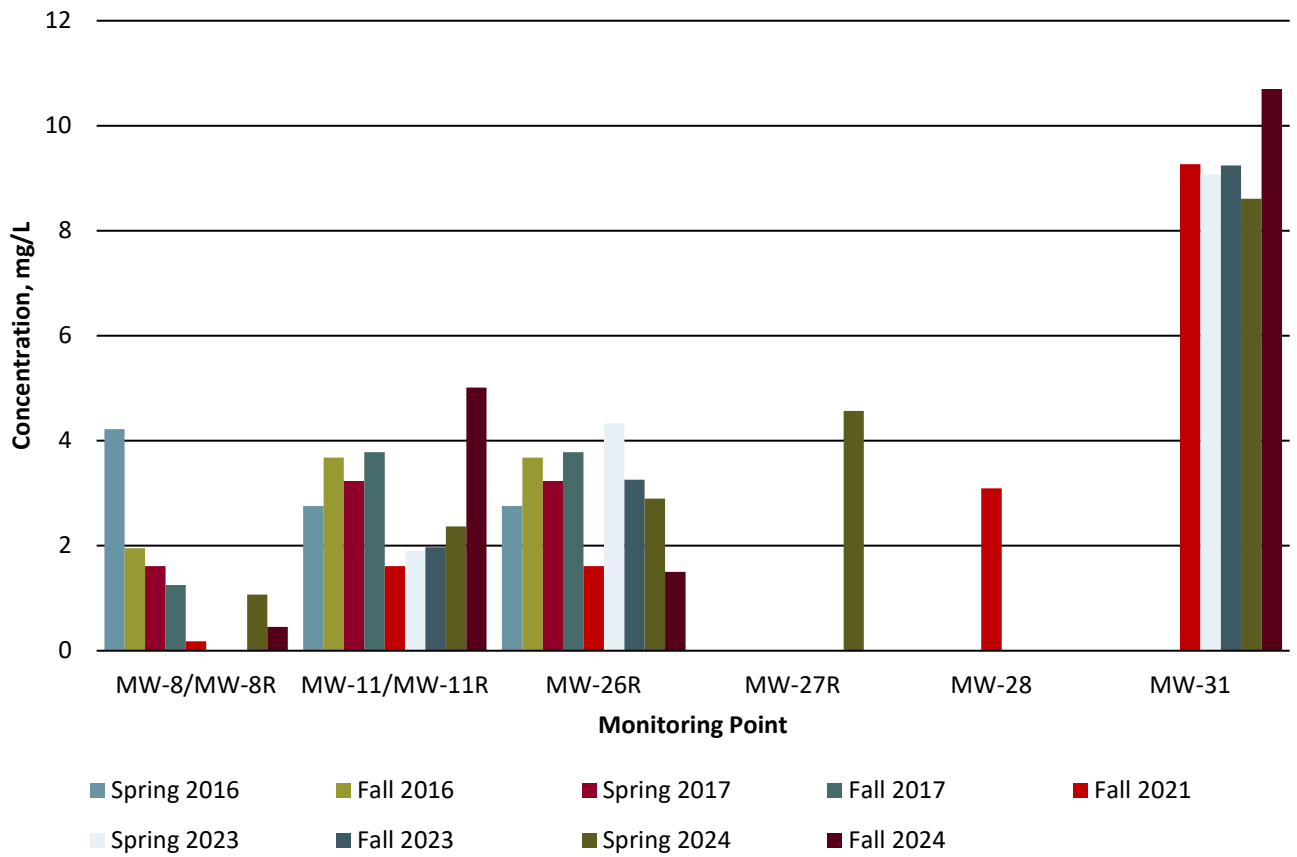
The GCCS is currently in place and operational. Methane exceedances at the site have reduced in number and frequency coinciding with the installation and expansion of the GCCS. An expansion of the GCCS was completed on September 21, 2024, as noted in the Construction Observation Report submitted by SCS Engineers dated November 19, 2024 (Doc #111341).

Natural attenuation processes are a component of the remedy to address groundwater impact at the Landfill. Semi-annual natural attenuation sampling was approved in the CAMP for monitoring wells MW-8R, MW-11R, MW-26R, MW-28, and bracketing monitoring well MW-31. Semi-annual natural attenuation sampling was approved on May 10, 2024 for monitoring well MW-27R (Doc #110023). A natural attenuation sample was obtained from monitoring wells MW-11R, MW-26R, and MW-31 during the 2024 semi-annual sampling events. Monitoring well MW-27R was dry during the 2nd 2024 sampling event and monitoring well MW-28 was dry during both semi-annual sampling events. The Summary of Groundwater Chemistry – Supplemental, located in **Appendix C**, summarizes the current and historical cobalt and Natural Attenuation constituent concentrations for bracketing monitoring well MW-31 and Corrective Action monitoring wells MW-8R, MW-11R, MW-26R, MW-27R, and MW-28. Current and historical arsenic and vinyl chloride concentrations can be found in The

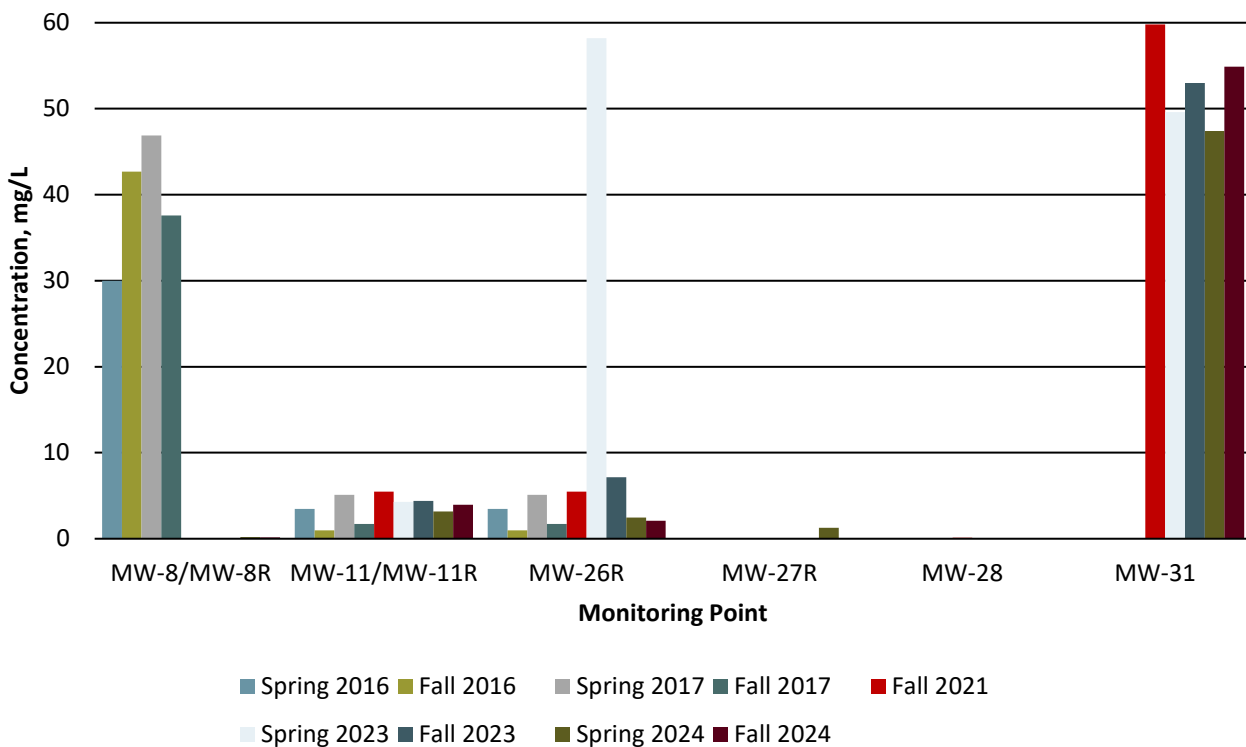
Summary of Groundwater Chemistry in **Appendix C**. Monitoring well MW-27R measured cobalt at an SSL for the first time during the 2023 reporting period. Therefore, sampling for natural attenuation parameters semi-annually in MW-27R began with the June 2024 semi-annual sampling event. The following graphs illustrate total nitrate, total manganese, total iron, and sulfate concentrations in monitoring wells MW-8R, MW-11R, MW-26R, MW-27R, MW-28, and MW-31.

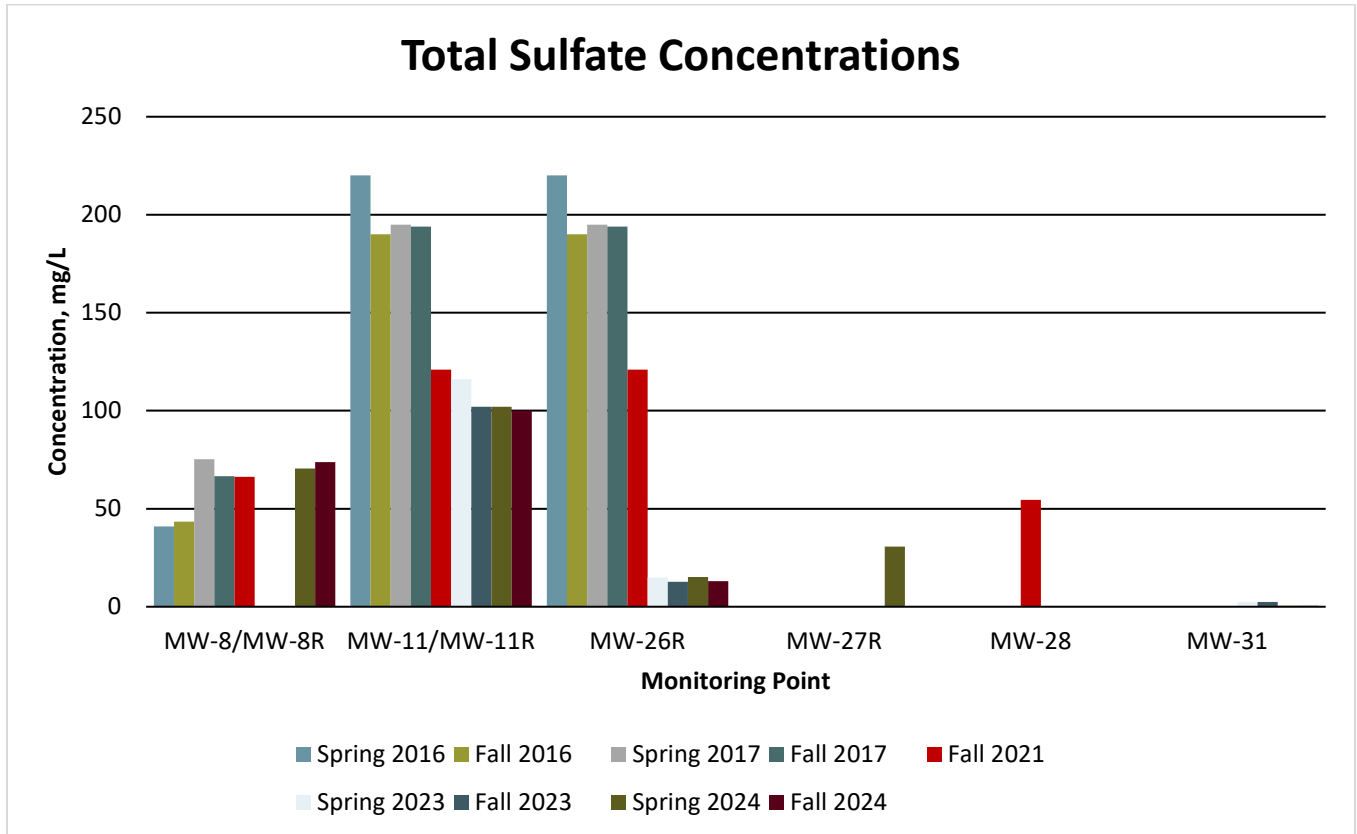


Total Manganese Concentrations



Total Iron Concentrations





The above graphs indicate varying degrees of reducing conditions at the individual monitoring wells, with electron acceptor availability remaining to sustain natural attenuation.

Trending

Trending of the SSL constituents, as shown in **Appendix D – Statistical Methodology and Statistical Output**, are generally decreasing. In the last eight sampling events, arsenic in monitoring well MW-8R has eight non-detects resulting in a stable trend. Cobalt in monitoring wells MW-11R, MW-26R, MW-27R, and MW-28 exhibited decreasing trends during the 2nd 2024 semi-annual statistical evaluation. Additionally, SSL constituent vinyl chloride was a decreasing trend in monitoring well MW-11R. This is a further indication that natural attenuation is likely occurring. The decreasing trends in the SSL parameters also may be an indication that the installed GCCS is successful in contributing to a decrease in gas migration, and therefore, concentrations of organics in the vicinity of the corrective action monitoring wells. It should be that cobalt in monitoring well MW-8R, and arsenic in monitoring well MW-26R exhibited increasing trends; however, the trending in inorganic constituents in this monitoring well is likely influenced by TSS.

6.0 RECOMMENDATIONS

6.1 SITE IMPACT ON GROUNDWATER

- Limited impact in the form of elevated arsenic concentrations is present to the south of the Landfill in the vicinity of corrective action monitoring well MW-26R. Based on geochemical evaluation, increased arsenic concentrations are likely due to landfill gas. A

landfill gas collection and control (GCCS) system was installed in 2020 (see Doc #97645). Arsenic was initially measured at an SSL during the 1st 2022 semi-annual statistical evaluation in monitoring well MW-26R and the 2nd 2018 semi-annual statistical evaluation in monitoring well MW-8R. Recent arsenic concentrations at monitoring well MW-8R have been non-detects resulting in the upper confidence limit for arsenic in monitoring well MW-8R falling below the GWPS and the well began tracking against the remedy completion criteria for this parameter.

- Impact from cobalt is present to the south, southeast, and east of the Landfill in the vicinity of corrective action monitoring wells MW-8R, MW-11R, MW-26R, and MW-27R. Based on geochemical evaluation, increased cobalt concentrations are likely due to landfill gas. Monitoring wells MW-8R and MW-11R were installed with pre-pack screens in September 2020. Monitoring wells MW-11R and MW-26R measured high levels of TSS during the November 2024 semi-annual sampling event.
- Vinyl chloride impact is present to the southeast of the Landfill in corrective action monitoring well MW-11R. It should be noted that all vinyl chloride concentrations measured in corrective action monitoring well MW-11R since September 2020 have been below the GWPS. This likely indicates improvement of water quality in the vicinity of MW-11R. Additionally, as indicated above, geochemical evaluation indicated that landfill gas is likely the cause of the elevated vinyl chloride concentrations.

6.2 PROPOSED MONITORING

Anticipated groundwater sampling for the 2025 reporting period is shown in **Table 2**. No changes to the monitoring program are recommended at this time.

6.3 PROPOSED MONITORING WELL CHANGES

Redevelopment of monitoring wells MW-11R and MW-26R as a result of the elevated TSS concentrations measured during the 2024 reporting period. No other changes to the monitoring wells are recommended at this time.

Tables

- 1 Monitoring Program Summary
- 2 Monitoring Program Implementation Schedule
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Table 1
Monitoring Program Summary Table
2024 Annual Water Quality Report
Loess Hills Regional Sanitary Landfill
Permit No. 65-SDP-01-72P

Monitoring Well	Formation ⁽¹⁾	Current Monitoring Program	Change for Next Sampling Event	SSIs ⁽²⁾	Constituents with Current and/or Historical SSLs	Total Number of Samples in Each Monitoring Program		
						Detection inorganic/organic	Assessment inorganic/organic	Corrective Action inorganic/organic
HMSP Monitoring Points								
MW-14	Sandy/gravelly clay	Background	No change	Not Applicable	Not applicable	17/17		
MW-17	Sandy clay	Background	No change	Not Applicable	Not applicable	8/17		
MW-7	Till	Assessment	No change	cis-1,2-Dichloroethene	None		19/36	
MW-8R	Till	Corrective Action	No change	Barium, Copper, Mercury, Nickel, Vanadium, cis-1,2-Dichloroethene	Arsenic, Cobalt			18/33
MW-10R	Sandy lean clay	Assessment	No change	Barium, 1,1-Dichloroethane, cis-1,2-Dichloroethene	None		19/35	
MW-11R	Till/ Red sandy clay and gray/brown silty clay	Corrective Action	No change	Arsenic, Barium, Cobalt, Lead, Nickel, Vanadium, Zinc, 1,4-Dichlorobenzene, Benzene, cis-1,2-Dichloroethene	Cobalt, Vinyl Chloride			16/29
MW-25	Till	Assessment	No change	None ⁽³⁾	None		12/17	
MW-26R	Silty sandy clay/ Brown clayey sand	Corrective Action	No change	Arsenic, Barium, Cadmium, Cobalt, Copper, Lead, Nickel, Vanadium, Zinc, 1,1-Dichloroethane, cis-1,2-Dichloroethene	Arsenic, Cobalt		10/10	
MW-27R	Silty sandy clay/ Brown silty sandy clay and brown clayey sand	Corrective Action	No change	Barium, Cobalt, Nickel, 1,1-Dichloroethane, Chlorobenzene, cis-1,2-Dichloroethene, Trichloroethene	Cobalt		9/10	
MW-28	Till	Corrective Action	No change	None ⁽³⁾	Cobalt			19/29
MW-29	Till	Detection	No change	None	Not applicable	19/31		
GU-1	NA	Treated with Leachate	No change	Not Applicable	Not Applicable		18/18	
SW-4	NA	Detection	No change	None ⁽³⁾	Not Applicable	9/9		
Other Monitoring Points								
MW-2	Loess	Water Level						
MW-3	Silty clay	Water Level						
MW-9R	Till	Water Level						
MW-15	Sandy clay	Water Level						
MW-16	Sandy clay	Water Level						
MW-18	Sandy clay	Water Level						
MW-19	Sandy/gravelly clay	Water Level						
MW-20	Sandy clay	Water Level						
MW-21	Sandy clay	Water Level						
MW-31	Brown/dark gray lean clay and dark brown lean clay	Bracketing						

- Notes:
- ⁽¹⁾ Obtained from screened interval on boring logs.
 - ⁽²⁾ A single detection of a VOC in the most recent reporting period, is recorded above as an SSI.
 - ⁽³⁾ Samples were unable to be obtained from monitoring wells MW-25, MW-28, and lagoon underdrain outlet SW-4 during this reporting period; therefore, prediction limit analysis was not performed on these monitoring wells during the 2024 reporting period.

SSI = Statistically Significant Increase above background.
SSL = Statistically Significant Level above groundwater protection standard.

Table 2
Monitoring Program Implementation Schedule
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Monitoring Well	Recent Sampling Dates and Constituents				Upcoming Sampling Dates and Constituents		Full Appendix II Sample Dates	
	April 2024 Retest	June 2024 Semi-Annual	August 2024 Background	November 2024 Semi-Annual	1 st 2025 Semi-Annual	2 nd 2025 Semi-Annual	Previously Collected	Next Event
HMSP								
MW-14	-	Appendix I, Sulfide, TSS	-	Appendix I, Sulfide, TSS	Appendix I, Mercury, Sulfide, TSS	Appendix I, Mercury, Sulfide, TSS	Not applicable	Not applicable
MW-17	-	Not Sampled - Dry	-	Not Sampled - Dry	Appendix I, Mercury, Sulfide, TSS	Appendix I, Mercury, Sulfide, TSS	Not applicable	Not applicable
MW-7	-	Appendix II, TSS	-	Appendix I+, TSS	Appendix I, TSS	Appendix I, TSS	1/23/2013, 9/4/2014, 4/10/2019, 6/19/2024	2029
MW-8R	Mercury	Appendix I, Sulfide, Mercury, Nitrate, Iron, Manganese, Sulfate, TSS	Mercury	Appendix I, Sulfide, Mercury, Nitrate, Iron, Manganese, Sulfate, TSS	Appendix I, Sulfide, Nitrate, Iron, Manganese, Sulfate, TSS	Appendix I, Sulfide, Nitrate, Iron, Manganese, Sulfate, TSS	6/24/2010, 9/25/2013, 3/19/2018, 9/13/2023	2028
MW-10R	-	Appendix II, TSS	-	Appendix I+, TSS	Appendix I, TSS	Appendix I, TSS	1/23/2013, 9/4/2014, 4/10/2019, 6/19/2024	2029
MW-11R	-	Appendix II, Nitrate, Iron, Manganese Sulfate TSS	-	Appendix I+, Sulfide, Nitrate, Iron, Manganese Sulfate TSS	Appendix I, Sulfide, Nitrate, Iron, Manganese Sulfate TSS	Appendix I, Sulfide, Nitrate, Iron, Manganese Sulfate TSS	6/24/2010, 9/25/2013, 4/10/2019, 6/19/2024	2029
MW-25	-	Not Sampled - Dry	-	Not Sampled - Dry	Appendix II, TSS	Appendix I+, TSS	4/10/2019, 11/21/2019	2025
MW-26R	-	Appendix I, Sulfide, Nitrate, Iron, Manganese, Sulfate, TSS	-	Appendix I, Sulfide, Nitrate, Iron, Manganese, Sulfate, TSS	Appendix I, Sulfide, Nitrate, Iron, Manganese, Sulfate, TSS	Appendix I, Sulfide, Nitrate, Iron, Manganese, Sulfate, TSS	6/14/2021, 3/8/2022, 8/8/2022	2027
MW-27R	-	Appendix I, Natural Attenuation, TSS	-	Not Sampled - Dry	Appendix I, Natural Attenuation, TSS	Appendix I, Natural Attenuation, TSS	6/14/202, 9/13/2023	2028
MW-28	-	Not Sampled - Dry	-	Not Sampled - Dry	Appendix II, Beta-BHC, Nitrate, Iron, Manganese, Sulfate, TSS	Appendix I+, Beta-BHC, Nitrate, Iron, Manganese, Sulfate, TSS	4/10/2019, 11/21/2019	2025
MW-29	-	Appendix I, TSS	-	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	Not applicable	Not applicable
GU-1	-	Not Sampled - Dry	-	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	Not applicable	Not applicable
SW-4	-	Not Sampled - Dry	-	Not Sampled - Dry	Appendix I, TSS	Appendix I, TSS	Not applicable	Not applicable
Supplemental								
MW-31	-	Nitrate, Iron, Manganese, Sulfate, TSS	-	Nitrate, Iron, Manganese, Sulfate, TSS	Cobalt, Nitrate, Iron, Manganese, Sulfate, TSS	Cobalt, Nitrate, Iron, Manganese, Sulfate, TSS	Not applicable	Not applicable

- Notes:
- 1) An insufficient amount of water was present in monitoring wells MW-25 and MW-28 to fill the full Appendix II sample bottle set during the 2024 sampling events; therefore, an Appendix II sample will be collected during the 1st 2025 sampling event.
 - 2) Appendix I+ parameters include parameters outside the Appendix I list.
 - 3) Natural attenuation parameters include iron, manganese, nitrate, and sulfate.
- TSS - Total Suspended Solids

Table 3
Monitoring Well Maintenance and Performance Re-Evaluation Schedule
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Compliance with:	2022	2023	2024	2025
567 IAC 113.10(2)"f"(1) high and low water levels	Completed		Included ⁽²⁾	
567 IAC 113.10(2)"f"(2) changes in the hydrologic setting and flow paths	Completed	Completed	Included ⁽¹⁾	Scheduled
567 IAC 113.10(2)"f"(3) well depths	Completed	Completed	Included ⁽²⁾	Scheduled
567 IAC 113.10(2)"f"(4) well recharge rates and chemistry	Completed		Included ⁽²⁾	
Waste separation from ground water 113.6(2)i	Completed	Completed	Included ⁽²⁾	Scheduled

Notes:

⁽¹⁾ See Section 2.2 of this report.

⁽²⁾ See Table 4.

Comments:

None.

Table 4
Monitoring Well Performance and Maintenance Summary
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Well	Top of Casing	Top of Screen	Total Depth	Date of Measurements		Maximum Depth Discrepancy (ft)	Initial Flow Rate* (L/min) Date	Recent Flow Rate (L/min) Date	% Change	
				6/19/2024	11/12/2024					
MW-14	1177.81	1105.7	82.5	Groundwater Level (ft)	53.23	52.00	-1.7	0.109 9/27/2016	0.258 11/12/2024	137%
				Groundwater Elevation (ft MSL)	1124.58	1125.81				
				Measured Well Depth (ft)	84.2	NM				
				Submerged screen	Y	Y				
MW-17	1140.64	1117.4	33.3	Groundwater Level (ft)	Dry	Dry	NA	0.200 9/15/2015	NM Insufficient water	NA
				Groundwater Elevation (ft MSL)	NA	NA				
				Measured Well Depth (ft)	NM	NM				
				Submerged screen	N	N				
MW-7	1116.60	1093.4	38.2	Groundwater Level (ft)	22.30	24.98	1.6	0.080 9/15/2015	0.142 11/12/2024	77%
				Groundwater Elevation (ft MSL)	1094.30	1091.62				
				Measured Well Depth (ft)	36.6	37.8				
				Submerged screen	Y	N				
MW-8R	1113.68	1090.9	37.8	Groundwater Level (ft)	24.43	25.53	NA	0.150 9/18/2018	0.250 11/12/2024	67%
				Groundwater Elevation (ft MSL)	1089.25	1089.15				
				Measured Well Depth (ft)	NM	NM				
				Submerged screen	N	N				
MW-10R	1127.21	1075.7	64.1	Groundwater Level (ft)	55.72	55.66	5.8	0.100 9/15/2015	0.200 11/12/2024	100%
				Groundwater Elevation (ft MSL)	1071.49	1071.55				
				Measured Well Depth (ft)	63.9	58.3				
				Submerged screen	N	N				
MW-11R	1098.59	1065.0	47.6	Groundwater Level (ft)	32.07	32.90	-0.9	0.167 10/27/2020	0.250 11/12/2024	50%
				Groundwater Elevation (ft MSL)	1066.52	1065.69				
				Measured Well Depth (ft)	48.5	NM				
				Submerged screen	Y	Y				
MW-25	1095.92	1082.9	22.8	Groundwater Level (ft)	Dry	Dry	NA	0.080 9/15/2015	NM Insufficient water	NA
				Groundwater Elevation (ft MSL)	NA	NA				
				Measured Well Depth (ft)	NM	NM				
				Submerged screen	N	N				
MW-26R	1125.58	1092.4	47.2	Groundwater Level (ft)	42.06	40.92	0.0	0.233 10/27/2020	0.250 11/12/2024	7%
				Groundwater Elevation (ft MSL)	1083.52	1084.66				
				Measured Well Depth (ft)	47.2	NM				
				Submerged screen	N	N				
MW-27R	1113.88	1071.3	57.6	Groundwater Level (ft)	48.25	52.20	NA	0.207 10/27/2020	0.292 11/12/2024	41%
				Groundwater Elevation (ft MSL)	1065.63	1061.68				
				Measured Well Depth (ft)	NM	NM				
				Submerged screen	N	N				
MW-28	1085.67	1072.7	32.8	Groundwater Level (ft)	Dry	Dry	NA	0.080 9/15/2015	NM Insufficient water	NA
				Groundwater Elevation (ft MSL)	NA	NM				
				Measured Well Depth (ft)	NM	NM				
				Submerged screen	N	N				
MW-29	1087.33	1064.3	32.8	Groundwater Level (ft)	21.08	22.40	0.0	0.080 9/15/2015	0.175 11/12/2024	119%
				Groundwater Elevation (ft MSL)	1066.25	1064.93				
				Measured Well Depth (ft)	32.8	32.8				
				Submerged screen	Y	Y				

Notes:

- NM - Not Measured.
- NA - Not Available; monitoring point was not measured.

Comments:

- 1) Monitoring wells with submersible pumps are only required to be measured once every 5 years. All monitoring wells with submersible pumps installed were measured during the 2022 reporting period and are required to be measured next during the 2027 reporting period with the exceptions of monitoring well MW-14. Due to discrepancies noted below, monitoring well MW-14 had it's well depth verified during the spring 2024 sampling event.
- 2) Measured well depths were within 1.0 foot of the installed depth with the following exceptions:
 - MW-14:** Monitoring well MW-14 measured approximately 14 feet shallower than the installed depth during the 2022 and 2023 sampling events. Monitoring well MW-14 has a dedicated submersible pump installed and well depth was recorded at 1.7 feet deeper than the installed depth during the spring 2024 sampling event.
 - MW-7:** Monitoring well MW-7 measured approximately 1.6 feet shallower than the installed depth during the 2024 sampling events. It is unknown what is causing the unprecedented shallower measurement, the well depth will be verified during the next sampling event.
 - MW-10R:** Monitoring well MW-10R measured 5.8 feet deeper than the installed depth during the fall 2024 semi-annual sampling events. This measurement appears anomalous, and the well depth will be verified during the next sampling event.
- 3) GWPZ-E could not be located during the 2024 reporting period, however monitoring well MW-28 is located near the waste boundary and is reflective of waste separation from groundwater in the south east portion of the landfill. If located, measurements from GWPZ-E will be reported in the next annual reporting period.

Well		Date of Measurements	
		6/19/2024	11/12/2024
MW-28	Bottom of waste (feet MSL)	1074.51	
	Groundwater Elevation (feet MSL)	< 1052.87 (Dry)	< 1052.87 (Dry)
	Separation distance compliant?	Yes	Yes

Table 5
Background and GWPS Summary Tables
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Interwell Background/GWPS (MW-14 and MW-17)

Constituent	Units	Samples	Detections	Min	Max	Mean	Background Level	Statistical Test	GWPS	Source
Antimony (Sb)	mg/L	25	4	0.0004*	0.002695	0.00079136	0.002695	PL (NP)	0.006	MCL
Arsenic (As)	mg/L	25	3	0.0008*	0.00188	0.00102464	0.00188	PL (NP)	0.01	MCL
Barium (Ba)	mg/L	25	25	0.158	0.3	0.25810000	0.3326	PL (P)	2.0	MCL
Beryllium (Be)	mg/L	25	3	0.000082*	0.0005 (1/2 RL)	0.00045760	0.0005	PL (NP)	0.004	MCL
Cadmium (Cd)	mg/L	25	6	0.000038*	0.000506	0.00012910	0.000506	PL (NP)	0.005	MCL
Chromium (Cr)	mg/L	25	6	0.00111*	0.0025 (1/2 RL)	0.00230840	0.0025	PL (NP)	0.1	MCL
Cobalt (Co)	mg/L	25	8	0.000187*	0.000915	0.00033332	0.000915	PL (NP)	0.0021	SWS
Copper (Cu)	mg/L	25	3	0.00162*	0.00432	0.00252800	0.00432	PL (NP)	1.3	MCL
Lead (Pb)	mg/L	25	10	0.00025 (1/2 RL)	0.00144	0.00052572	0.00144	PL (NP)	0.015	MCL
Nickel (Ni)	mg/L	25	3	0.000861*	0.0025 (1/2 RL)	0.00238324	0.0025	PL (NP)	0.1	SWS
Selenium (Se)	mg/L	25	4	0.001125*	0.0025 (1/2 RL)	0.00225220	0.0025	PL (NP)	0.05	MCL
Silver (Ag)	mg/L	25	1	0.000158*	0.0005 (1/2 RL)	0.00047632	0.0005	PL (NP)	0.1	SWS
Thallium (Tl)	mg/L	25	0	0.0005 (1/2 RL)	0.001 (1/2 RL)	0.00052000	< 0.002	DQR	0.002	MCL
Vanadium (V)	mg/L	25	8	0.0022*	0.00531	0.00292420	0.00531	PL (NP)	0.035	SWS
Zinc (Zn)	mg/L	25	3	0.005 (1/2 RL)	0.0247	0.01022640	0.0247	PL (NP)	2.0	SWS

Intrawell Background/GWPS (SW-4)

Constituent	Units	Samples	Detections	Min	Max	Mean	Background Level	Statistical Test	GWPS	Source
Antimony (Sb)	mg/L	8	1	0.001 (1/2 RL)	0.00379	0.00209875	0.00379	PL (NP)	0.006	MCL
Arsenic (As)	mg/L	8	6	0.001 (1/2 RL)	0.0788	0.01301875	0.2613	PL (P)	0.2613	SSGWPS
Barium (Ba)	mg/L	8	8	0.238	1.97	0.73300000	3.937	PL (P)	3.9	SSGWPS
Beryllium (Be)	mg/L	8	2	0.0005 (1/2 RL)	0.00612	0.00133625	0.00612	PL (NP)	0.00612	SSGWPS
Cadmium (Cd)	mg/L	8	4	0.00005 (1/2 RL)	0.00556	0.00098425	0.01194	PL (P)	0.01194	SSGWPS
Chromium (Cr)	mg/L	8	1	0.0025 (1/2 RL)	0.0302	0.00877500	0.0302	PL (NP)	0.1	MCL
Cobalt (Co)	mg/L	6	6	0.000698	0.016	0.00593517	0.07646	PL (P)	0.07646	SSGWPS
Copper (Cu)	mg/L	8	4	0.0025 (1/2 RL)	0.0728	0.01834500	0.1306	PL (P)	1.3	MCL
Lead (Pb)	mg/L	8	6	0.00025 (1/2 RL)	0.109	0.02155213	0.2195	PL (P)	0.2195	SSGWPS
Nickel (Ni)	mg/L	8	6	0.00643	0.2	0.04528375	0.3627	PL (P)	0.3627	SSGWPS
Selenium (Se)	mg/L	8	1	0.0025 (1/2 RL)	0.012	0.00368750	0.012	PL (NP)	0.05	MCL
Silver (Ag)	mg/L	8	0	0.0005 (1/2 RL)	0.01 (1/2 RL)	0.00406250	< 0.02	DQR	0.1	SWS
Thallium (Tl)	mg/L	8	0	0.0005 (1/2 RL)	0.001 (1/2 RL)	0.00068750	< 0.002	DQR	0.002	MCL
Vanadium (V)	mg/L	8	1	0.0025 (1/2 RL)	0.0361	0.01513750	0.0361	PL (NP)	0.0361	SSGWPS
Zinc (Zn)	mg/L	8	8	0.0215	0.524	0.16408750	0.8013	PL (P)	2.0	SWS

Notes:

- 1) Background levels based on calculated prediction limits or reporting limit, as applicable.
- 2) * - J-flag detection.

Acronyms/Abbreviations:

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

Comments:

- 1) **Water quality results and effectiveness of the statistical data evaluation criteria:** Statistical evaluations consist of prediction limits, double quantification rule, and confidence intervals/confidence bands, as appropriate. Data from the background wells is not used for development of the confidence intervals or confidence bands.
- 2) **Changes to the previous statistical method during reporting period:** There were no changes to the statistical method during the 2024 reporting period.
- 3) **Re-sampling strategy:** Retesting is performed on a 1-of-2 scheme.
- 4) **Justification for data exclusion:** Due to the effect of elevated TSS on inorganic concentrations, data obtained prior to the implementation of low-flow sampling (low-flow sampling began with the 2nd 2015 semi-annual sampling event) was removed from statistical consideration.

Table 6
Summary of Well/Detected Constituent Pairs With No Previous SSIs
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Well	Constituent	Units	Most Recent Result	Background Standard
MW-8R	Copper	mg/L	< 0.005	0.00432
	Mercury	mg/L	0.000462	< 0.0002
	Vanadium	mg/L	< 0.005	0.00531
MW-11R	Lead	mg/L	0.00287	0.00144
	Nickel	mg/L	0.0475	0.00250
	Vanadium	mg/L	0.0086	0.00531
	Zinc	mg/L	0.0276	0.0247
MW-26R	Cadmium	mg/L	0.000884	0.000506
	Copper	mg/L	0.0088	0.00432

Notes:

- 1) Criteria for inclusion in this table is a well/constituent pair with a statistically significant increase above background (SSI) during this current reporting period and no SSI in the immediately preceding reporting period or the nearest preceding reporting period in which samples were collected.
- 2) A single exceedance in an assessment/corrective action monitoring well is recorded above as an SSI. Retesting is not performed as these wells are not in the detection monitoring program.
- 3) A single detection of a VOC in the most recent reporting period, and not in the immediately preceding reporting period, is recorded above as an SSI.

Comments:

- 1) **Problems with the current detection network:** Monitoring point SW-4 monitors the lagoon underdrain at the site, therefore the background value for groundwater is not applicable for the SW-4 monitoring point. Samples were unable to be obtained from monitoring wells MW-17, MW-25, and MW-28 due to insufficient water.
- 2) **Schedule to implement remedies:** None.
- 3) **Alternative constituent or sample frequency changes:** None.
- 4) **Significant changes to calculated prediction limits:** None.
- 5) **Resampling strategy:** Retesting is performed on a 1-of-2 retesting scheme.

Table 7
Summary Table of Ongoing and Newly Identified SSIs
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Well	Constituent	Units	Most Recent Result	Background Standard	Lower Confidence Limit	GWPS	Sample Dates		
							Initial Exceedance	Resample(s)	5 th background sample
MW-7	cis-1,2-Dichloroethene	µg/L	8.73	< 1	4.843	70	9/27/2016	NM	12/30/2009
MW-8R	Barium	mg/L	0.402	0.3326	0.4014	2	4/27/2023	NM	10/24/2017
	Copper	mg/L	< 0.005	0.00432	0.0025	1.3	6/18/2024	NM	3/19/2018
	Mercury	mg/L	0.000462	< 0.0002	0.00007388	0.002	9/13/2023	4/3/2024, 6/19/24, 8/22/24	11/12/2024
	Nickel	mg/L	0.00805	0.0025	0.003921	0.1	4/27/2023	NM	10/24/2017
	Vanadium	mg/L	< 0.005	0.00531	0.0025	0.035	6/18/2024	NM	10/24/2017
MW-10R	cis-1,2-Dichloroethene	µg/L	7.61	< 1	3.874	70	4/28/2009	NM	12/30/2009
	Barium	mg/L	0.513	0.3326	0.5163	2	4/27/2023	NM	9/18/2018
	1,1-Dichloroethane	µg/L	1.71	< 1	1.349	140	4/23/2012	NM	12/30/2009
MW-11R	cis-1,2-Dichloroethene	µg/L	10.4	< 1	7.739	70	1/23/2013	NM	12/30/2009
	Arsenic	mg/L	0.011	0.00188	0.0007316	0.01	9/13/2023	NM	9/18/2018
	Barium	mg/L	0.487	0.3326	0.5444	2	4/27/2023	NM	9/18/2018
	Cobalt	mg/L	0.0149	0.000915	0	0.0021	6/18/2024	NM	9/18/2018
	Lead	mg/L	0.00287	0.00144	0.00025	0.015	11/12/2024	NM	9/18/2018
	Nickel	mg/L	0.0475	0.0025	0.001449	0.1	6/18/2024	NM	9/18/2018
	Vanadium	mg/L	0.0086	0.00531	0.0025	0.035	11/12/2024	NM	10/24/2017
	Zinc	mg/L	0.0276	0.0247	0.01	2	11/12/2024	NM	10/24/2017
	1,4-Dichlorobenzene	µg/L	1.35	< 1	1.04	75	10/24/2017	NM	12/30/2009
	Benzene	µg/L	1.44	< 0.5	0.6106	5	7/8/2009	NM	12/30/2009
MW-25	cis-1,2-Dichloroethene	µg/L	1.95	< 1	1.326	70	12/30/2009	NM	12/30/2009
	None								
MW-26R	Arsenic	mg/L	0.0403	0.00188	0.0276	0.01	4/27/2023	NM	3/8/2022
	Barium	mg/L	0.799	0.3326	0.6311	2	4/27/2023	NM	3/8/2022
	Cadmium	mg/L	0.000884	0.000506	0.00005	0.005	11/12/2024	NM	3/8/2022
	Cobalt	mg/L	0.005	0.000915	0.004854	0.0021	4/27/2023	NM	3/8/2022
	Copper	mg/L	0.0088	0.00432	0.0025	1.3	11/12/2024	NM	3/8/2022
	Lead	mg/L	0.00675	0.00144	0.00025	0.015	4/27/2023	NM	3/8/2022
	Nickel	mg/L	0.0212	0.0025	0.007519	0.1	4/27/2023	NM	3/8/2022
	Vanadium	mg/L	0.00571	0.00531	0.0025	0.035	4/27/2023	NM	3/8/2022
	Zinc	mg/L	0.0683	0.0247	0.01	2	4/27/2023	NM	3/8/2022
	1,1-Dichloroethane	µg/L	< 1	< 1	TS	140	10/27/2020	5/10/2021	3/8/2022
MW-27R	cis-1,2-Dichloroethene	µg/L	11.5	< 1	TS	70	10/27/2020	5/10/2021	3/8/2022
	Barium	mg/L	0.722	0.3326	0.0799	2	9/13/2023	NM	10/27/2020
	Cobalt	mg/L	0.00959	0.000915	0.005984	0.0021	9/13/2023	10/27/2020	10/27/2020
	Nickel	mg/L	0.01765	0.0025	0.00956	0.1	9/13/2023	10/27/2020	10/27/2020
	1,1-Dichloroethane	µg/L	4.29	< 1	TS	140	10/27/2020	NM	10/27/2020
	Chlorobenzene	µg/L	2.66	< 1	0.7184	100	5/10/2021	NM	10/27/2020
	cis-1,2-Dichloroethene	µg/L	40.35	< 1	TS	70	5/10/2021	NM	10/27/2020
	Trichloroethene	µg/L	3.445	< 1	TS	5	5/10/2021	NM	10/27/2020
	MW-28	None							
	MW-29	None							
GU-1	None								
SW-4	None								

Notes:

- 1) A single exceedance in an assessment/corrective action monitoring well is recorded above as an SSI. Retesting is not performed as the monitoring well is not in the detection monitoring program.
 - 2) Ongoing SSI is defined as one or more SSIs for a monitoring well/constituent pair in both the previous and current reporting periods.
 - 3) Shaded rows denote constituent/well pairs with SSIs indicated in 2024 but not in 2023. Unshaded rows denote constituent/well pairs with SSIs indicated during both the 2023 and 2024 reporting periods.
- NM - Not Measured; Resampling of constituents with indicated statistically significant increases (SSIs) above background was not part of the statistical methodology performed based on current monitoring program as the monitoring well was in either the assessment or corrective action monitoring programs.
- TS - Theil Sen; Due to a statistically significant trend, Theil Sen analysis was performed in lieu of Confidence Interval analysis. Therefore, a lower confidence limit is unavailable.

Comments:

- 1) **Problems with the current assessment network:** None.
- 2) **Proposed remedies:** None.
- 3) **Alternative constituent or sample frequency changes:** None.
- 4) **Plume delineation strategies:** See discussion of **Figures 4** through **6** in report.
- 5) **Property owner notifications:** Off-site access for plume delineation denied by adjacent property owner (See Doc #96653).

Table 8
Summary Table of Ongoing and Newly Identified SSLs
2024 Annual Water Quality Report
Loess Hills Regional Sanitary Landfill
Permit No. 65-SDP-01-72P

Well	Constituent	Units	Most Recent Result	Upper Confidence Limit	GWPS	Initial Exceedance	Upper Confidence Limit Below GWPS					
							1 st Year		2 nd Year		3 rd Year	
MW-8R	Arsenic	mg/L	< 0.002	N/A	0.01	2018*	11/24	NA	NA	NA	NA	NA
	Cobalt	mg/L	< 0.0005	0.000829	0.0021	2018*	6/24	11/24	NA	NA	NA	NA
MW-11R	Cobalt	mg/L	0.0149	0.009427	0.0021	2018*	NA	NA	NA	NA	NA	NA
	Vinyl Chloride	µg/L	< 1.00	1.559	2	2013	6/24	11/24	NA	NA	NA	NA
MW-26R	Arsenic	mg/L	0.0403	0.572	0.01	2022	NA	NA	NA	NA	NA	NA
	Cobalt	mg/L	0.005	0.007209	0.0021	2022	NA	NA	NA	NA	NA	NA
MW-27R	Cobalt	mg/L	0.00959	0.01554	0.0021	2023	NA	NA	NA	NA	NA	NA
MW-28	Cobalt	mg/L	0.0048	0.009771	0.0021	2019	NA	NA	NA	NA	NA	NA

- Notes:
- NA - Indicates that the constituent-monitoring point dataset has not satisfied the statistical requirements of IAC 567-113.10(9)"e"(2), which is identified by the entire confidence interval or any portion of the upper confidence band, as appropriate, being below the GWPS.
 - N/A - Not available, due to the previous eight sampling events being non-detects, an upper confidence limit could not be calculated.
 - * - Inorganic data obtained prior to the implementation of low-flow sampling was removed from statistical consideration. Therefore, the initial exceedance is considered the 2nd 2018 semi-annual sampling event although the SSL measurement precedes 2018.

Table 9
Summary of Groundwater Chemistry
2024 Annual Water Quality Report
Loess Hills Regional Sanitary Landfill
Permit No. 65-SDP-01-72P

The Summary of Groundwater Chemistry is located in Appendix C.

Table 10
Historical SSI and SSL
2024 Annual Water Quality Report
Loess Hills Regional Sanitary Landfill
Permit No. 65-SDP-01-72P

Key	SSI
	SSL

Well	Constituent	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023*	Fall 2023*	Spring 2024	Fall 2024
MW-7	Barium										
	Benzene										
	cis-1,2-Dichloroethene										
MW-8R	Arsenic										
	Barium										
	Cobalt										
	Copper										
	Mercury										
	Nickel										
	Vanadium										
	cis-1,2-Dichloroethene										
MW-10R	Barium										
	1,1-Dichloroethane										
	cis-1,2-Dichloroethene										
MW-11R	Arsenic										
	Barium										
	Cobalt										
	Lead										
	Nickel										
	Vanadium										
	Zinc										
	1,4-Dichlorobenzene										
	Benzene										
	cis-1,2-Dichloroethene										
MW-25	Vinyl Chloride										
	Barium				NS	NS	NS	NS	NS	NS	NS
MW-26R	Arsenic	NS	NA								
	Barium										
	Cadmium										
	Cobalt	NS	NA								
	Copper										
	Lead										
	Nickel										
	Thallium										
	Vanadium										
	Zinc										
	1,1-Dichloroethane										
	Benzene										
	cis-1,2-Dichloroethene										
MW-27R	Arsenic	NS			NS	NS	NS	NI			NS
	Barium	NS			NS	NS	NS	NI			NS
	Cobalt	NS			NS	NS	NS	NI			NS
	Lead	NS			NS	NS	NS	NI			NS
	Nickel	NS			NS	NS	NS	NI			NS
	1,1-Dichloroethane	NS			NS	NS	NS	NI			NS
	1,2-Dichloropropane	NS			NS	NS	NS	NI			NS
	Acetone	NS			NS	NS	NS	NI			NS
	Carbon Disulfide	NS			NS	NS	NS	NI			NS
	Chlorobenzene	NS			NS	NS	NS	NI			NS
	cis-1,2-Dichloroethene	NS			NS	NS	NS	NI			NS
MW-28	Trichloroethene	NS			NS	NS	NS	NI			NS
	Cobalt							NS	NS	NS	NS
MW-29	Barium**										

Notes:

- 1) Inorganic data obtained prior to the implementation of low-flow sampling was removed from the background dataset beginning with the 2021 reporting period due to the effect that high TSS concentrations could have had on concentrations of inorganics. Therefore, SSIs and/or SSLs measured prior to the 1st 2021 semi-annual statistical evaluation are no longer considered.
 - 2) Retesting is not performed in assessment and corrective action monitoring wells as these monitoring wells are not in the detection monitoring program. Therefore, indicated SSIs included in the table above are not confirmed.
- * - For the 2022 reporting period and earlier, only initial confirmed SSIs were recorded on this table for inorganic compounds. Beginning in the 2023 reporting period, indicated inorganic SSIs are included in this table.
- ** - As noted and approved in the 2020 AWQR (Doc #99637) barium concentrations around monitoring well MW-29 are likely the result of natural variation in the groundwater rather than a release from the landfill. Therefore, barium is not considered a confirmed SSI at this monitoring point.
- NS - Not Sampled during sampling event due to insufficient water, a dry well, or pump failure; therefore, statistical analyses were not performed.
- NI - As noted in the 2023 SSN (Doc #107762), the total suspended solids concentration in monitoring well MW-27R was 504 mg/L during the April 2023 sampling event. Therefore, the inorganic data from monitoring well MW-27R during the April 2023 sampling event was considered not representative and not included in the statistical analysis.

Table 11
Corrective Action Trend Analysis
2024 Annual Water Quality Report
Loess Hills Regional Sanitary Landfill
Permit No. 65-SDP-01-72P

Well	Current SSL	Trend	Calculated S	Critical S	Total N	Projected Date to Completion*
MW-8R	Arsenic	Decreasing	-7	-21	8	2027**
	Cobalt	Decreasing	-1	-21	8	2026**
MW-11R	Cobalt	Decreasing	-4	-21	8	2046
	Vinyl Chloride	Decreasing	-13	-21	8	2026
MW-26R	Arsenic	Increasing	4	21	8	NA
	Cobalt	Decreasing	-4	-21	8	2104
MW-27R	Cobalt	Decreasing	-10	-21	8	2034
MW-28	Cobalt	Decreasing	-4	-21	8	2036 ⁽¹⁾

Notes:

N - Number of Samples

S - Mann-Kendall Statistic

NA - Projected date to completion unable to be calculated due to the increasing slope.

N/A- Not Applicable, trend test unable to be calculated due to non-detections during the previous eight sampling events.

* - To satisfy IAC 113.10(9)"e"; Projected Date to Completion was based on utilizing the Sen's slope calculation to determine when the concentration would be below the GWPS for eight sampling events and remain there for three consecutive years.

** - Slope was zero, therefore the confidence interval fell below the GWPS and the completion date is the confidence interval below the GWPS for three consecutive years.

⁽¹⁾ - Samples were unable to be obtained; therefore, the projected date to completion is from the previous reporting period.

Comments:

- 1) An Assessment of Corrective Measures report was submitted on December 20, 2019 (Doc #96653) and approved in permit correspondence dated June 29, 2020 (Doc #97988). The Selection of Remedy and Corrective Action Groundwater Monitoring Plan was submitted October 30, 2020 (Doc #98833) and approved in the Permit Renewal Documentation dated December 10, 2020 (Doc #99104).

Figures

- 1 Approved Monitoring Network
- 2 Groundwater Contours
- 3 Reporting Period Detection Summary
- 4 Arsenic Concentration Map
- 5 Cobalt Concentration Map
- 6 Vinyl Chloride Concentration Map



Approved Monitoring Network

Legend

- HMSF Groundwater Underdrain
- HMSF Monitoring Point
- Monitoring Well
- Groundwater Underdrain
- Groundwater Piezometer
- Leachate Piezometer
- Approximate Location of Gas Probes
- Slope Extraction Well
- Manifold Extraction Well
- Horizontal Extraction Well
- Column Extraction Well
- Located Waste Boundary
- Approximate Waste Boundary
- Future Waste Boundary
- Approximate Property Boundary

Loess Hills Regional Sanitary
Landfill
Malvern, Iowa
Project No: 27224020.00
Drawing Date: January 2025

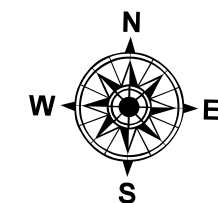
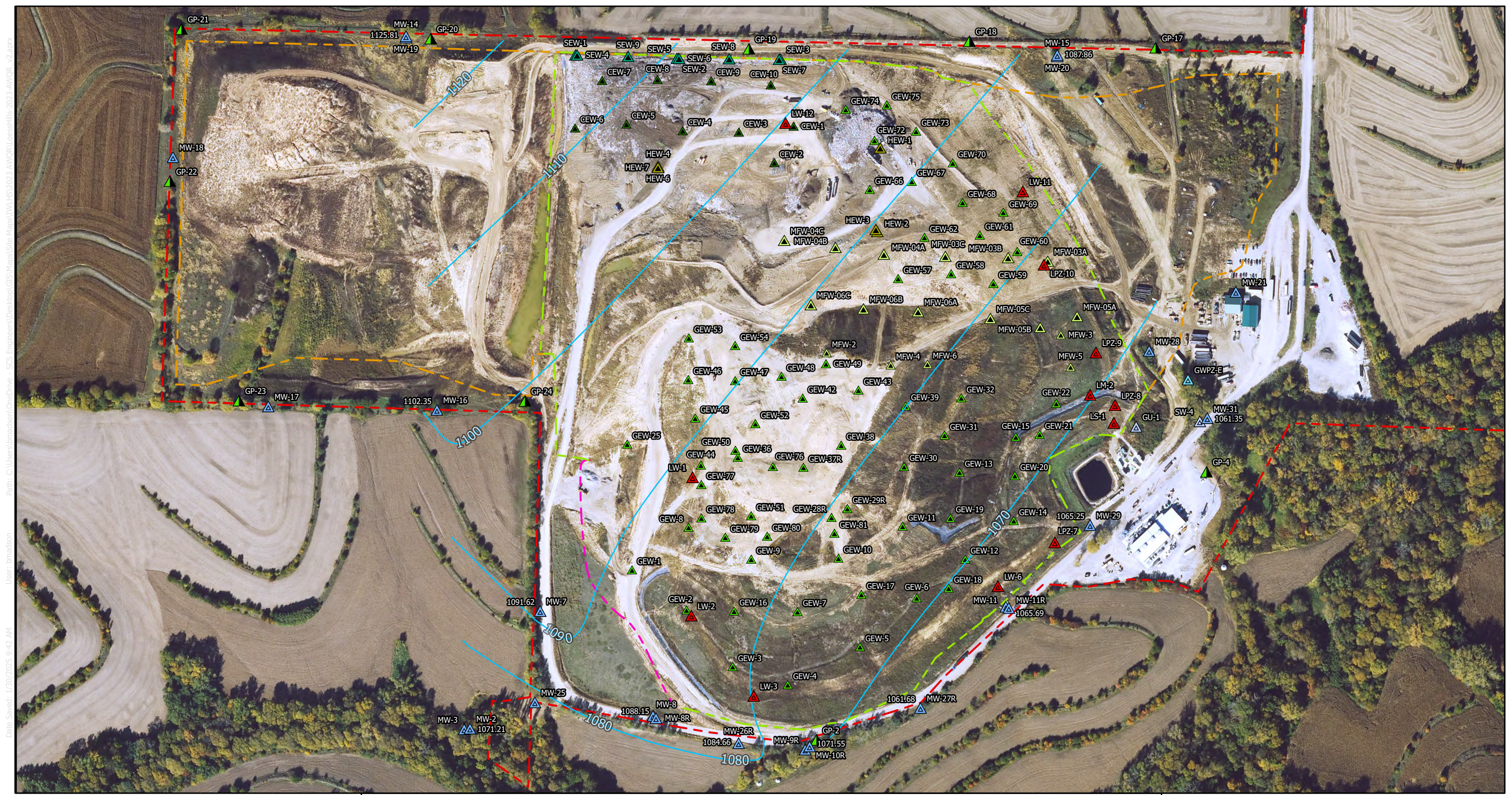


Figure 1



Groundwater Contours

Legend

Approximate Groundwater Contour Based on Field Measurements Take November 11, 2024	Groundwater Underdrain	Slope Extraction Well	Future Waste Boundary
Monitoring Well	Groundwater Piezometer	Manifold Extraction Well	Located Waste Boundary
	Leachate Piezometer	Horizontal Extraction Well	Approximate Waste Boundary
	Approximate Location of Gas Probes	Column Extraction Well	Approximate Property Boundary
		Gas Extraction Well	

Loess Hills Regional Sanitary
Landfill
Malvern, Iowa
Project No: 27224020.00
Drawing Date: January 2025

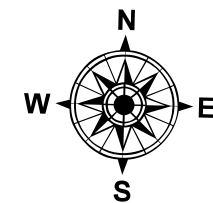


Figure 2



Constituent	Monitoring Point	Maximum Concentration
Arsenic (mg/L)	MW-26R	0.0403
Barium (mg/L)	MW-26R	0.799
Cadmium (mg/L)	MW-26R	0.000884
Cobalt (mg/L)	MW-11R	0.0149
Copper (mg/L)	MW-26R	0.0088
Lead (mg/L)	MW-26R	0.00675
Mercury (mg/L)	MW-8R	0.000695
Nickel (mg/L)	MW-11R	0.0475
Vanadium (mg/L)	MW-11R	0.0086
Zinc (mg/L)	MW-26R	0.0683
1,1-Dichloroethane (ug/L)	MW-27R	4.38
1,4-Dichlorobenzene (ug/L)	MW-11R	1.61
Benzene (ug/L)	MW-11R	1.44
Chlorobenzene (ug/L)	MW-27R	2.68
cis-1,2-Dichloroethene (ug/L)	MW-27R	40.6
Trichloroethene (ug/L)	MW-27R	3.56

MW-14	
Constituent (units)	Concentration
Barium (mg/L)	0.266 - 0.274 (2/2)
Lead (mg/L)	0.00087 (1/2)
Total Suspended Solids (mg/L)	4.4 - 33.3 (2/2)

MW-7	
Constituent (units)	Concentration
Barium (mg/L)	0.223 - 0.328 (2/2)
Lead (mg/L)	0.0007 (1/2)
cis-1,2-Dichloroethene (ug/L)	5.98 - 8.73 (2/2)
Total Suspended Solids (mg/L)	2.1 - 5.4 (2/2)

MW-26R	
Constituent (units)	Concentration
Arsenic (mg/L)	0.0276 - 0.0403 (2/2)
Barium (mg/L)	0.762 - 0.799 (2/2)
Cadmium (mg/L)	0.000884 (1/2)
Cobalt (mg/L)	0.005 - 0.00506 (2/2)
Copper (mg/L)	0.0088 (1/2)
Lead (mg/L)	0.00675 (1/2)
Nickel (mg/L)	0.0153 - 0.0212 (2/2)
Vanadium (mg/L)	0.00571 (1/2)
Zinc (mg/L)	0.0683 (1/2)
1,1-Dichloroethane (ug/L)	1.22 (1/2)
cis-1,2-Dichloroethene (ug/L)	11.5 - 13.2 (2/2)
Total Suspended Solids (mg/L)	33 - 423 (2/2)

MW-27R	
Constituent (units)	Concentration
Barium (mg/L)	0.72 - 0.724 (2/2)
Cobalt (mg/L)	0.00955 - 0.00963 (2/2)
Nickel (mg/L)	0.0158 - 0.0195 (2/2)
1,1-Dichloroethane (ug/L)	4.2 - 4.38 (2/2)
Chlorobenzene (ug/L)	2.64 - 2.68 (2/2)
cis-1,2-Dichloroethene (ug/L)	40.1 - 40.6 (2/2)
Trichloroethene (ug/L)	3.33 - 3.56 (2/2)
Total Suspended Solids (mg/L)	21.8 - 33 (2/2)

MW-29	
Constituent (units)	Concentration
Barium (mg/L)	0.328 - 0.33 (2/2)
Total Suspended Solids (mg/L)	4 (1/2)

MW-11R	
Constituent (units)	Concentration
Arsenic (mg/L)	0.00315 - 0.011 (2/2)
Barium (mg/L)	0.487 - 0.642 (2/2)
Cobalt (mg/L)	0.00238 - 0.0149 (2/2)
Lead (mg/L)	0.00287 (1/2)
Nickel (mg/L)	0.00986 - 0.0475 (2/2)
Vanadium (mg/L)	0.0086 (1/2)
Zinc (mg/L)	0.0276 (1/2)
1,4-Dichlorobenzene (ug/L)	1.35 - 1.61 (2/2)
Benzene (ug/L)	0.937 - 1.44 (2/2)
cis-1,2-Dichloroethene (ug/L)	1.9 - 1.95 (2/2)
Total Suspended Solids (mg/L)	13.3 - 499 (2/2)

MW-8R	
Constituent (units)	Concentration
Barium (mg/L)	0.402 - 0.446 (2/2)
Cadmium (mg/L)	0.000261 (1/2)
Cobalt (mg/L)	0.000829 (1/2)
Copper (mg/L)	0.00626 (1/2)
Lead (mg/L)	0.000953 - 0.00121 (2/2)
Mercury (mg/L)	0.000209 - 0.000695 (3/4)
Nickel (mg/L)	0.00805 - 0.0128 (2/2)
Vanadium (mg/L)	0.00538 (1/2)
cis-1,2-Dichloroethene (ug/L)	7.61 - 8.54 (2/2)
Total Suspended Solids (mg/L)	50.3 - 67 (3/4)

MW-10R	
Constituent (units)	Concentration
Barium (mg/L)	0.513 - 0.534 (2/2)
Lead (mg/L)	0.000676 (1/2)
1,1-Dichloroethane (ug/L)	1.71 - 2.05 (2/2)
cis-1,2-Dichloroethene (ug/L)	10.4 - 11.8 (2/2)
Total Suspended Solids (mg/L)	2.4 - 6 (2/2)

Reporting Period Detection Summary

Legend

- Monitoring Well
- Groundwater Underdrain
- Groundwater Piezometer
- Leachate Piezometer
- Gas Extraction Well
- Approximate Location of Gas Probes
- Slope Extraction Well
- Manifold Extraction Well
- Horizontal Extraction Well
- Column Extraction Well
- Future Waste Boundary
- Located Waste Boundary
- Approximate Waste Boundary
- Approximate Property Boundary

Loess Hills Regional Sanitary Landfill
 Malvern, Iowa
 Project No: 27224020.00
 Drawing Date: January 2025

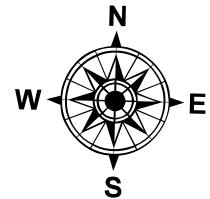


Figure 3





Arsenic Concentration Map

Arsenic Prediction Limit = 0.00188 mg/L

Legend		Approximate Location of Gas Probes		Gas Extraction Well	
	Monitoring Well		Approximate Location of Gas Probes		Gas Extraction Well
	Groundwater Underdrain		Slope Extraction Well		Future Waste Boundary
	Groundwater Piezometer		Manifold Extraction Well		Located Waste Boundary
	Leachate Piezometer		Horizontal Extraction Well		Approximate Waste Boundary
	SSL Well		Column Extraction Well		Approximate Property Boundary

Loess Hills Regional Sanitary Landfill
Malvern, Iowa
Project No: 27224020.00
Drawing Date: January 2025

0 170 340 680 1,020 Feet



Figure 4

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Cobalt Concentration Map

Legend		Cobalt Prediction Limit = 0.00092 mg/L		Loess Hills Regional Sanitary Landfill Malvern, Iowa Project No: 27224020.00 Drawing Date: January 2025
<ul style="list-style-type: none"> ▲ Monitoring Well ▲ Groundwater Underdrain ▲ Groundwater Piezometer ▲ Leachate Piezometer ○ SSL Well 	<ul style="list-style-type: none"> ▲ Approximate Location of Gas Probes ▲ Slope Extraction Well ▲ Manifold Extraction Well ▲ Horizontal Extraction Well ▲ Column Extraction Well 	<ul style="list-style-type: none"> ▲ Gas Extraction Well — Future Waste Boundary — Located Waste Boundary — Approximate Waste Boundary — Approximate Property Boundary 		

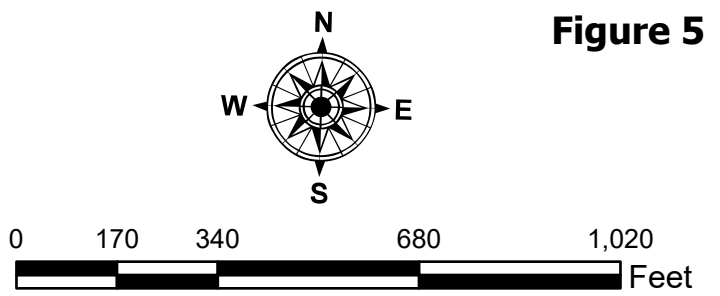
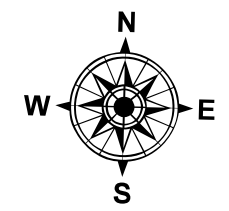





Figure 6





Appendix A
Field Sampling Forms

FORM FOR GROUNDWATER SAMPLING

Project:	Loess Hills Sanitary Landfill		
Monitoring Well/Piezometer ID:	MW-8R	Date:	4/3/2024
Gradient:	Down	Sampler:	Caleb Gomez

A. MW/PIEZOMETER CONDITIONS

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

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

Measured Well Total Depth (feet):	NM
Initial Static Water Level (feet):	25.60
Initial Groundwater Elevation (ft-amsl):	1088.08
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES						
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)
3:09 PM	Purging start time.					
3:12 PM	13.6	3.0	1622.2	6.22	209.1	NM
3:15 PM	13.5	0.8	1625.3	6.25	205.5	NM
3:18 PM	13.5	0.4	1630.8	6.27	200.9	NM
3:21 PM	13.6	0.2	1627.7	6.29	196.3	NM
Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.2
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	100.00

D. WELL MAINTENANCE

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

Additional Comments:	Equipment malfunction - Turbidity not measured Odor:None	Color:Clear
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FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-7	Date: 6/19/2024
Gradient: Down	Sampler: Tyler Stirling

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	36.6
Initial Static Water Level (feet):	22.30
Initial Groundwater Elevation (ft-amsl):	1094.30
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
3:14 PM	Purging start time.						
3:17 PM	16.2	1.2	2026.7	6.39	89.8	138.8	
3:20 PM	16.2	0.6	2020.9	6.34	88.2	138.1	
3:23 PM	16.1	0.5	2024.2	6.33	85.2	138.5	
3:26 PM	16.4	0.4	2024.7	6.32	80.5	139.4	
Parameters stabilized, sample collected.							

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

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-8R	Date: 6/19/2024
Gradient: Down	Sampler: Tyler Stirling

A. MW/PIEZOMETER CONDITIONS

Well/Piezometer Capped?	No	Not recorded
Litter/Standing Water?	No	

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

Measured Well Total Depth (feet):	NM
Initial Static Water Level (feet):	24.43
Initial Groundwater Elevation (ft-amsl):	1089.25
Equipment Used:	Dedicated Tubing – Dedicated Submersible

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
4:58 PM	Purging start time.						
5:01 PM	17.1	4.2	1799.9	6.46	20.9	132.1	
5:04 PM	14.8	2.6	1785.4	6.41	18.1	129.8	
5:07 PM	14.4	4.3	1786.7	6.46	19.1	130.4	
5:10 PM	14.9	4.9	1777.2	6.47	22.0	130.8	
Parameters stabilized, sample collected.							

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

D. WELL MAINTENANCE

Does the well require any future maintenance?	Yes
If yes, explain:	Submersible needs re-spliced (B/R) or replaced

Additional Comments:	Color: Clear Odor: N/A
----------------------	---------------------------

FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill			
Monitoring Well/Piezometer ID:	MW-10R	Date:	6/20/2024
Gradient: Down	Sampler: Tyler Stirling		

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	NM
Initial Static Water Level (feet):	55.72
Initial Groundwater Elevation (ft-amsl):	1071.49
Equipment Used:	Dedicated Submersible

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
8:11 AM	Purging start time.						
8:14 AM	15.8	1.1	1276.2	6.53	53.5	138.9	
8:17 AM	15.7	0.8	1293.5	6.49	54.8	139.7	
8:20 AM	16.3	0.6	1296.6	6.47	54.8	140.2	
8:23 AM	16.5	0.6	1294.0	6.47	54.4	140.2	
	Parameters stabilized, sample collected.						

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

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

Additional Comments:	Color:Clear Odor:None
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FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-11R	Date: 6/20/2024
Gradient: Down	Sampler: Tyler Stirling

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	NM
Initial Static Water Level (feet):	32.07
Initial Groundwater Elevation (ft-amsl):	1067.33
Equipment Used:	Dedicated Submersible

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
9:41 AM	Purging start time.						
9:44 AM	17.2	0.9	2024.5	6.10	-25.4	137.7	
9:47 AM	16.6	0.6	1998.2	6.07	-26.6	138.0	
9:50 AM	16.7	0.6	1989.5	6.06	-28.3	138.9	
9:53 AM	16.6	0.4	1961.1	6.03	-27.8	138.8	
Parameters stabilized, sample collected.							

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

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

Additional Comments:	Color: Clear Odor: None
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FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-14	Date: 6/18/2024
Gradient: UP	Sampler: Tyler Stirling

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	84.2
Initial Static Water Level (feet):	53.23
Initial Groundwater Elevation (ft-amsl):	1124.58
Equipment Used:	Non-Dedicated Bladder Pump

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
6:13 PM	Purging start time.						
6:16 PM	15.1	2.7	735.5	6.93	128.8	131.7	
6:19 PM	14.6	1.2	731.7	6.89	126.5	133.1	
6:22 PM	14.4	1.0	731.6	6.89	123.5	133.1	
6:25 PM	14.4	1.6	731.9	6.91	121.7	132.5	
Parameters stabilized, sample collected.							

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

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Sampled using bladder pump. Color:Clear Odor:None

FORM FOR GROUNDWATER SAMPLING

Project:	Loess Hills Sanitary Landfill		
Monitoring Well/Piezometer ID:	MW-17	Date:	6/20/2024
Gradient:	UP	Sampler:	Tyler Stirling

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	32.9
Initial Static Water Level (feet):	31.97
Initial Groundwater Elevation (ft-amsl):	1108.67
Equipment Used:	Dedicated Tubing-Dedicated Submersible

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
	Purging start time.						
	Parameters stabilized, sample collected.						

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

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Well did not have sufficient water to sample.

FORM FOR GROUNDWATER SAMPLING

Project:	Loess Hills Sanitary Landfill		
Monitoring Well/Piezometer ID:	MW-25	Date:	6/20/2024
Gradient:	Down	Sampler:	Tyler Stirling

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	22.4
Initial Static Water Level (feet):	Dry
Initial Groundwater Elevation (ft-amsl):	NA
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
	Purging start time.						
	Parameters stabilized, sample collected.						

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

D. WELL MAINTENANCE

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

Additional Comments:	Well did not have sufficient water to sample.
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FORM FOR GROUNDWATER SAMPLING

Project:	Loess Hills Sanitary Landfill		
Monitoring Well/Piezometer ID:	MW-26R	Date:	6/19/2024
Gradient:	Down	Sampler:	Tyler Stirling

A. MW/PIEZOMETER CONDITIONS

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

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

Measured Well Total Depth (feet):	47.2
Initial Static Water Level (feet):	42.06
Initial Groundwater Elevation (ft-amsl):	1083.19
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
Time							
11:51 AM	Purging start time.						
11:54 AM	17.0	1.5	1518.1	6.39	-1.4	138.6	
11:57 AM	18.2	7.7	8.6	6.94	-29.8	121.0	
11:58 AM	18.4	3.9	1517.1	6.57	-24.0	139.4	
12:01 PM	17.8	1.4	1499.4	6.39	-24.8	138.6	
12:04 PM	16.4	0.8	1496.4	6.37	-25.8	138.5	
12:07 PM	17.4	0.6	1486.3	6.37	-27.2	139.6	
12:10 PM	18.0	0.6	1486.8	6.37	-28.4	139.9	
12:13 PM	18.2	0.6	1489.8	6.37	-29.4	139.8	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	2.1
Was well pumped/bailed dry?	Yes
Total Amount of Time Purged (minutes:seconds):	15:00
Average Purge Rate (mL/min):	140.00

D. WELL MAINTENANCE

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

Additional Comments:	Color:Clear Odor:None Specific Conductivity value of 8.6 was erroneous reading on YSI.
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FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-27R	Date: 6/20/2024
Gradient: Down	Sampler: Tyler Stirling

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	NM
Initial Static Water Level (feet):	48.25
Initial Groundwater Elevation (ft-amsl):	1064.92
Equipment Used:	Dedicated Tubing – Dedicated Bladder Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
8:57 AM	Purging start time.						
9:00 AM	14.1	1.3	1737.9	6.23	54.5	138.7	
9:03 AM	14.4	1.4	1743.6	6.22	45.4	138.8	
9:06 AM	14.6	1.2	1745.7	6.22	39.2	138.8	
Parameters stabilized, sample collected.							

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

D. WELL MAINTENANCE

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

Additional Comments:	Color: Clear Odor: None
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FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-28	Date: 6/20/2024
Gradient: Down	Sampler: Tyler Stirling

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	21.8
Initial Static Water Level (feet):	Dry
Initial Groundwater Elevation (ft-amsl):	NA
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
	Purging start time.						
	Parameters stabilized, sample collected.						

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

D. WELL MAINTENANCE

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

Additional Comments:	Well did not have sufficient water to sample.
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FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-29	Date: 6/19/2024
Gradient: Down	Sampler: Tyler Stirling

A. MW/PIEZOMETER CONDITIONS

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

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

Measured Well Total Depth (feet):	32.8
Initial Static Water Level (feet):	21.08
Initial Groundwater Elevation (ft-amsl):	1066.25
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)
10:50 AM	Purging start time.					
10:53 AM	15.9	3.5	1146.1	6.65	46.6	138.8
10:56 AM	16.0	3.2	1141.0	6.58	51.2	138.9
10:59 AM	16.0	2.9	1140.6	6.57	54.5	139.4
11:02 AM	15.8	2.9	1144.9	6.56	58.4	139.5
Parameters stabilized, sample collected.						

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

D. WELL MAINTENANCE

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

Additional Comments:	Color:Clear Odor:None
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FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-31	Date: 6/19/2024
Gradient: Supp	Sampler: Tyler Stirling

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	28.3
Initial Static Water Level (feet):	16.64
Initial Groundwater Elevation (ft-amsl):	1059.96
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
10:14 AM	Purging start time.						
10:17 AM	15.4	1.1	1385.3	6.70	-102.3	138.5	
10:20 AM	15.7	0.7	1392.1	6.68	-115.3	139.3	
10:23 AM	15.8	0.5	1392.9	6.69	-122.1	139.5	
10:26 AM	15.8	0.4	1393.3	6.69	-126.6	139.6	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	1.4
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	116.67

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Color: Initially clear, then became brown/faint red tint. Odor: None

FORM FOR SURFACE WATER SAMPLING

Site Name Loess Hills Sanitary Landfill Permit No. 65-SDP-01-74P
Surface Monitoring Point No. GU-1 Date 6/20/24

Name of Person Sampling TS

A. TYPE OF MOINITORING POINT

Stream Open Tile
Road Ditch Tile with Riser
Drainage Ditch Other

B. PURPOSE OF MONITORING POINT

Upstream Downstream
Within Landfill Other

C. MONITORING POINT CONDITIONS/LOCATION

Groundwater underdrain southeast of Cell F east.

Was monitoring point dry? Yes Too little water to sample? _____
Was water flowing? No If yes, estimate quantity (cfs) _____
Standing Water? No If yes, estimate depth (inches) _____
If yes, estimate width (inches) _____

Was water discolored? _____
Does water have odor? _____
Was ground discolored? _____
Litter present? _____

D. FIELD MEASUREMENTS

Weather Conditions: Cloudy 85°

Time: 1100

Field Measurements:
Temperature _____ Units Celsius
Equipment Used _____
pH _____ Units Standard units
Equipment Used _____
Spec. Conductance _____ Units uS/cm
Equipment Used _____

COMMENTS

FORM FOR SURFACE WATER SAMPLING

Site Name Loess Hills Sanitary Landfill Permit No. 65-SDP-01-74P
Surface Monitoring Point No. SW-4 Date 6/20/24

Name of Person Sampling TS

A. TYPE OF MONITORING POINT

Stream Open Tile
Road Ditch Tile with Riser
Drainage Ditch Other

B. PURPOSE OF MONITORING POINT

Upstream Downstream
Within Landfill Other

C. MONITORING POINT CONDITIONS/LOCATION

Lagoon underdrain outlet.

Was monitoring point dry? Yes Too little water to sample? _____
Was water flowing? No If yes, estimate quantity (cfs) _____
Standing Water? No If yes, estimate depth (inches) _____
If yes, estimate width (inches) _____

Was water discolored? _____
Does water have odor? _____
Was ground discolored? _____
Litter present? _____

D. FIELD MEASUREMENTS

Weather Conditions: Cloudy 85°
Time: 1200
Field Measurements:

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

COMMENTS

FORM FOR GROUNDWATER SAMPLING

Project:	Loess Hills Sanitary Landfill		
Monitoring Well/Piezometer ID:	MW-8R	Date:	8/21/2024
Gradient:	Down	Sampler:	Cole Tesar

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	37.8
Initial Static Water Level (feet):	24.58
Initial Groundwater Elevation (ft-amsl):	1089.10
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING	
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES	

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
10:28 AM	Purging start time.						
10:31 AM	15.4	0.4	1639.8	6.42	-25.4	51.5	
10:34 AM	15.6	0.2	1654.6	6.43	-27.6	143.5	
10:37 AM	16.1	0.2	1651.9	6.44	-29.0	130.2	
10:40 AM	17.2	0.2	1664.2	6.44	-29.0	88.5	
Parameters stabilized, sample collected.							

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

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No

If yes, explain:	
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Additional Comments:	Color: Clear Odor: None
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FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill			
Monitoring Well/Piezometer ID:	MW-7	Date:	11/12/2024
Gradient: Down	Sampler: Cole Tesar		

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	37.8
Initial Static Water Level (feet):	24.98
Initial Groundwater Elevation (ft-amsl):	1091.62
Equipment Used: Dedicated Tubing – Peristaltic Pump	

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (μS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
11:26 AM	Purging start time.						
11:29 AM	13.0	0.7	1654.5	6.43	153.5	12.0	
11:32 AM	13.1	0.3	1656.0	6.44	143.8	3.3	
11:35 AM	13.0	0.1	1655.7	6.44	136.9	2.5	
11:38 AM	13.1	0.1	1657.3	6.44	132.0	2.4	
Parameters stabilized, sample collected.							

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

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill			
Monitoring Well/Piezometer ID: MW-8R		Date: 11/12/2024	
Gradient: Down		Sampler: Cole Tesar	

A. MW/PIEZOMETER CONDITIONS

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

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

Measured Well Total Depth (feet):	NM
Initial Static Water Level (feet):	25.53
Initial Groundwater Elevation (ft-amsl):	1088.15
Equipment Used:	Non-Dedicated Submersible

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
2:43 PM	Purging start time.						
2:46 PM	13.7	0.6	1471.8	6.47	132.7	68.1	
2:49 PM	13.9	0.4	1480.2	6.47	122.6	56.2	
2:52 PM	14.1	0.4	1484.4	6.47	119.5	48.5	
2:55 PM	14.2	0.3	1490.1	6.47	121.0	33.1	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	3.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	250.00

D. WELL MAINTENANCE

Does the well require any future maintenance?		No
If yes, explain:		
Additional Comments:	Color: Clear Odor: None	

FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill			
Monitoring Well/Piezometer ID:	MW-10R	Date:	11/12/2024
Gradient:	Down	Sampler:	Cole Tesar

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	NM
Initial Static Water Level (feet):	55.66
Initial Groundwater Elevation (ft-amsl):	1071.55
Equipment Used:	Dedicated Submersible

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (μS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
1:25 PM	Purging start time.						
1:28 PM	12.8	1.2	1086.3	6.61	-44.3	22.5	
1:31 PM	13.0	0.5	1089.3	6.60	-10.0	15.6	
1:34 PM	13.4	0.4	1091.6	6.59	5.7	11.7	
1:37 PM	13.6	0.3	1093.2	6.59	15.8	9.2	
Parameters stabilized, sample collected.							

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

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-11R	Date: 11/12/2024
Gradient: Down	Sampler: Cole Tesar

A. MW/PIEZOMETER CONDITIONS

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

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

Measured Well Total Depth (feet):	NM
Initial Static Water Level (feet):	32.90
Initial Groundwater Elevation (ft-amsl):	1066.50
Equipment Used:	Non-Dedicated Submersible Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
10:49 AM	Purging start time.						
10:52 AM	14.0	0.7	1637.1	6.14	-71.7	331.9	
10:55 AM	14.3	0.4	1646.8	6.13	-78.7	283.4	
10:58 AM	14.6	0.3	1645.8	6.13	-82.5	277.6	
11:01 AM	14.7	0.2	1647.0	6.12	-85.1	267.2	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	3.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	250.00

D. WELL MAINTENANCE

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

Additional Comments:	Color: Cloudy Odor: Swampy Dedicated Submersible Pump did not work and was pulled after attempting to use different batteries.
----------------------	---

FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill			
Monitoring Well/Piezometer ID:	MW-14	Date:	11/12/2024
Gradient:	Down	Sampler:	Cole Tesar

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	NM
Initial Static Water Level (feet):	52.00
Initial Groundwater Elevation (ft-amsl):	1125.81
Equipment Used:	Dedicated Submersible

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
3:32 PM	Purging start time.						
3:35 PM	11.9	0.9	627.1	7.19	167.1	175.0	
3:38 PM	12.3	1.0	625.6	7.17	150.4	69.7	
3:41 PM	12.8	2.4	626.4	7.17	149.6	19.9	
3:44 PM	12.9	3.2	626.2	7.17	159.9	10.7	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	3.1
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	258.33

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

Additional Comments:	Color: Clear Odor: None Could not pump slower, flow keeps stopping.
----------------------	--

FORM FOR GROUNDWATER SAMPLING

Project:	Loess Hills Sanitary Landfill		
Monitoring Well/Piezometer ID:	MW-17	Date:	11/12/2024
Gradient:	Up	Sampler:	Cole Tesar

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	33.4
Initial Static Water Level (feet):	Dry
Initial Groundwater Elevation (ft-amsl):	NA
Equipment Used:	Dedicated Tubing – Dedicated Submersible

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
	Purging start time.						
	Parameters stabilized, sample collected.						

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

D. WELL MAINTENANCE

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

Additional Comments:	Well did not have sufficient water to sample.
----------------------	---

FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-25	Date: 11/12/2024
Gradient: Down	Sampler: Cole Tesar

A. MW/PIEZOMETER CONDITIONS

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

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

Measured Well Total Depth (feet):	22.5
Initial Static Water Level (feet):	Dry
Initial Groundwater Elevation (ft-amsl):	NA
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
	Purging start time.						
	Parameters stabilized, sample collected.						

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

D. WELL MAINTENANCE

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

Additional Comments:	Well did not have sufficient water to sample.
----------------------	---

FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-26R	Date: 11/12/2024
Gradient: Down	Sampler: Cole Tesar

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	NM
Initial Static Water Level (feet):	40.92
Initial Groundwater Elevation (ft-amsl):	1084.33
Equipment Used:	Dedicated Submersible

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
1:54 PM	Purging start time.						
1:57 PM	14.5	0.7	1284.0	6.50	21.7	271.4	
2:00 PM	14.8	0.5	1289.9	6.50	11.9	227.1	
2:03 PM	15.2	0.3	1291.6	6.50	-7.8	213.9	
2:06 PM	15.5	0.2	1294.6	6.50	-17.9	247.0	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	3.0
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	250.00

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

Additional Comments:	Color: Cloudy/ Light brown Odor: None Had to lower pump, then started pulling up sand. Pump stopped halfway through sample. Plastic 250 ml zinc acetate & NaOH not filled and half of plastic 1 L TSS bottle filled. Well went dry during collection.
----------------------	--

FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-27R	Date: 11/12/2024
Gradient: Down	Sampler: Cole Tesar

A. MW/PIEZOMETER CONDITIONS

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

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

Measured Well Total Depth (feet):	NM
Initial Static Water Level (feet):	52.20
Initial Groundwater Elevation (ft-amsl):	1060.97
Equipment Used:	Non-Dedicated Stainless Steel

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
4:46 PM	Purging start time.						
4:49 PM	13.3	0.3	1495.2	6.36	-26.3	4145.9	
4:52 PM	13.1	0.1	1499.5	6.36	-36.5	5415.7	
4:55 PM	13.3	0.0	1495.9	6.37	-38.8	5288.0	
4:58 PM	13.5	0.0	1503.7	6.36	-37.3	4789.1	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	3.5
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	291.67

D. WELL MAINTENANCE

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

Additional Comments:	Color: Dark brown/ Murky Odor: None Bladder pump controller problems. Stabilized with stainless steel, then well went dry before a sample could be taken.
----------------------	--

FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-28	Date: 11/12/2024
Gradient: Down	Sampler: Cole Tesar

A. MW/PIEZOMETER CONDITIONS

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

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

Measured Well Total Depth (feet):	22.0
Initial Static Water Level (feet):	Dry
Initial Groundwater Elevation (ft-amsl):	NA
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
	Purging start time.						
	Parameters stabilized, sample collected.						

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

D. WELL MAINTENANCE

Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Well did not have sufficient water to sample.

FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-29	Date: 11/12/2024
Gradient: Down	Sampler: Cole Tesar

A. MW/PIEZOMETER CONDITIONS

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

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

Measured Well Total Depth (feet):	33.1
Initial Static Water Level (feet):	22.08
Initial Groundwater Elevation (ft-amsl):	1065.25
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
9:57 AM	Purging start time.						
10:00 AM	12.5	2.5	942.8	6.62	288.0	11.8	
10:03 AM	12.5	2.2	960.1	6.64	285.9	14.6	
10:06 AM	12.6	2.3	967.6	6.65	285.1	12.7	
10:09 AM	12.6	2.4	971.0	6.65	285.3	11.1	
Parameters stabilized, sample collected.							

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

D. WELL MAINTENANCE

Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project: Loess Hills Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-31	Date: 11/12/2024
Gradient: Supp	Sampler: Cole Tesar

A. MW/PIEZOMETER CONDITIONS

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

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

Measured Well Total Depth (feet):	28.6
Initial Static Water Level (feet):	16.90
Initial Groundwater Elevation (ft-amsl):	1059.70
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)
4:01 PM	Purging start time.					
4:04 PM	13.0	0.6	1186.4	6.81	-188.9	10.3
4:07 PM	13.1	0.2	1195.5	6.81	-194.3	9.4
4:10 PM	13.2	0.1	1198.6	6.80	-196.9	10.6
4:13 PM	13.3	0.0	1199.4	6.80	-198.2	10.8
Parameters stabilized, sample collected.						

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

D. WELL MAINTENANCE

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

Additional Comments:	Color: Clear Odor: None
----------------------	-------------------------

FORM FOR SURFACE WATER SAMPLING

Site Name Loess Hills Sanitary Landfill Permit No. 65-SDP-01-74P
 Surface Monitoring Point No. GU-1 Date 11/12/24

Name of Person Sampling Col e Tesar

A. TYPE OF MOINITORING POINT

Stream	<input type="checkbox"/>	Open Tile	<input type="checkbox"/>
Road Ditch	<input type="checkbox"/>	Tile with Riser	<input type="checkbox"/>
Drainage Ditch	<input type="checkbox"/>	Other	<input checked="" type="checkbox"/>

B. PURPOSE OF MONITORING POINT

Upstream	<input type="checkbox"/>	Downstream	<input type="checkbox"/>
Within Landfill	<input type="checkbox"/>	Other	<input checked="" type="checkbox"/>

C. MONITORING POINT CONDITIONS/LOCATION

Groundwater underdrain southeast of Cell F east.

Was monitoring point dry?	<u>NO</u>	Too little water to sample?	<input type="checkbox"/>
Was water flowing?	<u>Yes</u>	If yes, estimate quantity (cfs)	<input type="checkbox"/>
Standing Water?	<u>NO</u>	If yes, estimate depth (inches)	<input type="checkbox"/>
		If yes, estimate width (inches)	<input type="checkbox"/>
Was water discolored?	<u>yes</u>		
Does water have odor?	<u>yes</u>		
Was ground discolored?	<u>NO</u>		
Litter present?	<input type="checkbox"/>		

D. FIELD MEASUREMENTS


Weather Conditions: 5-18 mph winds 56°F cloudy

Time: 17:30

Field Measurements:

Temperature	<u>8.0</u>	Units	<u>Celsius</u>
Equipment Used	<u>Pro D55</u>		
pH	<u>6.39</u>	Units	<u>Standard units</u>
Equipment Used	<u>Pro D55</u>		
Spec. Conductance	<u>6537</u>	Units	<u>uS/cm</u>
Equipment Used	<u>Pro D55</u>		

COMMENTS



Appendix B-1
Laboratory Analytical Data Sheets

ANALYTICAL REPORT

PREPARED FOR

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

Generated 4/18/2024 4:21:26 PM

JOB DESCRIPTION

Loess Hills Regional Sanitary Landfill
April 2024 Retest

JOB NUMBER

310-278378-1

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



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Case Narrative

Client: SCS Engineers
Project: Loess Hills Regional Sanitary Landfill

Job ID: 310-278378-1

Job ID: 310-278378-1

Eurofins Cedar Falls

Job Narrative 310-278378-1

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 are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample 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 sample was received on 4/5/2024 4:40 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 3.1°C.

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: SCS Engineers
Project/Site: Loess Hills Regional Sanitary Landfill

Job ID: 310-278378-1
SDG: April 2024 Retest

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-278378-1	MW-8R	Ground Water	04/03/24 15:50	04/05/24 16:40

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

Detection Summary

Client: SCS Engineers
Project/Site: Loess Hills Regional Sanitary Landfill

Job ID: 310-278378-1
SDG: April 2024 Retest

Client Sample ID: MW-8R

Lab Sample ID: 310-278378-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Mercury	0.000209		0.000200		mg/L	1		7470A	Total/NA

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

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills Regional Sanitary Landfill

Job ID: 310-278378-1
 SDG: April 2024 Retest

Client Sample ID: MW-8R

Lab Sample ID: 310-278378-1

Date Collected: 04/03/24 15:50

Matrix: Ground Water

Date Received: 04/05/24 16:40

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000209		0.000200		mg/L		04/17/24 08:22	04/18/24 09:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.9		1.9		mg/L			04/09/24 15:49	1

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

Definitions/Glossary

Client: SCS Engineers
Project/Site: Loess Hills Regional Sanitary Landfill

Job ID: 310-278378-1
SDG: April 2024 Retest

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

QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills Regional Sanitary Landfill

Job ID: 310-278378-1
 SDG: April 2024 Retest

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-418934/1-A
 Matrix: Water
 Analysis Batch: 419140

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 418934

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		04/17/24 08:22	04/18/24 09:30	1

Lab Sample ID: LCS 310-418934/2-A
 Matrix: Water
 Analysis Batch: 419140

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 418934

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001737		mg/L		104	80 - 120

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

Lab Sample ID: MB 310-418270/1
 Matrix: Water
 Analysis Batch: 418270

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	<5.0		5.0		mg/L			04/09/24 15:49	1

Lab Sample ID: LCS 310-418270/2
 Matrix: Water
 Analysis Batch: 418270

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	100.0		mg/L		100	75 - 116

QC Association Summary

Client: SCS Engineers
Project/Site: Loess Hills Regional Sanitary Landfill

Job ID: 310-278378-1
SDG: April 2024 Retest

Metals

Prep Batch: 418934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278378-1	MW-8R	Total/NA	Ground Water	7470A	
MB 310-418934/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-418934/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 419140

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278378-1	MW-8R	Total/NA	Ground Water	7470A	418934
MB 310-418934/1-A	Method Blank	Total/NA	Water	7470A	418934
LCS 310-418934/2-A	Lab Control Sample	Total/NA	Water	7470A	418934

General Chemistry

Analysis Batch: 418270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-278378-1	MW-8R	Total/NA	Ground Water	I-3765-85	
MB 310-418270/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-418270/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Lab Chronicle

Client: SCS Engineers
Project/Site: Loess Hills Regional Sanitary Landfill

Job ID: 310-278378-1
SDG: April 2024 Retest

Client Sample ID: MW-8R

Lab Sample ID: 310-278378-1

Date Collected: 04/03/24 15:50

Matrix: Ground Water

Date Received: 04/05/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			418934	A6US	EET CF	04/17/24 08:22
Total/NA	Analysis	7470A		1	419140	A6US	EET CF	04/18/24 09:41
Total/NA	Analysis	I-3765-85		1	418270	A4XP	EET CF	04/09/24 15:49

Laboratory References:

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



Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Loess Hills Regional Sanitary Landfill

Job ID: 310-278378-1
SDG: April 2024 Retest

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
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Method Summary

Client: SCS Engineers
Project/Site: Loess Hills Regional Sanitary Landfill

Job ID: 310-278378-1
SDG: April 2024 Retest

Method	Method Description	Protocol	Laboratory
7470A	Mercury (CVAA)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
7470A	Preparation, Mercury	SW846	EET CF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

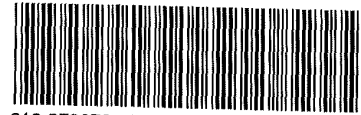
Laboratory References:

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





Environment Testing
America



310-278378 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

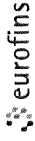
Client Information			
Client: SCS			
City/State:	CITY	STATE	Project:
		IA	
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	4/5/24	1640	SB
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee			
<input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # _____ of _____	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID:	X	Correction Factor (°C):	0
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C):	3.1	Corrected Temp (°C):	3.1
• Sample Container Temperature			
Container(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? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Eurofins TestAmerica, Cedar Falls
3019 Venture Way

Cedar Falls, IA 50613-6907
phone 319.277.2401 fax 319.277.2425

TestAmerica ca Des Moines SC
214

Chain of Custody Record



TestAmerica Laboratories, Inc. db/a Eurofins TestAmerica

Regulatory Program: DW NPDES RCRA Other

Client Contact		Project Manager:		Site Contact:		Date:		COC No			
SCS Engineers 1690 All-State Court, Suite 100 West Des Moines, Iowa 50265 515-631-6160		Email Cell Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS Other <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Lab Contact: Carrier: For Lab Use Only: Walk-in Client Lab Sampling Job / SDG No		Date: Carrier: For Lab Use Only: Walk-in Client Lab Sampling Job / SDG No		COC No of COCs			
Sample Identification		Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Mercury	Total Suspended Solids	Perform MS / MSD (Y/N)	
MW-8R		4/3	15:50	G	GW		X	X			
Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input type="checkbox"/> Dispose by Lab <input type="checkbox"/> Archive for _____ Months											
Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample. <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown		Custody Seal No Company SCS Date/Time 4/16/24 10:00		Received by Company Eurofins Date/Time 4/16/24 10:00		Therm ID No Date/Time 4/16/24 10:00		Received in Laboratory by Company Euro Date/Time 4/16/24 16:46		Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019	



Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-278378-1

SDG Number: April 2024 Retest

Login Number: 278378

List Number: 1

Creator: Muehling, Angela C

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

PREPARED FOR

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

Generated 7/8/2024 2:51:52 PM

JOB DESCRIPTION

Loess Hills Regional SLF (Supplemental)
1st 2024 Semi-Annual Sampling

JOB NUMBER

310-284194-1

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
7/8/2024 2:51:52 PM

Authorized for release by
Mary Yang, Client Service Manager
Mary.Yang@ET.EurofinsUS.com
(319)595-2025



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Case Narrative

Client: SCS Engineers
Project: Loess Hills Regional SLF (Supplemental)

Job ID: 310-284194-1

Job ID: 310-284194-1

Eurofins Cedar Falls

Job Narrative 310-284194-1

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 are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample 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 sample was received on 6/21/2024 4:40 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.1°C.

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: SCS Engineers
Project: Loess Hills Regional SLF (Supplemental)

Job ID: 310-284194-1

Job ID: 310-284194-2

Eurofins Cedar Falls

Job Narrative 310-284194-2

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 are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample 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 sample was received on 6/21/2024 4:40 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.1°C.

HPLC/IC

Method 9056A_ORGFM_48H: The following sample(s) was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: MW-31 (310-284194-1).

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: SCS Engineers
Project/Site: Loess Hills Regional SLF (Supplemental)

Job ID: 310-284194-1
SDG: 1st 2024 Semi-Annual Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-284194-1	MW-31	Water	06/19/24 10:26	06/21/24 16:40

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

Detection Summary

Client: SCS Engineers
Project/Site: Loess Hills Regional SLF (Supplemental)

Job ID: 310-284194-1
SDG: 1st 2024 Semi-Annual Sampling

Client Sample ID: MW-31

Lab Sample ID: 310-284194-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	47.4		0.100		mg/L	1		6020B	Total/NA
Manganese	8.61		0.0100		mg/L	1		6020B	Total/NA
Total Suspended Solids	107		15.0		mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills Regional SLF (Supplemental)

Job ID: 310-284194-1
 SDG: 1st 2024 Semi-Annual Sampling

Client Sample ID: MW-31
Date Collected: 06/19/24 10:26
Date Received: 06/21/24 16:40

Lab Sample ID: 310-284194-1
Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200	H H3	0.200		mg/L			06/24/24 10:18	1
Sulfate	<1.00		1.00		mg/L			06/24/24 10:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	47.4		0.100		mg/L		06/26/24 09:00	07/01/24 19:38	1
Manganese	8.61		0.0100		mg/L		06/26/24 09:00	07/01/24 19:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	107		15.0		mg/L			06/25/24 10:01	1

- 1
- 2
- 3
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- 5
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- 11
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- 13
- 14

Definitions/Glossary

Client: SCS Engineers
Project/Site: Loess Hills Regional SLF (Supplemental)

Job ID: 310-284194-1
SDG: 1st 2024 Semi-Annual Sampling

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
H3	Sample was received and analyzed past holding time. This does not meet regulatory requirements.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills Regional SLF (Supplemental)

Job ID: 310-284194-1
 SDG: 1st 2024 Semi-Annual Sampling

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-425527/3
Matrix: Water
Analysis Batch: 425527

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Nitrate as N	<0.200		0.200		mg/L			06/21/24 09:20	1
Sulfate	<1.00		1.00		mg/L			06/21/24 09:20	1

Lab Sample ID: LCS 310-425527/4
Matrix: Water
Analysis Batch: 425527

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec	Limits
		Result	Qualifier					
Nitrate as N	2.00	2.049		mg/L		102		90 - 110
Sulfate	10.0	10.15		mg/L		101		90 - 110

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

Lab Sample ID: MB 310-425551/1
Matrix: Water
Analysis Batch: 425551

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Suspended Solids	<5.0		5.0		mg/L			06/25/24 10:01	1

Lab Sample ID: LCS 310-425551/2
Matrix: Water
Analysis Batch: 425551

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec	Limits
		Result	Qualifier					
Total Suspended Solids	100	95.00		mg/L		95		81 - 116

Lab Sample ID: 310-284194-1 DU
Matrix: Water
Analysis Batch: 425551

Client Sample ID: MW-31
Prep Type: Total/NA

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Total Suspended Solids	107		103.0		mg/L		4	35

QC Association Summary

Client: SCS Engineers
Project/Site: Loess Hills Regional SLF (Supplemental)

Job ID: 310-284194-1
SDG: 1st 2024 Semi-Annual Sampling

HPLC/IC

Analysis Batch: 425527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284194-1	MW-31	Total/NA	Water	9056A	
MB 310-425527/3	Method Blank	Total/NA	Water	9056A	
LCS 310-425527/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 425623

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284194-1	MW-31	Total/NA	Water	3005A	

Analysis Batch: 426190

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284194-1	MW-31	Total/NA	Water	6020B	425623

General Chemistry

Analysis Batch: 425551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284194-1	MW-31	Total/NA	Water	I-3765-85	
MB 310-425551/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-425551/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-284194-1 DU	MW-31	Total/NA	Water	I-3765-85	

Lab Chronicle

Client: SCS Engineers
Project/Site: Loess Hills Regional SLF (Supplemental)

Job ID: 310-284194-1
SDG: 1st 2024 Semi-Annual Sampling

Client Sample ID: MW-31
Date Collected: 06/19/24 10:26
Date Received: 06/21/24 16:40

Lab Sample ID: 310-284194-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		1	425527	QTZ5	EET CF	06/24/24 10:18
Total/NA	Prep	3005A			425623	QTZ5	EET CF	06/26/24 09:00
Total/NA	Analysis	6020B		1	426190	NFT2	EET CF	07/01/24 19:38
Total/NA	Analysis	I-3765-85		1	425551	DGU1	EET CF	06/25/24 10:01

Laboratory References:

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



Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Loess Hills Regional SLF (Supplemental)

Job ID: 310-284194-1
SDG: 1st 2024 Semi-Annual Sampling

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

Method Summary

Client: SCS Engineers
Project/Site: Loess Hills Regional SLF (Supplemental)

Job ID: 310-284194-1
SDG: 1st 2024 Semi-Annual Sampling

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

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





Environment Testing
America

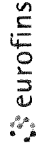


310-284194 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE <u>6-21-24</u>	TIME <u>1640</u>	Received By: <u>MC</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____
Multiple Coolers?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # ____ of ____
Cooler Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>X</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>0.1</u>		Corrected Temp (°C): <u>0.1</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?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
a) If yes: Is there evidence that the chilling process began?		<input type="checkbox"/> Yes	<input type="checkbox"/> 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?)		<input type="checkbox"/> Yes	<input type="checkbox"/> No
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			





Regulatory Program: DW NPDES RCRA Other:

Project Manager: Ben Madson
 Email: bmadson@scsengineers.com
 Cell: 515-776-9255

Client Contact
 SCS Engineers
 1690 All-State Court, Suite 100
 West Des Moines, IA 50265
 515-631-6160

Site Information
 Project Name: 1st 2024 Semi-Annual Sampling (Supplemental)
 Site: Loess Hills Regional Sanitary Landfill
 P O #: 27224020 00

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
 Other: 2 weeks 1 week 2 days 1 day

Site Contact: Ben Madson Date: _____
Lab Contact: Mary Yang Carrier: _____

Sample Identification

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.
MW-31	10/26		G	GW	
Trip Blank					

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other

Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

Non-Hazard Flammable Skin Irritant Poison B Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Return to Client Disposal by Lab Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Natural Attenuation: Iron, Manganese Nitrate and Sulfate

Custody Seal No	Company	Date/Time	Received by	Company	Date/Time	Received by	Company	Date/Time
500	Company	10/26/24	MW	Company	10/26/24		Company	
	Company			Company			Company	
	Company			Company			Company	

Natural Attenuation: Iron, Manganese Nitrate, and Sulfate

Cooler Temp (°C) Obs'd _____ Cor'd _____ Therm ID No _____



Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-284194-1
SDG Number: 1st 2024 Semi-Annual Sampling

Login Number: 284194

List Number: 1

Creator: Costello, Mackenzie K

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.	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)	False	Nitrate received outside of hold time.
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



 **ANALYTICAL REPORT****PREPARED FOR**

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

Generated 7/16/2024 8:02:11 AM

JOB DESCRIPTION

Loess Hills 1st 2024 Semi-Annual Sampling (HMSP)
1st 2024 Semi-Annual (HMSP)

JOB NUMBER

310-284193-1

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



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Authorized for release by
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(319)595-2025



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Case Narrative

Client: SCS Engineers
Project: Loess Hills 1st 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-284193-1

Job ID: 310-284193-1

Eurofins Cedar Falls

Job Narrative 310-284193-1

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 are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample 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 6/21/2024 4:40 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.1°C, 0.6°C and 11.1°C.

Receipt Exceptions

The following samples were received at the laboratory outside the required temperature criteria: MW-14 (310-284193-1), MW-7 (310-284193-2), MW-8R (310-284193-3), MW-10R (310-284193-4), MW-11R (310-284193-5), MW-26R (310-284193-6), MW-27R (310-284193-7), MW-29 (310-284193-8), MW-D (310-284193-9), Trip Blank 1 (310-284193-10), Trip Blank 2 (310-284193-11) and Trip Blank 3 (310-284193-12). This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to proceed with analysis.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-425596 recovered above the upper control limit for Methyl methacrylate(26.9%D), 4-Methyl-2-pentanone(26.2%D), and Bromoform(28.4%D). 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 310-425596/3).

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

GC/MS Semi VOA

Method 8270E: The continuing calibration verification (CCV) associated with batch 310-426234 recovered above the upper control limit for Hexachlorocyclopentadiene (27.3%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method 8270E: Internal standard (ISTD) response for the following samples were outside of acceptance limits: MW-7 (310-284193-2), MW-10R (310-284193-4) and MW-11R (310-284193-5). The ISTD fails low, causing results to be biased high. Since all associated analytes are non detects, results will be reported.

Method 8270E: The laboratory control sample (LCS) for preparation batch 310-425691 and analytical batch 310-426230 recovered outside control limits for the following analytes: Famphur. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.

Method 8270E: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 310-425691 and analytical batch 310-426230 recovered outside control limits for the following analyte(s): p-Phenylene diamine, p-Phenylene diamine has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/re-analysis was not performed.

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

GC Semi VOA

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

Herbicides

Method 8151A: The laboratory control sample duplicate (LCSD) for preparation batch 410-521860 and analytical batch 410-522037 recovered outside the lower control limits for the following analytes: 2,4-D and Silvex (2,4,5-TP). The associated

Eurofins Cedar Falls

Case Narrative

Client: SCS Engineers
Project: Loess Hills 1st 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-284193-1

Job ID: 310-284193-1 (Continued)

Eurofins Cedar Falls

samples were re-prepared outside holding time and the LCSD is within control limits. Results are reported from both trials. MW-7 (310-284193-2), MW-10R (310-284193-4) and MW-11R (310-284193-5).

Method 8151A: Surrogate recovery for the following sample was outside control limits (high) : MW-7 (310-284193-2). Re-extraction was performed outside of holding time with acceptable results.

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

PCBs

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

Pesticides

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: SCS Engineers
Project: Loess Hills 1st 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-284193-1

Job ID: 310-284193-2

Eurofins Cedar Falls

Job Narrative 310-284193-2

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 are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample 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 6/21/2024 4:40 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were 0.1°C, 0.6°C and 11.1°C.

Receipt Exceptions

The following samples were received at the laboratory outside the required temperature criteria: MW-14 (310-284193-1), MW-7 (310-284193-2), MW-8R (310-284193-3), MW-10R (310-284193-4), MW-11R (310-284193-5), MW-26R (310-284193-6), MW-27R (310-284193-7), MW-29 (310-284193-8), MW-D (310-284193-9), Trip Blank 1 (310-284193-10), Trip Blank 2 (310-284193-11) and Trip Blank 3 (310-284193-12). This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to proceed with analysis.

HPLC/IC

Method 9056A_ORGFM_48H: The following sample(s) was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: MW-8R (310-284193-3), MW-11R (310-284193-5), MW-26R (310-284193-6), MW-27R (310-284193-7) and MW-D (310-284193-9).

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: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-284193-1	MW-14	Groundwater	06/18/24 18:26	06/21/24 16:40
310-284193-2	MW-7	Groundwater	06/19/24 15:26	06/21/24 16:40
310-284193-3	MW-8R	Groundwater	06/19/24 17:11	06/21/24 16:40
310-284193-4	MW-10R	Groundwater	06/20/24 08:23	06/21/24 16:40
310-284193-5	MW-11R	Groundwater	06/20/24 09:54	06/21/24 16:40
310-284193-6	MW-26R	Groundwater	06/19/24 12:13	06/21/24 16:40
310-284193-7	MW-27R	Groundwater	06/20/24 09:07	06/21/24 16:40
310-284193-8	MW-29	Groundwater	06/19/24 11:02	06/21/24 16:40
310-284193-9	MW-D	Groundwater	06/20/24 09:07	06/21/24 16:40
310-284193-10	Trip Blank 1	Trip Blank	06/20/24 00:00	06/21/24 16:40
310-284193-11	Trip Blank 2	Water	06/20/24 00:00	06/21/24 16:40
310-284193-12	Trip Blank 3	Water	06/20/24 00:00	06/21/24 16:40



Detection Summary

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-14

Lab Sample ID: 310-284193-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.274		0.00200		mg/L	1		6020B	Total/NA
Lead	0.000870		0.000500		mg/L	1		6020B	Total/NA
Total Suspended Solids	33.3		1.9		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-7

Lab Sample ID: 310-284193-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	5.98		1.00		ug/L	1		8260D	Total/NA
Barium	0.223		0.00200		mg/L	1		6020B	Total/NA
Lead	0.000700		0.000500		mg/L	1		6020B	Total/NA
Total Suspended Solids	5.4		1.9		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-8R

Lab Sample ID: 310-284193-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	8.54		1.00		ug/L	1		8260D	Total/NA
Sulfate	70.5		1.00		mg/L	1		9056A	Total/NA
Barium	0.446		0.00200		mg/L	1		6020B	Total/NA
Cadmium	0.000261		0.000200		mg/L	1		6020B	Total/NA
Cobalt	0.000829		0.000500		mg/L	1		6020B	Total/NA
Copper	0.00626		0.00500		mg/L	1		6020B	Total/NA
Iron	0.206		0.100		mg/L	1		6020B	Total/NA
Lead	0.00121		0.000500		mg/L	1		6020B	Total/NA
Manganese	1.07		0.0100		mg/L	1		6020B	Total/NA
Nickel	0.0128		0.00500		mg/L	1		6020B	Total/NA
Vanadium	0.00538		0.00500		mg/L	1		6020B	Total/NA
Mercury	0.000695		0.000200		mg/L	1		7470A	Total/NA
Total Suspended Solids	67.0		3.8		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-10R

Lab Sample ID: 310-284193-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	11.8		1.00		ug/L	1		8260D	Total/NA
1,1-Dichloroethane	2.05		1.00		ug/L	1		8260D	Total/NA
Barium	0.534		0.00200		mg/L	1		6020B	Total/NA
Lead	0.000676		0.000500		mg/L	1		6020B	Total/NA
Total Suspended Solids	2.4		1.9		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-11R

Lab Sample ID: 310-284193-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	0.937		0.500		ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	1.90		1.00		ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	1.61		1.00		ug/L	1		8260D	Total/NA
Sulfate	102		20.0		mg/L	20		9056A	Total/NA
Arsenic	0.00315		0.00200		mg/L	1		6020B	Total/NA
Barium	0.642		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.00238		0.000500		mg/L	1		6020B	Total/NA
Nickel	0.00986		0.00500		mg/L	1		6020B	Total/NA
Iron	3.17		0.100		mg/L	1		6020B	Total/NA
Manganese	2.37		0.0100		mg/L	1		6020B	Total/NA
Total Suspended Solids	13.3		3.8		mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-26R

Lab Sample ID: 310-284193-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	13.2		1.00		ug/L	1		8260D	Total/NA
1,1-Dichloroethane	1.22		1.00		ug/L	1		8260D	Total/NA
Sulfate	15.2		1.00		mg/L	1		9056A	Total/NA
Arsenic	0.0276		0.00200		mg/L	1		6020B	Total/NA
Barium	0.762		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.00506		0.000500		mg/L	1		6020B	Total/NA
Iron	2.46		0.100		mg/L	1		6020B	Total/NA
Manganese	2.90		0.0100		mg/L	1		6020B	Total/NA
Nickel	0.0153		0.00500		mg/L	1		6020B	Total/NA
Total Suspended Solids	33.0		7.5		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-27R

Lab Sample ID: 310-284193-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	2.68		1.00		ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	40.1		1.00		ug/L	1		8260D	Total/NA
1,1-Dichloroethane	4.20		1.00		ug/L	1		8260D	Total/NA
Trichloroethene	3.33		1.00		ug/L	1		8260D	Total/NA
Sulfate	30.5		1.00		mg/L	1		9056A	Total/NA
Barium	0.720		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.00963		0.000500		mg/L	1		6020B	Total/NA
Iron	1.28		0.100		mg/L	1		6020B	Total/NA
Manganese	4.50		0.0100		mg/L	1		6020B	Total/NA
Nickel	0.0158		0.00500		mg/L	1		6020B	Total/NA
Total Suspended Solids	21.8		3.8		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-29

Lab Sample ID: 310-284193-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.330		0.00200		mg/L	1		6020B	Total/NA

Client Sample ID: MW-D

Lab Sample ID: 310-284193-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chlorobenzene	2.64		1.00		ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	40.6		1.00		ug/L	1		8260D	Total/NA
1,1-Dichloroethane	4.38		1.00		ug/L	1		8260D	Total/NA
Trichloroethene	3.56		1.00		ug/L	1		8260D	Total/NA
Sulfate	30.6		1.00		mg/L	1		9056A	Total/NA
Barium	0.724		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.00955		0.000500		mg/L	1		6020B	Total/NA
Iron	1.27		0.100		mg/L	1		6020B	Total/NA
Manganese	4.57		0.0100		mg/L	1		6020B	Total/NA
Nickel	0.0195		0.00500		mg/L	1		6020B	Total/NA
Total Suspended Solids	33.0		3.8		mg/L	1		I-3765-85	Total/NA

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-284193-10

No Detections.

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-284193-11

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

Client Sample ID: Trip Blank 3

Lab Sample ID: 310-284193-12

No Detections.

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This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-14

Lab Sample ID: 310-284193-1

Date Collected: 06/18/24 18:26

Matrix: Groundwater

Date Received: 06/21/24 16:40

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			06/25/24 23:17	1
Acrylonitrile	<5.00		5.00		ug/L			06/25/24 23:17	1
Benzene	<0.500		0.500		ug/L			06/25/24 23:17	1
Bromochloromethane	<5.00		5.00		ug/L			06/25/24 23:17	1
Bromodichloromethane	<1.00		1.00		ug/L			06/25/24 23:17	1
Bromoform	<5.00		5.00		ug/L			06/25/24 23:17	1
Bromomethane	<4.00		4.00		ug/L			06/25/24 23:17	1
2-Butanone (MEK)	<10.0		10.0		ug/L			06/25/24 23:17	1
Carbon disulfide	<1.00		1.00		ug/L			06/25/24 23:17	1
Carbon tetrachloride	<2.00		2.00		ug/L			06/25/24 23:17	1
Chlorobenzene	<1.00		1.00		ug/L			06/25/24 23:17	1
Chlorodibromomethane	<5.00		5.00		ug/L			06/25/24 23:17	1
Chloroethane	<4.00		4.00		ug/L			06/25/24 23:17	1
Chloroform	<3.00		3.00		ug/L			06/25/24 23:17	1
Chloromethane	<3.00		3.00		ug/L			06/25/24 23:17	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			06/25/24 23:17	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			06/25/24 23:17	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			06/25/24 23:17	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			06/25/24 23:17	1
Dibromomethane	<1.00		1.00		ug/L			06/25/24 23:17	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			06/25/24 23:17	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			06/25/24 23:17	1
1,1-Dichloroethane	<1.00		1.00		ug/L			06/25/24 23:17	1
1,2-Dichloroethane	<1.00		1.00		ug/L			06/25/24 23:17	1
1,1-Dichloroethene	<2.00		2.00		ug/L			06/25/24 23:17	1
1,2-Dichloropropane	<1.00		1.00		ug/L			06/25/24 23:17	1
Ethylbenzene	<1.00		1.00		ug/L			06/25/24 23:17	1
2-Hexanone	<10.0		10.0		ug/L			06/25/24 23:17	1
Iodomethane	<10.0		10.0		ug/L			06/25/24 23:17	1
Methylene Chloride	<5.00		5.00		ug/L			06/25/24 23:17	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			06/25/24 23:17	1
Styrene	<1.00		1.00		ug/L			06/25/24 23:17	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			06/25/24 23:17	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			06/25/24 23:17	1
Tetrachloroethene	<1.00		1.00		ug/L			06/25/24 23:17	1
Toluene	<1.00		1.00		ug/L			06/25/24 23:17	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			06/25/24 23:17	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			06/25/24 23:17	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			06/25/24 23:17	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			06/25/24 23:17	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			06/25/24 23:17	1
Trichloroethene	<1.00		1.00		ug/L			06/25/24 23:17	1
Trichlorofluoromethane	<4.00		4.00		ug/L			06/25/24 23:17	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			06/25/24 23:17	1
Vinyl acetate	<10.0		10.0		ug/L			06/25/24 23:17	1
Vinyl chloride	<1.00		1.00		ug/L			06/25/24 23:17	1
Xylenes, Total	<3.00		3.00		ug/L			06/25/24 23:17	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-14
Date Collected: 06/18/24 18:26
Date Received: 06/21/24 16:40

Lab Sample ID: 310-284193-1
Matrix: Groundwater

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		80 - 120		06/25/24 23:17	1
Dibromofluoromethane (Surr)	120		73 - 130		06/25/24 23:17	1
Toluene-d8 (Surr)	91		80 - 120		06/25/24 23:17	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:08	1
Arsenic	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:08	1
Barium	0.274		0.00200		mg/L		06/25/24 09:00	07/12/24 19:08	1
Beryllium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:08	1
Cadmium	<0.000200		0.000200		mg/L		06/25/24 09:00	07/12/24 19:08	1
Chromium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:08	1
Cobalt	<0.000500		0.000500		mg/L		06/25/24 09:00	07/12/24 19:08	1
Copper	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:08	1
Lead	0.000870		0.000500		mg/L		06/25/24 09:00	07/12/24 19:08	1
Nickel	<0.00500		0.00500		mg/L		06/25/24 09:00	07/14/24 21:36	1
Selenium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:08	1
Silver	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:08	1
Thallium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:08	1
Vanadium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:08	1
Zinc	<0.0200		0.0200		mg/L		06/25/24 09:00	07/12/24 19:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<2.00		2.00		mg/L			06/25/24 16:10	1
Total Suspended Solids (USGS I-3765-85)	33.3		1.9		mg/L			06/24/24 11:33	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-7
Date Collected: 06/19/24 15:26
Date Received: 06/21/24 16:40

Lab Sample ID: 310-284193-2
Matrix: Groundwater

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			06/25/24 23:39	1
Acrolein	<10.0		10.0		ug/L			06/25/24 23:39	1
Acrylonitrile	<5.00		5.00		ug/L			06/25/24 23:39	1
Allyl chloride	<2.00		2.00		ug/L			06/25/24 23:39	1
Benzene	<0.500		0.500		ug/L			06/25/24 23:39	1
Bromochloromethane	<5.00		5.00		ug/L			06/25/24 23:39	1
Bromodichloromethane	<1.00		1.00		ug/L			06/25/24 23:39	1
Bromoform	<5.00		5.00		ug/L			06/25/24 23:39	1
Bromomethane	<4.00		4.00		ug/L			06/25/24 23:39	1
2-Butanone (MEK)	<10.0		10.0		ug/L			06/25/24 23:39	1
Carbon disulfide	<1.00		1.00		ug/L			06/25/24 23:39	1
Carbon tetrachloride	<2.00		2.00		ug/L			06/25/24 23:39	1
Chlorobenzene	<1.00		1.00		ug/L			06/25/24 23:39	1
Chlorodibromomethane	<5.00		5.00		ug/L			06/25/24 23:39	1
Chloroethane	<4.00		4.00		ug/L			06/25/24 23:39	1
Chloroform	<3.00		3.00		ug/L			06/25/24 23:39	1
Chloromethane	<3.00		3.00		ug/L			06/25/24 23:39	1
Chloroprene	<1.00		1.00		ug/L			06/25/24 23:39	1
cis-1,2-Dichloroethene	5.98		1.00		ug/L			06/25/24 23:39	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			06/25/24 23:39	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			06/25/24 23:39	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			06/25/24 23:39	1
Dibromomethane	<1.00		1.00		ug/L			06/25/24 23:39	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			06/25/24 23:39	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			06/25/24 23:39	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			06/25/24 23:39	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			06/25/24 23:39	1
1,1-Dichloroethane	<1.00		1.00		ug/L			06/25/24 23:39	1
1,2-Dichloroethane	<1.00		1.00		ug/L			06/25/24 23:39	1
1,1-Dichloroethene	<2.00		2.00		ug/L			06/25/24 23:39	1
1,2-Dichloropropane	<1.00		1.00		ug/L			06/25/24 23:39	1
1,3-Dichloropropane	<1.00		1.00		ug/L			06/25/24 23:39	1
2,2-Dichloropropane	<4.00		4.00		ug/L			06/25/24 23:39	1
1,1-Dichloropropene	<1.00		1.00		ug/L			06/25/24 23:39	1
Ethylbenzene	<1.00		1.00		ug/L			06/25/24 23:39	1
Ethyl methacrylate	<2.00		2.00		ug/L			06/25/24 23:39	1
2-Hexanone	<10.0		10.0		ug/L			06/25/24 23:39	1
Iodomethane	<10.0		10.0		ug/L			06/25/24 23:39	1
Methacrylonitrile	<10.0		10.0		ug/L			06/25/24 23:39	1
Methylene Chloride	<5.00		5.00		ug/L			06/25/24 23:39	1
Methyl methacrylate	<2.00		2.00		ug/L			06/25/24 23:39	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			06/25/24 23:39	1
Naphthalene	<5.00		5.00		ug/L			06/25/24 23:39	1
Propionitrile	<10.0		10.0		ug/L			06/25/24 23:39	1
Styrene	<1.00		1.00		ug/L			06/25/24 23:39	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			06/25/24 23:39	1
1,1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			06/25/24 23:39	1
Tetrachloroethene	<1.00		1.00		ug/L			06/25/24 23:39	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-7
Date Collected: 06/19/24 15:26
Date Received: 06/21/24 16:40

Lab Sample ID: 310-284193-2
Matrix: Groundwater

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			06/25/24 23:39	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			06/25/24 23:39	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			06/25/24 23:39	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			06/25/24 23:39	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			06/25/24 23:39	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			06/25/24 23:39	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			06/25/24 23:39	1
Trichloroethene	<1.00		1.00		ug/L			06/25/24 23:39	1
Trichlorofluoromethane	<4.00		4.00		ug/L			06/25/24 23:39	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			06/25/24 23:39	1
Vinyl acetate	<10.0		10.0		ug/L			06/25/24 23:39	1
Vinyl chloride	<1.00		1.00		ug/L			06/25/24 23:39	1
Xylenes, Total	<3.00		3.00		ug/L			06/25/24 23:39	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	110		80 - 120					06/25/24 23:39	1
Dibromofluoromethane (Surr)	119		73 - 130					06/25/24 23:39	1
Toluene-d8 (Surr)	88		80 - 120					06/25/24 23:39	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Acenaphthylene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Acetophenone	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
2-Acetylaminofluorene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
4-Aminobiphenyl	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Anthracene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Benzo(a)anthracene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Benzo(a)pyrene	<10.6	*3	10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Benzo(b)fluoranthene	<10.6	*3	10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Benzo(g,h,i)perylene	<10.6	*3	10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Benzo(k)fluoranthene	<10.6	*3	10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Benzyl alcohol	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Bis(2-chloroethoxy)methane	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Bis(2-chloroethyl)ether	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
bis(2-chloroisopropyl) ether	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Bis(2-ethylhexyl) phthalate	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
4-Bromophenyl phenyl ether	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Butyl benzyl phthalate	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
4-Chloroaniline	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Chlorobenzilate	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
4-Chloro-3-methylphenol	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
2-Chloronaphthalene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
2-Chlorophenol	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
4-Chlorophenyl phenyl ether	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Chrysene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Diallate	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Dibenz(a,h)anthracene	<10.6	*3	10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Dibenzofuran	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-7
Date Collected: 06/19/24 15:26
Date Received: 06/21/24 16:40

Lab Sample ID: 310-284193-2
Matrix: Groundwater

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
2,4-Dichlorophenol	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
2,6-Dichlorophenol	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Diethyl phthalate	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Dimethoate	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
7,12-Dimethylbenz(a)anthracene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
3,3'-Dimethylbenzidine	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
2,4-Dimethylphenol	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Dimethyl phthalate	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Di-n-butyl phthalate	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
1,3-Dinitrobenzene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
4,6-Dinitro-2-methylphenol	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
2,4-Dinitrophenol	<21.3		21.3		ug/L		06/26/24 09:43	07/02/24 14:21	1
2,4-Dinitrotoluene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
2,6-Dinitrotoluene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Di-n-octyl phthalate	<21.3	*3	21.3		ug/L		06/26/24 09:43	07/02/24 14:21	1
Dinoseb	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Diphenylamine	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Disulfoton	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Ethyl methanesulfonate	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Ethyl parathion	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Famphur	<10.6	*+	10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Fluoranthene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Fluorene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Hexachlorobenzene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Hexachlorobutadiene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Hexachlorocyclopentadiene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Hexachloroethane	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Hexachloropropene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Indeno(1,2,3-cd)pyrene	<10.6	*3	10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Isodrin	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Isophorone	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Isosafrole	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Kepone	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Methapyrilene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
3-Methylcholanthrene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Methyl methanesulfonate	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
2-Methylnaphthalene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Methyl parathion	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
2-Methylphenol	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
4-Methylphenol (and/or 3-Methylphenol)	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
1,4-Naphthoquinone	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
1-Naphthylamine	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
2-Naphthylamine	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
2-Nitroaniline	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
3-Nitroaniline	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
4-Nitroaniline	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Nitrobenzene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-7
Date Collected: 06/19/24 15:26
Date Received: 06/21/24 16:40

Lab Sample ID: 310-284193-2
Matrix: Groundwater

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
5-Nitro-o-toluidine	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
2-Nitrophenol	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
4-Nitrophenol	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
N-Nitrosodiethylamine	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
N-Nitrosodimethylamine	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
N-Nitrosodi-n-butylamine	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
N-Nitrosodi-n-propylamine	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
N-Nitrosodiphenylamine	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
N-Nitrosomethylethylamine	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
N-Nitrosopiperidine	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
N-Nitrosopyrrolidine	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
o,o',o"-Triethylphosphorothioate	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
o-Toluidine	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
p-Dimethylamino azobenzene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Pentachlorobenzene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Pentachloronitrobenzene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Pentachlorophenol	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Phenacetin	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Phenanthrene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Phenol	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
1,4-Phenylenediamine	<10.6	*	10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Phorate	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Pronamide	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
Pyrene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Safrole	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
1,2,4,5-Tetrachlorobenzene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
2,3,4,6-Tetrachlorophenol	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
Thionazin	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1
2,4,5-Trichlorophenol	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
2,4,6-Trichlorophenol	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:21	1
1,3,5-Trinitrobenzene	<10.6		10.6		ug/L		06/26/24 09:43	07/02/24 14:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	79		39 - 118	06/26/24 09:43	07/02/24 14:21	1
2-Fluorophenol (Surr)	79		25 - 110	06/26/24 09:43	07/02/24 14:21	1
Nitrobenzene-d5 (Surr)	102		45 - 129	06/26/24 09:43	07/02/24 14:21	1
Phenol-d5 (Surr)	66		21 - 110	06/26/24 09:43	07/02/24 14:21	1
Terphenyl-d14 (Surr)	103		12 - 144	06/26/24 09:43	07/02/24 14:21	1
2,4,6-Tribromophenol (Surr)	80		27 - 136	06/26/24 09:43	07/02/24 14:21	1

Method: SW846 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<10.0		10.0		mg/L			06/24/24 17:38	1
Isobutanol	<10.0		10.0		mg/L			06/24/24 17:38	1

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
4,4'-DDE	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-7
Date Collected: 06/19/24 15:26
Date Received: 06/21/24 16:40

Lab Sample ID: 310-284193-2
Matrix: Groundwater

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
Aldrin	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
alpha-BHC	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
beta-BHC	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
Chlordane (technical)	<1.87		1.87		ug/L		06/26/24 08:19	06/27/24 12:24	1
delta-BHC	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
Dieldrin	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
Endosulfan I	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
Endosulfan II	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
Endosulfan sulfate	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
Endrin	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
Endrin aldehyde	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
gamma-BHC (Lindane)	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
Heptachlor	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
Heptachlor epoxide	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
Methoxychlor	<0.0933		0.0933		ug/L		06/26/24 08:19	06/27/24 12:24	1
Toxaphene	<1.87		1.87		ug/L		06/26/24 08:19	06/27/24 12:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	118		10 - 136				06/26/24 08:19	06/27/24 12:24	1
Tetrachloro-m-xylene (Surr)	99		10 - 130				06/26/24 08:19	06/27/24 12:24	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<1.87		1.87		ug/L		06/26/24 08:19	06/27/24 12:24	1
PCB-1221	<1.87		1.87		ug/L		06/26/24 08:19	06/27/24 12:24	1
PCB-1232	<1.87		1.87		ug/L		06/26/24 08:19	06/27/24 12:24	1
PCB-1242	<1.87		1.87		ug/L		06/26/24 08:19	06/27/24 12:24	1
PCB-1248	<1.87		1.87		ug/L		06/26/24 08:19	06/27/24 12:24	1
PCB-1254	<1.87		1.87		ug/L		06/26/24 08:19	06/27/24 12:24	1
PCB-1260	<1.87		1.87		ug/L		06/26/24 08:19	06/27/24 12:24	1
PCB-1268	<1.87		1.87		ug/L		06/26/24 08:19	06/27/24 12:24	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	118		10 - 136				06/26/24 08:19	06/27/24 12:24	1
Tetrachloro-m-xylene (Surr)	100		10 - 130				06/26/24 08:19	06/27/24 12:24	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.595	*-	0.595		ug/L		06/26/24 16:05	06/27/24 08:32	1
Silvex (2,4,5-TP)	<0.0496	*-	0.0496		ug/L		06/26/24 16:05	06/27/24 08:32	1
2,4,5-T	<0.149		0.149		ug/L		06/26/24 16:05	06/27/24 08:32	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	62	p	34 - 142				06/26/24 16:05	06/27/24 08:32	1
DCAA	166	S1+	34 - 142				06/26/24 16:05	06/27/24 08:32	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-7
Date Collected: 06/19/24 15:26
Date Received: 06/21/24 16:40

Lab Sample ID: 310-284193-2
Matrix: Groundwater

Method: SW846 8151A - Herbicides (GC) - RE

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	58		34 - 142	06/27/24 15:09	06/28/24 14:30	1
DCAA	142		34 - 142	06/27/24 15:09	06/28/24 14:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:21	1
Arsenic	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:21	1
Barium	0.223		0.00200		mg/L		06/25/24 09:00	07/12/24 19:21	1
Beryllium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:21	1
Cadmium	<0.000200		0.000200		mg/L		06/25/24 09:00	07/12/24 19:21	1
Chromium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:21	1
Cobalt	<0.000500		0.000500		mg/L		06/25/24 09:00	07/12/24 19:21	1
Copper	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:21	1
Lead	0.000700		0.000500		mg/L		06/25/24 09:00	07/12/24 19:21	1
Nickel	<0.00500		0.00500		mg/L		06/25/24 09:00	07/14/24 21:43	1
Selenium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:21	1
Silver	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:21	1
Thallium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:21	1
Tin	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:21	1
Vanadium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:21	1
Zinc	<0.0200		0.0200		mg/L		06/25/24 09:00	07/12/24 19:21	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		07/02/24 11:03	07/03/24 14:33	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (SW846 9012B)	<0.0100		0.0100		mg/L		06/27/24 10:02	06/28/24 17:22	1
Sulfide (SW846 9034)	<2.00		2.00		mg/L			06/25/24 16:10	1
Total Suspended Solids (USGS I-3765-85)	5.4		1.9		mg/L			06/25/24 08:59	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-8R

Lab Sample ID: 310-284193-3

Date Collected: 06/19/24 17:11

Matrix: Groundwater

Date Received: 06/21/24 16:40

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			06/26/24 00:01	1
Acrylonitrile	<5.00		5.00		ug/L			06/26/24 00:01	1
Benzene	<0.500		0.500		ug/L			06/26/24 00:01	1
Bromochloromethane	<5.00		5.00		ug/L			06/26/24 00:01	1
Bromodichloromethane	<1.00		1.00		ug/L			06/26/24 00:01	1
Bromoform	<5.00		5.00		ug/L			06/26/24 00:01	1
Bromomethane	<4.00		4.00		ug/L			06/26/24 00:01	1
2-Butanone (MEK)	<10.0		10.0		ug/L			06/26/24 00:01	1
Carbon disulfide	<1.00		1.00		ug/L			06/26/24 00:01	1
Carbon tetrachloride	<2.00		2.00		ug/L			06/26/24 00:01	1
Chlorobenzene	<1.00		1.00		ug/L			06/26/24 00:01	1
Chlorodibromomethane	<5.00		5.00		ug/L			06/26/24 00:01	1
Chloroethane	<4.00		4.00		ug/L			06/26/24 00:01	1
Chloroform	<3.00		3.00		ug/L			06/26/24 00:01	1
Chloromethane	<3.00		3.00		ug/L			06/26/24 00:01	1
cis-1,2-Dichloroethene	8.54		1.00		ug/L			06/26/24 00:01	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			06/26/24 00:01	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			06/26/24 00:01	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			06/26/24 00:01	1
Dibromomethane	<1.00		1.00		ug/L			06/26/24 00:01	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			06/26/24 00:01	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			06/26/24 00:01	1
1,1-Dichloroethane	<1.00		1.00		ug/L			06/26/24 00:01	1
1,2-Dichloroethane	<1.00		1.00		ug/L			06/26/24 00:01	1
1,1-Dichloroethene	<2.00		2.00		ug/L			06/26/24 00:01	1
1,2-Dichloropropane	<1.00		1.00		ug/L			06/26/24 00:01	1
Ethylbenzene	<1.00		1.00		ug/L			06/26/24 00:01	1
2-Hexanone	<10.0		10.0		ug/L			06/26/24 00:01	1
Iodomethane	<10.0		10.0		ug/L			06/26/24 00:01	1
Methylene Chloride	<5.00		5.00		ug/L			06/26/24 00:01	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			06/26/24 00:01	1
Styrene	<1.00		1.00		ug/L			06/26/24 00:01	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			06/26/24 00:01	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			06/26/24 00:01	1
Tetrachloroethene	<1.00		1.00		ug/L			06/26/24 00:01	1
Toluene	<1.00		1.00		ug/L			06/26/24 00:01	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			06/26/24 00:01	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			06/26/24 00:01	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			06/26/24 00:01	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			06/26/24 00:01	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			06/26/24 00:01	1
Trichloroethene	<1.00		1.00		ug/L			06/26/24 00:01	1
Trichlorofluoromethane	<4.00		4.00		ug/L			06/26/24 00:01	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			06/26/24 00:01	1
Vinyl acetate	<10.0		10.0		ug/L			06/26/24 00:01	1
Vinyl chloride	<1.00		1.00		ug/L			06/26/24 00:01	1
Xylenes, Total	<3.00		3.00		ug/L			06/26/24 00:01	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-8R

Lab Sample ID: 310-284193-3

Date Collected: 06/19/24 17:11

Matrix: Groundwater

Date Received: 06/21/24 16:40

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	111		80 - 120		06/26/24 00:01	1
Dibromofluoromethane (Surr)	119		73 - 130		06/26/24 00:01	1
Toluene-d8 (Surr)	90		80 - 120		06/26/24 00:01	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	70.5		1.00		mg/L			06/24/24 09:18	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200	H	0.200		mg/L			06/24/24 09:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:24	1
Arsenic	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:24	1
Barium	0.446		0.00200		mg/L		06/25/24 09:00	07/12/24 19:24	1
Beryllium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:24	1
Cadmium	0.000261		0.000200		mg/L		06/25/24 09:00	07/12/24 19:24	1
Chromium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:24	1
Cobalt	0.000829		0.000500		mg/L		06/25/24 09:00	07/12/24 19:24	1
Copper	0.00626		0.00500		mg/L		06/25/24 09:00	07/12/24 19:24	1
Iron	0.206		0.100		mg/L		06/25/24 09:00	07/12/24 19:24	1
Lead	0.00121		0.000500		mg/L		06/25/24 09:00	07/12/24 19:24	1
Manganese	1.07		0.0100		mg/L		06/25/24 09:00	07/12/24 19:24	1
Nickel	0.0128		0.00500		mg/L		06/25/24 09:00	07/14/24 22:01	1
Selenium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:24	1
Silver	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:24	1
Thallium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:24	1
Vanadium	0.00538		0.00500		mg/L		06/25/24 09:00	07/12/24 19:24	1
Zinc	<0.0200		0.0200		mg/L		06/25/24 09:00	07/12/24 19:24	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000695		0.000200		mg/L		07/02/24 11:03	07/03/24 14:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<2.00		2.00		mg/L			06/25/24 16:10	1
Total Suspended Solids (USGS I-3765-85)	67.0		3.8		mg/L			06/25/24 10:01	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-10R

Lab Sample ID: 310-284193-4

Date Collected: 06/20/24 08:23

Matrix: Groundwater

Date Received: 06/21/24 16:40

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			06/26/24 00:23	1
Acrolein	<10.0		10.0		ug/L			06/26/24 00:23	1
Acrylonitrile	<5.00		5.00		ug/L			06/26/24 00:23	1
Allyl chloride	<2.00		2.00		ug/L			06/26/24 00:23	1
Benzene	<0.500		0.500		ug/L			06/26/24 00:23	1
Bromochloromethane	<5.00		5.00		ug/L			06/26/24 00:23	1
Bromodichloromethane	<1.00		1.00		ug/L			06/26/24 00:23	1
Bromoform	<5.00		5.00		ug/L			06/26/24 00:23	1
Bromomethane	<4.00		4.00		ug/L			06/26/24 00:23	1
2-Butanone (MEK)	<10.0		10.0		ug/L			06/26/24 00:23	1
Carbon disulfide	<1.00		1.00		ug/L			06/26/24 00:23	1
Carbon tetrachloride	<2.00		2.00		ug/L			06/26/24 00:23	1
Chlorobenzene	<1.00		1.00		ug/L			06/26/24 00:23	1
Chlorodibromomethane	<5.00		5.00		ug/L			06/26/24 00:23	1
Chloroethane	<4.00		4.00		ug/L			06/26/24 00:23	1
Chloroform	<3.00		3.00		ug/L			06/26/24 00:23	1
Chloromethane	<3.00		3.00		ug/L			06/26/24 00:23	1
Chloroprene	<1.00		1.00		ug/L			06/26/24 00:23	1
cis-1,2-Dichloroethene	11.8		1.00		ug/L			06/26/24 00:23	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			06/26/24 00:23	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			06/26/24 00:23	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			06/26/24 00:23	1
Dibromomethane	<1.00		1.00		ug/L			06/26/24 00:23	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			06/26/24 00:23	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			06/26/24 00:23	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			06/26/24 00:23	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			06/26/24 00:23	1
1,1-Dichloroethane	2.05		1.00		ug/L			06/26/24 00:23	1
1,2-Dichloroethane	<1.00		1.00		ug/L			06/26/24 00:23	1
1,1-Dichloroethene	<2.00		2.00		ug/L			06/26/24 00:23	1
1,2-Dichloropropane	<1.00		1.00		ug/L			06/26/24 00:23	1
1,3-Dichloropropane	<1.00		1.00		ug/L			06/26/24 00:23	1
2,2-Dichloropropane	<4.00		4.00		ug/L			06/26/24 00:23	1
1,1-Dichloropropene	<1.00		1.00		ug/L			06/26/24 00:23	1
Ethylbenzene	<1.00		1.00		ug/L			06/26/24 00:23	1
Ethyl methacrylate	<2.00		2.00		ug/L			06/26/24 00:23	1
2-Hexanone	<10.0		10.0		ug/L			06/26/24 00:23	1
Iodomethane	<10.0		10.0		ug/L			06/26/24 00:23	1
Methacrylonitrile	<10.0		10.0		ug/L			06/26/24 00:23	1
Methylene Chloride	<5.00		5.00		ug/L			06/26/24 00:23	1
Methyl methacrylate	<2.00		2.00		ug/L			06/26/24 00:23	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			06/26/24 00:23	1
Naphthalene	<5.00		5.00		ug/L			06/26/24 00:23	1
Propionitrile	<10.0		10.0		ug/L			06/26/24 00:23	1
Styrene	<1.00		1.00		ug/L			06/26/24 00:23	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			06/26/24 00:23	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			06/26/24 00:23	1
Tetrachloroethene	<1.00		1.00		ug/L			06/26/24 00:23	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-10R

Lab Sample ID: 310-284193-4

Date Collected: 06/20/24 08:23

Matrix: Groundwater

Date Received: 06/21/24 16:40

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			06/26/24 00:23	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			06/26/24 00:23	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			06/26/24 00:23	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			06/26/24 00:23	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			06/26/24 00:23	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			06/26/24 00:23	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			06/26/24 00:23	1
Trichloroethene	<1.00		1.00		ug/L			06/26/24 00:23	1
Trichlorofluoromethane	<4.00		4.00		ug/L			06/26/24 00:23	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			06/26/24 00:23	1
Vinyl acetate	<10.0		10.0		ug/L			06/26/24 00:23	1
Vinyl chloride	<1.00		1.00		ug/L			06/26/24 00:23	1
Xylenes, Total	<3.00		3.00		ug/L			06/26/24 00:23	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		80 - 120					06/26/24 00:23	1
Dibromofluoromethane (Surr)	117		73 - 130					06/26/24 00:23	1
Toluene-d8 (Surr)	90		80 - 120					06/26/24 00:23	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Acenaphthylene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Acetophenone	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
2-Acetylaminofluorene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
4-Aminobiphenyl	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Anthracene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Benzo(a)anthracene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Benzo(a)pyrene	<10.0	*3	10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Benzo(b)fluoranthene	<10.0	*3	10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Benzo(g,h,i)perylene	<10.0	*3	10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Benzo(k)fluoranthene	<10.0	*3	10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Benzyl alcohol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Bis(2-chloroethoxy)methane	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Bis(2-chloroethyl)ether	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
bis(2-chloroisopropyl) ether	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Bis(2-ethylhexyl) phthalate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
4-Bromophenyl phenyl ether	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Butyl benzyl phthalate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
4-Chloroaniline	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Chlorobenzilate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
4-Chloro-3-methylphenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
2-Chloronaphthalene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
2-Chlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
4-Chlorophenyl phenyl ether	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Chrysene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Diallate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Dibenz(a,h)anthracene	<10.0	*3	10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Dibenzofuran	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-10R

Lab Sample ID: 310-284193-4

Date Collected: 06/20/24 08:23

Matrix: Groundwater

Date Received: 06/21/24 16:40

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
2,4-Dichlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
2,6-Dichlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Diethyl phthalate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Dimethoate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
7,12-Dimethylbenz(a)anthracene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
3,3'-Dimethylbenzidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
2,4-Dimethylphenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Dimethyl phthalate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Di-n-butyl phthalate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
1,3-Dinitrobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
4,6-Dinitro-2-methylphenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
2,4-Dinitrophenol	<20.0		20.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
2,4-Dinitrotoluene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
2,6-Dinitrotoluene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Di-n-octyl phthalate	<20.0	*3	20.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Dinoseb	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Diphenylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Disulfoton	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Ethyl methanesulfonate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Ethyl parathion	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Famphur	<10.0	*+	10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Fluoranthene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Fluorene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Hexachlorobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Hexachlorobutadiene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Hexachlorocyclopentadiene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Hexachloroethane	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Hexachloropropene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Indeno(1,2,3-cd)pyrene	<10.0	*3	10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Isodrin	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Isophorone	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Isosafrole	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Kepone	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Methapyrilene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
3-Methylcholanthrene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Methyl methanesulfonate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
2-Methylnaphthalene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Methyl parathion	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
2-Methylphenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
4-Methylphenol (and/or 3-Methylphenol)	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
1,4-Naphthoquinone	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
1-Naphthylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
2-Naphthylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
2-Nitroaniline	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
3-Nitroaniline	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
4-Nitroaniline	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Nitrobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-10R

Lab Sample ID: 310-284193-4

Date Collected: 06/20/24 08:23

Matrix: Groundwater

Date Received: 06/21/24 16:40

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
5-Nitro-o-toluidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
2-Nitrophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
4-Nitrophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
N-Nitrosodiethylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
N-Nitrosodimethylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
N-Nitrosodi-n-butylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
N-Nitrosodi-n-propylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
N-Nitrosodiphenylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
N-Nitrosomethylethylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
N-Nitrosopiperidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
N-Nitrosopyrrolidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
o,o',o"-Triethylphosphorothioate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
o-Toluidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
p-Dimethylamino azobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Pentachlorobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Pentachloronitrobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Pentachlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Phenacetin	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Phenanthrene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Phenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
1,4-Phenylenediamine	<10.0	*	10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Phorate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Pronamide	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
Pyrene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Safrole	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
1,2,4,5-Tetrachlorobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
2,3,4,6-Tetrachlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
Thionazin	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1
2,4,5-Trichlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
2,4,6-Trichlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:48	1
1,3,5-Trinitrobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:27	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	75		39 - 118	06/26/24 09:43	07/02/24 14:48	1
2-Fluorophenol (Surr)	74		25 - 110	06/26/24 09:43	07/02/24 14:48	1
Nitrobenzene-d5 (Surr)	97		45 - 129	06/26/24 09:43	07/02/24 14:48	1
Phenol-d5 (Surr)	59		21 - 110	06/26/24 09:43	07/02/24 14:48	1
Terphenyl-d14 (Surr)	99		12 - 144	06/26/24 09:43	07/02/24 14:48	1
2,4,6-Tribromophenol (Surr)	76		27 - 136	06/26/24 09:43	07/02/24 14:48	1

Method: SW846 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<10.0		10.0		mg/L			06/24/24 17:58	1
Isobutanol	<10.0		10.0		mg/L			06/24/24 17:58	1

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
4,4'-DDE	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-10R

Lab Sample ID: 310-284193-4

Date Collected: 06/20/24 08:23

Matrix: Groundwater

Date Received: 06/21/24 16:40

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
Aldrin	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
alpha-BHC	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
beta-BHC	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
Chlordane (technical)	<1.83		1.83		ug/L		06/26/24 08:19	06/27/24 12:40	1
delta-BHC	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
Dieldrin	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
Endosulfan I	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
Endosulfan II	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
Endosulfan sulfate	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
Endrin	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
Endrin aldehyde	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
gamma-BHC (Lindane)	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
Heptachlor	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
Heptachlor epoxide	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
Methoxychlor	<0.0916		0.0916		ug/L		06/26/24 08:19	06/27/24 12:40	1
Toxaphene	<1.83		1.83		ug/L		06/26/24 08:19	06/27/24 12:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	117		10 - 136				06/26/24 08:19	06/27/24 12:40	1
Tetrachloro-m-xylene (Surr)	99		10 - 130				06/26/24 08:19	06/27/24 12:40	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<1.83		1.83		ug/L		06/26/24 08:19	06/27/24 12:40	1
PCB-1221	<1.83		1.83		ug/L		06/26/24 08:19	06/27/24 12:40	1
PCB-1232	<1.83		1.83		ug/L		06/26/24 08:19	06/27/24 12:40	1
PCB-1242	<1.83		1.83		ug/L		06/26/24 08:19	06/27/24 12:40	1
PCB-1248	<1.83		1.83		ug/L		06/26/24 08:19	06/27/24 12:40	1
PCB-1254	<1.83		1.83		ug/L		06/26/24 08:19	06/27/24 12:40	1
PCB-1260	<1.83		1.83		ug/L		06/26/24 08:19	06/27/24 12:40	1
PCB-1268	<1.83		1.83		ug/L		06/26/24 08:19	06/27/24 12:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	117		10 - 136				06/26/24 08:19	06/27/24 12:40	1
Tetrachloro-m-xylene (Surr)	101		10 - 130				06/26/24 08:19	06/27/24 12:40	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.591	*-	0.591		ug/L		06/26/24 16:05	06/27/24 09:00	1
Silvex (2,4,5-TP)	<0.0492	*-	0.0492		ug/L		06/26/24 16:05	06/27/24 09:00	1
2,4,5-T	<0.148		0.148		ug/L		06/26/24 16:05	06/27/24 09:00	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCAA	60		34 - 142				06/26/24 16:05	06/27/24 09:00	1
DCAA	56		34 - 142				06/26/24 16:05	06/27/24 09:00	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-10R

Lab Sample ID: 310-284193-4

Date Collected: 06/20/24 08:23

Matrix: Groundwater

Date Received: 06/21/24 16:40

Method: SW846 8151A - Herbicides (GC) - RE

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	52		34 - 142	06/27/24 15:09	06/28/24 14:58	1
DCAA	51		34 - 142	06/27/24 15:09	06/28/24 14:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:26	1
Arsenic	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:26	1
Barium	0.534		0.00200		mg/L		06/25/24 09:00	07/12/24 19:26	1
Beryllium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:26	1
Cadmium	<0.000200		0.000200		mg/L		06/25/24 09:00	07/12/24 19:26	1
Chromium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:26	1
Cobalt	<0.000500		0.000500		mg/L		06/25/24 09:00	07/12/24 19:26	1
Copper	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:26	1
Lead	0.000676		0.000500		mg/L		06/25/24 09:00	07/12/24 19:26	1
Nickel	<0.00500		0.00500		mg/L		06/25/24 09:00	07/14/24 22:05	1
Selenium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:26	1
Silver	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:26	1
Thallium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:26	1
Tin	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:26	1
Vanadium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:26	1
Zinc	<0.0200		0.0200		mg/L		06/25/24 09:00	07/12/24 19:26	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		07/02/24 11:03	07/03/24 14:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (SW846 9012B)	<0.0100		0.0100		mg/L		06/27/24 10:02	06/28/24 17:34	1
Sulfide (SW846 9034)	<2.00		2.00		mg/L			06/25/24 16:10	1
Total Suspended Solids (USGS I-3765-85)	2.4		1.9		mg/L			06/25/24 10:39	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-11R

Lab Sample ID: 310-284193-5

Date Collected: 06/20/24 09:54

Matrix: Groundwater

Date Received: 06/21/24 16:40

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			06/26/24 00:44	1
Acrolein	<10.0		10.0		ug/L			06/26/24 00:44	1
Acrylonitrile	<5.00		5.00		ug/L			06/26/24 00:44	1
Allyl chloride	<2.00		2.00		ug/L			06/26/24 00:44	1
Benzene	0.937		0.500		ug/L			06/26/24 00:44	1
Bromochloromethane	<5.00		5.00		ug/L			06/26/24 00:44	1
Bromodichloromethane	<1.00		1.00		ug/L			06/26/24 00:44	1
Bromoform	<5.00		5.00		ug/L			06/26/24 00:44	1
Bromomethane	<4.00		4.00		ug/L			06/26/24 00:44	1
2-Butanone (MEK)	<10.0		10.0		ug/L			06/26/24 00:44	1
Carbon disulfide	<1.00		1.00		ug/L			06/26/24 00:44	1
Carbon tetrachloride	<2.00		2.00		ug/L			06/26/24 00:44	1
Chlorobenzene	<1.00		1.00		ug/L			06/26/24 00:44	1
Chlorodibromomethane	<5.00		5.00		ug/L			06/26/24 00:44	1
Chloroethane	<4.00		4.00		ug/L			06/26/24 00:44	1
Chloroform	<3.00		3.00		ug/L			06/26/24 00:44	1
Chloromethane	<3.00		3.00		ug/L			06/26/24 00:44	1
Chloroprene	<1.00		1.00		ug/L			06/26/24 00:44	1
cis-1,2-Dichloroethene	1.90		1.00		ug/L			06/26/24 00:44	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			06/26/24 00:44	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			06/26/24 00:44	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			06/26/24 00:44	1
Dibromomethane	<1.00		1.00		ug/L			06/26/24 00:44	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			06/26/24 00:44	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			06/26/24 00:44	1
1,4-Dichlorobenzene	1.61		1.00		ug/L			06/26/24 00:44	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			06/26/24 00:44	1
1,1-Dichloroethane	<1.00		1.00		ug/L			06/26/24 00:44	1
1,2-Dichloroethane	<1.00		1.00		ug/L			06/26/24 00:44	1
1,1-Dichloroethene	<2.00		2.00		ug/L			06/26/24 00:44	1
1,2-Dichloropropane	<1.00		1.00		ug/L			06/26/24 00:44	1
1,3-Dichloropropane	<1.00		1.00		ug/L			06/26/24 00:44	1
2,2-Dichloropropane	<4.00		4.00		ug/L			06/26/24 00:44	1
1,1-Dichloropropene	<1.00		1.00		ug/L			06/26/24 00:44	1
Ethylbenzene	<1.00		1.00		ug/L			06/26/24 00:44	1
Ethyl methacrylate	<2.00		2.00		ug/L			06/26/24 00:44	1
2-Hexanone	<10.0		10.0		ug/L			06/26/24 00:44	1
Iodomethane	<10.0		10.0		ug/L			06/26/24 00:44	1
Methacrylonitrile	<10.0		10.0		ug/L			06/26/24 00:44	1
Methylene Chloride	<5.00		5.00		ug/L			06/26/24 00:44	1
Methyl methacrylate	<2.00		2.00		ug/L			06/26/24 00:44	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			06/26/24 00:44	1
Naphthalene	<5.00		5.00		ug/L			06/26/24 00:44	1
Propionitrile	<10.0		10.0		ug/L			06/26/24 00:44	1
Styrene	<1.00		1.00		ug/L			06/26/24 00:44	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			06/26/24 00:44	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			06/26/24 00:44	1
Tetrachloroethene	<1.00		1.00		ug/L			06/26/24 00:44	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-11R

Lab Sample ID: 310-284193-5

Date Collected: 06/20/24 09:54

Matrix: Groundwater

Date Received: 06/21/24 16:40

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			06/26/24 00:44	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			06/26/24 00:44	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			06/26/24 00:44	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			06/26/24 00:44	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			06/26/24 00:44	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			06/26/24 00:44	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			06/26/24 00:44	1
Trichloroethene	<1.00		1.00		ug/L			06/26/24 00:44	1
Trichlorofluoromethane	<4.00		4.00		ug/L			06/26/24 00:44	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			06/26/24 00:44	1
Vinyl acetate	<10.0		10.0		ug/L			06/26/24 00:44	1
Vinyl chloride	<1.00		1.00		ug/L			06/26/24 00:44	1
Xylenes, Total	<3.00		3.00		ug/L			06/26/24 00:44	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	115		80 - 120		06/26/24 00:44	1
Dibromofluoromethane (Surr)	116		73 - 130		06/26/24 00:44	1
Toluene-d8 (Surr)	88		80 - 120		06/26/24 00:44	1

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Acenaphthylene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Acetophenone	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
2-Acetylaminofluorene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
4-Aminobiphenyl	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Anthracene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Benzo(a)anthracene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Benzo(a)pyrene	<10.0	*3	10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Benzo(b)fluoranthene	<10.0	*3	10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Benzo(g,h,i)perylene	<10.0	*3	10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Benzo(k)fluoranthene	<10.0	*3	10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Benzyl alcohol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Bis(2-chloroethoxy)methane	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Bis(2-chloroethyl)ether	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
bis(2-chloroisopropyl) ether	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Bis(2-ethylhexyl) phthalate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
4-Bromophenyl phenyl ether	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Butyl benzyl phthalate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
4-Chloroaniline	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Chlorobenzilate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
4-Chloro-3-methylphenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
2-Chloronaphthalene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
2-Chlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
4-Chlorophenyl phenyl ether	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Chrysene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Diallate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Dibenz(a,h)anthracene	<10.0	*3	10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Dibenzofuran	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-11R

Lab Sample ID: 310-284193-5

Date Collected: 06/20/24 09:54

Matrix: Groundwater

Date Received: 06/21/24 16:40

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
3,3'-Dichlorobenzidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
2,4-Dichlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
2,6-Dichlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Diethyl phthalate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Dimethoate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
7,12-Dimethylbenz(a)anthracene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
3,3'-Dimethylbenzidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
2,4-Dimethylphenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Dimethyl phthalate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Di-n-butyl phthalate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
1,3-Dinitrobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
4,6-Dinitro-2-methylphenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
2,4-Dinitrophenol	<20.0		20.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
2,4-Dinitrotoluene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
2,6-Dinitrotoluene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Di-n-octyl phthalate	<20.0	*3	20.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Dinoseb	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Diphenylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Disulfoton	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Ethyl methanesulfonate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Ethyl parathion	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Famphur	<10.0	*+	10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Fluoranthene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Fluorene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Hexachlorobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Hexachlorobutadiene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Hexachlorocyclopentadiene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Hexachloroethane	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Hexachloropropene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Indeno(1,2,3-cd)pyrene	<10.0	*3	10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Isodrin	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Isophorone	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Isosafrole	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Kepone	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Methapyrilene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
3-Methylcholanthrene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Methyl methanesulfonate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
2-Methylnaphthalene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Methyl parathion	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
2-Methylphenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
4-Methylphenol (and/or 3-Methylphenol)	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
1,4-Naphthoquinone	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
1-Naphthylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
2-Naphthylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
2-Nitroaniline	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
3-Nitroaniline	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
4-Nitroaniline	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Nitrobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-11R

Lab Sample ID: 310-284193-5

Date Collected: 06/20/24 09:54

Matrix: Groundwater

Date Received: 06/21/24 16:40

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
5-Nitro-o-toluidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
2-Nitrophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
4-Nitrophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
N-Nitrosodiethylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
N-Nitrosodimethylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
N-Nitrosodi-n-butylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
N-Nitrosodi-n-propylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
N-Nitrosodiphenylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
N-Nitrosomethylethylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
N-Nitrosopiperidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
N-Nitrosopyrrolidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
o,o',o"-Triethylphosphorothioate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
o-Toluidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
p-Dimethylamino azobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Pentachlorobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Pentachloronitrobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Pentachlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Phenacetin	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Phenanthrene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Phenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
1,4-Phenylenediamine	<10.0	*	10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Phorate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Pronamide	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
Pyrene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Safrole	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
1,2,4,5-Tetrachlorobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
2,3,4,6-Tetrachlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
Thionazin	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1
2,4,5-Trichlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
2,4,6-Trichlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 15:15	1
1,3,5-Trinitrobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 14:52	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	65		39 - 118	06/26/24 09:43	07/02/24 15:15	1
2-Fluorophenol (Surr)	64		25 - 110	06/26/24 09:43	07/02/24 15:15	1
Nitrobenzene-d5 (Surr)	84		45 - 129	06/26/24 09:43	07/02/24 15:15	1
Phenol-d5 (Surr)	54		21 - 110	06/26/24 09:43	07/02/24 15:15	1
Terphenyl-d14 (Surr)	91		12 - 144	06/26/24 09:43	07/02/24 15:15	1
2,4,6-Tribromophenol (Surr)	73		27 - 136	06/26/24 09:43	07/02/24 15:15	1

Method: SW846 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetonitrile	<10.0		10.0		mg/L			06/24/24 18:19	1
Isobutanol	<10.0		10.0		mg/L			06/24/24 18:19	1

Method: SW846 8081B - Organochlorine Pesticides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDD	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
4,4'-DDE	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-11R

Lab Sample ID: 310-284193-5

Date Collected: 06/20/24 09:54

Matrix: Groundwater

Date Received: 06/21/24 16:40

Method: SW846 8081B - Organochlorine Pesticides (GC) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4,4'-DDT	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
Aldrin	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
alpha-BHC	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
beta-BHC	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
Chlordane (technical)	<1.89		1.89		ug/L		06/26/24 08:19	06/27/24 12:57	1
delta-BHC	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
Dieldrin	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
Endosulfan I	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
Endosulfan II	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
Endosulfan sulfate	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
Endrin	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
Endrin aldehyde	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
gamma-BHC (Lindane)	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
Heptachlor	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
Heptachlor epoxide	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
Methoxychlor	<0.0943		0.0943		ug/L		06/26/24 08:19	06/27/24 12:57	1
Toxaphene	<1.89		1.89		ug/L		06/26/24 08:19	06/27/24 12:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	93		10 - 136	06/26/24 08:19	06/27/24 12:57	1
Tetrachloro-m-xylene (Surr)	80		10 - 130	06/26/24 08:19	06/27/24 12:57	1

Method: SW846 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
PCB-1016	<1.89		1.89		ug/L		06/26/24 08:19	06/27/24 12:57	1
PCB-1221	<1.89		1.89		ug/L		06/26/24 08:19	06/27/24 12:57	1
PCB-1232	<1.89		1.89		ug/L		06/26/24 08:19	06/27/24 12:57	1
PCB-1242	<1.89		1.89		ug/L		06/26/24 08:19	06/27/24 12:57	1
PCB-1248	<1.89		1.89		ug/L		06/26/24 08:19	06/27/24 12:57	1
PCB-1254	<1.89		1.89		ug/L		06/26/24 08:19	06/27/24 12:57	1
PCB-1260	<1.89		1.89		ug/L		06/26/24 08:19	06/27/24 12:57	1
PCB-1268	<1.89		1.89		ug/L		06/26/24 08:19	06/27/24 12:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	93		10 - 136	06/26/24 08:19	06/27/24 12:57	1
Tetrachloro-m-xylene (Surr)	81		10 - 130	06/26/24 08:19	06/27/24 12:57	1

Method: SW846 8151A - Herbicides (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4-D	<0.629	*-	0.629		ug/L		06/26/24 16:05	06/27/24 09:28	1
Silvex (2,4,5-TP)	<0.0524	*-	0.0524		ug/L		06/26/24 16:05	06/27/24 09:28	1
2,4,5-T	<0.157		0.157		ug/L		06/26/24 16:05	06/27/24 09:28	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	56		34 - 142	06/26/24 16:05	06/27/24 09:28	1
DCAA	59		34 - 142	06/26/24 16:05	06/27/24 09:28	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-11R

Lab Sample ID: 310-284193-5

Date Collected: 06/20/24 09:54

Matrix: Groundwater

Date Received: 06/21/24 16:40

Method: SW846 8151A - Herbicides (GC) - RE

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCAA	52		34 - 142	06/27/24 15:09	06/28/24 15:26	1
DCAA	54		34 - 142	06/27/24 15:09	06/28/24 15:26	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	102		20.0		mg/L			06/24/24 10:30	20

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200	H	0.200		mg/L			06/24/24 09:29	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:28	1
Arsenic	0.00315		0.00200		mg/L		06/25/24 09:00	07/12/24 19:28	1
Barium	0.642		0.00200		mg/L		06/25/24 09:00	07/12/24 19:28	1
Beryllium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:28	1
Cadmium	<0.000200		0.000200		mg/L		06/25/24 09:00	07/12/24 19:28	1
Chromium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:28	1
Cobalt	0.00238		0.000500		mg/L		06/25/24 09:00	07/12/24 19:28	1
Copper	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:28	1
Lead	<0.000500		0.000500		mg/L		06/25/24 09:00	07/12/24 19:28	1
Nickel	0.00986		0.00500		mg/L		06/25/24 09:00	07/14/24 22:08	1
Selenium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:28	1
Silver	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:28	1
Thallium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:28	1
Tin	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:28	1
Vanadium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:28	1
Zinc	<0.0200		0.0200		mg/L		06/25/24 09:00	07/12/24 19:28	1
Iron	3.17		0.100		mg/L		06/25/24 09:00	07/12/24 19:28	1
Manganese	2.37		0.0100		mg/L		06/25/24 09:00	07/12/24 19:28	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		07/02/24 11:03	07/03/24 14:40	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (SW846 9012B)	<0.0100		0.0100		mg/L		06/27/24 10:02	06/28/24 17:33	1
Sulfide (SW846 9034)	<2.00		2.00		mg/L			06/25/24 16:10	1
Total Suspended Solids (USGS I-3765-85)	13.3		3.8		mg/L			06/25/24 10:39	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-26R

Lab Sample ID: 310-284193-6

Date Collected: 06/19/24 12:13

Matrix: Groundwater

Date Received: 06/21/24 16:40

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			06/26/24 01:06	1
Acrylonitrile	<5.00		5.00		ug/L			06/26/24 01:06	1
Benzene	<0.500		0.500		ug/L			06/26/24 01:06	1
Bromochloromethane	<5.00		5.00		ug/L			06/26/24 01:06	1
Bromodichloromethane	<1.00		1.00		ug/L			06/26/24 01:06	1
Bromoform	<5.00		5.00		ug/L			06/26/24 01:06	1
Bromomethane	<4.00		4.00		ug/L			06/26/24 01:06	1
2-Butanone (MEK)	<10.0		10.0		ug/L			06/26/24 01:06	1
Carbon disulfide	<1.00		1.00		ug/L			06/26/24 01:06	1
Carbon tetrachloride	<2.00		2.00		ug/L			06/26/24 01:06	1
Chlorobenzene	<1.00		1.00		ug/L			06/26/24 01:06	1
Chlorodibromomethane	<5.00		5.00		ug/L			06/26/24 01:06	1
Chloroethane	<4.00		4.00		ug/L			06/26/24 01:06	1
Chloroform	<3.00		3.00		ug/L			06/26/24 01:06	1
Chloromethane	<3.00		3.00		ug/L			06/26/24 01:06	1
cis-1,2-Dichloroethene	13.2		1.00		ug/L			06/26/24 01:06	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			06/26/24 01:06	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			06/26/24 01:06	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			06/26/24 01:06	1
Dibromomethane	<1.00		1.00		ug/L			06/26/24 01:06	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			06/26/24 01:06	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			06/26/24 01:06	1
1,1-Dichloroethane	1.22		1.00		ug/L			06/26/24 01:06	1
1,2-Dichloroethane	<1.00		1.00		ug/L			06/26/24 01:06	1
1,1-Dichloroethene	<2.00		2.00		ug/L			06/26/24 01:06	1
1,2-Dichloropropane	<1.00		1.00		ug/L			06/26/24 01:06	1
Ethylbenzene	<1.00		1.00		ug/L			06/26/24 01:06	1
2-Hexanone	<10.0		10.0		ug/L			06/26/24 01:06	1
Iodomethane	<10.0		10.0		ug/L			06/26/24 01:06	1
Methylene Chloride	<5.00		5.00		ug/L			06/26/24 01:06	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			06/26/24 01:06	1
Styrene	<1.00		1.00		ug/L			06/26/24 01:06	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			06/26/24 01:06	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			06/26/24 01:06	1
Tetrachloroethene	<1.00		1.00		ug/L			06/26/24 01:06	1
Toluene	<1.00		1.00		ug/L			06/26/24 01:06	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			06/26/24 01:06	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			06/26/24 01:06	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			06/26/24 01:06	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			06/26/24 01:06	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			06/26/24 01:06	1
Trichloroethene	<1.00		1.00		ug/L			06/26/24 01:06	1
Trichlorofluoromethane	<4.00		4.00		ug/L			06/26/24 01:06	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			06/26/24 01:06	1
Vinyl acetate	<10.0		10.0		ug/L			06/26/24 01:06	1
Vinyl chloride	<1.00		1.00		ug/L			06/26/24 01:06	1
Xylenes, Total	<3.00		3.00		ug/L			06/26/24 01:06	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-26R

Lab Sample ID: 310-284193-6

Date Collected: 06/19/24 12:13

Matrix: Groundwater

Date Received: 06/21/24 16:40

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120		06/26/24 01:06	1
Dibromofluoromethane (Surr)	120		73 - 130		06/26/24 01:06	1
Toluene-d8 (Surr)	91		80 - 120		06/26/24 01:06	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	15.2		1.00		mg/L			06/24/24 09:41	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200	H H3	0.200		mg/L			06/24/24 09:41	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:30	1
Arsenic	0.0276		0.00200		mg/L		06/25/24 09:00	07/12/24 19:30	1
Barium	0.762		0.00200		mg/L		06/25/24 09:00	07/12/24 19:30	1
Beryllium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:30	1
Cadmium	<0.000200		0.000200		mg/L		06/25/24 09:00	07/12/24 19:30	1
Chromium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:30	1
Cobalt	0.00506		0.000500		mg/L		06/25/24 09:00	07/12/24 19:30	1
Copper	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:30	1
Iron	2.46		0.100		mg/L		06/25/24 09:00	07/12/24 19:30	1
Lead	<0.000500		0.000500		mg/L		06/25/24 09:00	07/12/24 19:30	1
Manganese	2.90		0.0100		mg/L		06/25/24 09:00	07/12/24 19:30	1
Nickel	0.0153		0.00500		mg/L		06/25/24 09:00	07/15/24 14:06	1
Selenium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:30	1
Silver	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:30	1
Thallium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:30	1
Vanadium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:30	1
Zinc	<0.0200		0.0200		mg/L		06/25/24 09:00	07/12/24 19:30	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<2.00		2.00		mg/L			06/25/24 16:10	1
Total Suspended Solids (USGS I-3765-85)	33.0		7.5		mg/L			06/25/24 10:01	1

Client Sample Results

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-27R

Lab Sample ID: 310-284193-7

Date Collected: 06/20/24 09:07

Matrix: Groundwater

Date Received: 06/21/24 16:40

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			06/26/24 01:28	1
Acrylonitrile	<5.00		5.00		ug/L			06/26/24 01:28	1
Benzene	<0.500		0.500		ug/L			06/26/24 01:28	1
Bromochloromethane	<5.00		5.00		ug/L			06/26/24 01:28	1
Bromodichloromethane	<1.00		1.00		ug/L			06/26/24 01:28	1
Bromoform	<5.00		5.00		ug/L			06/26/24 01:28	1
Bromomethane	<4.00		4.00		ug/L			06/26/24 01:28	1
2-Butanone (MEK)	<10.0		10.0		ug/L			06/26/24 01:28	1
Carbon disulfide	<1.00		1.00		ug/L			06/26/24 01:28	1
Carbon tetrachloride	<2.00		2.00		ug/L			06/26/24 01:28	1
Chlorobenzene	2.68		1.00		ug/L			06/26/24 01:28	1
Chlorodibromomethane	<5.00		5.00		ug/L			06/26/24 01:28	1
Chloroethane	<4.00		4.00		ug/L			06/26/24 01:28	1
Chloroform	<3.00		3.00		ug/L			06/26/24 01:28	1
Chloromethane	<3.00		3.00		ug/L			06/26/24 01:28	1
cis-1,2-Dichloroethene	40.1		1.00		ug/L			06/26/24 01:28	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			06/26/24 01:28	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			06/26/24 01:28	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			06/26/24 01:28	1
Dibromomethane	<1.00		1.00		ug/L			06/26/24 01:28	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			06/26/24 01:28	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			06/26/24 01:28	1
1,1-Dichloroethane	4.20		1.00		ug/L			06/26/24 01:28	1
1,2-Dichloroethane	<1.00		1.00		ug/L			06/26/24 01:28	1
1,1-Dichloroethene	<2.00		2.00		ug/L			06/26/24 01:28	1
1,2-Dichloropropane	<1.00		1.00		ug/L			06/26/24 01:28	1
Ethylbenzene	<1.00		1.00		ug/L			06/26/24 01:28	1
2-Hexanone	<10.0		10.0		ug/L			06/26/24 01:28	1
Iodomethane	<10.0		10.0		ug/L			06/26/24 01:28	1
Methylene Chloride	<5.00		5.00		ug/L			06/26/24 01:28	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			06/26/24 01:28	1
Styrene	<1.00		1.00		ug/L			06/26/24 01:28	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			06/26/24 01:28	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			06/26/24 01:28	1
Tetrachloroethene	<1.00		1.00		ug/L			06/26/24 01:28	1
Toluene	<1.00		1.00		ug/L			06/26/24 01:28	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			06/26/24 01:28	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			06/26/24 01:28	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			06/26/24 01:28	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			06/26/24 01:28	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			06/26/24 01:28	1
Trichloroethene	3.33		1.00		ug/L			06/26/24 01:28	1
Trichlorofluoromethane	<4.00		4.00		ug/L			06/26/24 01:28	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			06/26/24 01:28	1
Vinyl acetate	<10.0		10.0		ug/L			06/26/24 01:28	1
Vinyl chloride	<1.00		1.00		ug/L			06/26/24 01:28	1
Xylenes, Total	<3.00		3.00		ug/L			06/26/24 01:28	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-27R

Lab Sample ID: 310-284193-7

Date Collected: 06/20/24 09:07

Matrix: Groundwater

Date Received: 06/21/24 16:40

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	114		80 - 120		06/26/24 01:28	1
Dibromofluoromethane (Surr)	115		73 - 130		06/26/24 01:28	1
Toluene-d8 (Surr)	90		80 - 120		06/26/24 01:28	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	30.5		1.00		mg/L			06/24/24 09:54	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200	H	0.200		mg/L			06/24/24 09:54	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:32	1
Arsenic	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:32	1
Barium	0.720		0.00200		mg/L		06/25/24 09:00	07/12/24 19:32	1
Beryllium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:32	1
Cadmium	<0.000200		0.000200		mg/L		06/25/24 09:00	07/12/24 19:32	1
Chromium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:32	1
Cobalt	0.00963		0.000500		mg/L		06/25/24 09:00	07/12/24 19:32	1
Copper	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:32	1
Iron	1.28		0.100		mg/L		06/25/24 09:00	07/12/24 19:32	1
Lead	<0.000500		0.000500		mg/L		06/25/24 09:00	07/12/24 19:32	1
Manganese	4.50		0.0100		mg/L		06/25/24 09:00	07/12/24 19:32	1
Nickel	0.0158		0.00500		mg/L		06/25/24 09:00	07/14/24 22:16	1
Selenium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:32	1
Silver	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:32	1
Thallium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:32	1
Vanadium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:32	1
Zinc	<0.0200		0.0200		mg/L		06/25/24 09:00	07/12/24 19:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	21.8		3.8		mg/L			06/25/24 10:39	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-29
Date Collected: 06/19/24 11:02
Date Received: 06/21/24 16:40

Lab Sample ID: 310-284193-8
Matrix: Groundwater

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			06/26/24 01:50	1
Acrylonitrile	<5.00		5.00		ug/L			06/26/24 01:50	1
Benzene	<0.500		0.500		ug/L			06/26/24 01:50	1
Bromochloromethane	<5.00		5.00		ug/L			06/26/24 01:50	1
Bromodichloromethane	<1.00		1.00		ug/L			06/26/24 01:50	1
Bromoform	<5.00		5.00		ug/L			06/26/24 01:50	1
Bromomethane	<4.00		4.00		ug/L			06/26/24 01:50	1
2-Butanone (MEK)	<10.0		10.0		ug/L			06/26/24 01:50	1
Carbon disulfide	<1.00		1.00		ug/L			06/26/24 01:50	1
Carbon tetrachloride	<2.00		2.00		ug/L			06/26/24 01:50	1
Chlorobenzene	<1.00		1.00		ug/L			06/26/24 01:50	1
Chlorodibromomethane	<5.00		5.00		ug/L			06/26/24 01:50	1
Chloroethane	<4.00		4.00		ug/L			06/26/24 01:50	1
Chloroform	<3.00		3.00		ug/L			06/26/24 01:50	1
Chloromethane	<3.00		3.00		ug/L			06/26/24 01:50	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			06/26/24 01:50	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			06/26/24 01:50	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			06/26/24 01:50	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			06/26/24 01:50	1
Dibromomethane	<1.00		1.00		ug/L			06/26/24 01:50	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			06/26/24 01:50	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			06/26/24 01:50	1
1,1-Dichloroethane	<1.00		1.00		ug/L			06/26/24 01:50	1
1,2-Dichloroethane	<1.00		1.00		ug/L			06/26/24 01:50	1
1,1-Dichloroethene	<2.00		2.00		ug/L			06/26/24 01:50	1
1,2-Dichloropropane	<1.00		1.00		ug/L			06/26/24 01:50	1
Ethylbenzene	<1.00		1.00		ug/L			06/26/24 01:50	1
2-Hexanone	<10.0		10.0		ug/L			06/26/24 01:50	1
Iodomethane	<10.0		10.0		ug/L			06/26/24 01:50	1
Methylene Chloride	<5.00		5.00		ug/L			06/26/24 01:50	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			06/26/24 01:50	1
Styrene	<1.00		1.00		ug/L			06/26/24 01:50	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			06/26/24 01:50	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			06/26/24 01:50	1
Tetrachloroethene	<1.00		1.00		ug/L			06/26/24 01:50	1
Toluene	<1.00		1.00		ug/L			06/26/24 01:50	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			06/26/24 01:50	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			06/26/24 01:50	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			06/26/24 01:50	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			06/26/24 01:50	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			06/26/24 01:50	1
Trichloroethene	<1.00		1.00		ug/L			06/26/24 01:50	1
Trichlorofluoromethane	<4.00		4.00		ug/L			06/26/24 01:50	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			06/26/24 01:50	1
Vinyl acetate	<10.0		10.0		ug/L			06/26/24 01:50	1
Vinyl chloride	<1.00		1.00		ug/L			06/26/24 01:50	1
Xylenes, Total	<3.00		3.00		ug/L			06/26/24 01:50	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-29

Lab Sample ID: 310-284193-8

Date Collected: 06/19/24 11:02

Matrix: Groundwater

Date Received: 06/21/24 16:40

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	107		80 - 120		06/26/24 01:50	1
Dibromofluoromethane (Surr)	125		73 - 130		06/26/24 01:50	1
Toluene-d8 (Surr)	89		80 - 120		06/26/24 01:50	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:35	1
Arsenic	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:35	1
Barium	0.330		0.00200		mg/L		06/25/24 09:00	07/12/24 19:35	1
Beryllium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:35	1
Cadmium	<0.000200		0.000200		mg/L		06/25/24 09:00	07/12/24 19:35	1
Chromium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:35	1
Cobalt	<0.000500		0.000500		mg/L		06/25/24 09:00	07/12/24 19:35	1
Copper	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:35	1
Lead	<0.000500		0.000500		mg/L		06/25/24 09:00	07/12/24 19:35	1
Nickel	<0.00500		0.00500		mg/L		06/25/24 09:00	07/14/24 22:19	1
Selenium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:35	1
Silver	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:35	1
Thallium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:35	1
Vanadium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:35	1
Zinc	<0.0200		0.0200		mg/L		06/25/24 09:00	07/12/24 19:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.9		1.9		mg/L			06/25/24 08:59	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-D

Lab Sample ID: 310-284193-9

Date Collected: 06/20/24 09:07

Matrix: Groundwater

Date Received: 06/21/24 16:40

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			06/26/24 02:12	1
Acrylonitrile	<5.00		5.00		ug/L			06/26/24 02:12	1
Benzene	<0.500		0.500		ug/L			06/26/24 02:12	1
Bromochloromethane	<5.00		5.00		ug/L			06/26/24 02:12	1
Bromodichloromethane	<1.00		1.00		ug/L			06/26/24 02:12	1
Bromoform	<5.00		5.00		ug/L			06/26/24 02:12	1
Bromomethane	<4.00		4.00		ug/L			06/26/24 02:12	1
2-Butanone (MEK)	<10.0		10.0		ug/L			06/26/24 02:12	1
Carbon disulfide	<1.00		1.00		ug/L			06/26/24 02:12	1
Carbon tetrachloride	<2.00		2.00		ug/L			06/26/24 02:12	1
Chlorobenzene	2.64		1.00		ug/L			06/26/24 02:12	1
Chlorodibromomethane	<5.00		5.00		ug/L			06/26/24 02:12	1
Chloroethane	<4.00		4.00		ug/L			06/26/24 02:12	1
Chloroform	<3.00		3.00		ug/L			06/26/24 02:12	1
Chloromethane	<3.00		3.00		ug/L			06/26/24 02:12	1
cis-1,2-Dichloroethene	40.6		1.00		ug/L			06/26/24 02:12	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			06/26/24 02:12	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			06/26/24 02:12	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			06/26/24 02:12	1
Dibromomethane	<1.00		1.00		ug/L			06/26/24 02:12	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			06/26/24 02:12	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			06/26/24 02:12	1
1,1-Dichloroethane	4.38		1.00		ug/L			06/26/24 02:12	1
1,2-Dichloroethane	<1.00		1.00		ug/L			06/26/24 02:12	1
1,1-Dichloroethene	<2.00		2.00		ug/L			06/26/24 02:12	1
1,2-Dichloropropane	<1.00		1.00		ug/L			06/26/24 02:12	1
Ethylbenzene	<1.00		1.00		ug/L			06/26/24 02:12	1
2-Hexanone	<10.0		10.0		ug/L			06/26/24 02:12	1
Iodomethane	<10.0		10.0		ug/L			06/26/24 02:12	1
Methylene Chloride	<5.00		5.00		ug/L			06/26/24 02:12	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			06/26/24 02:12	1
Styrene	<1.00		1.00		ug/L			06/26/24 02:12	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			06/26/24 02:12	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			06/26/24 02:12	1
Tetrachloroethene	<1.00		1.00		ug/L			06/26/24 02:12	1
Toluene	<1.00		1.00		ug/L			06/26/24 02:12	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			06/26/24 02:12	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			06/26/24 02:12	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			06/26/24 02:12	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			06/26/24 02:12	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			06/26/24 02:12	1
Trichloroethene	3.56		1.00		ug/L			06/26/24 02:12	1
Trichlorofluoromethane	<4.00		4.00		ug/L			06/26/24 02:12	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			06/26/24 02:12	1
Vinyl acetate	<10.0		10.0		ug/L			06/26/24 02:12	1
Vinyl chloride	<1.00		1.00		ug/L			06/26/24 02:12	1
Xylenes, Total	<3.00		3.00		ug/L			06/26/24 02:12	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-D
Date Collected: 06/20/24 09:07
Date Received: 06/21/24 16:40

Lab Sample ID: 310-284193-9
Matrix: Groundwater

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	112		80 - 120		06/26/24 02:12	1
Dibromofluoromethane (Surr)	121		73 - 130		06/26/24 02:12	1
Toluene-d8 (Surr)	91		80 - 120		06/26/24 02:12	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfate	30.6		1.00		mg/L			06/24/24 10:06	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200	H	0.200		mg/L			06/24/24 10:06	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:37	1
Arsenic	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 19:37	1
Barium	0.724		0.00200		mg/L		06/25/24 09:00	07/12/24 19:37	1
Beryllium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:37	1
Cadmium	<0.000200		0.000200		mg/L		06/25/24 09:00	07/12/24 19:37	1
Chromium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:37	1
Cobalt	0.00955		0.000500		mg/L		06/25/24 09:00	07/12/24 19:37	1
Copper	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:37	1
Iron	1.27		0.100		mg/L		06/25/24 09:00	07/12/24 19:37	1
Lead	<0.000500		0.000500		mg/L		06/25/24 09:00	07/12/24 19:37	1
Manganese	4.57		0.0100		mg/L		06/25/24 09:00	07/12/24 19:37	1
Nickel	0.0195		0.00500		mg/L		06/25/24 09:00	07/14/24 22:23	1
Selenium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:37	1
Silver	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:37	1
Thallium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 19:37	1
Vanadium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 19:37	1
Zinc	<0.0200		0.0200		mg/L		06/25/24 09:00	07/12/24 19:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	33.0		3.8		mg/L			06/25/24 10:01	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-284193-10

Date Collected: 06/20/24 00:00

Matrix: Trip Blank

Date Received: 06/21/24 16:40

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			06/24/24 13:40	1
Acrolein	<10.0		10.0		ug/L			06/24/24 13:40	1
Acrylonitrile	<5.00		5.00		ug/L			06/24/24 13:40	1
Allyl chloride	<2.00		2.00		ug/L			06/24/24 13:40	1
Benzene	<0.500		0.500		ug/L			06/24/24 13:40	1
Bromochloromethane	<5.00		5.00		ug/L			06/24/24 13:40	1
Bromodichloromethane	<1.00		1.00		ug/L			06/24/24 13:40	1
Bromoform	<5.00		5.00		ug/L			06/24/24 13:40	1
Bromomethane	<4.00		4.00		ug/L			06/24/24 13:40	1
2-Butanone (MEK)	<10.0		10.0		ug/L			06/24/24 13:40	1
Carbon disulfide	<1.00		1.00		ug/L			06/24/24 13:40	1
Carbon tetrachloride	<2.00		2.00		ug/L			06/24/24 13:40	1
Chlorobenzene	<1.00		1.00		ug/L			06/24/24 13:40	1
Chlorodibromomethane	<5.00		5.00		ug/L			06/24/24 13:40	1
Chloroethane	<4.00		4.00		ug/L			06/24/24 13:40	1
Chloroform	<3.00		3.00		ug/L			06/24/24 13:40	1
Chloromethane	<3.00		3.00		ug/L			06/24/24 13:40	1
Chloroprene	<1.00		1.00		ug/L			06/24/24 13:40	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			06/24/24 13:40	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			06/24/24 13:40	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			06/24/24 13:40	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			06/24/24 13:40	1
Dibromomethane	<1.00		1.00		ug/L			06/24/24 13:40	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			06/24/24 13:40	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			06/24/24 13:40	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			06/24/24 13:40	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			06/24/24 13:40	1
1,1-Dichloroethane	<1.00		1.00		ug/L			06/24/24 13:40	1
1,2-Dichloroethane	<1.00		1.00		ug/L			06/24/24 13:40	1
1,1-Dichloroethene	<2.00		2.00		ug/L			06/24/24 13:40	1
1,2-Dichloropropane	<1.00		1.00		ug/L			06/24/24 13:40	1
1,3-Dichloropropane	<1.00		1.00		ug/L			06/24/24 13:40	1
2,2-Dichloropropane	<4.00		4.00		ug/L			06/24/24 13:40	1
1,1-Dichloropropene	<1.00		1.00		ug/L			06/24/24 13:40	1
Ethylbenzene	<1.00		1.00		ug/L			06/24/24 13:40	1
Ethyl methacrylate	<2.00		2.00		ug/L			06/24/24 13:40	1
2-Hexanone	<10.0		10.0		ug/L			06/24/24 13:40	1
Iodomethane	<10.0		10.0		ug/L			06/24/24 13:40	1
Methacrylonitrile	<10.0		10.0		ug/L			06/24/24 13:40	1
Methylene Chloride	<5.00		5.00		ug/L			06/24/24 13:40	1
Methyl methacrylate	<2.00		2.00		ug/L			06/24/24 13:40	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			06/24/24 13:40	1
Naphthalene	<5.00		5.00		ug/L			06/24/24 13:40	1
Propionitrile	<10.0		10.0		ug/L			06/24/24 13:40	1
Styrene	<1.00		1.00		ug/L			06/24/24 13:40	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			06/24/24 13:40	1
1,1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			06/24/24 13:40	1
Tetrachloroethene	<1.00		1.00		ug/L			06/24/24 13:40	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-284193-10

Date Collected: 06/20/24 00:00

Matrix: Trip Blank

Date Received: 06/21/24 16:40

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			06/24/24 13:40	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			06/24/24 13:40	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			06/24/24 13:40	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			06/24/24 13:40	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			06/24/24 13:40	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			06/24/24 13:40	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			06/24/24 13:40	1
Trichloroethene	<1.00		1.00		ug/L			06/24/24 13:40	1
Trichlorofluoromethane	<4.00		4.00		ug/L			06/24/24 13:40	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			06/24/24 13:40	1
Vinyl acetate	<10.0		10.0		ug/L			06/24/24 13:40	1
Vinyl chloride	<1.00		1.00		ug/L			06/24/24 13:40	1
Xylenes, Total	<3.00		3.00		ug/L			06/24/24 13:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120		06/24/24 13:40	1
Dibromofluoromethane (Surr)	107		73 - 130		06/24/24 13:40	1
Toluene-d8 (Surr)	98		80 - 120		06/24/24 13:40	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-284193-11

Date Collected: 06/20/24 00:00

Matrix: Water

Date Received: 06/21/24 16:40

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			06/24/24 14:03	1
Acrolein	<10.0		10.0		ug/L			06/24/24 14:03	1
Acrylonitrile	<5.00		5.00		ug/L			06/24/24 14:03	1
Allyl chloride	<2.00		2.00		ug/L			06/24/24 14:03	1
Benzene	<0.500		0.500		ug/L			06/24/24 14:03	1
Bromochloromethane	<5.00		5.00		ug/L			06/24/24 14:03	1
Bromodichloromethane	<1.00		1.00		ug/L			06/24/24 14:03	1
Bromoform	<5.00		5.00		ug/L			06/24/24 14:03	1
Bromomethane	<4.00		4.00		ug/L			06/24/24 14:03	1
2-Butanone (MEK)	<10.0		10.0		ug/L			06/24/24 14:03	1
Carbon disulfide	<1.00		1.00		ug/L			06/24/24 14:03	1
Carbon tetrachloride	<2.00		2.00		ug/L			06/24/24 14:03	1
Chlorobenzene	<1.00		1.00		ug/L			06/24/24 14:03	1
Chlorodibromomethane	<5.00		5.00		ug/L			06/24/24 14:03	1
Chloroethane	<4.00		4.00		ug/L			06/24/24 14:03	1
Chloroform	<3.00		3.00		ug/L			06/24/24 14:03	1
Chloromethane	<3.00		3.00		ug/L			06/24/24 14:03	1
Chloroprene	<1.00		1.00		ug/L			06/24/24 14:03	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			06/24/24 14:03	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			06/24/24 14:03	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			06/24/24 14:03	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			06/24/24 14:03	1
Dibromomethane	<1.00		1.00		ug/L			06/24/24 14:03	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			06/24/24 14:03	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			06/24/24 14:03	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			06/24/24 14:03	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			06/24/24 14:03	1
1,1-Dichloroethane	<1.00		1.00		ug/L			06/24/24 14:03	1
1,2-Dichloroethane	<1.00		1.00		ug/L			06/24/24 14:03	1
1,1-Dichloroethene	<2.00		2.00		ug/L			06/24/24 14:03	1
1,2-Dichloropropane	<1.00		1.00		ug/L			06/24/24 14:03	1
1,3-Dichloropropane	<1.00		1.00		ug/L			06/24/24 14:03	1
2,2-Dichloropropane	<4.00		4.00		ug/L			06/24/24 14:03	1
1,1-Dichloropropene	<1.00		1.00		ug/L			06/24/24 14:03	1
Ethylbenzene	<1.00		1.00		ug/L			06/24/24 14:03	1
Ethyl methacrylate	<2.00		2.00		ug/L			06/24/24 14:03	1
2-Hexanone	<10.0		10.0		ug/L			06/24/24 14:03	1
Iodomethane	<10.0		10.0		ug/L			06/24/24 14:03	1
Methacrylonitrile	<10.0		10.0		ug/L			06/24/24 14:03	1
Methylene Chloride	<5.00		5.00		ug/L			06/24/24 14:03	1
Methyl methacrylate	<2.00		2.00		ug/L			06/24/24 14:03	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			06/24/24 14:03	1
Naphthalene	<5.00		5.00		ug/L			06/24/24 14:03	1
Propionitrile	<10.0		10.0		ug/L			06/24/24 14:03	1
Styrene	<1.00		1.00		ug/L			06/24/24 14:03	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			06/24/24 14:03	1
1,1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			06/24/24 14:03	1
Tetrachloroethene	<1.00		1.00		ug/L			06/24/24 14:03	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-284193-11

Date Collected: 06/20/24 00:00

Matrix: Water

Date Received: 06/21/24 16:40

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			06/24/24 14:03	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			06/24/24 14:03	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			06/24/24 14:03	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			06/24/24 14:03	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			06/24/24 14:03	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			06/24/24 14:03	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			06/24/24 14:03	1
Trichloroethene	<1.00		1.00		ug/L			06/24/24 14:03	1
Trichlorofluoromethane	<4.00		4.00		ug/L			06/24/24 14:03	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			06/24/24 14:03	1
Vinyl acetate	<10.0		10.0		ug/L			06/24/24 14:03	1
Vinyl chloride	<1.00		1.00		ug/L			06/24/24 14:03	1
Xylenes, Total	<3.00		3.00		ug/L			06/24/24 14:03	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120		06/24/24 14:03	1
Dibromofluoromethane (Surr)	108		73 - 130		06/24/24 14:03	1
Toluene-d8 (Surr)	98		80 - 120		06/24/24 14:03	1

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: Trip Blank 3

Lab Sample ID: 310-284193-12

Date Collected: 06/20/24 00:00

Matrix: Water

Date Received: 06/21/24 16:40

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			06/25/24 22:56	1
Acrolein	<10.0		10.0		ug/L			06/25/24 22:56	1
Acrylonitrile	<5.00		5.00		ug/L			06/25/24 22:56	1
Allyl chloride	<2.00		2.00		ug/L			06/25/24 22:56	1
Benzene	<0.500		0.500		ug/L			06/25/24 22:56	1
Bromochloromethane	<5.00		5.00		ug/L			06/25/24 22:56	1
Bromodichloromethane	<1.00		1.00		ug/L			06/25/24 22:56	1
Bromoform	<5.00		5.00		ug/L			06/25/24 22:56	1
Bromomethane	<4.00		4.00		ug/L			06/25/24 22:56	1
2-Butanone (MEK)	<10.0		10.0		ug/L			06/25/24 22:56	1
Carbon disulfide	<1.00		1.00		ug/L			06/25/24 22:56	1
Carbon tetrachloride	<2.00		2.00		ug/L			06/25/24 22:56	1
Chlorobenzene	<1.00		1.00		ug/L			06/25/24 22:56	1
Chlorodibromomethane	<5.00		5.00		ug/L			06/25/24 22:56	1
Chloroethane	<4.00		4.00		ug/L			06/25/24 22:56	1
Chloroform	<3.00		3.00		ug/L			06/25/24 22:56	1
Chloromethane	<3.00		3.00		ug/L			06/25/24 22:56	1
Chloroprene	<1.00		1.00		ug/L			06/25/24 22:56	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			06/25/24 22:56	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			06/25/24 22:56	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			06/25/24 22:56	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			06/25/24 22:56	1
Dibromomethane	<1.00		1.00		ug/L			06/25/24 22:56	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			06/25/24 22:56	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			06/25/24 22:56	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			06/25/24 22:56	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			06/25/24 22:56	1
1,1-Dichloroethane	<1.00		1.00		ug/L			06/25/24 22:56	1
1,2-Dichloroethane	<1.00		1.00		ug/L			06/25/24 22:56	1
1,1-Dichloroethene	<2.00		2.00		ug/L			06/25/24 22:56	1
1,2-Dichloropropane	<1.00		1.00		ug/L			06/25/24 22:56	1
1,3-Dichloropropane	<1.00		1.00		ug/L			06/25/24 22:56	1
2,2-Dichloropropane	<4.00		4.00		ug/L			06/25/24 22:56	1
1,1-Dichloropropene	<1.00		1.00		ug/L			06/25/24 22:56	1
Ethylbenzene	<1.00		1.00		ug/L			06/25/24 22:56	1
Ethyl methacrylate	<2.00		2.00		ug/L			06/25/24 22:56	1
2-Hexanone	<10.0		10.0		ug/L			06/25/24 22:56	1
Iodomethane	<10.0		10.0		ug/L			06/25/24 22:56	1
Methacrylonitrile	<10.0		10.0		ug/L			06/25/24 22:56	1
Methylene Chloride	<5.00		5.00		ug/L			06/25/24 22:56	1
Methyl methacrylate	<2.00		2.00		ug/L			06/25/24 22:56	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			06/25/24 22:56	1
Naphthalene	<5.00		5.00		ug/L			06/25/24 22:56	1
Propionitrile	<10.0		10.0		ug/L			06/25/24 22:56	1
Styrene	<1.00		1.00		ug/L			06/25/24 22:56	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			06/25/24 22:56	1
1,1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			06/25/24 22:56	1
Tetrachloroethene	<1.00		1.00		ug/L			06/25/24 22:56	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: Trip Blank 3

Lab Sample ID: 310-284193-12

Date Collected: 06/20/24 00:00

Matrix: Water

Date Received: 06/21/24 16:40

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			06/25/24 22:56	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			06/25/24 22:56	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			06/25/24 22:56	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			06/25/24 22:56	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			06/25/24 22:56	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			06/25/24 22:56	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			06/25/24 22:56	1
Trichloroethene	<1.00		1.00		ug/L			06/25/24 22:56	1
Trichlorofluoromethane	<4.00		4.00		ug/L			06/25/24 22:56	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			06/25/24 22:56	1
Vinyl acetate	<10.0		10.0		ug/L			06/25/24 22:56	1
Vinyl chloride	<1.00		1.00		ug/L			06/25/24 22:56	1
Xylenes, Total	<3.00		3.00		ug/L			06/25/24 22:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		80 - 120					06/25/24 22:56	1
Dibromofluoromethane (Surr)	118		73 - 130					06/25/24 22:56	1
Toluene-d8 (Surr)	94		80 - 120					06/25/24 22:56	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
*+	LCS and/or LCSD is outside acceptance limits, high biased.
*3	ISTD response or retention time outside acceptable limits.
E	Result exceeded calibration range.

GC Semi VOA

Qualifier	Qualifier Description
*-	LCS and/or LCSD is outside acceptance limits, low biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
S1+	Surrogate recovery exceeds control limits, high biased.

HPLC/IC

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.
H3	Sample was received and analyzed past holding time. This does not meet regulatory requirements.

Metals

Qualifier	Qualifier Description
F3	Duplicate RPD exceeds the control limit

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	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

Definitions/Glossary

Client: SCS Engineers

Job ID: 310-284193-1

Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling (HMSP)

Glossary (Continued)

Abbreviation **These commonly used abbreviations may or may not be present in this report.**

TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

Surrogate Summary

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

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

Matrix: Groundwater

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (80-120)	DBFM (73-130)	TOL (80-120)
310-284193-1	MW-14	111	120	91
310-284193-2	MW-7	110	119	88
310-284193-3	MW-8R	111	119	90
310-284193-4	MW-10R	112	117	90
310-284193-5	MW-11R	115	116	88
310-284193-6	MW-26R	104	120	91
310-284193-7	MW-27R	114	115	90
310-284193-8	MW-29	107	125	89
310-284193-9	MW-D	112	121	91

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
 DBFM = Dibromofluoromethane (Surr)
 TOL = Toluene-d8 (Surr)

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

Matrix: Trip Blank

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (80-120)	DBFM (73-130)	TOL (80-120)
310-284193-10	Trip Blank 1	105	107	98

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
 DBFM = Dibromofluoromethane (Surr)
 TOL = Toluene-d8 (Surr)

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	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (80-120)	DBFM (73-130)	TOL (80-120)
310-284193-11	Trip Blank 2	105	108	98
310-284193-12	Trip Blank 3	109	118	94
LCS 310-425457/6	Lab Control Sample	102	99	100
LCS 310-425457/7	Lab Control Sample	102	105	99
LCS 310-425596/6	Lab Control Sample	103	94	100
LCS 310-425596/7	Lab Control Sample	110	118	91
MB 310-425457/5	Method Blank	105	106	98
MB 310-425596/5	Method Blank	109	115	93

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
 DBFM = Dibromofluoromethane (Surr)
 TOL = Toluene-d8 (Surr)

Surrogate Summary

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Groundwater

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		FBP (39-118)	2FP (25-110)	NBZ (45-129)	PHL (21-110)	TPHL (12-144)	TBP (27-136)
310-284193-2	MW-7	79	79	102	66	103	80
310-284193-4	MW-10R	75	74	97	59	99	76
310-284193-5	MW-11R	65	64	84	54	91	73

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
 2FP = 2-Fluorophenol (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 PHL = Phenol-d5 (Surr)
 TPHL = Terphenyl-d14 (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)					
		FBP (39-118)	2FP (25-110)	NBZ (45-129)	PHL (21-110)	TPHL (12-144)	TBP (27-136)
LCS 310-425691/2-A	Lab Control Sample	82	82	101	65	101	82
LCSD 310-425691/3-A	Lab Control Sample Dup	78	81	98	64	99	82
MB 310-425691/1-A	Method Blank	79	82	107	67	105	82

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
 2FP = 2-Fluorophenol (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 PHL = Phenol-d5 (Surr)
 TPHL = Terphenyl-d14 (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Groundwater

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)	
		DCB1 (10-136)	TCX1 (10-130)
310-284193-2	MW-7	118	99
310-284193-2 MS	MW-7	120	105
310-284193-2 MSD	MW-7	111	100
310-284193-4	MW-10R	117	99
310-284193-5	MW-11R	93	80

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
 TCX = Tetrachloro-m-xylene (Surr)

Surrogate Summary

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB1 (10-136)	TCX1 (10-130)
LCS 310-425670/6-A	Lab Control Sample	110	85
MB 310-425670/1-A	Method Blank	100	80

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
 TCX = Tetrachloro-m-xylene (Surr)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Groundwater

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB1 (10-136)	TCX1 (10-130)
310-284193-2	MW-7	118	100
310-284193-4	MW-10R	117	101
310-284193-5	MW-11R	93	81

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
 TCX = Tetrachloro-m-xylene (Surr)

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB1 (10-136)	TCX1 (10-130)
LCS 310-425670/7-A	Lab Control Sample	132	109
MB 310-425670/1-A	Method Blank	100	81

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)
 TCX = Tetrachloro-m-xylene (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Groundwater

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (34-142)	DCPAA2 (34-142)
310-284193-2	MW-7	62 p	166 S1+
310-284193-2 - RE	MW-7	58	142
310-284193-4	MW-10R	60	56
310-284193-4 - RE	MW-10R	52	51
310-284193-5	MW-11R	56	59
310-284193-5 - RE	MW-11R	52	54

Surrogate Legend

DCPAA = DCAA

Surrogate Summary

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (34-142)	DCPAA2 (34-142)
LCS 410-521860/2-A	Lab Control Sample	54	56
LCS 410-522344/2-A	Lab Control Sample	59	58
LCSD 410-521860/3-A	Lab Control Sample Dup	45	44
LCSD 410-522344/3-A	Lab Control Sample Dup	60	64
MB 410-521860/1-A	Method Blank	48	43
MB 410-522344/1-A	Method Blank	47	42

Surrogate Legend

DCPAA = DCAA

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

QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

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

Lab Sample ID: MB 310-425457/5
Matrix: Water
Analysis Batch: 425457

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			06/24/24 11:46	1
Acrolein	<10.0		10.0		ug/L			06/24/24 11:46	1
Acrylonitrile	<5.00		5.00		ug/L			06/24/24 11:46	1
Allyl chloride	<2.00		2.00		ug/L			06/24/24 11:46	1
Benzene	<0.500		0.500		ug/L			06/24/24 11:46	1
Bromochloromethane	<5.00		5.00		ug/L			06/24/24 11:46	1
Bromodichloromethane	<1.00		1.00		ug/L			06/24/24 11:46	1
Bromoform	<5.00		5.00		ug/L			06/24/24 11:46	1
Bromomethane	<4.00		4.00		ug/L			06/24/24 11:46	1
2-Butanone (MEK)	<10.0		10.0		ug/L			06/24/24 11:46	1
Carbon disulfide	<1.00		1.00		ug/L			06/24/24 11:46	1
Carbon tetrachloride	<2.00		2.00		ug/L			06/24/24 11:46	1
Chlorobenzene	<1.00		1.00		ug/L			06/24/24 11:46	1
Chlorodibromomethane	<5.00		5.00		ug/L			06/24/24 11:46	1
Chloroethane	<4.00		4.00		ug/L			06/24/24 11:46	1
Chloroform	<3.00		3.00		ug/L			06/24/24 11:46	1
Chloromethane	<3.00		3.00		ug/L			06/24/24 11:46	1
Chloroprene	<1.00		1.00		ug/L			06/24/24 11:46	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			06/24/24 11:46	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			06/24/24 11:46	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			06/24/24 11:46	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			06/24/24 11:46	1
Dibromomethane	<1.00		1.00		ug/L			06/24/24 11:46	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			06/24/24 11:46	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			06/24/24 11:46	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			06/24/24 11:46	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			06/24/24 11:46	1
1,1-Dichloroethane	<1.00		1.00		ug/L			06/24/24 11:46	1
1,2-Dichloroethane	<1.00		1.00		ug/L			06/24/24 11:46	1
1,1-Dichloroethene	<2.00		2.00		ug/L			06/24/24 11:46	1
1,2-Dichloropropane	<1.00		1.00		ug/L			06/24/24 11:46	1
1,3-Dichloropropane	<1.00		1.00		ug/L			06/24/24 11:46	1
2,2-Dichloropropane	<4.00		4.00		ug/L			06/24/24 11:46	1
1,1-Dichloropropene	<1.00		1.00		ug/L			06/24/24 11:46	1
Ethylbenzene	<1.00		1.00		ug/L			06/24/24 11:46	1
Ethyl methacrylate	<2.00		2.00		ug/L			06/24/24 11:46	1
2-Hexanone	<10.0		10.0		ug/L			06/24/24 11:46	1
Iodomethane	<10.0		10.0		ug/L			06/24/24 11:46	1
Methacrylonitrile	<10.0		10.0		ug/L			06/24/24 11:46	1
Methylene Chloride	<5.00		5.00		ug/L			06/24/24 11:46	1
Methyl methacrylate	<2.00		2.00		ug/L			06/24/24 11:46	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			06/24/24 11:46	1
Naphthalene	<5.00		5.00		ug/L			06/24/24 11:46	1
Propionitrile	<10.0		10.0		ug/L			06/24/24 11:46	1
Styrene	<1.00		1.00		ug/L			06/24/24 11:46	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			06/24/24 11:46	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			06/24/24 11:46	1

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

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

Lab Sample ID: MB 310-425457/5
Matrix: Water
Analysis Batch: 425457

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			06/24/24 11:46	1
Toluene	<1.00		1.00		ug/L			06/24/24 11:46	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			06/24/24 11:46	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			06/24/24 11:46	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			06/24/24 11:46	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			06/24/24 11:46	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			06/24/24 11:46	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			06/24/24 11:46	1
Trichloroethene	<1.00		1.00		ug/L			06/24/24 11:46	1
Trichlorofluoromethane	<4.00		4.00		ug/L			06/24/24 11:46	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			06/24/24 11:46	1
Vinyl acetate	<10.0		10.0		ug/L			06/24/24 11:46	1
Vinyl chloride	<1.00		1.00		ug/L			06/24/24 11:46	1
Xylenes, Total	<3.00		3.00		ug/L			06/24/24 11:46	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	105		80 - 120		06/24/24 11:46	1
Dibromofluoromethane (Surr)	106		73 - 130		06/24/24 11:46	1
Toluene-d8 (Surr)	98		80 - 120		06/24/24 11:46	1

Lab Sample ID: LCS 310-425457/6
Matrix: Water
Analysis Batch: 425457

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	44.95		ug/L		112	50 - 150
Acrolein	94.8	108.3		ug/L		114	49 - 150
Acrylonitrile	200	214.1		ug/L		107	50 - 150
Allyl chloride	20.0	20.63		ug/L		103	49 - 150
Benzene	20.0	19.86		ug/L		99	72 - 124
Bromochloromethane	20.0	19.46		ug/L		97	73 - 130
Bromodichloromethane	20.0	19.30		ug/L		97	74 - 122
Bromoform	20.0	20.00		ug/L		100	61 - 122
2-Butanone (MEK)	40.0	46.76		ug/L		117	50 - 150
Carbon disulfide	20.0	20.41		ug/L		102	59 - 135
Carbon tetrachloride	20.0	20.75		ug/L		104	67 - 132
Chlorobenzene	20.0	19.70		ug/L		98	76 - 120
Chlorodibromomethane	20.0	20.56		ug/L		103	71 - 121
Chloroform	20.0	19.44		ug/L		97	72 - 125
Chloroprene	20.0	21.46		ug/L		107	69 - 133
cis-1,2-Dichloroethene	20.0	19.32		ug/L		97	74 - 123
cis-1,3-Dichloropropene	20.0	20.61		ug/L		103	71 - 125
1,2-Dibromo-3-Chloropropane	20.0	22.04		ug/L		110	50 - 150
1,2-Dibromoethane (EDB)	20.0	20.76		ug/L		104	75 - 125
Dibromomethane	20.0	19.11		ug/L		96	74 - 125
1,2-Dichlorobenzene	20.0	20.86		ug/L		104	74 - 120
1,3-Dichlorobenzene	20.0	20.67		ug/L		103	72 - 120

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

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

Lab Sample ID: LCS 310-425457/6
Matrix: Water
Analysis Batch: 425457

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,4-Dichlorobenzene	20.0	20.80		ug/L		104	72 - 120
1,1-Dichloroethane	20.0	19.95		ug/L		100	70 - 127
1,2-Dichloroethane	20.0	20.11		ug/L		101	71 - 125
1,1-Dichloroethene	20.0	20.75		ug/L		104	63 - 132
1,2-Dichloropropane	20.0	20.11		ug/L		101	73 - 124
1,3-Dichloropropane	20.0	20.43		ug/L		102	72 - 125
2,2-Dichloropropane	20.0	21.55		ug/L		108	50 - 150
1,1-Dichloropropene	20.0	21.00		ug/L		105	69 - 132
Ethylbenzene	20.0	20.25		ug/L		101	74 - 122
Ethyl methacrylate	20.0	19.99		ug/L		100	70 - 129
2-Hexanone	40.0	45.26		ug/L		113	60 - 140
Iodomethane	20.0	14.01		ug/L		70	10 - 150
Methacrylonitrile	200	204.9		ug/L		102	69 - 129
Methylene Chloride	20.0	20.14		ug/L		101	50 - 150
Methyl methacrylate	40.0	41.87		ug/L		105	68 - 131
4-Methyl-2-pentanone (MIBK)	40.0	46.08		ug/L		115	60 - 139
Naphthalene	20.0	20.90		ug/L		105	50 - 150
Propionitrile	200	215.9		ug/L		108	63 - 135
Styrene	20.0	19.53		ug/L		98	74 - 121
1,1,1,2-Tetrachloroethane	20.0	21.07		ug/L		105	71 - 120
1,1,2,2-Tetrachloroethane	20.0	21.78		ug/L		109	68 - 124
Tetrachloroethene	20.0	21.54		ug/L		108	71 - 130
Toluene	20.0	20.05		ug/L		100	74 - 123
trans-1,4-Dichloro-2-butene	20.0	21.36		ug/L		107	50 - 150
trans-1,2-Dichloroethene	20.0	19.34		ug/L		97	70 - 126
trans-1,3-Dichloropropene	20.0	19.71		ug/L		99	69 - 123
1,2,4-Trichlorobenzene	20.0	21.39		ug/L		107	68 - 124
1,1,1-Trichloroethane	20.0	20.02		ug/L		100	73 - 129
1,1,2-Trichloroethane	20.0	20.92		ug/L		105	73 - 123
Trichloroethene	20.0	20.52		ug/L		103	72 - 126
1,2,3-Trichloropropane	20.0	21.69		ug/L		108	65 - 127
Vinyl acetate	40.0	43.28		ug/L		108	50 - 150
Xylenes, Total	40.0	39.29		ug/L		98	73 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	99		73 - 130
Toluene-d8 (Surr)	100		80 - 120

Lab Sample ID: LCS 310-425457/7
Matrix: Water
Analysis Batch: 425457

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	17.11		ug/L		86	23 - 150
Chloroethane	20.0	20.43		ug/L		102	54 - 136
Chloromethane	20.0	19.51		ug/L		98	38 - 150

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

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

Lab Sample ID: LCS 310-425457/7

Matrix: Water

Analysis Batch: 425457

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Dichlorodifluoromethane	20.0	24.28		ug/L		121	39 - 150
Trichlorofluoromethane	20.0	24.05		ug/L		120	54 - 149
Vinyl chloride	20.0	20.59		ug/L		103	56 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	102		80 - 120
Dibromofluoromethane (Surr)	105		73 - 130
Toluene-d8 (Surr)	99		80 - 120

Lab Sample ID: MB 310-425596/5

Matrix: Water

Analysis Batch: 425596

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			06/25/24 21:50	1
Acrolein	<10.0		10.0		ug/L			06/25/24 21:50	1
Acrylonitrile	<5.00		5.00		ug/L			06/25/24 21:50	1
Allyl chloride	<2.00		2.00		ug/L			06/25/24 21:50	1
Benzene	<0.500		0.500		ug/L			06/25/24 21:50	1
Bromochloromethane	<5.00		5.00		ug/L			06/25/24 21:50	1
Bromodichloromethane	<1.00		1.00		ug/L			06/25/24 21:50	1
Bromoform	<5.00		5.00		ug/L			06/25/24 21:50	1
Bromomethane	<4.00		4.00		ug/L			06/25/24 21:50	1
2-Butanone (MEK)	<10.0		10.0		ug/L			06/25/24 21:50	1
Carbon disulfide	<1.00		1.00		ug/L			06/25/24 21:50	1
Carbon tetrachloride	<2.00		2.00		ug/L			06/25/24 21:50	1
Chlorobenzene	<1.00		1.00		ug/L			06/25/24 21:50	1
Chlorodibromomethane	<5.00		5.00		ug/L			06/25/24 21:50	1
Chloroethane	<4.00		4.00		ug/L			06/25/24 21:50	1
Chloroform	<3.00		3.00		ug/L			06/25/24 21:50	1
Chloromethane	<3.00		3.00		ug/L			06/25/24 21:50	1
Chloroprene	<1.00		1.00		ug/L			06/25/24 21:50	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			06/25/24 21:50	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			06/25/24 21:50	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			06/25/24 21:50	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			06/25/24 21:50	1
Dibromomethane	<1.00		1.00		ug/L			06/25/24 21:50	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			06/25/24 21:50	1
1,3-Dichlorobenzene	<1.00		1.00		ug/L			06/25/24 21:50	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			06/25/24 21:50	1
Dichlorodifluoromethane	<3.00		3.00		ug/L			06/25/24 21:50	1
1,1-Dichloroethane	<1.00		1.00		ug/L			06/25/24 21:50	1
1,2-Dichloroethane	<1.00		1.00		ug/L			06/25/24 21:50	1
1,1-Dichloroethene	<2.00		2.00		ug/L			06/25/24 21:50	1
1,2-Dichloropropane	<1.00		1.00		ug/L			06/25/24 21:50	1
1,3-Dichloropropane	<1.00		1.00		ug/L			06/25/24 21:50	1
2,2-Dichloropropane	<4.00		4.00		ug/L			06/25/24 21:50	1

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

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

Lab Sample ID: MB 310-425596/5

Matrix: Water

Analysis Batch: 425596

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1-Dichloropropene	<1.00		1.00		ug/L			06/25/24 21:50	1
Ethylbenzene	<1.00		1.00		ug/L			06/25/24 21:50	1
Ethyl methacrylate	<2.00		2.00		ug/L			06/25/24 21:50	1
2-Hexanone	<10.0		10.0		ug/L			06/25/24 21:50	1
Iodomethane	<10.0		10.0		ug/L			06/25/24 21:50	1
Methacrylonitrile	<10.0		10.0		ug/L			06/25/24 21:50	1
Methylene Chloride	<5.00		5.00		ug/L			06/25/24 21:50	1
Methyl methacrylate	<2.00		2.00		ug/L			06/25/24 21:50	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			06/25/24 21:50	1
Naphthalene	<5.00		5.00		ug/L			06/25/24 21:50	1
Propionitrile	<10.0		10.0		ug/L			06/25/24 21:50	1
Styrene	<1.00		1.00		ug/L			06/25/24 21:50	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			06/25/24 21:50	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			06/25/24 21:50	1
Tetrachloroethene	<1.00		1.00		ug/L			06/25/24 21:50	1
Toluene	<1.00		1.00		ug/L			06/25/24 21:50	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			06/25/24 21:50	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			06/25/24 21:50	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			06/25/24 21:50	1
1,2,4-Trichlorobenzene	<5.00		5.00		ug/L			06/25/24 21:50	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			06/25/24 21:50	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			06/25/24 21:50	1
Trichloroethene	<1.00		1.00		ug/L			06/25/24 21:50	1
Trichlorofluoromethane	<4.00		4.00		ug/L			06/25/24 21:50	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			06/25/24 21:50	1
Vinyl acetate	<10.0		10.0		ug/L			06/25/24 21:50	1
Vinyl chloride	<1.00		1.00		ug/L			06/25/24 21:50	1
Xylenes, Total	<3.00		3.00		ug/L			06/25/24 21:50	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		80 - 120		06/25/24 21:50	1
Dibromofluoromethane (Surr)	115		73 - 130		06/25/24 21:50	1
Toluene-d8 (Surr)	93		80 - 120		06/25/24 21:50	1

Lab Sample ID: LCS 310-425596/6

Matrix: Water

Analysis Batch: 425596

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	39.50		ug/L		99	50 - 150
Acrolein	94.8	96.26		ug/L		102	49 - 150
Acrylonitrile	200	218.4		ug/L		109	50 - 150
Allyl chloride	20.0	21.80		ug/L		109	49 - 150
Benzene	20.0	21.62		ug/L		108	72 - 124
Bromochloromethane	20.0	20.32		ug/L		102	73 - 130
Bromodichloromethane	20.0	19.68		ug/L		98	74 - 122
Bromoform	20.0	21.49		ug/L		107	61 - 122

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

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

Lab Sample ID: LCS 310-425596/6

Matrix: Water

Analysis Batch: 425596

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butanone (MEK)	40.0	40.52		ug/L		101	50 - 150
Carbon disulfide	20.0	24.96		ug/L		125	59 - 135
Carbon tetrachloride	20.0	22.56		ug/L		113	67 - 132
Chlorobenzene	20.0	19.71		ug/L		99	76 - 120
Chlorodibromomethane	20.0	20.40		ug/L		102	71 - 121
Chloroform	20.0	20.42		ug/L		102	72 - 125
Chloroprene	20.0	23.00		ug/L		115	69 - 133
cis-1,2-Dichloroethene	20.0	20.59		ug/L		103	74 - 123
cis-1,3-Dichloropropene	20.0	20.72		ug/L		104	71 - 125
1,2-Dibromo-3-Chloropropane	20.0	21.14		ug/L		106	50 - 150
1,2-Dibromoethane (EDB)	20.0	21.14		ug/L		106	75 - 125
Dibromomethane	20.0	21.53		ug/L		108	74 - 125
1,2-Dichlorobenzene	20.0	20.10		ug/L		101	74 - 120
1,3-Dichlorobenzene	20.0	20.31		ug/L		102	72 - 120
1,4-Dichlorobenzene	20.0	19.58		ug/L		98	72 - 120
1,1-Dichloroethane	20.0	20.45		ug/L		102	70 - 127
1,2-Dichloroethane	20.0	20.69		ug/L		103	71 - 125
1,1-Dichloroethene	20.0	22.92		ug/L		115	63 - 132
1,2-Dichloropropane	20.0	19.90		ug/L		100	73 - 124
1,3-Dichloropropane	20.0	21.12		ug/L		106	72 - 125
2,2-Dichloropropane	20.0	19.59		ug/L		98	50 - 150
1,1-Dichloropropene	20.0	23.00		ug/L		115	69 - 132
Ethylbenzene	20.0	21.23		ug/L		106	74 - 122
Ethyl methacrylate	20.0	20.50		ug/L		102	70 - 129
2-Hexanone	40.0	41.52		ug/L		104	60 - 140
Iodomethane	20.0	18.71		ug/L		94	10 - 150
Methacrylonitrile	200	216.0		ug/L		108	69 - 129
Methylene Chloride	20.0	22.64		ug/L		113	50 - 150
Methyl methacrylate	40.0	44.37		ug/L		111	68 - 131
4-Methyl-2-pentanone (MIBK)	40.0	42.26		ug/L		106	60 - 139
Naphthalene	20.0	22.21		ug/L		111	50 - 150
Propionitrile	200	217.9		ug/L		109	63 - 135
Styrene	20.0	21.78		ug/L		109	74 - 121
1,1,1,2-Tetrachloroethane	20.0	21.17		ug/L		106	71 - 120
1,1,1,2,2-Tetrachloroethane	20.0	20.09		ug/L		100	68 - 124
Tetrachloroethene	20.0	22.28		ug/L		111	71 - 130
Toluene	20.0	20.79		ug/L		104	74 - 123
trans-1,4-Dichloro-2-butene	20.0	19.54		ug/L		98	50 - 150
trans-1,2-Dichloroethene	20.0	20.40		ug/L		102	70 - 126
trans-1,3-Dichloropropene	20.0	20.54		ug/L		103	69 - 123
1,2,4-Trichlorobenzene	20.0	19.09		ug/L		95	68 - 124
1,1,1-Trichloroethane	20.0	22.32		ug/L		112	73 - 129
1,1,2-Trichloroethane	20.0	21.45		ug/L		107	73 - 123
Trichloroethene	20.0	22.16		ug/L		111	72 - 126
1,2,3-Trichloropropane	20.0	21.41		ug/L		107	65 - 127
Vinyl acetate	40.0	44.74		ug/L		112	50 - 150
Xylenes, Total	40.0	41.00		ug/L		103	73 - 123

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

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

Lab Sample ID: LCS 310-425596/6
Matrix: Water
Analysis Batch: 425596

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

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	94		73 - 130
Toluene-d8 (Surr)	100		80 - 120

Lab Sample ID: LCS 310-425596/7
Matrix: Water
Analysis Batch: 425596

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	16.02		ug/L		80	23 - 150
Chloroethane	20.0	17.01		ug/L		85	54 - 136
Chloromethane	20.0	18.44		ug/L		92	38 - 150
Dichlorodifluoromethane	20.0	15.32		ug/L		77	39 - 150
Trichlorofluoromethane	20.0	17.92		ug/L		90	54 - 149
Vinyl chloride	20.0	16.97		ug/L		85	56 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	110		80 - 120
Dibromofluoromethane (Surr)	118		73 - 130
Toluene-d8 (Surr)	91		80 - 120

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 310-425691/1-A
Matrix: Water
Analysis Batch: 426234

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425691

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Acenaphthylene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Acetophenone	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Anthracene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Benzo(a)anthracene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Benzo(a)pyrene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Benzo(b)fluoranthene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Benzo(g,h,i)perylene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Benzo(k)fluoranthene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Benzyl alcohol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Bis(2-chloroethoxy)methane	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Bis(2-chloroethyl)ether	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
bis(2-chloroisopropyl) ether	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Bis(2-ethylhexyl) phthalate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
4-Bromophenyl phenyl ether	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Butyl benzyl phthalate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
4-Chloroaniline	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
4-Chloro-3-methylphenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
2-Chloronaphthalene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-425691/1-A
Matrix: Water
Analysis Batch: 426234

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425691

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
4-Chlorophenyl phenyl ether	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Chrysene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Dibenz(a,h)anthracene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Dibenzofuran	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
3,3'-Dichlorobenzidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
2,4-Dichlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
2,6-Dichlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Diethyl phthalate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
2,4-Dimethylphenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Dimethyl phthalate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Di-n-butyl phthalate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
1,3-Dinitrobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
4,6-Dinitro-2-methylphenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
2,4-Dinitrophenol	<20.0		20.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
2,4-Dinitrotoluene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
2,6-Dinitrotoluene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Di-n-octyl phthalate	<20.0		20.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Diphenylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Fluoranthene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Fluorene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Hexachlorobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Hexachlorobutadiene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Hexachlorocyclopentadiene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Hexachloroethane	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Indeno(1,2,3-cd)pyrene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Isophorone	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
2-Methylnaphthalene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
2-Methylphenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
4-Methylphenol (and/or 3-Methylphenol)	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
2-Nitroaniline	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
3-Nitroaniline	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
4-Nitroaniline	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Nitrobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
2-Nitrophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
4-Nitrophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
N-Nitrosodimethylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
N-Nitrosodi-n-propylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
N-Nitrosodiphenylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Pentachlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Phenanthrene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Phenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
Pyrene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
1,2,4,5-Tetrachlorobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
2,3,4,6-Tetrachlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
2,4,5-Trichlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1
2,4,6-Trichlorophenol	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:01	1

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	79		39 - 118	06/26/24 09:43	07/02/24 13:01	1
2-Fluorophenol (Surr)	82		25 - 110	06/26/24 09:43	07/02/24 13:01	1
Nitrobenzene-d5 (Surr)	107		45 - 129	06/26/24 09:43	07/02/24 13:01	1
Phenol-d5 (Surr)	67		21 - 110	06/26/24 09:43	07/02/24 13:01	1
Terphenyl-d14 (Surr)	105		12 - 144	06/26/24 09:43	07/02/24 13:01	1
2,4,6-Tribromophenol (Surr)	82		27 - 136	06/26/24 09:43	07/02/24 13:01	1

Lab Sample ID: MB 310-425691/1-A
Matrix: Water
Analysis Batch: 426230

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425691

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Acetylaminofluorene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
4-Aminobiphenyl	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Chlorobenzilate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Diallate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Dimethoate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
7,12-Dimethylbenz(a)anthracene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
3,3'-Dimethylbenzidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Dinoseb	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Disulfoton	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Ethyl methanesulfonate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Ethyl parathion	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Famphur	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Hexachloropropene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Isodrin	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Isosafrole	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Kepone	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Methapyrilene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
3-Methylcholanthrene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Methyl methanesulfonate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Methyl parathion	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
1,4-Naphthoquinone	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
1-Naphthylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
2-Naphthylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
5-Nitro-o-toluidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
N-Nitrosodiethylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
N-Nitrosodi-n-butylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
N-Nitrosomethylethylamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
N-Nitrosopiperidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
N-Nitrosopyrrolidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
o,o',o"-Triethylphosphorothioate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
o-Toluidine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
p-Dimethylamino azobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Pentachlorobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Pentachloronitrobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Phenacetin	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
1,4-Phenylenediamine	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Phorate	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Pronamide	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 310-425691/1-A
Matrix: Water
Analysis Batch: 426230

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425691

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Safrole	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
Thionazin	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1
1,3,5-Trinitrobenzene	<10.0		10.0		ug/L		06/26/24 09:43	07/02/24 13:12	1

Lab Sample ID: LCS 310-425691/14-A
Matrix: Water
Analysis Batch: 426230

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425691

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Acetylaminofluorene	64.0	50.84		ug/L		79	35 - 150
4-Aminobiphenyl	64.0	66.76		ug/L		104	24 - 138
Chlorobenzilate	64.0	50.74		ug/L		79	52 - 138
Diallate	64.0	58.39		ug/L		91	42 - 141
Dimethoate	64.0	79.11		ug/L		124	51 - 150
7,12-Dimethylbenz(a)anthracene	64.0	51.07		ug/L		80	51 - 129
3,3'-Dimethylbenzidine	64.0	31.71		ug/L		50	10 - 150
Dinoseb	64.0	67.58		ug/L		106	25 - 146
Disulfoton	64.0	53.36		ug/L		83	54 - 131
Ethyl methanesulfonate	64.0	50.92		ug/L		80	48 - 120
Ethyl parathion	64.0	53.68		ug/L		84	52 - 149
Famphur	64.0	105.0	E *+	ug/L		164	44 - 150
Hexachloropropene	64.0	19.57		ug/L		31	10 - 110
Isodrin	64.0	57.02		ug/L		89	52 - 125
Isosafrole	64.0	60.10		ug/L		94	31 - 123
Kepone	64.0	92.41		ug/L		144	10 - 150
Methapyrilene	64.0	12.53		ug/L		20	10 - 110
3-Methylcholanthrene	64.0	49.45		ug/L		77	43 - 150
Methyl methanesulfonate	64.0	24.34		ug/L		38	36 - 110
Methyl parathion	64.0	68.98		ug/L		108	50 - 150
1,4-Naphthoquinone	64.0	58.26		ug/L		91	37 - 149
1-Naphthylamine	64.0	31.81		ug/L		50	19 - 110
2-Naphthylamine	64.0	61.36		ug/L		96	18 - 127
5-Nitro-o-toluidine	64.0	71.24		ug/L		111	47 - 145
N-Nitrosodiethylamine	64.0	60.81		ug/L		95	47 - 138
N-Nitrosodi-n-butylamine	64.0	68.73		ug/L		107	52 - 142
N-Nitrosomethylethylamine	64.0	49.96		ug/L		78	54 - 123
N-Nitrosopiperidine	64.0	53.99		ug/L		84	60 - 127
N-Nitrosopyrrolidine	64.0	75.27		ug/L		118	56 - 143
o,o',o"-Triethylphosphorothioate	64.0	62.34		ug/L		97	45 - 113
o-Toluidine	64.0	55.00		ug/L		86	24 - 142
p-Dimethylamino azobenzene	64.0	56.86		ug/L		89	42 - 138
Pentachlorobenzene	64.0	49.22		ug/L		77	33 - 110
Pentachloronitrobenzene	64.0	50.84		ug/L		79	65 - 127
Phenacetin	64.0	55.80		ug/L		87	56 - 146
1,4-Phenylenediamine	64.0	<1.90	*-	ug/L		-1	20 - 120
Phorate	64.0	51.52		ug/L		81	57 - 135
Pronamide	64.0	69.32		ug/L		108	61 - 144
Safrole	64.0	61.95		ug/L		97	34 - 110

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-425691/14-A
Matrix: Water
Analysis Batch: 426230

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425691

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Thionazin	64.0	61.36		ug/L		96	52 - 147
1,3,5-Trinitrobenzene	64.0	37.34		ug/L		58	39 - 144

Lab Sample ID: LCS 310-425691/2-A
Matrix: Water
Analysis Batch: 426234

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425691

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acenaphthene	100	83.82		ug/L		84	43 - 110
Acenaphthylene	100	75.61		ug/L		76	40 - 110
Acetophenone	100	82.79		ug/L		83	48 - 119
Anthracene	100	83.27		ug/L		83	51 - 120
Benzo(a)anthracene	100	76.60		ug/L		77	51 - 123
Benzo(a)pyrene	100	66.92		ug/L		67	48 - 125
Benzo(b)fluoranthene	100	79.75		ug/L		80	49 - 129
Benzo(g,h,i)perylene	100	65.65		ug/L		66	43 - 139
Benzo(k)fluoranthene	100	81.56		ug/L		82	47 - 130
Benzyl alcohol	100	96.01		ug/L		96	39 - 128
Bis(2-chloroethoxy)methane	100	93.74		ug/L		94	48 - 121
Bis(2-chloroethyl)ether	100	86.39		ug/L		86	43 - 123
bis(2-chloroisopropyl) ether	100	80.68		ug/L		81	34 - 123
Bis(2-ethylhexyl) phthalate	100	64.24		ug/L		64	43 - 143
4-Bromophenyl phenyl ether	100	88.54		ug/L		89	45 - 119
Butyl benzyl phthalate	100	77.51		ug/L		78	46 - 135
4-Chloroaniline	100	105.8		ug/L		106	21 - 139
4-Chloro-3-methylphenol	100	91.85		ug/L		92	49 - 130
2-Chloronaphthalene	100	75.34		ug/L		75	37 - 110
2-Chlorophenol	100	89.18		ug/L		89	44 - 117
4-Chlorophenyl phenyl ether	100	73.32		ug/L		73	44 - 116
Chrysene	100	79.02		ug/L		79	51 - 125
Dibenz(a,h)anthracene	100	69.67		ug/L		70	38 - 149
Dibenzofuran	100	76.16		ug/L		76	45 - 112
2,4-Dichlorophenol	100	92.61		ug/L		93	41 - 124
2,6-Dichlorophenol	100	92.58		ug/L		93	30 - 130
Diethyl phthalate	100	74.85		ug/L		75	43 - 135
2,4-Dimethylphenol	100	84.96		ug/L		85	31 - 142
Dimethyl phthalate	100	81.63		ug/L		82	43 - 129
Di-n-butyl phthalate	100	83.38		ug/L		83	50 - 133
1,3-Dinitrobenzene	100	87.23		ug/L		87	45 - 138
4,6-Dinitro-2-methylphenol	200	180.0		ug/L		90	22 - 143
2,4-Dinitrophenol	200	160.0		ug/L		80	10 - 138
2,4-Dinitrotoluene	100	76.65		ug/L		77	47 - 137
2,6-Dinitrotoluene	100	93.54		ug/L		94	51 - 130
Di-n-octyl phthalate	100	64.22		ug/L		64	34 - 150
Diphenylamine	85.0	81.34		ug/L		96	48 - 122
Fluoranthene	100	72.47		ug/L		72	47 - 128
Fluorene	100	79.48		ug/L		79	45 - 119
Hexachlorobenzene	100	84.96		ug/L		85	48 - 119

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-425691/2-A

Matrix: Water

Analysis Batch: 426234

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 425691

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	
Hexachlorobutadiene	100	67.56		ug/L		68	32 - 110	
Hexachlorocyclopentadiene	100	41.23		ug/L		41	10 - 110	
Hexachloroethane	100	62.66		ug/L		63	31 - 110	
Indeno(1,2,3-cd)pyrene	100	56.16		ug/L		56	37 - 150	
Isophorone	100	90.94		ug/L		91	50 - 125	
2-Methylnaphthalene	100	66.61		ug/L		67	33 - 110	
2-Methylphenol	100	86.66		ug/L		87	47 - 118	
4-Methylphenol (and/or 3-Methylphenol)	100	88.00		ug/L		88	46 - 117	
2-Nitroaniline	100	98.56		ug/L		99	50 - 135	
3-Nitroaniline	100	86.03		ug/L		86	42 - 139	
4-Nitroaniline	100	72.79		ug/L		73	31 - 145	
Nitrobenzene	100	92.74		ug/L		93	47 - 116	
2-Nitrophenol	100	101.6		ug/L		102	41 - 129	
4-Nitrophenol	200	94.97		ug/L		47	18 - 110	
N-Nitrosodimethylamine	100	74.58		ug/L		75	37 - 110	
N-Nitrosodi-n-propylamine	100	91.96		ug/L		92	45 - 130	
N-Nitrosodiphenylamine	100	95.70		ug/L		96	49 - 121	
Pentachlorophenol	200	190.8		ug/L		95	26 - 133	
Phenanthrene	100	82.58		ug/L		83	51 - 117	
Phenol	100	61.05		ug/L		61	29 - 110	
Pyrene	100	93.15		ug/L		93	48 - 127	
1,2,4,5-Tetrachlorobenzene	100	68.56		ug/L		69	36 - 110	
2,3,4,6-Tetrachlorophenol	100	86.22		ug/L		86	33 - 134	
2,4,5-Trichlorophenol	100	98.78		ug/L		99	35 - 133	
2,4,6-Trichlorophenol	100	97.72		ug/L		98	28 - 139	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl (Surr)	82		39 - 118
2-Fluorophenol (Surr)	82		25 - 110
Nitrobenzene-d5 (Surr)	101		45 - 129
Phenol-d5 (Surr)	65		21 - 110
Terphenyl-d14 (Surr)	101		12 - 144
2,4,6-Tribromophenol (Surr)	82		27 - 136

Lab Sample ID: LCSD 310-425691/3-A

Matrix: Water

Analysis Batch: 426234

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 425691

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	
							Limits	RPD	Limit	
Acenaphthene	100	83.53		ug/L		84	43 - 110	0	35	
Acenaphthylene	100	75.19		ug/L		75	40 - 110	1	35	
Acetophenone	100	83.19		ug/L		83	48 - 119	0	35	
Anthracene	100	86.81		ug/L		87	51 - 120	4	35	
Benzo(a)anthracene	100	77.04		ug/L		77	51 - 123	1	35	
Benzo(a)pyrene	100	69.62		ug/L		70	48 - 125	4	35	
Benzo(b)fluoranthene	100	78.06		ug/L		78	49 - 129	2	35	
Benzo(g,h,i)perylene	100	64.02		ug/L		64	43 - 139	3	35	

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-425691/3-A

Matrix: Water

Analysis Batch: 426234

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 425691

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	RPD Limit
							Limits	RPD		
Benzo(k)fluoranthene	100	91.19		ug/L		91	47 - 130	11	35	
Benzyl alcohol	100	97.06		ug/L		97	39 - 128	1	35	
Bis(2-chloroethoxy)methane	100	96.19		ug/L		96	48 - 121	3	35	
Bis(2-chloroethyl)ether	100	85.99		ug/L		86	43 - 123	0	35	
bis(2-chloroisopropyl) ether	100	80.36		ug/L		80	34 - 123	0	35	
Bis(2-ethylhexyl) phthalate	100	66.13		ug/L		66	43 - 143	3	35	
4-Bromophenyl phenyl ether	100	89.28		ug/L		89	45 - 119	1	35	
Butyl benzyl phthalate	100	80.87		ug/L		81	46 - 135	4	35	
4-Chloroaniline	100	96.36		ug/L		96	21 - 139	9	35	
4-Chloro-3-methylphenol	100	91.70		ug/L		92	49 - 130	0	35	
2-Chloronaphthalene	100	75.85		ug/L		76	37 - 110	1	35	
2-Chlorophenol	100	91.22		ug/L		91	44 - 117	2	35	
4-Chlorophenyl phenyl ether	100	73.24		ug/L		73	44 - 116	0	35	
Chrysene	100	83.85		ug/L		84	51 - 125	6	35	
Dibenz(a,h)anthracene	100	63.46		ug/L		63	38 - 149	9	35	
Dibenzofuran	100	74.60		ug/L		75	45 - 112	2	35	
2,4-Dichlorophenol	100	94.91		ug/L		95	41 - 124	2	35	
2,6-Dichlorophenol	100	92.63		ug/L		93	30 - 130	0	35	
Diethyl phthalate	100	77.82		ug/L		78	43 - 135	4	35	
2,4-Dimethylphenol	100	84.67		ug/L		85	31 - 142	0	35	
Dimethyl phthalate	100	83.45		ug/L		83	43 - 129	2	35	
Di-n-butyl phthalate	100	87.77		ug/L		88	50 - 133	5	35	
1,3-Dinitrobenzene	100	89.25		ug/L		89	45 - 138	2	35	
4,6-Dinitro-2-methylphenol	200	189.8		ug/L		95	22 - 143	5	35	
2,4-Dinitrophenol	200	173.7		ug/L		87	10 - 138	8	35	
2,4-Dinitrotoluene	100	79.84		ug/L		80	47 - 137	4	35	
2,6-Dinitrotoluene	100	95.07		ug/L		95	51 - 130	2	35	
Di-n-octyl phthalate	100	65.12		ug/L		65	34 - 150	1	35	
Diphenylamine	85.0	83.33		ug/L		98	48 - 122	2	35	
Fluoranthene	100	76.86		ug/L		77	47 - 128	6	35	
Fluorene	100	80.38		ug/L		80	45 - 119	1	35	
Hexachlorobenzene	100	85.24		ug/L		85	48 - 119	0	35	
Hexachlorobutadiene	100	67.54		ug/L		68	32 - 110	0	35	
Hexachlorocyclopentadiene	100	37.89		ug/L		38	10 - 110	8	35	
Hexachloroethane	100	62.89		ug/L		63	31 - 110	0	35	
Indeno(1,2,3-cd)pyrene	100	44.17		ug/L		44	37 - 150	24	35	
Isophorone	100	92.00		ug/L		92	50 - 125	1	35	
2-Methylnaphthalene	100	66.49		ug/L		66	33 - 110	0	35	
2-Methylphenol	100	88.78		ug/L		89	47 - 118	2	35	
4-Methylphenol (and/or 3-Methylphenol)	100	88.19		ug/L		88	46 - 117	0	35	
2-Nitroaniline	100	100.7		ug/L		101	50 - 135	2	35	
3-Nitroaniline	100	88.52		ug/L		89	42 - 139	3	35	
4-Nitroaniline	100	75.83		ug/L		76	31 - 145	4	35	
Nitrobenzene	100	93.32		ug/L		93	47 - 116	1	35	
2-Nitrophenol	100	104.9		ug/L		105	41 - 129	3	35	
4-Nitrophenol	200	94.04		ug/L		47	18 - 110	1	35	
N-Nitrosodimethylamine	100	77.31		ug/L		77	37 - 110	4	35	

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 310-425691/3-A
Matrix: Water
Analysis Batch: 426234

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 425691

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
N-Nitrosodi-n-propylamine	100	90.00		ug/L		90	45 - 130	2	35
N-Nitrosodiphenylamine	100	98.04		ug/L		98	49 - 121	2	35
Pentachlorophenol	200	198.3		ug/L		99	26 - 133	4	35
Phenanthrene	100	84.57		ug/L		85	51 - 117	2	35
Phenol	100	60.74		ug/L		61	29 - 110	1	35
Pyrene	100	93.93		ug/L		94	48 - 127	1	35
1,2,4,5-Tetrachlorobenzene	100	67.30		ug/L		67	36 - 110	2	35
2,3,4,6-Tetrachlorophenol	100	87.54		ug/L		88	33 - 134	2	35
2,4,5-Trichlorophenol	100	97.16		ug/L		97	35 - 133	2	35
2,4,6-Trichlorophenol	100	97.99		ug/L		98	28 - 139	0	35

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl (Surr)	78		39 - 118
2-Fluorophenol (Surr)	81		25 - 110
Nitrobenzene-d5 (Surr)	98		45 - 129
Phenol-d5 (Surr)	64		21 - 110
Terphenyl-d14 (Surr)	99		12 - 144
2,4,6-Tribromophenol (Surr)	82		27 - 136

Method: 8015C - Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)

Lab Sample ID: MB 310-425395/16
Matrix: Water
Analysis Batch: 425395

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetonitrile	<10.0		10.0		mg/L			06/24/24 13:34	1
Isobutanol	<10.0		10.0		mg/L			06/24/24 13:34	1

Lab Sample ID: LCS 310-425395/17
Matrix: Water
Analysis Batch: 425395

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetonitrile	113	115.9		mg/L		102	67 - 132
Isobutanol	104	104.7		mg/L		100	80 - 121

Method: 8081B - Organochlorine Pesticides (GC)

Lab Sample ID: MB 310-425670/1-A
Matrix: Water
Analysis Batch: 425792

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425670

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
4,4'-DDD	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
4,4'-DDE	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
4,4'-DDT	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
Aldrin	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: MB 310-425670/1-A
Matrix: Water
Analysis Batch: 425792

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425670

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
alpha-BHC	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
beta-BHC	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
Chlordane (technical)	<1.79		1.79		ug/L		06/26/24 08:19	06/27/24 11:51	1
delta-BHC	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
Dieldrin	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
Endosulfan I	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
Endosulfan II	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
Endosulfan sulfate	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
Endrin	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
Endrin aldehyde	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
gamma-BHC (Lindane)	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
Heptachlor	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
Heptachlor epoxide	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
Methoxychlor	<0.0897		0.0897		ug/L		06/26/24 08:19	06/27/24 11:51	1
Toxaphene	<1.79		1.79		ug/L		06/26/24 08:19	06/27/24 11:51	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl (Surr)	100		10 - 136	06/26/24 08:19	06/27/24 11:51	1
Tetrachloro-m-xylene (Surr)	80		10 - 130	06/26/24 08:19	06/27/24 11:51	1

Lab Sample ID: LCS 310-425670/6-A
Matrix: Water
Analysis Batch: 425792

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425670

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
4,4'-DDE	2.56	1.739		ug/L		68	34 - 130
4,4'-DDT	2.56	2.124		ug/L		83	23 - 150
Aldrin	2.56	1.603		ug/L		63	13 - 120
alpha-BHC	2.56	2.503		ug/L		98	36 - 127
beta-BHC	2.56	2.513		ug/L		98	37 - 136
delta-BHC	2.56	2.632		ug/L		103	33 - 134
Dieldrin	2.56	2.207		ug/L		86	39 - 130
Endosulfan I	2.56	2.188		ug/L		85	10 - 120
Endosulfan II	2.56	2.469		ug/L		96	14 - 120
Endosulfan sulfate	2.56	2.601		ug/L		101	36 - 147
Endrin	2.56	2.477		ug/L		97	39 - 140
Endrin aldehyde	2.56	2.326		ug/L		91	32 - 137
gamma-BHC (Lindane)	2.56	2.607		ug/L		102	36 - 132
Heptachlor	2.56	1.880		ug/L		73	27 - 120
Heptachlor epoxide	2.56	2.314		ug/L		90	38 - 133
Methoxychlor	2.56	2.600		ug/L		101	10 - 150

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl (Surr)	110		10 - 136
Tetrachloro-m-xylene (Surr)	85		10 - 130

QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 310-284193-2 MS

Matrix: Groundwater

Analysis Batch: 425792

Client Sample ID: MW-7

Prep Type: Total/NA

Prep Batch: 425670

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec	Limits
	Result	Qualifier	Added	Result	Qualifier					
4,4'-DDD	<0.0933		2.65	2.757		ug/L		104		36 - 149
4,4'-DDE	<0.0933		2.65	2.718		ug/L		102		34 - 130
4,4'-DDT	<0.0933		2.65	3.032		ug/L		114		23 - 150
Aldrin	<0.0933		2.65	2.703		ug/L		102		13 - 120
alpha-BHC	<0.0933		2.65	2.669		ug/L		101		36 - 127
beta-BHC	<0.0933		2.65	2.549		ug/L		96		37 - 136
delta-BHC	<0.0933		2.65	2.668		ug/L		101		33 - 134
Dieldrin	<0.0933		2.65	2.896		ug/L		109		39 - 130
Endosulfan I	<0.0933		2.65	2.815		ug/L		106		10 - 120
Endosulfan II	<0.0933		2.65	2.740		ug/L		103		14 - 120
Endosulfan sulfate	<0.0933		2.65	2.771		ug/L		104		36 - 147
Endrin	<0.0933		2.65	3.120		ug/L		118		39 - 140
Endrin aldehyde	<0.0933		2.65	2.490		ug/L		94		32 - 137
gamma-BHC (Lindane)	<0.0933		2.65	2.692		ug/L		101		36 - 132
Heptachlor	<0.0933		2.65	2.829		ug/L		107		27 - 120
Heptachlor epoxide	<0.0933		2.65	2.878		ug/L		109		38 - 133
Methoxychlor	<0.0933		2.65	3.060		ug/L		115		10 - 150

Surrogate	MS	MS	Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl (Surr)	120		10 - 136
Tetrachloro-m-xylene (Surr)	105		10 - 130

Lab Sample ID: 310-284193-2 MSD

Matrix: Groundwater

Analysis Batch: 425792

Client Sample ID: MW-7

Prep Type: Total/NA

Prep Batch: 425670

Analyte	Sample	Sample	Spike	MSD	MSD	Unit	D	%Rec	%Rec	Limits	RPD	Limit
	Result	Qualifier	Added	Result	Qualifier							
4,4'-DDD	<0.0933		2.58	2.562		ug/L		99		36 - 149	7	35
4,4'-DDE	<0.0933		2.58	2.439		ug/L		95		34 - 130	11	35
4,4'-DDT	<0.0933		2.58	2.851		ug/L		111		23 - 150	6	35
Aldrin	<0.0933		2.58	2.556		ug/L		99		13 - 120	6	35
alpha-BHC	<0.0933		2.58	2.611		ug/L		101		36 - 127	2	35
beta-BHC	<0.0933		2.58	2.499		ug/L		97		37 - 136	2	35
delta-BHC	<0.0933		2.58	2.556		ug/L		99		33 - 134	4	35
Dieldrin	<0.0933		2.58	2.572		ug/L		100		39 - 130	12	35
Endosulfan I	<0.0933		2.58	2.497		ug/L		97		10 - 120	12	35
Endosulfan II	<0.0933		2.58	2.558		ug/L		99		14 - 120	7	35
Endosulfan sulfate	<0.0933		2.58	2.660		ug/L		103		36 - 147	4	35
Endrin	<0.0933		2.58	2.869		ug/L		111		39 - 140	8	35
Endrin aldehyde	<0.0933		2.58	2.336		ug/L		91		32 - 137	6	35
gamma-BHC (Lindane)	<0.0933		2.58	2.603		ug/L		101		36 - 132	3	35
Heptachlor	<0.0933		2.58	2.728		ug/L		106		27 - 120	4	35
Heptachlor epoxide	<0.0933		2.58	2.599		ug/L		101		38 - 133	10	35
Methoxychlor	<0.0933		2.58	2.981		ug/L		116		10 - 150	3	35

Surrogate	MSD	MSD	Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl (Surr)	111		10 - 136

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Method: 8081B - Organochlorine Pesticides (GC) (Continued)

Lab Sample ID: 310-284193-2 MSD
Matrix: Groundwater
Analysis Batch: 425792

Client Sample ID: MW-7
Prep Type: Total/NA
Prep Batch: 425670

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
Tetrachloro-m-xylene (Surr)	100		10 - 130

Method: 8082A - Polychlorinated Biphenyls (PCBs) by Gas Chromatography

Lab Sample ID: MB 310-425670/1-A
Matrix: Water
Analysis Batch: 425791

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425670

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
PCB-1016	<1.79		1.79		ug/L		06/26/24 08:19	06/27/24 11:51	1
PCB-1221	<1.79		1.79		ug/L		06/26/24 08:19	06/27/24 11:51	1
PCB-1232	<1.79		1.79		ug/L		06/26/24 08:19	06/27/24 11:51	1
PCB-1242	<1.79		1.79		ug/L		06/26/24 08:19	06/27/24 11:51	1
PCB-1248	<1.79		1.79		ug/L		06/26/24 08:19	06/27/24 11:51	1
PCB-1254	<1.79		1.79		ug/L		06/26/24 08:19	06/27/24 11:51	1
PCB-1260	<1.79		1.79		ug/L		06/26/24 08:19	06/27/24 11:51	1
PCB-1268	<1.79		1.79		ug/L		06/26/24 08:19	06/27/24 11:51	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl (Surr)	100		10 - 136	06/26/24 08:19	06/27/24 11:51	1
Tetrachloro-m-xylene (Surr)	81		10 - 130	06/26/24 08:19	06/27/24 11:51	1

Lab Sample ID: LCS 310-425670/7-A
Matrix: Water
Analysis Batch: 425791

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425670

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
PCB-1016	25.1	24.49		ug/L		97	30 - 133
PCB-1260	25.1	25.01		ug/L		100	31 - 133

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl (Surr)	132		10 - 136
Tetrachloro-m-xylene (Surr)	109		10 - 130

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-521860/1-A
Matrix: Water
Analysis Batch: 522037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 521860

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2,4-D	<0.600		0.600		ug/L		06/26/24 16:05	06/27/24 05:14	1
Silvex (2,4,5-TP)	<0.0500		0.0500		ug/L		06/26/24 16:05	06/27/24 05:14	1
2,4,5-T	<0.150		0.150		ug/L		06/26/24 16:05	06/27/24 05:14	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCAA	48		34 - 142	06/26/24 16:05	06/27/24 05:14	1

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: MB 410-521860/1-A
Matrix: Water
Analysis Batch: 522037

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 521860

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCAA	43		34 - 142	06/26/24 16:05	06/27/24 05:14	1

Lab Sample ID: LCS 410-521860/2-A
Matrix: Water
Analysis Batch: 522037

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 521860

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
2,4-D	2.51	1.612		ug/L		64	53 - 159	
Silvex (2,4,5-TP)	0.250	0.1717		ug/L		69	62 - 170	
2,4,5-T	0.250	0.1835		ug/L		73	57 - 171	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
DCAA	54		34 - 142
DCAA	56		34 - 142

Lab Sample ID: LCSD 410-521860/3-A
Matrix: Water
Analysis Batch: 522037

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 521860

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits		RPD Limit	
									RPD	Limit
2,4-D	2.51	1.308	*-	ug/L		52	53 - 159	21	30	
Silvex (2,4,5-TP)	0.250	0.1396	*-	ug/L		56	62 - 170	21	30	
2,4,5-T	0.250	0.1452	J	ug/L		58	57 - 171	23	30	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
DCAA	45		34 - 142
DCAA	44		34 - 142

Lab Sample ID: MB 410-522344/1-A
Matrix: Water
Analysis Batch: 522526

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 522344

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
2,4-D	<0.600		0.600		ug/L		06/27/24 15:09	06/28/24 12:08	1
Silvex (2,4,5-TP)	<0.0500		0.0500		ug/L		06/27/24 15:09	06/28/24 12:08	1
2,4,5-T	<0.150		0.150		ug/L		06/27/24 15:09	06/28/24 12:08	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCAA	47		34 - 142	06/27/24 15:09	06/28/24 12:08	1
DCAA	42		34 - 142	06/27/24 15:09	06/28/24 12:08	1

Lab Sample ID: LCS 410-522344/2-A
Matrix: Water
Analysis Batch: 522526

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 522344

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
2,4-D	2.51	1.936		ug/L		77	53 - 159	

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCS 410-522344/2-A
Matrix: Water
Analysis Batch: 522526

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 522344

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Silvex (2,4,5-TP)	0.250	0.2058		ug/L		82	62 - 170	
2,4,5-T	0.250	0.2338		ug/L		94	57 - 171	
		LCS	LCS					
Surrogate	%Recovery	Qualifier	Limits					
DCAA	59		34 - 142					
DCAA	58		34 - 142					

Lab Sample ID: LCSD 410-522344/3-A
Matrix: Water
Analysis Batch: 522526

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 522344

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits		RPD Limit	
									RPD	Limit
2,4-D	2.51	1.886		ug/L		75	53 - 159	3	30	
Silvex (2,4,5-TP)	0.250	0.1950		ug/L		78	62 - 170	5	30	
2,4,5-T	0.250	0.2206		ug/L		88	57 - 171	6	30	
		LCSD	LCSD							
Surrogate	%Recovery	Qualifier	Limits							
DCAA	60		34 - 142							
DCAA	64		34 - 142							

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-425527/3
Matrix: Water
Analysis Batch: 425527

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

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Nitrate as N	<0.200		0.200		mg/L		06/21/24 09:20	06/21/24 09:20	1
Sulfate	<1.00		1.00		mg/L		06/21/24 09:20	06/21/24 09:20	1

Lab Sample ID: LCS 310-425527/4
Matrix: Water
Analysis Batch: 425527

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Nitrate as N	2.00	2.049		mg/L		102	90 - 110	
Sulfate	10.0	10.15		mg/L		101	90 - 110	

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-425486/1-A
Matrix: Water
Analysis Batch: 427169

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425486

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 14:28	1
Arsenic	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 14:28	1
Barium	<0.00200		0.00200		mg/L		06/25/24 09:00	07/12/24 14:28	1

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

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

Lab Sample ID: MB 310-425486/1-A
Matrix: Water
Analysis Batch: 427169

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425486

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Beryllium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 14:28	1
Cadmium	<0.000200		0.000200		mg/L		06/25/24 09:00	07/12/24 14:28	1
Chromium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 14:28	1
Cobalt	<0.000500		0.000500		mg/L		06/25/24 09:00	07/12/24 14:28	1
Copper	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 14:28	1
Lead	<0.000500		0.000500		mg/L		06/25/24 09:00	07/12/24 14:28	1
Selenium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 14:28	1
Silver	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 14:28	1
Tin	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 14:28	1
Thallium	<0.00100		0.00100		mg/L		06/25/24 09:00	07/12/24 14:28	1
Vanadium	<0.00500		0.00500		mg/L		06/25/24 09:00	07/12/24 14:28	1
Zinc	<0.0200		0.0200		mg/L		06/25/24 09:00	07/12/24 14:28	1
Iron	<0.100		0.100		mg/L		06/25/24 09:00	07/12/24 14:28	1
Manganese	<0.0100		0.0100		mg/L		06/25/24 09:00	07/12/24 14:28	1

Lab Sample ID: MB 310-425486/1-A
Matrix: Water
Analysis Batch: 427230

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425486

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Nickel	<0.00500		0.00500		mg/L		06/25/24 09:00	07/14/24 21:11	1

Lab Sample ID: LCS 310-425486/2-A
Matrix: Water
Analysis Batch: 427169

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425486

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Antimony	0.200	0.2289		mg/L		114	80 - 120
Arsenic	0.200	0.2163		mg/L		108	80 - 120
Barium	0.100	0.1108		mg/L		111	80 - 120
Beryllium	0.100	0.1090		mg/L		109	80 - 120
Cadmium	0.100	0.1070		mg/L		107	80 - 120
Chromium	0.100	0.1036		mg/L		104	80 - 120
Cobalt	0.100	0.1089		mg/L		109	80 - 120
Copper	0.200	0.2096		mg/L		105	80 - 120
Lead	0.200	0.2169		mg/L		108	80 - 120
Selenium	0.400	0.4143		mg/L		104	80 - 120
Silver	0.100	0.1069		mg/L		107	80 - 120
Tin	0.200	0.2030		mg/L		101	80 - 120
Thallium	0.100	0.1129		mg/L		113	80 - 120
Vanadium	0.100	0.1029		mg/L		103	80 - 120
Zinc	0.200	0.2083		mg/L		104	80 - 120
Iron	0.200	0.1861		mg/L		93	80 - 120
Manganese	0.100	0.1038		mg/L		104	80 - 120

QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

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

Lab Sample ID: LCS 310-425486/2-A
Matrix: Water
Analysis Batch: 427230

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425486

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Nickel	0.200	0.1999		mg/L		100	80 - 120

Lab Sample ID: 310-284193-1 DU
Matrix: Groundwater
Analysis Batch: 427207

Client Sample ID: MW-14
Prep Type: Total/NA
Prep Batch: 425486

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Antimony	<0.00200		<0.00200		mg/L		NC	20
Arsenic	<0.00200		<0.00200		mg/L		NC	20
Barium	0.274		0.2810		mg/L		2	20
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Cadmium	<0.000200		<0.000200		mg/L		NC	20
Chromium	<0.00500		<0.00500		mg/L		NC	20
Cobalt	<0.000500		<0.000500		mg/L		NC	20
Copper	<0.00500		<0.00500		mg/L		NC	20
Lead	0.000870		0.0008810		mg/L		1	20
Selenium	<0.00500		<0.00500		mg/L		NC	20
Silver	<0.00100		<0.00100		mg/L		NC	20
Tin	<0.00500		<0.00500		mg/L		NC	20
Thallium	<0.00100		<0.00100		mg/L		NC	20
Vanadium	<0.00500		<0.00500		mg/L		NC	20
Zinc	<0.0200		<0.0200		mg/L		NC	20
Iron	0.219		0.4597	F3	mg/L		71	20
Manganese	0.0226		0.02308		mg/L		2	20

Lab Sample ID: 310-284193-1 DU
Matrix: Groundwater
Analysis Batch: 427230

Client Sample ID: MW-14
Prep Type: Total/NA
Prep Batch: 425486

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Nickel	<0.00500		<0.00500		mg/L		NC	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-426238/1-A
Matrix: Water
Analysis Batch: 426425

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 426238

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		07/02/24 11:03	07/03/24 15:35	1

Lab Sample ID: LCS 310-426238/2-A
Matrix: Water
Analysis Batch: 426425

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 426238

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	0.00167	0.001677		mg/L		101	80 - 120

QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Method: 9012B - Cyanide, Total and/or Amenable

Lab Sample ID: MB 310-425819/1-A
 Matrix: Water
 Analysis Batch: 426029

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 425819

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0100		0.0100		mg/L		06/27/24 10:02	06/28/24 17:12	1

Lab Sample ID: LCS 310-425819/2-A
 Matrix: Water
 Analysis Batch: 426029

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 425819

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.200	0.1907		mg/L		95	90 - 110

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

Lab Sample ID: MB 410-521158/1
 Matrix: Water
 Analysis Batch: 521158

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide	<2.00		2.00		mg/L			06/25/24 10:34	1

Lab Sample ID: LCS 410-521158/2
 Matrix: Water
 Analysis Batch: 521158

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Sulfide	20.0	18.64		mg/L		93	77 - 110

Lab Sample ID: LCSD 410-521158/3
 Matrix: Water
 Analysis Batch: 521158

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfide	20.0	18.83		mg/L		94	77 - 110	1	10

Lab Sample ID: 310-284193-6 DU
 Matrix: Groundwater
 Analysis Batch: 521158

Client Sample ID: MW-26R
 Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Sulfide	<2.00		<2.00		mg/L		NC	10

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

Lab Sample ID: MB 310-425449/1
 Matrix: Water
 Analysis Batch: 425449

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	<5.0		5.0		mg/L			06/24/24 11:33	1

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QC Sample Results

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

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

Lab Sample ID: LCS 310-425449/2
Matrix: Water
Analysis Batch: 425449

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

Lab Sample ID: MB 310-425532/1
Matrix: Water
Analysis Batch: 425532

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	<5.0		5.0		mg/L			06/25/24 08:59	1

Lab Sample ID: LCS 310-425532/2
Matrix: Water
Analysis Batch: 425532

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	81 - 116

Lab Sample ID: MB 310-425551/1
Matrix: Water
Analysis Batch: 425551

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	<5.0		5.0		mg/L			06/25/24 10:01	1

Lab Sample ID: LCS 310-425551/2
Matrix: Water
Analysis Batch: 425551

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	95.00		mg/L		95	81 - 116

Lab Sample ID: MB 310-425556/1
Matrix: Water
Analysis Batch: 425556

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	<5.0		5.0		mg/L			06/25/24 10:39	1

Lab Sample ID: LCS 310-425556/2
Matrix: Water
Analysis Batch: 425556

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	98.00		mg/L		98	81 - 116

QC Association Summary

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

GC/MS VOA

Analysis Batch: 425457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-10	Trip Blank 1	Total/NA	Trip Blank	8260D	
310-284193-11	Trip Blank 2	Total/NA	Water	8260D	
MB 310-425457/5	Method Blank	Total/NA	Water	8260D	
LCS 310-425457/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-425457/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 425596

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-1	MW-14	Total/NA	Groundwater	8260D	
310-284193-2	MW-7	Total/NA	Groundwater	8260D	
310-284193-3	MW-8R	Total/NA	Groundwater	8260D	
310-284193-4	MW-10R	Total/NA	Groundwater	8260D	
310-284193-5	MW-11R	Total/NA	Groundwater	8260D	
310-284193-6	MW-26R	Total/NA	Groundwater	8260D	
310-284193-7	MW-27R	Total/NA	Groundwater	8260D	
310-284193-8	MW-29	Total/NA	Groundwater	8260D	
310-284193-9	MW-D	Total/NA	Groundwater	8260D	
310-284193-12	Trip Blank 3	Total/NA	Water	8260D	
MB 310-425596/5	Method Blank	Total/NA	Water	8260D	
LCS 310-425596/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-425596/7	Lab Control Sample	Total/NA	Water	8260D	

GC/MS Semi VOA

Prep Batch: 425691

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2	MW-7	Total/NA	Groundwater	3510C	
310-284193-4	MW-10R	Total/NA	Groundwater	3510C	
310-284193-5	MW-11R	Total/NA	Groundwater	3510C	
MB 310-425691/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-425691/14-A	Lab Control Sample	Total/NA	Water	3510C	
LCS 310-425691/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-425691/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 426230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2	MW-7	Total/NA	Groundwater	8270E	425691
310-284193-4	MW-10R	Total/NA	Groundwater	8270E	425691
310-284193-5	MW-11R	Total/NA	Groundwater	8270E	425691
MB 310-425691/1-A	Method Blank	Total/NA	Water	8270E	425691
LCS 310-425691/14-A	Lab Control Sample	Total/NA	Water	8270E	425691

Analysis Batch: 426234

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2	MW-7	Total/NA	Groundwater	8270E	425691
310-284193-4	MW-10R	Total/NA	Groundwater	8270E	425691
310-284193-5	MW-11R	Total/NA	Groundwater	8270E	425691
MB 310-425691/1-A	Method Blank	Total/NA	Water	8270E	425691
LCS 310-425691/2-A	Lab Control Sample	Total/NA	Water	8270E	425691
LCSD 310-425691/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	425691

Eurofins Cedar Falls

QC Association Summary

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

GC Semi VOA

Analysis Batch: 425395

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2	MW-7	Total/NA	Groundwater	8015C	
310-284193-4	MW-10R	Total/NA	Groundwater	8015C	
310-284193-5	MW-11R	Total/NA	Groundwater	8015C	
MB 310-425395/16	Method Blank	Total/NA	Water	8015C	
LCS 310-425395/17	Lab Control Sample	Total/NA	Water	8015C	

Prep Batch: 425670

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2	MW-7	Total/NA	Groundwater	3511	
310-284193-4	MW-10R	Total/NA	Groundwater	3511	
310-284193-5	MW-11R	Total/NA	Groundwater	3511	
MB 310-425670/1-A	Method Blank	Total/NA	Water	3511	
LCS 310-425670/6-A	Lab Control Sample	Total/NA	Water	3511	
LCS 310-425670/7-A	Lab Control Sample	Total/NA	Water	3511	
310-284193-2 MS	MW-7	Total/NA	Groundwater	3511	
310-284193-2 MSD	MW-7	Total/NA	Groundwater	3511	

Analysis Batch: 425791

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2	MW-7	Total/NA	Groundwater	8082A	425670
310-284193-4	MW-10R	Total/NA	Groundwater	8082A	425670
310-284193-5	MW-11R	Total/NA	Groundwater	8082A	425670
MB 310-425670/1-A	Method Blank	Total/NA	Water	8082A	425670
LCS 310-425670/7-A	Lab Control Sample	Total/NA	Water	8082A	425670

Analysis Batch: 425792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2	MW-7	Total/NA	Groundwater	8081B	425670
310-284193-4	MW-10R	Total/NA	Groundwater	8081B	425670
310-284193-5	MW-11R	Total/NA	Groundwater	8081B	425670
MB 310-425670/1-A	Method Blank	Total/NA	Water	8081B	425670
LCS 310-425670/6-A	Lab Control Sample	Total/NA	Water	8081B	425670
310-284193-2 MS	MW-7	Total/NA	Groundwater	8081B	425670
310-284193-2 MSD	MW-7	Total/NA	Groundwater	8081B	425670

Prep Batch: 521860

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2	MW-7	Total/NA	Groundwater	8151A	
310-284193-4	MW-10R	Total/NA	Groundwater	8151A	
310-284193-5	MW-11R	Total/NA	Groundwater	8151A	
MB 410-521860/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-521860/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 410-521860/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 522037

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2	MW-7	Total/NA	Groundwater	8151A	521860
310-284193-4	MW-10R	Total/NA	Groundwater	8151A	521860
310-284193-5	MW-11R	Total/NA	Groundwater	8151A	521860
MB 410-521860/1-A	Method Blank	Total/NA	Water	8151A	521860

Eurofins Cedar Falls

QC Association Summary

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

GC Semi VOA (Continued)

Analysis Batch: 522037 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 410-521860/2-A	Lab Control Sample	Total/NA	Water	8151A	521860
LCSD 410-521860/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	521860

Prep Batch: 522344

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2 - RE	MW-7	Total/NA	Groundwater	8151A	
310-284193-4 - RE	MW-10R	Total/NA	Groundwater	8151A	
310-284193-5 - RE	MW-11R	Total/NA	Groundwater	8151A	
MB 410-522344/1-A	Method Blank	Total/NA	Water	8151A	
LCS 410-522344/2-A	Lab Control Sample	Total/NA	Water	8151A	
LCSD 410-522344/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	

Analysis Batch: 522526

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2 - RE	MW-7	Total/NA	Groundwater	8151A	522344
310-284193-4 - RE	MW-10R	Total/NA	Groundwater	8151A	522344
310-284193-5 - RE	MW-11R	Total/NA	Groundwater	8151A	522344
MB 410-522344/1-A	Method Blank	Total/NA	Water	8151A	522344
LCS 410-522344/2-A	Lab Control Sample	Total/NA	Water	8151A	522344
LCSD 410-522344/3-A	Lab Control Sample Dup	Total/NA	Water	8151A	522344

HPLC/IC

Analysis Batch: 425527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-3	MW-8R	Total/NA	Groundwater	9056A	
310-284193-5	MW-11R	Total/NA	Groundwater	9056A	
310-284193-5	MW-11R	Total/NA	Groundwater	9056A	
310-284193-6	MW-26R	Total/NA	Groundwater	9056A	
310-284193-7	MW-27R	Total/NA	Groundwater	9056A	
310-284193-9	MW-D	Total/NA	Groundwater	9056A	
MB 310-425527/3	Method Blank	Total/NA	Water	9056A	
LCS 310-425527/4	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 425486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-1	MW-14	Total/NA	Groundwater	3005A	
310-284193-2	MW-7	Total/NA	Groundwater	3005A	
310-284193-3	MW-8R	Total/NA	Groundwater	3005A	
310-284193-4	MW-10R	Total/NA	Groundwater	3005A	
310-284193-5	MW-11R	Total/NA	Groundwater	3005A	
310-284193-6	MW-26R	Total/NA	Groundwater	3005A	
310-284193-7	MW-27R	Total/NA	Groundwater	3005A	
310-284193-8	MW-29	Total/NA	Groundwater	3005A	
310-284193-9	MW-D	Total/NA	Groundwater	3005A	
MB 310-425486/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-425486/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-284193-1 DU	MW-14	Total/NA	Groundwater	3005A	

Eurofins Cedar Falls

QC Association Summary

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

Metals

Prep Batch: 426238

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2	MW-7	Total/NA	Groundwater	7470A	
310-284193-3	MW-8R	Total/NA	Groundwater	7470A	
310-284193-4	MW-10R	Total/NA	Groundwater	7470A	
310-284193-5	MW-11R	Total/NA	Groundwater	7470A	
MB 310-426238/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-426238/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 426425

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2	MW-7	Total/NA	Groundwater	7470A	426238
310-284193-3	MW-8R	Total/NA	Groundwater	7470A	426238
310-284193-4	MW-10R	Total/NA	Groundwater	7470A	426238
310-284193-5	MW-11R	Total/NA	Groundwater	7470A	426238
MB 310-426238/1-A	Method Blank	Total/NA	Water	7470A	426238
LCS 310-426238/2-A	Lab Control Sample	Total/NA	Water	7470A	426238

Analysis Batch: 427169

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-425486/1-A	Method Blank	Total/NA	Water	6020B	425486
LCS 310-425486/2-A	Lab Control Sample	Total/NA	Water	6020B	425486

Analysis Batch: 427207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-1	MW-14	Total/NA	Groundwater	6020B	425486
310-284193-2	MW-7	Total/NA	Groundwater	6020B	425486
310-284193-3	MW-8R	Total/NA	Groundwater	6020B	425486
310-284193-4	MW-10R	Total/NA	Groundwater	6020B	425486
310-284193-5	MW-11R	Total/NA	Groundwater	6020B	425486
310-284193-6	MW-26R	Total/NA	Groundwater	6020B	425486
310-284193-7	MW-27R	Total/NA	Groundwater	6020B	425486
310-284193-8	MW-29	Total/NA	Groundwater	6020B	425486
310-284193-9	MW-D	Total/NA	Groundwater	6020B	425486
310-284193-1 DU	MW-14	Total/NA	Groundwater	6020B	425486

Analysis Batch: 427230

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-1	MW-14	Total/NA	Groundwater	6020B	425486
310-284193-2	MW-7	Total/NA	Groundwater	6020B	425486
310-284193-3	MW-8R	Total/NA	Groundwater	6020B	425486
310-284193-4	MW-10R	Total/NA	Groundwater	6020B	425486
310-284193-5	MW-11R	Total/NA	Groundwater	6020B	425486
310-284193-7	MW-27R	Total/NA	Groundwater	6020B	425486
310-284193-8	MW-29	Total/NA	Groundwater	6020B	425486
310-284193-9	MW-D	Total/NA	Groundwater	6020B	425486
MB 310-425486/1-A	Method Blank	Total/NA	Water	6020B	425486
LCS 310-425486/2-A	Lab Control Sample	Total/NA	Water	6020B	425486
310-284193-1 DU	MW-14	Total/NA	Groundwater	6020B	425486

QC Association Summary

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

Metals

Analysis Batch: 427305

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-6	MW-26R	Total/NA	Groundwater	6020B	425486

General Chemistry

Analysis Batch: 425449

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-1	MW-14	Total/NA	Groundwater	I-3765-85	
MB 310-425449/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-425449/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 425532

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2	MW-7	Total/NA	Groundwater	I-3765-85	
310-284193-8	MW-29	Total/NA	Groundwater	I-3765-85	
MB 310-425532/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-425532/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 425551

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-3	MW-8R	Total/NA	Groundwater	I-3765-85	
310-284193-6	MW-26R	Total/NA	Groundwater	I-3765-85	
310-284193-9	MW-D	Total/NA	Groundwater	I-3765-85	
MB 310-425551/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-425551/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 425556

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-4	MW-10R	Total/NA	Groundwater	I-3765-85	
310-284193-5	MW-11R	Total/NA	Groundwater	I-3765-85	
310-284193-7	MW-27R	Total/NA	Groundwater	I-3765-85	
MB 310-425556/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-425556/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Prep Batch: 425819

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2	MW-7	Total/NA	Groundwater	9012B	
310-284193-4	MW-10R	Total/NA	Groundwater	9012B	
310-284193-5	MW-11R	Total/NA	Groundwater	9012B	
MB 310-425819/1-A	Method Blank	Total/NA	Water	9012B	
LCS 310-425819/2-A	Lab Control Sample	Total/NA	Water	9012B	

Analysis Batch: 426029

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-2	MW-7	Total/NA	Groundwater	9012B	425819
310-284193-4	MW-10R	Total/NA	Groundwater	9012B	425819
310-284193-5	MW-11R	Total/NA	Groundwater	9012B	425819
MB 310-425819/1-A	Method Blank	Total/NA	Water	9012B	425819
LCS 310-425819/2-A	Lab Control Sample	Total/NA	Water	9012B	425819

QC Association Summary

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

General Chemistry

Analysis Batch: 521158

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-284193-1	MW-14	Total/NA	Groundwater	9034	
310-284193-2	MW-7	Total/NA	Groundwater	9034	
310-284193-3	MW-8R	Total/NA	Groundwater	9034	
310-284193-4	MW-10R	Total/NA	Groundwater	9034	
310-284193-5	MW-11R	Total/NA	Groundwater	9034	
310-284193-6	MW-26R	Total/NA	Groundwater	9034	
MB 410-521158/1	Method Blank	Total/NA	Water	9034	
LCS 410-521158/2	Lab Control Sample	Total/NA	Water	9034	
LCSD 410-521158/3	Lab Control Sample Dup	Total/NA	Water	9034	
310-284193-6 DU	MW-26R	Total/NA	Groundwater	9034	

Lab Chronicle

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-14

Lab Sample ID: 310-284193-1

Date Collected: 06/18/24 18:26

Matrix: Groundwater

Date Received: 06/21/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425596	MZR8	EET CF	06/25/24 23:17
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427230	NFT2	EET CF	07/14/24 21:36
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427207	A6US	EET CF	07/12/24 19:08
Total/NA	Analysis	9034		1	521158	USE1	ELLE	06/25/24 16:10
Total/NA	Analysis	I-3765-85		1	425449	DGU1	EET CF	06/24/24 11:33

Client Sample ID: MW-7

Lab Sample ID: 310-284193-2

Date Collected: 06/19/24 15:26

Matrix: Groundwater

Date Received: 06/21/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425596	MZR8	EET CF	06/25/24 23:39
Total/NA	Prep	3510C			425691	D0DG	EET CF	06/26/24 09:43
Total/NA	Analysis	8270E		1	426230	L0FS	EET CF	07/02/24 14:02
Total/NA	Prep	3510C			425691	D0DG	EET CF	06/26/24 09:43
Total/NA	Analysis	8270E		1	426234	L0FS	EET CF	07/02/24 14:21
Total/NA	Analysis	8015C		1	425395	V7YZ	EET CF	06/24/24 17:38
Total/NA	Prep	3511			425670	D2YP	EET CF	06/26/24 08:19
Total/NA	Analysis	8081B		1	425792	BW2O	EET CF	06/27/24 12:24
Total/NA	Prep	3511			425670	D2YP	EET CF	06/26/24 08:19
Total/NA	Analysis	8082A		1	425791	BW2O	EET CF	06/27/24 12:24
Total/NA	Prep	8151A			521860	QJZ6	ELLE	06/26/24 16:05
Total/NA	Analysis	8151A		1	522037	UAMZ	ELLE	06/27/24 08:32
Total/NA	Prep	8151A	RE		522344	QJZ6	ELLE	06/27/24 15:09
Total/NA	Analysis	8151A	RE	1	522526	UAMZ	ELLE	06/28/24 14:30
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427230	NFT2	EET CF	07/14/24 21:43
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427207	A6US	EET CF	07/12/24 19:21
Total/NA	Prep	7470A			426238	A6US	EET CF	07/02/24 11:03
Total/NA	Analysis	7470A		1	426425	A6US	EET CF	07/03/24 14:33
Total/NA	Prep	9012B			425819	WZC8	EET CF	06/27/24 10:02
Total/NA	Analysis	9012B		1	426029	ZJX4	EET CF	06/28/24 17:22
Total/NA	Analysis	9034		1	521158	USE1	ELLE	06/25/24 16:10
Total/NA	Analysis	I-3765-85		1	425532	DGU1	EET CF	06/25/24 08:59

Lab Chronicle

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-8R

Lab Sample ID: 310-284193-3

Date Collected: 06/19/24 17:11

Matrix: Groundwater

Date Received: 06/21/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425596	MZR8	EET CF	06/26/24 00:01
Total/NA	Analysis	9056A		1	425527	QTZ5	EET CF	06/24/24 09:18
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427230	NFT2	EET CF	07/14/24 22:01
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427207	A6US	EET CF	07/12/24 19:24
Total/NA	Prep	7470A			426238	A6US	EET CF	07/02/24 11:03
Total/NA	Analysis	7470A		1	426425	A6US	EET CF	07/03/24 14:35
Total/NA	Analysis	9034		1	521158	USE1	ELLE	06/25/24 16:10
Total/NA	Analysis	I-3765-85		1	425551	DGU1	EET CF	06/25/24 10:01

Client Sample ID: MW-10R

Lab Sample ID: 310-284193-4

Date Collected: 06/20/24 08:23

Matrix: Groundwater

Date Received: 06/21/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425596	MZR8	EET CF	06/26/24 00:23
Total/NA	Prep	3510C			425691	D0DG	EET CF	06/26/24 09:43
Total/NA	Analysis	8270E		1	426230	L0FS	EET CF	07/02/24 14:27
Total/NA	Prep	3510C			425691	D0DG	EET CF	06/26/24 09:43
Total/NA	Analysis	8270E		1	426234	L0FS	EET CF	07/02/24 14:48
Total/NA	Analysis	8015C		1	425395	V7YZ	EET CF	06/24/24 17:58
Total/NA	Prep	3511			425670	D2YP	EET CF	06/26/24 08:19
Total/NA	Analysis	8081B		1	425792	BW2O	EET CF	06/27/24 12:40
Total/NA	Prep	3511			425670	D2YP	EET CF	06/26/24 08:19
Total/NA	Analysis	8082A		1	425791	BW2O	EET CF	06/27/24 12:40
Total/NA	Prep	8151A			521860	QJZ6	ELLE	06/26/24 16:05
Total/NA	Analysis	8151A		1	522037	UAMZ	ELLE	06/27/24 09:00
Total/NA	Prep	8151A	RE		522344	QJZ6	ELLE	06/27/24 15:09
Total/NA	Analysis	8151A	RE	1	522526	UAMZ	ELLE	06/28/24 14:58
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427230	NFT2	EET CF	07/14/24 22:05
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427207	A6US	EET CF	07/12/24 19:26
Total/NA	Prep	7470A			426238	A6US	EET CF	07/02/24 11:03
Total/NA	Analysis	7470A		1	426425	A6US	EET CF	07/03/24 14:37
Total/NA	Prep	9012B			425819	WZC8	EET CF	06/27/24 10:02
Total/NA	Analysis	9012B		1	426029	ZJX4	EET CF	06/28/24 17:34
Total/NA	Analysis	9034		1	521158	USE1	ELLE	06/25/24 16:10
Total/NA	Analysis	I-3765-85		1	425556	DGU1	EET CF	06/25/24 10:39

Lab Chronicle

Client: SCS Engineers
 Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
 (HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-11R

Lab Sample ID: 310-284193-5

Date Collected: 06/20/24 09:54

Matrix: Groundwater

Date Received: 06/21/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425596	MZR8	EET CF	06/26/24 00:44
Total/NA	Prep	3510C			425691	D0DG	EET CF	06/26/24 09:43
Total/NA	Analysis	8270E		1	426230	L0FS	EET CF	07/02/24 14:52
Total/NA	Prep	3510C			425691	D0DG	EET CF	06/26/24 09:43
Total/NA	Analysis	8270E		1	426234	L0FS	EET CF	07/02/24 15:15
Total/NA	Analysis	8015C		1	425395	V7YZ	EET CF	06/24/24 18:19
Total/NA	Prep	3511			425670	D2YP	EET CF	06/26/24 08:19
Total/NA	Analysis	8081B		1	425792	BW2O	EET CF	06/27/24 12:57
Total/NA	Prep	3511			425670	D2YP	EET CF	06/26/24 08:19
Total/NA	Analysis	8082A		1	425791	BW2O	EET CF	06/27/24 12:57
Total/NA	Prep	8151A			521860	QJZ6	ELLE	06/26/24 16:05
Total/NA	Analysis	8151A		1	522037	UAMZ	ELLE	06/27/24 09:28
Total/NA	Prep	8151A	RE		522344	QJZ6	ELLE	06/27/24 15:09
Total/NA	Analysis	8151A	RE	1	522526	UAMZ	ELLE	06/28/24 15:26
Total/NA	Analysis	9056A		1	425527	QTZ5	EET CF	06/24/24 09:29
Total/NA	Analysis	9056A		20	425527	QTZ5	EET CF	06/24/24 10:30
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427230	NFT2	EET CF	07/14/24 22:08
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427207	A6US	EET CF	07/12/24 19:28
Total/NA	Prep	7470A			426238	A6US	EET CF	07/02/24 11:03
Total/NA	Analysis	7470A		1	426425	A6US	EET CF	07/03/24 14:40
Total/NA	Prep	9012B			425819	WZC8	EET CF	06/27/24 10:02
Total/NA	Analysis	9012B		1	426029	ZJX4	EET CF	06/28/24 17:33
Total/NA	Analysis	9034		1	521158	USE1	ELLE	06/25/24 16:10
Total/NA	Analysis	I-3765-85		1	425556	DGU1	EET CF	06/25/24 10:39

Client Sample ID: MW-26R

Lab Sample ID: 310-284193-6

Date Collected: 06/19/24 12:13

Matrix: Groundwater

Date Received: 06/21/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425596	MZR8	EET CF	06/26/24 01:06
Total/NA	Analysis	9056A		1	425527	QTZ5	EET CF	06/24/24 09:41
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427305	NFT2	EET CF	07/15/24 14:06
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427207	A6US	EET CF	07/12/24 19:30
Total/NA	Analysis	9034		1	521158	USE1	ELLE	06/25/24 16:10
Total/NA	Analysis	I-3765-85		1	425551	DGU1	EET CF	06/25/24 10:01

Lab Chronicle

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

Client Sample ID: MW-27R

Lab Sample ID: 310-284193-7

Date Collected: 06/20/24 09:07

Matrix: Groundwater

Date Received: 06/21/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425596	MZR8	EET CF	06/26/24 01:28
Total/NA	Analysis	9056A		1	425527	QTZ5	EET CF	06/24/24 09:54
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427230	NFT2	EET CF	07/14/24 22:16
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427207	A6US	EET CF	07/12/24 19:32
Total/NA	Analysis	I-3765-85		1	425556	DGU1	EET CF	06/25/24 10:39

Client Sample ID: MW-29

Lab Sample ID: 310-284193-8

Date Collected: 06/19/24 11:02

Matrix: Groundwater

Date Received: 06/21/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425596	MZR8	EET CF	06/26/24 01:50
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427230	NFT2	EET CF	07/14/24 22:19
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427207	A6US	EET CF	07/12/24 19:35
Total/NA	Analysis	I-3765-85		1	425532	DGU1	EET CF	06/25/24 08:59

Client Sample ID: MW-D

Lab Sample ID: 310-284193-9

Date Collected: 06/20/24 09:07

Matrix: Groundwater

Date Received: 06/21/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425596	MZR8	EET CF	06/26/24 02:12
Total/NA	Analysis	9056A		1	425527	QTZ5	EET CF	06/24/24 10:06
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427230	NFT2	EET CF	07/14/24 22:23
Total/NA	Prep	3005A			425486	KM3E	EET CF	06/25/24 09:00
Total/NA	Analysis	6020B		1	427207	A6US	EET CF	07/12/24 19:37
Total/NA	Analysis	I-3765-85		1	425551	DGU1	EET CF	06/25/24 10:01

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-284193-10

Date Collected: 06/20/24 00:00

Matrix: Trip Blank

Date Received: 06/21/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425457	FE5V	EET CF	06/24/24 13:40

Lab Chronicle

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-284193-1

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-284193-11

Date Collected: 06/20/24 00:00

Matrix: Water

Date Received: 06/21/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425457	FE5V	EET CF	06/24/24 14:03

Client Sample ID: Trip Blank 3

Lab Sample ID: 310-284193-12

Date Collected: 06/20/24 00:00

Matrix: Water

Date Received: 06/21/24 16:40

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	425596	MZR8	EET CF	06/25/24 22:56

Laboratory References:

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

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

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
8082A	3511	Groundwater	PCB-1268
8260D		Groundwater	1,2,4-Trichlorobenzene
8260D		Groundwater	Allyl chloride
8260D		Groundwater	Ethyl methacrylate
8260D		Trip Blank	1,2,4-Trichlorobenzene
8260D		Trip Blank	Allyl chloride
8260D		Trip Blank	Ethyl methacrylate
8260D		Water	1,2,4-Trichlorobenzene
8260D		Water	Allyl chloride
8260D		Water	Ethyl methacrylate

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	361	03-01-26

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9034		Groundwater	Sulfide

Method Summary

Client: SCS Engineers
Project/Site: Loess Hills 1st 2024 Semi-Annual Sampling
(HMSP)

Job ID: 310-284193-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
8015C	Nonhalogenated Organic using GC/FID (Direct Aqueous Injection)	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
8082A	Polychlorinated Biphenyls (PCBs) by Gas Chromatography	SW846	EET CF
8151A	Herbicides (GC)	SW846	ELLE
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
9012B	Cyanide, Total and/or Amenable	SW846	EET CF
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	ELLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
3511	Microextraction of Organic Compounds	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
8151A	Extraction (Herbicides)	SW846	ELLE
9012B	Cyanide, Total and/or Amenable, Distillation	SW846	EET CF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Environment Testing
America



310-284193 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS</u>			
City/State:	<small>CITY</small>	<small>STATE</small>	Project:
		<u>IA</u>	
Receipt Information			
Date/Time Received:	<small>DATE</small>	<small>TIME</small>	Received By:
	<u>6-21-24</u>	<u>1640</u>	<u>MU</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee			
<input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>3</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
	<u>MW-14</u>	<u>MW-7</u>	<u>MW-8R</u> <u>MW-29</u>
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID:	<u>X</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>0.4</u>	Corrected Temp (°C):	<u>0.4</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? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Environment Testing
America

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client:			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE 6-21-24	TIME 16:40	Received By: <i>MU</i>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:
Multiple Coolers?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>2</u> of <u>3</u>
Cooler Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
<i>MW-10R</i>		<i>MW-11R</i>	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <i>X</i>		Correction Factor (°C): <i>0</i>	
*Temp Blank Temperature - If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <i>11.1</i>		Corrected Temp (°C): <i>11.1</i>	
Sample Container Temperature			
Container(s) used.	CONTAINER 1 <i>plastic 1L</i>	CONTAINER 2	
Uncorrected Temp (°C):	<i>10.2</i>	<i>10.3</i>	
Corrected Temp (°C):	<i>10.2</i>	<i>10.3</i>	
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

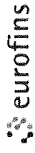


Environment Testing
America

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client:			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE 6-21-24	TIME 1640	Received By: <u>MU</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:
Multiple Coolers?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>3</u> of <u>3</u>
Cooler Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Sample Custody Seals Present?		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No
Trip Blank Present?		<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓
<u>MW-26R MW-27R MW-D</u>			
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>X</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>0.1</u>		Corrected Temp (°C): <u>0.1</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?		<input type="checkbox"/> Yes	<input type="checkbox"/> No
a) If yes: Is there evidence that the chilling process began?		<input type="checkbox"/> Yes	<input type="checkbox"/> 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?)		<input type="checkbox"/> Yes	<input type="checkbox"/> No
NOTE If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Regulatory Program: DW NPDES RCRA Other

Client Contact
 SCS Engineers
 1690 All-State Court, Suite 100
 West Des Moines IA 50265
 515-631-6160

Project Manager: Ben Madson
 Email: bmadson@scesengineers.com
 Cell: 515-776-9255

Site Contact: Ben Madson
Lab Contact: Mary Yang

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
 Other: 2 weeks 1 week 2 days 1 day

Project Name: 1st 2024 Semi-Annual Sampling (HMSP)
Site: Loess Hills Regional Sanitary Landfill
P O #: 27224020 00

Sample Identification	Sample Date	Sample Time	Sample Type (G=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I	Appendix II	Sulfide	Natural Attenuation	TSS	Mercury	Trip Blank	Sample Specific Notes
MW-14	6/16/24	1526	G	GW				X		X					
MW-17			G	GW				X		X					
MW-7	6/16/24	1526	G	GW				X		X					
MW-8R	6/16/24	1526	G	GW				X		X					
MW-10R	6/20/24	0523	G	GW				X		X					
MW-11R	6/20/24	0754	G	GW				X		X					
MW-25			G	GW				X		X					
MW-26R	6/17/24	23	G	GW				X		X					
MW-27R	6/20/24	0627	G	GW				X		X					
MW-28			G	GW				X		X					
MW-29	6/16/24	1102	G	GW				X		X					
Trip Blank															

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4= HNO3; 5= NaOH; 6= Other

Possible Hazard Identification:
 Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

Non-Hazard Flammable Skin Irritant Poison B Unknown

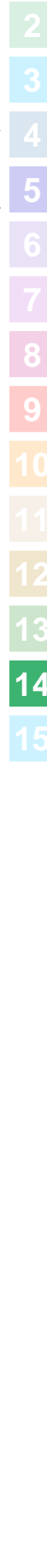
Special Instructions/QC Requirements & Comments:
 Natural Attenuation - Iron Manganese Nitrate and Sulfate

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
 Return to Client Disposal by Lab Archive for _____ Months

Received by: _____ **Company:** _____ **Date/Time:** _____

Received by: _____ **Company:** _____ **Date/Time:** _____

Received in Laboratory by: _____ **Company:** _____ **Date/Time:** _____





Regulatory Program: DW NPDES RCRA Other:

Project Manager: Ben Madson
 Email: bmadson@sosengineers.com
 Cell: 515-776-9255

Client Contact
 SCS Engineers
 1690 All-State Court, Suite 100
 West Des Moines IA 50265
 515-631-6160

Analysis Turnaround Time
 CALENDAR DAYS WORKING DAYS
 Other: 2 weeks 1 week 2 days 1 day

Project Name: 1st 2024 Semi-Annual Sampling (HMSP)
Site: Loess Hills Regional Sanitary Landfill
P O #: 27224020 00

Site Contact: Ben Madson
Lab Contact: Mary Yang

Date: _____
Carrier: _____

COC No: 2 of 2 COCs

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS/MSD (Y/N)	Appendix I	Natural Attenuation	TSS	Trip Blank	Sample Specific Notes
GU-1			G	GW				X	X	X		
SW-4			G	GW				X	X	X		
MW-D	12/24/2024		G	GW				X	X	X		Natural Attenuation Iron Manganese, Nitrate and Sulfate
Trip Blank											X	Include trip blanks in every cooler containing VOC sample containers

Preservation Used: 1= Ice, 2= HCl; 3= H2SO4; 4=HNO3; 5=NaOH; 6= Other _____

Possible Hazard Identification: Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

Non-Hazard Flammable Skin Irritant Poison B Unknown

Special Instructions/QC Requirements & Comments:

Natural Attenuation: Iron Manganese, Nitrate and Sulfate

Return to Client Disposal by Lab Archive for _____ Months

Relinquished by	Company	Date/Time	Relinquished by	Company	Date/Time	Relinquished by	Company	Date/Time	Relinquished by	Company	Date/Time	Therm ID No
Ben Madson	SCS	12/24/2024	Mary Yang	Company	12/24/2024							



Eurofins Cedar Falls

3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record



Client Information (Sub Contract Lab)	Sampler:	Lab PM: Yang, Mary E	Carrier Tracking No(s):	COC No: 310-73743.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Mary Yang@ET.EurofinsUS.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Lancaster Laboratories Environm	Accreditations Required (See note): State - Iowa; State Program - Iowa			Job #: 310-284193-1

Address: 2425 New Holland Pike, City: Lancaster State, Zip: PA, 17601 Phone: 717-656-2300(Tel) Email:	Due Date Requested: 7/8/2024 TAT Requested (days): PO #: WO #:	Analysis Requested Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 9034/ Sulfide 8151A/8151A_AP Appendix II Herbicides	Total Number of containers	Preservation Codes:
Project Name: Loess Hills 1st 2024 Semi-Annual Sampling (HMSP) Site: 310-SCS Loess Hills	Project #: 31013424 SSOW#:			Other:

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Soild, Overstail, BT-Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)								Total Number of containers	Special Instructions/Note:				
Preservation Code:																			
MW-14 (310-284193-1)	6/18/24	18:26 Central		Water		X												1	
MW-7 (310-284193-2)	6/19/24	15:26 Central		Water		X	X											3	
MW-8R (310-284193-3)	6/19/24	17:11 Central		Water		X												1	
MW-10R (310-284193-4)	6/20/24	08:23 Central		Water		X	X											3	
MW-11R (310-284193-5)	6/20/24	09:54 Central		Water		X	X											3	
MW-26R (310-284193-6)	6/19/24	12:13 Central		Water		X												1	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification Unconfirmed	Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:
Relinquished by: <i>T. Skelton</i>	Date/Time: 6/24/24 1425	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by:
Relinquished by:	Date/Time:	Company:	Received by: <i>MT</i>
	Date/Time: 6/25/24 09:55	Company: 6045T	

Custody Seals Intact: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks: R 15.4 C 15.1
--	-------------------	---

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Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-284193-1

Login Number: 284193

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Costello, Mackenzie K

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.	False	One cooler received out of temp.
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 <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-284193-1

Login Number: 284193

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 06/25/24 01:00 PM

Creator: Santiago, Nathaniel

Question	Answer	Comment
The cooler's custody seal is 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 acceptable, where thermal pres is required ($\leq 6C$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temp acceptable, where thermal pres is required ($\leq 6C$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	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	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	



ANALYTICAL REPORT

PREPARED FOR

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

Generated 9/4/2024 5:02:16 PM

JOB DESCRIPTION

August 2024 Background
Loess Hills Regional Sanitary Landfill

JOB NUMBER

310-288931-1

Eurofins Cedar Falls

Job Notes

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

Authorization



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Authorized for release by
Samuel Miller, Project Management Assistant I
Samuel.Miller@et.eurofinsus.com
(319)277-2401



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Case Narrative

Client: SCS Engineers
Project: August 2024 Background

Job ID: 310-288931-1

Job ID: 310-288931-1

Eurofins Cedar Falls

Job Narrative 310-288931-1

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 sample was received on 8/23/2024 4:45 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 1.8°C.

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: SCS Engineers
Project/Site: August 2024 Background

Job ID: 310-288931-1
SDG: Loess Hills Regional Sanitary Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-288931-1	MW-8R	Water	08/22/24 10:28	08/23/24 16:45

- 1
- 2
- 3
- 4
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Detection Summary

Client: SCS Engineers
Project/Site: August 2024 Background

Job ID: 310-288931-1
SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-8R

Lab Sample ID: 310-288931-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	50.3		3.8		mg/L	1		I-3765-85	Total/NA

- 1
- 2
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- 14

This Detection Summary does not include radiochemical test results.

Client Sample Results

Client: SCS Engineers
 Project/Site: August 2024 Background

Job ID: 310-288931-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-8R
 Date Collected: 08/22/24 10:28
 Date Received: 08/23/24 16:45

Lab Sample ID: 310-288931-1
 Matrix: Water

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200		0.000200		mg/L		09/03/24 14:45	09/04/24 12:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	50.3		3.8		mg/L			08/26/24 10:22	1

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Definitions/Glossary

Client: SCS Engineers
Project/Site: August 2024 Background

Job ID: 310-288931-1
SDG: Loess Hills Regional Sanitary Landfill

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

QC Sample Results

Client: SCS Engineers
 Project/Site: August 2024 Background

Job ID: 310-288931-1
 SDG: Loess Hills Regional Sanitary Landfill

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

Lab Sample ID: MB 310-431397/1
Matrix: Water
Analysis Batch: 431397

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	<5.0		5.0		mg/L			08/26/24 10:22	1

Lab Sample ID: LCS 310-431397/2
Matrix: Water
Analysis Batch: 431397

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	95.00		mg/L		95	81 - 116



QC Association Summary

Client: SCS Engineers
Project/Site: August 2024 Background

Job ID: 310-288931-1
SDG: Loess Hills Regional Sanitary Landfill

Metals

Prep Batch: 431949

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-288931-1	MW-8R	Total/NA	Water	7470A	

Analysis Batch: 432225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-288931-1	MW-8R	Total/NA	Water	7470A	431949

General Chemistry

Analysis Batch: 431397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-288931-1	MW-8R	Total/NA	Water	I-3765-85	
MB 310-431397/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-431397/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Lab Chronicle

Client: SCS Engineers
Project/Site: August 2024 Background

Job ID: 310-288931-1
SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-8R

Lab Sample ID: 310-288931-1

Date Collected: 08/22/24 10:28

Matrix: Water

Date Received: 08/23/24 16:45

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	7470A			431949	DHM5	EET CF	09/03/24 14:45
Total/NA	Analysis	7470A		1	432225	DHM5	EET CF	09/04/24 12:24
Total/NA	Analysis	I-3765-85		1	431397	ENB7	EET CF	08/26/24 10:22

Laboratory References:

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

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Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: August 2024 Background

Job ID: 310-288931-1
SDG: Loess Hills Regional Sanitary Landfill

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

- 1
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Method Summary

Client: SCS Engineers
Project/Site: August 2024 Background

Job ID: 310-288931-1
SDG: Loess Hills Regional Sanitary Landfill

Method	Method Description	Protocol	Laboratory
7470A	Mercury (CVAA)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
7470A	Preparation, Mercury	SW846	EET CF

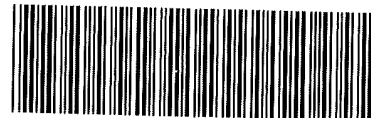
Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

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





Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SLS</u>			
City/State:	CITY <u>West Des Moines</u>	STATE <u>IA</u>	Project:
Receipt Information			
Date/Time Received:	DATE <u>8/23/24</u>	TIME <u>1645</u>	Received By: <u>PH</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # _____ of _____	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>MP P</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>1.8</u>		Corrected Temp (°C): <u>1.8</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? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Cedar Falls, IA 50613-6907
phone 319 277.2401 fax 319 277.2425

Regulatory Program: DW NPDES RCRA Other

TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Client Contact SCS Engineers 1690 All-State Court, Suite 100 West Des Moines Iowa 50265 515-631-6160		Project Manager: BEN MADSON Email: benmadson@scsengineers.com Cell:		Site Contact: Date: _____ Carrier: _____		COC No 1 of 1 COCs	
Analysis Turnaround Time <input type="checkbox"/> CALENDAR DAYS <input type="checkbox"/> WORKING DAYS Other: <input type="checkbox"/> 2 weeks <input type="checkbox"/> 1 week <input type="checkbox"/> 2 days <input type="checkbox"/> 1 day		Sample Identification MW-8R		Filtered Sample (Y/N) _____ Perform MS / MSD (Y/N) _____ Mercury _____ Total Suspended Solids _____		Sampler: For Lab Use Only: Walk-in Client: Lab Sampling _____ Job / SDG No _____	
Sample Date: 8-22-24 Sample Time: 10 28 Sample Type (C=Comp, G=Grab): G Matrix: GW # of Cont: _____		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return to Client <input type="checkbox"/> Disposal by Lab <input type="checkbox"/> Archive for _____ Months		Cooler Temp (°C) Obs'd _____ Received by: <i>Ben Madson</i> Date/Time: 8/23/24 9:45 Company: Eurofins		Therm ID No _____ Date/Time: 8/23/24 9:45 Company: Eurofins	
Preservation Used: 1= Ice, 2= HCl, 3= H2SO4, 4=HNO3, 5=NaOH, 6= Other _____ Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.		Relinquished by: <i>Ben Madson</i> Date/Time: 8/23/24 9:30 Company: SCS		Relinquished by: <i>Ben Madson</i> Date/Time: 8/23/24 9:30 Company: SCS		Relinquished by: <i>Ben Madson</i> Date/Time: 8/23/24 9:30 Company: SCS	
Special Instructions/QC Requirements & Comments:		Relinquished by: _____ Date/Time: _____ Company: _____		Relinquished by: _____ Date/Time: _____ Company: _____		Relinquished by: _____ Date/Time: _____ Company: _____	



Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-288931-1
SDG Number: Loess Hills Regional Sanitary Landfill

Login Number: 288931

List Number: 1

Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

PREPARED FOR

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

Generated 11/19/2024 3:15:04 PM

JOB DESCRIPTION

2nd 2024 Semi-Annual Sampling (Supplemental)
Loess Hills Regional Landfill

JOB NUMBER

310-295137-1

Eurofins Cedar Falls

Job Notes

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

Authorization



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11/19/2024 3:15:04 PM

Authorized for release by
Samuel Miller, Project Management Assistant I
Samuel.Miller@et.eurofinsus.com
(319)277-2401



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Case Narrative

Client: SCS Engineers
Project: 2nd 2024 Semi-Annual Sampling (Supplemental)

Job ID: 310-295137-1

Job ID: 310-295137-1

Eurofins Cedar Falls

Job Narrative 310-295137-1

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 sample was received on 11/13/2024 4:10 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.9°C.

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: SCS Engineers
Project: 2nd 2024 Semi-Annual Sampling (Supplemental)

Job ID: 310-295137-1

Job ID: 310-295137-2

Eurofins Cedar Falls

Job Narrative 310-295137-2

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 sample was received on 11/13/2024 4:10 PM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.9°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: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (Supplemental)

Job ID: 310-295137-1
SDG: Loess Hills Regional Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-295137-1	MW-31	Water	11/12/24 17:30	11/13/24 16:10

- 1
- 2
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Detection Summary

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (Supplemental)

Job ID: 310-295137-1
SDG: Loess Hills Regional Landfill

Client Sample ID: MW-31

Lab Sample ID: 310-295137-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Iron	54.9		0.100		mg/L	1		6020B	Total/NA
Manganese	10.7		0.0400		mg/L	4		6020B	Total/NA
Total Suspended Solids	84.0		15.0		mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (Supplemental)

Job ID: 310-295137-1
 SDG: Loess Hills Regional Landfill

Client Sample ID: MW-31
Date Collected: 11/12/24 17:30
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295137-1
Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200		mg/L			11/14/24 02:58	1
Sulfate	<1.00		1.00		mg/L			11/14/24 02:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	54.9		0.100		mg/L		11/15/24 09:30	11/15/24 17:45	1
Manganese	10.7		0.0400		mg/L		11/15/24 09:30	11/18/24 13:39	4

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	84.0		15.0		mg/L			11/14/24 19:59	1

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Definitions/Glossary

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (Supplemental)

Job ID: 310-295137-1
SDG: Loess Hills Regional Landfill

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

QC Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (Supplemental)

Job ID: 310-295137-1
 SDG: Loess Hills Regional Landfill

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-439982/3
Matrix: Water
Analysis Batch: 439982

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200		mg/L			11/13/24 19:32	1
Sulfate	<1.00		1.00		mg/L			11/13/24 19:32	1

Lab Sample ID: LCS 310-439982/6
Matrix: Water
Analysis Batch: 439982

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	2.00	2.102		mg/L		105	90 - 110
Sulfate	10.0	10.12		mg/L		101	90 - 110

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-439749/1-A
Matrix: Water
Analysis Batch: 440003

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 439749

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Iron	<0.100		0.100		mg/L		11/15/24 09:30	11/15/24 16:26	1
Manganese	<0.0100		0.0100		mg/L		11/15/24 09:30	11/15/24 16:26	1

Lab Sample ID: LCS 310-439749/2-A
Matrix: Water
Analysis Batch: 440003

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 439749

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	0.200	0.2077		mg/L		104	80 - 120
Manganese	0.100	0.09950		mg/L		99	80 - 120

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

Lab Sample ID: MB 310-439795/1
Matrix: Water
Analysis Batch: 439795

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	<5.0		5.0		mg/L			11/14/24 19:59	1

Lab Sample ID: LCS 310-439795/2
Matrix: Water
Analysis Batch: 439795

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	111.0		mg/L		111	81 - 116

QC Association Summary

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (Supplemental)

Job ID: 310-295137-1
SDG: Loess Hills Regional Landfill

HPLC/IC

Analysis Batch: 439982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295137-1	MW-31	Total/NA	Water	9056A	
MB 310-439982/3	Method Blank	Total/NA	Water	9056A	
LCS 310-439982/6	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 439749

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295137-1	MW-31	Total/NA	Water	3005A	
MB 310-439749/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-439749/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 440003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295137-1	MW-31	Total/NA	Water	6020B	439749
MB 310-439749/1-A	Method Blank	Total/NA	Water	6020B	439749
LCS 310-439749/2-A	Lab Control Sample	Total/NA	Water	6020B	439749

Analysis Batch: 440089

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295137-1	MW-31	Total/NA	Water	6020B	439749

General Chemistry

Analysis Batch: 439795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295137-1	MW-31	Total/NA	Water	I-3765-85	
MB 310-439795/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-439795/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Lab Chronicle

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (Supplemental)

Job ID: 310-295137-1
SDG: Loess Hills Regional Landfill

Client Sample ID: MW-31
Date Collected: 11/12/24 17:30
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295137-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		1	439982	WZC8	EET CF	11/14/24 02:58
Total/NA	Prep	3005A			439749	F5MW	EET CF	11/15/24 09:30
Total/NA	Analysis	6020B		1	440003	A6US	EET CF	11/15/24 17:45
Total/NA	Prep	3005A			439749	F5MW	EET CF	11/15/24 09:30
Total/NA	Analysis	6020B		4	440089	A6US	EET CF	11/18/24 13:39
Total/NA	Analysis	I-3765-85		1	439795	MDU9	EET CF	11/14/24 19:59

Laboratory References:

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



Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (Supplemental)

Job ID: 310-295137-1
SDG: Loess Hills Regional Landfill

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

- 1
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Method Summary

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (Supplemental)

Job ID: 310-295137-1
SDG: Loess Hills Regional Landfill

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

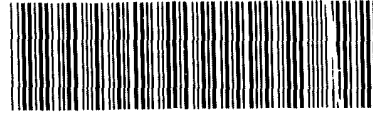
Laboratory References:

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





Environment Testing
America



310-295137 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE <u>11.13.24</u>	TIME <u>1610</u>	Received By: <u>CGC</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID.	
Multiple Coolers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # ____ of ____	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>P</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>0.9</u>	Corrected Temp (°C): <u>0.9</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? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			



Chain of Custody Record



Client Information Client Contact: Ben Madison Company: SCS Engineers Address: 1690 All State Court Suite 100 City: West Des Moines State, Zip: IA, 50265 Phone: 515-776-9255(Tel) Email: bmadson@scsengineers.com Project Name: 2nd 2024 Semi-Annual Sampling (Supplemental) Site: Loess Hills Regional Sanitary Landfill	Lab PM: Miller, Samuel E-Mail: Samuel.Miller@tet.eurofins.com Carrier Tracking No(s): COC No: 310-98202-26732.1 State of Origin: Page: Page 1 of 1 Job #:	Analysis Requested Due Date Requested: TAT Requested (days): Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Purchase Order Requested PO #: 27221020 00 WO #: 31013424 Project #: 31013424 SSOW#:	Sample Identification MW-31 Sample Date: 11/24/24 Sample Time: 7:30 Sample Type (C=comp, G=grab): G Matrix (W=water, S=solid, O=soil, BT=tissue, A=air): Water Preservation Code: Field Filtered Sample (Yes or No): Perform MS/MSD (Yes or No): 906A_ORGM_28D, 906A_ORGM_48H 602B - Iron and Manganese only I_3766_85 - Residue, Non-Filterable (TSS) Total Number of Containers:
<p>Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological Deliverable Requested I, II, III, IV, Other (specify)</p> <p>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months Special Instructions/QC Requirements:</p>			
Empty Kit Relinquished by Relinquished by Relinquished by Relinquished by		Method of Shipment: Received by: <i>CGC</i> Date/Time: 11-13-24 16:10 Received by: Date/Time: Received by: Date/Time:	
Custody Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No Cooler Temperature(s) °C and Other Remarks:	



Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-295137-1
SDG Number: Loess Hills Regional Landfill

Login Number: 295137
List Number: 1
Creator: Hirsch, Preston

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is < /= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



ANALYTICAL REPORT

PREPARED FOR

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

Generated 11/25/2024 2:15:31 PM

JOB DESCRIPTION

2nd 2024 Semi-Annual Sampling (HMSP)
Loess Hills Regional Sanitary Landfill

JOB NUMBER

310-295139-1

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



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11/25/2024 2:15:31 PM

Authorized for release by
Samuel Miller, Project Management Assistant I
Samuel.Miller@et.eurofinsus.com
(319)277-2401



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Case Narrative

Client: SCS Engineers
Project: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1

Job ID: 310-295139-1

Eurofins Cedar Falls

Job Narrative 310-295139-1

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 11/13/2024 4:10 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.8°C and 3.1°C.

GC/MS VOA

Method 8260D: The following sample was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The sample was analyzed within the 7-day holding time specified for unpreserved samples: GU-1 (310-295139-8).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-439883 recovered outside control limits for Iodomethane (-57.9%D). The LCS associated with this CCV passes CCV criteria for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-439883/3).

Method 8260D: The following sample was diluted due to the nature of the sample matrix: GU-1 (310-295139-8). 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.

HPLC/IC

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

Metals

Method 6020B: Due to the difficult matrix, only 10 mL was used for digestion.

GU-1 (310-295139-8)

Method 6020B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 310-439943 and analytical batch 310-440164 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.

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: SCS Engineers
Project: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1

Job ID: 310-295139-2

Eurofins Cedar Falls

Job Narrative 310-295139-2

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 11/13/2024 4:10 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.8°C and 3.1°C.

HPLC/IC

Method 9056A_ORGFM_48H: The following sample(s) was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: MW-8R (310-295139-3).

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: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
SDG: Loess Hills Regional Sanitary Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-295139-1	MW-14	Water	11/12/24 15:32	11/13/24 16:10
310-295139-2	MW-7	Water	11/12/24 11:26	11/13/24 16:10
310-295139-3	MW-8R	Water	11/12/24 14:43	11/13/24 16:10
310-295139-4	MW-10R	Water	11/12/24 13:25	11/13/24 16:10
310-295139-5	MW-11R	Water	11/12/24 10:49	11/13/24 16:10
310-295139-6	MW-26R	Water	11/12/24 13:54	11/13/24 16:10
310-295139-7	MW-29	Water	11/12/24 09:57	11/13/24 16:10
310-295139-8	GU-1	Water	11/12/24 17:30	11/13/24 16:10
310-295139-9	Trip Blank	Water	11/12/24 00:00	11/13/24 16:10

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Detection Summary

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-14

Lab Sample ID: 310-295139-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.266		0.00200		mg/L	1		6020B	Total/NA
Total Suspended Solids	4.4		1.9		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-7

Lab Sample ID: 310-295139-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	8.73		1.00		ug/L	1		8260D	Total/NA
Barium	0.328		0.00200		mg/L	1		6020B	Total/NA
Total Suspended Solids	2.1		1.9		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-8R

Lab Sample ID: 310-295139-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	7.61		1.00		ug/L	1		8260D	Total/NA
Sulfate	73.7		1.00		mg/L	1		9056A	Total/NA
Barium	0.402		0.00200		mg/L	1		6020B	Total/NA
Lead	0.000953		0.000500		mg/L	1		6020B	Total/NA
Nickel	0.00805		0.00500		mg/L	1		6020B	Total/NA
Iron	0.172		0.100		mg/L	1		6020B	Total/NA
Manganese	0.455		0.0100		mg/L	1		6020B	Total/NA
Mercury	0.000462		0.000200		mg/L	1		7470A	Total/NA
Total Suspended Solids	50.4		1.9		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-10R

Lab Sample ID: 310-295139-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	10.4		1.00		ug/L	1		8260D	Total/NA
1,1-Dichloroethane	1.71		1.00		ug/L	1		8260D	Total/NA
Barium	0.513		0.00200		mg/L	1		6020B	Total/NA
Total Suspended Solids	6.0		1.9		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-11R

Lab Sample ID: 310-295139-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	1.44		0.500		ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	1.95		1.00		ug/L	1		8260D	Total/NA
1,4-Dichlorobenzene	1.35		1.00		ug/L	1		8260D	Total/NA
Sulfate	100		10.0		mg/L	10		9056A	Total/NA
Arsenic	0.0110		0.00200		mg/L	1		6020B	Total/NA
Barium	0.487		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.0149		0.000500		mg/L	1		6020B	Total/NA
Lead	0.00287		0.000500		mg/L	1		6020B	Total/NA
Nickel	0.0475		0.00500		mg/L	1		6020B	Total/NA
Vanadium	0.00860		0.00500		mg/L	1		6020B	Total/NA
Zinc	0.0276		0.0200		mg/L	1		6020B	Total/NA
Iron	3.95		0.100		mg/L	1		6020B	Total/NA
Manganese	5.01		0.0100		mg/L	1		6020B	Total/NA
Total Suspended Solids	499		15.0		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-26R

Lab Sample ID: 310-295139-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
cis-1,2-Dichloroethene	11.5		1.00		ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-26R (Continued)

Lab Sample ID: 310-295139-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	13.1		1.00		mg/L	1		9056A	Total/NA
Arsenic	0.0403		0.00200		mg/L	1		6020B	Total/NA
Barium	0.799		0.00200		mg/L	1		6020B	Total/NA
Cadmium	0.000884		0.000200		mg/L	1		6020B	Total/NA
Cobalt	0.00500		0.000500		mg/L	1		6020B	Total/NA
Copper	0.00880		0.00500		mg/L	1		6020B	Total/NA
Lead	0.00675		0.000500		mg/L	1		6020B	Total/NA
Nickel	0.0212		0.00500		mg/L	1		6020B	Total/NA
Vanadium	0.00571		0.00500		mg/L	1		6020B	Total/NA
Zinc	0.0683		0.0200		mg/L	1		6020B	Total/NA
Iron	2.09		0.100		mg/L	1		6020B	Total/NA
Manganese	1.50		0.0100		mg/L	1		6020B	Total/NA
Total Suspended Solids	423		15.0		mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-29

Lab Sample ID: 310-295139-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.328		0.00200		mg/L	1		6020B	Total/NA
Total Suspended Solids	4.0		1.9		mg/L	1		I-3765-85	Total/NA

Client Sample ID: GU-1

Lab Sample ID: 310-295139-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	24800		500		ug/L	50		8260D	Total/NA
Benzene	46.1		25.0		ug/L	50		8260D	Total/NA
2-Butanone (MEK)	23400		500		ug/L	50		8260D	Total/NA
4-Methyl-2-pentanone (MIBK)	1230		500		ug/L	50		8260D	Total/NA
Toluene	171		50.0		ug/L	50		8260D	Total/NA
Antimony	0.0550		0.0100		mg/L	1		6020B	Total/NA
Arsenic	0.141		0.0100		mg/L	1		6020B	Total/NA
Barium	0.181		0.0100		mg/L	1		6020B	Total/NA
Chromium	0.118		0.0250		mg/L	1		6020B	Total/NA
Cobalt	0.00917		0.00250		mg/L	1		6020B	Total/NA
Lead	0.00454		0.00250		mg/L	1		6020B	Total/NA
Nickel	0.0876		0.0250		mg/L	1		6020B	Total/NA
Total Suspended Solids	35.0		15.0		mg/L	1		I-3765-85	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 310-295139-9

No Detections.

This Detection Summary does not include radiochemical test results.

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Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-14
Date Collected: 11/12/24 15:32
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-1
Matrix: Water

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			11/16/24 05:22	1
Acrylonitrile	<5.00		5.00		ug/L			11/16/24 05:22	1
Benzene	<0.500		0.500		ug/L			11/16/24 05:22	1
Bromochloromethane	<5.00		5.00		ug/L			11/16/24 05:22	1
Bromodichloromethane	<1.00		1.00		ug/L			11/16/24 05:22	1
Bromoform	<5.00		5.00		ug/L			11/16/24 05:22	1
Bromomethane	<4.00		4.00		ug/L			11/16/24 05:22	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/16/24 05:22	1
Carbon disulfide	<1.00		1.00		ug/L			11/16/24 05:22	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/16/24 05:22	1
Chlorobenzene	<1.00		1.00		ug/L			11/16/24 05:22	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/16/24 05:22	1
Chloroethane	<4.00		4.00		ug/L			11/16/24 05:22	1
Chloroform	<3.00		3.00		ug/L			11/16/24 05:22	1
Chloromethane	<3.00		3.00		ug/L			11/16/24 05:22	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			11/16/24 05:22	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 05:22	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/16/24 05:22	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/16/24 05:22	1
Dibromomethane	<1.00		1.00		ug/L			11/16/24 05:22	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 05:22	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 05:22	1
1,1-Dichloroethane	<1.00		1.00		ug/L			11/16/24 05:22	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/16/24 05:22	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/16/24 05:22	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/16/24 05:22	1
Ethylbenzene	<1.00		1.00		ug/L			11/16/24 05:22	1
2-Hexanone	<10.0		10.0		ug/L			11/16/24 05:22	1
Iodomethane	<10.0		10.0		ug/L			11/16/24 05:22	1
Methylene Chloride	<5.00		5.00		ug/L			11/16/24 05:22	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			11/16/24 05:22	1
Styrene	<1.00		1.00		ug/L			11/16/24 05:22	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 05:22	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 05:22	1
Tetrachloroethene	<1.00		1.00		ug/L			11/16/24 05:22	1
Toluene	<1.00		1.00		ug/L			11/16/24 05:22	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			11/16/24 05:22	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/16/24 05:22	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 05:22	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/16/24 05:22	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/16/24 05:22	1
Trichloroethene	<1.00		1.00		ug/L			11/16/24 05:22	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/16/24 05:22	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/16/24 05:22	1
Vinyl acetate	<10.0		10.0		ug/L			11/16/24 05:22	1
Vinyl chloride	<1.00		1.00		ug/L			11/16/24 05:22	1
Xylenes, Total	<3.00		3.00		ug/L			11/16/24 05:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120		11/16/24 05:22	1

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Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-14
Date Collected: 11/12/24 15:32
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-1
Matrix: Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	104		73 - 130		11/16/24 05:22	1
Toluene-d8 (Surr)	92		80 - 120		11/16/24 05:22	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		11/18/24 09:30	11/18/24 17:53	1
Arsenic	<0.00200		0.00200		mg/L		11/18/24 09:30	11/18/24 17:53	1
Barium	0.266		0.00200		mg/L		11/18/24 09:30	11/18/24 17:53	1
Beryllium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 17:53	1
Cadmium	<0.000200		0.000200		mg/L		11/18/24 09:30	11/18/24 17:53	1
Chromium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:53	1
Cobalt	<0.000500		0.000500		mg/L		11/18/24 09:30	11/18/24 17:53	1
Copper	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:53	1
Lead	<0.000500		0.000500		mg/L		11/18/24 09:30	11/18/24 17:53	1
Nickel	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:53	1
Selenium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:53	1
Silver	<0.00100	*+	0.00100		mg/L		11/18/24 09:30	11/18/24 17:53	1
Thallium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 17:53	1
Vanadium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:53	1
Zinc	<0.0200		0.0200		mg/L		11/18/24 09:30	11/18/24 17:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<2.00		2.00		mg/L			11/19/24 08:22	1
Total Suspended Solids (USGS I-3765-85)	4.4		1.9		mg/L			11/14/24 19:59	1

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-7
Date Collected: 11/12/24 11:26
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-2
Matrix: Water

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			11/16/24 05:45	1
Acrylonitrile	<5.00		5.00		ug/L			11/16/24 05:45	1
Benzene	<0.500		0.500		ug/L			11/16/24 05:45	1
Bromochloromethane	<5.00		5.00		ug/L			11/16/24 05:45	1
Bromodichloromethane	<1.00		1.00		ug/L			11/16/24 05:45	1
Bromoform	<5.00		5.00		ug/L			11/16/24 05:45	1
Bromomethane	<4.00		4.00		ug/L			11/16/24 05:45	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/16/24 05:45	1
Carbon disulfide	<1.00		1.00		ug/L			11/16/24 05:45	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/16/24 05:45	1
Chlorobenzene	<1.00		1.00		ug/L			11/16/24 05:45	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/16/24 05:45	1
Chloroethane	<4.00		4.00		ug/L			11/16/24 05:45	1
Chloroform	<3.00		3.00		ug/L			11/16/24 05:45	1
Chloromethane	<3.00		3.00		ug/L			11/16/24 05:45	1
cis-1,2-Dichloroethene	8.73		1.00		ug/L			11/16/24 05:45	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 05:45	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/16/24 05:45	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/16/24 05:45	1
Dibromomethane	<1.00		1.00		ug/L			11/16/24 05:45	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 05:45	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 05:45	1
1,1-Dichloroethane	<1.00		1.00		ug/L			11/16/24 05:45	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/16/24 05:45	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/16/24 05:45	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/16/24 05:45	1
Ethylbenzene	<1.00		1.00		ug/L			11/16/24 05:45	1
2-Hexanone	<10.0		10.0		ug/L			11/16/24 05:45	1
Iodomethane	<10.0		10.0		ug/L			11/16/24 05:45	1
Methylene Chloride	<5.00		5.00		ug/L			11/16/24 05:45	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			11/16/24 05:45	1
Styrene	<1.00		1.00		ug/L			11/16/24 05:45	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 05:45	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 05:45	1
Tetrachloroethene	<1.00		1.00		ug/L			11/16/24 05:45	1
Toluene	<1.00		1.00		ug/L			11/16/24 05:45	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			11/16/24 05:45	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/16/24 05:45	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 05:45	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/16/24 05:45	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/16/24 05:45	1
Trichloroethene	<1.00		1.00		ug/L			11/16/24 05:45	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/16/24 05:45	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/16/24 05:45	1
Vinyl acetate	<10.0		10.0		ug/L			11/16/24 05:45	1
Vinyl chloride	<1.00		1.00		ug/L			11/16/24 05:45	1
Xylenes, Total	<3.00		3.00		ug/L			11/16/24 05:45	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120		11/16/24 05:45	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-7
Date Collected: 11/12/24 11:26
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-2
Matrix: Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	103		73 - 130		11/16/24 05:45	1
Toluene-d8 (Surr)	92		80 - 120		11/16/24 05:45	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		11/18/24 09:30	11/18/24 17:56	1
Arsenic	<0.00200		0.00200		mg/L		11/18/24 09:30	11/18/24 17:56	1
Barium	0.328		0.00200		mg/L		11/18/24 09:30	11/18/24 17:56	1
Beryllium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 17:56	1
Cadmium	<0.000200		0.000200		mg/L		11/18/24 09:30	11/18/24 17:56	1
Chromium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:56	1
Cobalt	<0.000500		0.000500		mg/L		11/18/24 09:30	11/18/24 17:56	1
Copper	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:56	1
Lead	<0.000500		0.000500		mg/L		11/18/24 09:30	11/18/24 17:56	1
Nickel	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:56	1
Selenium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:56	1
Silver	<0.00100	*+	0.00100		mg/L		11/18/24 09:30	11/18/24 17:56	1
Thallium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 17:56	1
Vanadium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:56	1
Zinc	<0.0200		0.0200		mg/L		11/18/24 09:30	11/18/24 17:56	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	2.1		1.9		mg/L			11/14/24 19:59	1

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-8R
Date Collected: 11/12/24 14:43
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-3
Matrix: Water

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			11/16/24 06:07	1
Acrylonitrile	<5.00		5.00		ug/L			11/16/24 06:07	1
Benzene	<0.500		0.500		ug/L			11/16/24 06:07	1
Bromochloromethane	<5.00		5.00		ug/L			11/16/24 06:07	1
Bromodichloromethane	<1.00		1.00		ug/L			11/16/24 06:07	1
Bromoform	<5.00		5.00		ug/L			11/16/24 06:07	1
Bromomethane	<4.00		4.00		ug/L			11/16/24 06:07	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/16/24 06:07	1
Carbon disulfide	<1.00		1.00		ug/L			11/16/24 06:07	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/16/24 06:07	1
Chlorobenzene	<1.00		1.00		ug/L			11/16/24 06:07	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/16/24 06:07	1
Chloroethane	<4.00		4.00		ug/L			11/16/24 06:07	1
Chloroform	<3.00		3.00		ug/L			11/16/24 06:07	1
Chloromethane	<3.00		3.00		ug/L			11/16/24 06:07	1
cis-1,2-Dichloroethene	7.61		1.00		ug/L			11/16/24 06:07	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 06:07	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/16/24 06:07	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/16/24 06:07	1
Dibromomethane	<1.00		1.00		ug/L			11/16/24 06:07	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 06:07	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 06:07	1
1,1-Dichloroethane	<1.00		1.00		ug/L			11/16/24 06:07	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/16/24 06:07	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/16/24 06:07	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/16/24 06:07	1
Ethylbenzene	<1.00		1.00		ug/L			11/16/24 06:07	1
2-Hexanone	<10.0		10.0		ug/L			11/16/24 06:07	1
Iodomethane	<10.0		10.0		ug/L			11/16/24 06:07	1
Methylene Chloride	<5.00		5.00		ug/L			11/16/24 06:07	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			11/16/24 06:07	1
Styrene	<1.00		1.00		ug/L			11/16/24 06:07	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 06:07	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 06:07	1
Tetrachloroethene	<1.00		1.00		ug/L			11/16/24 06:07	1
Toluene	<1.00		1.00		ug/L			11/16/24 06:07	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			11/16/24 06:07	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/16/24 06:07	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 06:07	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/16/24 06:07	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/16/24 06:07	1
Trichloroethene	<1.00		1.00		ug/L			11/16/24 06:07	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/16/24 06:07	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/16/24 06:07	1
Vinyl acetate	<10.0		10.0		ug/L			11/16/24 06:07	1
Vinyl chloride	<1.00		1.00		ug/L			11/16/24 06:07	1
Xylenes, Total	<3.00		3.00		ug/L			11/16/24 06:07	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 120		11/16/24 06:07	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-8R
Date Collected: 11/12/24 14:43
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-3
Matrix: Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	103		73 - 130		11/16/24 06:07	1
Toluene-d8 (Surr)	91		80 - 120		11/16/24 06:07	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200	H	0.200		mg/L			11/16/24 01:53	1
Sulfate	73.7		1.00		mg/L			11/16/24 01:53	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		11/18/24 09:30	11/18/24 17:59	1
Arsenic	<0.00200		0.00200		mg/L		11/18/24 09:30	11/18/24 17:59	1
Barium	0.402		0.00200		mg/L		11/18/24 09:30	11/18/24 17:59	1
Beryllium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 17:59	1
Cadmium	<0.000200		0.000200		mg/L		11/18/24 09:30	11/18/24 17:59	1
Chromium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:59	1
Cobalt	<0.000500		0.000500		mg/L		11/18/24 09:30	11/18/24 17:59	1
Copper	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:59	1
Lead	0.000953		0.000500		mg/L		11/18/24 09:30	11/18/24 17:59	1
Nickel	0.00805		0.00500		mg/L		11/18/24 09:30	11/18/24 17:59	1
Selenium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:59	1
Silver	<0.00100	*+	0.00100		mg/L		11/18/24 09:30	11/18/24 17:59	1
Thallium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 17:59	1
Vanadium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:59	1
Zinc	<0.0200		0.0200		mg/L		11/18/24 09:30	11/18/24 17:59	1
Iron	0.172		0.100		mg/L		11/18/24 09:30	11/18/24 17:59	1
Manganese	0.455		0.0100		mg/L		11/18/24 09:30	11/18/24 17:59	1

Method: SW846 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.000462		0.000200		mg/L		11/21/24 15:25	11/22/24 16:03	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sulfide (SW846 9034)	<2.00		2.00		mg/L			11/19/24 08:22	1
Total Suspended Solids (USGS I-3765-85)	50.4		1.9		mg/L			11/14/24 19:59	1

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-10R
Date Collected: 11/12/24 13:25
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-4
Matrix: Water

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			11/16/24 06:30	1
Acrylonitrile	<5.00		5.00		ug/L			11/16/24 06:30	1
Benzene	<0.500		0.500		ug/L			11/16/24 06:30	1
Bromochloromethane	<5.00		5.00		ug/L			11/16/24 06:30	1
Bromodichloromethane	<1.00		1.00		ug/L			11/16/24 06:30	1
Bromoform	<5.00		5.00		ug/L			11/16/24 06:30	1
Bromomethane	<4.00		4.00		ug/L			11/16/24 06:30	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/16/24 06:30	1
Carbon disulfide	<1.00		1.00		ug/L			11/16/24 06:30	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/16/24 06:30	1
Chlorobenzene	<1.00		1.00		ug/L			11/16/24 06:30	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/16/24 06:30	1
Chloroethane	<4.00		4.00		ug/L			11/16/24 06:30	1
Chloroform	<3.00		3.00		ug/L			11/16/24 06:30	1
Chloromethane	<3.00		3.00		ug/L			11/16/24 06:30	1
cis-1,2-Dichloroethene	10.4		1.00		ug/L			11/16/24 06:30	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 06:30	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/16/24 06:30	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/16/24 06:30	1
Dibromomethane	<1.00		1.00		ug/L			11/16/24 06:30	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 06:30	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 06:30	1
1,1-Dichloroethane	1.71		1.00		ug/L			11/16/24 06:30	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/16/24 06:30	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/16/24 06:30	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/16/24 06:30	1
Ethylbenzene	<1.00		1.00		ug/L			11/16/24 06:30	1
2-Hexanone	<10.0		10.0		ug/L			11/16/24 06:30	1
Iodomethane	<10.0		10.0		ug/L			11/16/24 06:30	1
Methylene Chloride	<5.00		5.00		ug/L			11/16/24 06:30	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			11/16/24 06:30	1
Styrene	<1.00		1.00		ug/L			11/16/24 06:30	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 06:30	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 06:30	1
Tetrachloroethene	<1.00		1.00		ug/L			11/16/24 06:30	1
Toluene	<1.00		1.00		ug/L			11/16/24 06:30	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			11/16/24 06:30	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/16/24 06:30	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 06:30	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/16/24 06:30	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/16/24 06:30	1
Trichloroethene	<1.00		1.00		ug/L			11/16/24 06:30	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/16/24 06:30	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/16/24 06:30	1
Vinyl acetate	<10.0		10.0		ug/L			11/16/24 06:30	1
Vinyl chloride	<1.00		1.00		ug/L			11/16/24 06:30	1
Xylenes, Total	<3.00		3.00		ug/L			11/16/24 06:30	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		11/16/24 06:30	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-10R
Date Collected: 11/12/24 13:25
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-4
Matrix: Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	103		73 - 130		11/16/24 06:30	1
Toluene-d8 (Surr)	91		80 - 120		11/16/24 06:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		11/18/24 09:30	11/18/24 18:02	1
Arsenic	<0.00200		0.00200		mg/L		11/18/24 09:30	11/18/24 18:02	1
Barium	0.513		0.00200		mg/L		11/18/24 09:30	11/18/24 18:02	1
Beryllium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 18:02	1
Cadmium	<0.000200		0.000200		mg/L		11/18/24 09:30	11/18/24 18:02	1
Chromium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:02	1
Cobalt	<0.000500		0.000500		mg/L		11/18/24 09:30	11/18/24 18:02	1
Copper	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:02	1
Lead	<0.000500		0.000500		mg/L		11/18/24 09:30	11/18/24 18:02	1
Nickel	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:02	1
Selenium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:02	1
Silver	<0.00100	*+	0.00100		mg/L		11/18/24 09:30	11/18/24 18:02	1
Thallium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 18:02	1
Vanadium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:02	1
Zinc	<0.0200		0.0200		mg/L		11/18/24 09:30	11/18/24 18:02	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	6.0		1.9		mg/L			11/14/24 19:59	1

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-11R

Lab Sample ID: 310-295139-5

Date Collected: 11/12/24 10:49

Matrix: Water

Date Received: 11/13/24 16:10

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			11/16/24 06:53	1
Acrylonitrile	<5.00		5.00		ug/L			11/16/24 06:53	1
Benzene	1.44		0.500		ug/L			11/16/24 06:53	1
Bromochloromethane	<5.00		5.00		ug/L			11/16/24 06:53	1
Bromodichloromethane	<1.00		1.00		ug/L			11/16/24 06:53	1
Bromoform	<5.00		5.00		ug/L			11/16/24 06:53	1
Bromomethane	<4.00		4.00		ug/L			11/16/24 06:53	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/16/24 06:53	1
Carbon disulfide	<1.00		1.00		ug/L			11/16/24 06:53	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/16/24 06:53	1
Chlorobenzene	<1.00		1.00		ug/L			11/16/24 06:53	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/16/24 06:53	1
Chloroethane	<4.00		4.00		ug/L			11/16/24 06:53	1
Chloroform	<3.00		3.00		ug/L			11/16/24 06:53	1
Chloromethane	<3.00		3.00		ug/L			11/16/24 06:53	1
cis-1,2-Dichloroethene	1.95		1.00		ug/L			11/16/24 06:53	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 06:53	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/16/24 06:53	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/16/24 06:53	1
Dibromomethane	<1.00		1.00		ug/L			11/16/24 06:53	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 06:53	1
1,4-Dichlorobenzene	1.35		1.00		ug/L			11/16/24 06:53	1
1,1-Dichloroethane	<1.00		1.00		ug/L			11/16/24 06:53	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/16/24 06:53	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/16/24 06:53	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/16/24 06:53	1
Ethylbenzene	<1.00		1.00		ug/L			11/16/24 06:53	1
2-Hexanone	<10.0		10.0		ug/L			11/16/24 06:53	1
Iodomethane	<10.0		10.0		ug/L			11/16/24 06:53	1
Methylene Chloride	<5.00		5.00		ug/L			11/16/24 06:53	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			11/16/24 06:53	1
Styrene	<1.00		1.00		ug/L			11/16/24 06:53	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 06:53	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 06:53	1
Tetrachloroethene	<1.00		1.00		ug/L			11/16/24 06:53	1
Toluene	<1.00		1.00		ug/L			11/16/24 06:53	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			11/16/24 06:53	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/16/24 06:53	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 06:53	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/16/24 06:53	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/16/24 06:53	1
Trichloroethene	<1.00		1.00		ug/L			11/16/24 06:53	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/16/24 06:53	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/16/24 06:53	1
Vinyl acetate	<10.0		10.0		ug/L			11/16/24 06:53	1
Vinyl chloride	<1.00		1.00		ug/L			11/16/24 06:53	1
Xylenes, Total	<3.00		3.00		ug/L			11/16/24 06:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	94		80 - 120		11/16/24 06:53	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-11R

Lab Sample ID: 310-295139-5

Date Collected: 11/12/24 10:49

Matrix: Water

Date Received: 11/13/24 16:10

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	101		73 - 130		11/16/24 06:53	1
Toluene-d8 (Surr)	93		80 - 120		11/16/24 06:53	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200		mg/L			11/14/24 01:37	1
Sulfate	100		10.0		mg/L			11/14/24 11:45	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		11/18/24 09:30	11/18/24 18:04	1
Arsenic	0.0110		0.00200		mg/L		11/18/24 09:30	11/18/24 18:04	1
Barium	0.487		0.00200		mg/L		11/18/24 09:30	11/18/24 18:04	1
Beryllium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 18:04	1
Cadmium	<0.000200		0.000200		mg/L		11/18/24 09:30	11/18/24 18:04	1
Chromium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:04	1
Cobalt	0.0149		0.000500		mg/L		11/18/24 09:30	11/18/24 18:04	1
Copper	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:04	1
Lead	0.00287		0.000500		mg/L		11/18/24 09:30	11/18/24 18:04	1
Nickel	0.0475		0.00500		mg/L		11/18/24 09:30	11/18/24 18:04	1
Selenium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:04	1
Silver	<0.00100	*+	0.00100		mg/L		11/18/24 09:30	11/18/24 18:04	1
Thallium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 18:04	1
Vanadium	0.00860		0.00500		mg/L		11/18/24 09:30	11/18/24 18:04	1
Zinc	0.0276		0.0200		mg/L		11/18/24 09:30	11/18/24 18:04	1
Iron	3.95		0.100		mg/L		11/18/24 09:30	11/18/24 18:04	1
Manganese	5.01		0.0100		mg/L		11/18/24 09:30	11/18/24 18:04	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	499		15.0		mg/L			11/14/24 19:59	1

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-26R
Date Collected: 11/12/24 13:54
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-6
Matrix: Water

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			11/16/24 07:16	1
Acrylonitrile	<5.00		5.00		ug/L			11/16/24 07:16	1
Benzene	<0.500		0.500		ug/L			11/16/24 07:16	1
Bromochloromethane	<5.00		5.00		ug/L			11/16/24 07:16	1
Bromodichloromethane	<1.00		1.00		ug/L			11/16/24 07:16	1
Bromoform	<5.00		5.00		ug/L			11/16/24 07:16	1
Bromomethane	<4.00		4.00		ug/L			11/16/24 07:16	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/16/24 07:16	1
Carbon disulfide	<1.00		1.00		ug/L			11/16/24 07:16	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/16/24 07:16	1
Chlorobenzene	<1.00		1.00		ug/L			11/16/24 07:16	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/16/24 07:16	1
Chloroethane	<4.00		4.00		ug/L			11/16/24 07:16	1
Chloroform	<3.00		3.00		ug/L			11/16/24 07:16	1
Chloromethane	<3.00		3.00		ug/L			11/16/24 07:16	1
cis-1,2-Dichloroethene	11.5		1.00		ug/L			11/16/24 07:16	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 07:16	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/16/24 07:16	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/16/24 07:16	1
Dibromomethane	<1.00		1.00		ug/L			11/16/24 07:16	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 07:16	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 07:16	1
1,1-Dichloroethane	<1.00		1.00		ug/L			11/16/24 07:16	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/16/24 07:16	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/16/24 07:16	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/16/24 07:16	1
Ethylbenzene	<1.00		1.00		ug/L			11/16/24 07:16	1
2-Hexanone	<10.0		10.0		ug/L			11/16/24 07:16	1
Iodomethane	<10.0		10.0		ug/L			11/16/24 07:16	1
Methylene Chloride	<5.00		5.00		ug/L			11/16/24 07:16	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			11/16/24 07:16	1
Styrene	<1.00		1.00		ug/L			11/16/24 07:16	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 07:16	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 07:16	1
Tetrachloroethene	<1.00		1.00		ug/L			11/16/24 07:16	1
Toluene	<1.00		1.00		ug/L			11/16/24 07:16	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			11/16/24 07:16	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/16/24 07:16	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 07:16	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/16/24 07:16	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/16/24 07:16	1
Trichloroethene	<1.00		1.00		ug/L			11/16/24 07:16	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/16/24 07:16	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/16/24 07:16	1
Vinyl acetate	<10.0		10.0		ug/L			11/16/24 07:16	1
Vinyl chloride	<1.00		1.00		ug/L			11/16/24 07:16	1
Xylenes, Total	<3.00		3.00		ug/L			11/16/24 07:16	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		80 - 120		11/16/24 07:16	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-26R
 Date Collected: 11/12/24 13:54
 Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-6
 Matrix: Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	104		73 - 130		11/16/24 07:16	1
Toluene-d8 (Surr)	90		80 - 120		11/16/24 07:16	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200		mg/L			11/14/24 02:42	1
Sulfate	13.1		1.00		mg/L			11/14/24 02:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		11/18/24 09:30	11/18/24 18:10	1
Arsenic	0.0403		0.00200		mg/L		11/18/24 09:30	11/18/24 18:10	1
Barium	0.799		0.00200		mg/L		11/18/24 09:30	11/18/24 18:10	1
Beryllium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 18:10	1
Cadmium	0.000884		0.000200		mg/L		11/18/24 09:30	11/18/24 18:10	1
Chromium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:10	1
Cobalt	0.00500		0.000500		mg/L		11/18/24 09:30	11/18/24 18:10	1
Copper	0.00880		0.00500		mg/L		11/18/24 09:30	11/18/24 18:10	1
Lead	0.00675		0.000500		mg/L		11/18/24 09:30	11/18/24 18:10	1
Nickel	0.0212		0.00500		mg/L		11/18/24 09:30	11/18/24 18:10	1
Selenium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:10	1
Silver	<0.00100	*+	0.00100		mg/L		11/18/24 09:30	11/18/24 18:10	1
Thallium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 18:10	1
Vanadium	0.00571		0.00500		mg/L		11/18/24 09:30	11/18/24 18:10	1
Zinc	0.0683		0.0200		mg/L		11/18/24 09:30	11/18/24 18:10	1
Iron	2.09		0.100		mg/L		11/18/24 09:30	11/18/24 18:10	1
Manganese	1.50		0.0100		mg/L		11/18/24 09:30	11/18/24 18:10	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	423		15.0		mg/L			11/15/24 13:46	1

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-29
Date Collected: 11/12/24 09:57
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-7
Matrix: Water

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			11/16/24 07:39	1
Acrylonitrile	<5.00		5.00		ug/L			11/16/24 07:39	1
Benzene	<0.500		0.500		ug/L			11/16/24 07:39	1
Bromochloromethane	<5.00		5.00		ug/L			11/16/24 07:39	1
Bromodichloromethane	<1.00		1.00		ug/L			11/16/24 07:39	1
Bromoform	<5.00		5.00		ug/L			11/16/24 07:39	1
Bromomethane	<4.00		4.00		ug/L			11/16/24 07:39	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/16/24 07:39	1
Carbon disulfide	<1.00		1.00		ug/L			11/16/24 07:39	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/16/24 07:39	1
Chlorobenzene	<1.00		1.00		ug/L			11/16/24 07:39	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/16/24 07:39	1
Chloroethane	<4.00		4.00		ug/L			11/16/24 07:39	1
Chloroform	<3.00		3.00		ug/L			11/16/24 07:39	1
Chloromethane	<3.00		3.00		ug/L			11/16/24 07:39	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			11/16/24 07:39	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 07:39	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/16/24 07:39	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/16/24 07:39	1
Dibromomethane	<1.00		1.00		ug/L			11/16/24 07:39	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 07:39	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 07:39	1
1,1-Dichloroethane	<1.00		1.00		ug/L			11/16/24 07:39	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/16/24 07:39	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/16/24 07:39	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/16/24 07:39	1
Ethylbenzene	<1.00		1.00		ug/L			11/16/24 07:39	1
2-Hexanone	<10.0		10.0		ug/L			11/16/24 07:39	1
Iodomethane	<10.0		10.0		ug/L			11/16/24 07:39	1
Methylene Chloride	<5.00		5.00		ug/L			11/16/24 07:39	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			11/16/24 07:39	1
Styrene	<1.00		1.00		ug/L			11/16/24 07:39	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 07:39	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 07:39	1
Tetrachloroethene	<1.00		1.00		ug/L			11/16/24 07:39	1
Toluene	<1.00		1.00		ug/L			11/16/24 07:39	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			11/16/24 07:39	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/16/24 07:39	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 07:39	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/16/24 07:39	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/16/24 07:39	1
Trichloroethene	<1.00		1.00		ug/L			11/16/24 07:39	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/16/24 07:39	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/16/24 07:39	1
Vinyl acetate	<10.0		10.0		ug/L			11/16/24 07:39	1
Vinyl chloride	<1.00		1.00		ug/L			11/16/24 07:39	1
Xylenes, Total	<3.00		3.00		ug/L			11/16/24 07:39	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	109		80 - 120		11/16/24 07:39	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-29
Date Collected: 11/12/24 09:57
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-7
Matrix: Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	105		73 - 130		11/16/24 07:39	1
Toluene-d8 (Surr)	88		80 - 120		11/16/24 07:39	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		11/18/24 09:30	11/18/24 18:24	1
Arsenic	<0.00200		0.00200		mg/L		11/18/24 09:30	11/18/24 18:24	1
Barium	0.328		0.00200		mg/L		11/18/24 09:30	11/18/24 18:24	1
Beryllium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 18:24	1
Cadmium	<0.000200		0.000200		mg/L		11/18/24 09:30	11/18/24 18:24	1
Chromium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:24	1
Cobalt	<0.000500		0.000500		mg/L		11/18/24 09:30	11/18/24 18:24	1
Copper	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:24	1
Lead	<0.000500		0.000500		mg/L		11/18/24 09:30	11/18/24 18:24	1
Nickel	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:24	1
Selenium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:24	1
Silver	<0.00100	*+	0.00100		mg/L		11/18/24 09:30	11/18/24 18:24	1
Thallium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 18:24	1
Vanadium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:24	1
Zinc	<0.0200		0.0200		mg/L		11/18/24 09:30	11/18/24 18:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	4.0		1.9		mg/L			11/15/24 13:46	1

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: GU-1

Lab Sample ID: 310-295139-8

Date Collected: 11/12/24 17:30

Matrix: Water

Date Received: 11/13/24 16:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	24800		500		ug/L			11/16/24 09:10	50
Acrylonitrile	<250		250		ug/L			11/16/24 09:10	50
Benzene	46.1		25.0		ug/L			11/16/24 09:10	50
Bromochloromethane	<250		250		ug/L			11/16/24 09:10	50
Bromodichloromethane	<50.0		50.0		ug/L			11/16/24 09:10	50
Bromoform	<250		250		ug/L			11/16/24 09:10	50
Bromomethane	<200		200		ug/L			11/16/24 09:10	50
2-Butanone (MEK)	23400		500		ug/L			11/16/24 09:10	50
Carbon disulfide	<50.0		50.0		ug/L			11/16/24 09:10	50
Carbon tetrachloride	<100		100		ug/L			11/16/24 09:10	50
Chlorobenzene	<50.0		50.0		ug/L			11/16/24 09:10	50
Chlorodibromomethane	<250		250		ug/L			11/16/24 09:10	50
Chloroethane	<200		200		ug/L			11/16/24 09:10	50
Chloroform	<150		150		ug/L			11/16/24 09:10	50
Chloromethane	<150		150		ug/L			11/16/24 09:10	50
cis-1,2-Dichloroethene	<50.0		50.0		ug/L			11/16/24 09:10	50
cis-1,3-Dichloropropene	<250		250		ug/L			11/16/24 09:10	50
1,2-Dibromo-3-Chloropropane	<250		250		ug/L			11/16/24 09:10	50
1,2-Dibromoethane (EDB)	<50.0		50.0		ug/L			11/16/24 09:10	50
Dibromomethane	<50.0		50.0		ug/L			11/16/24 09:10	50
1,2-Dichlorobenzene	<50.0		50.0		ug/L			11/16/24 09:10	50
1,4-Dichlorobenzene	<50.0		50.0		ug/L			11/16/24 09:10	50
1,1-Dichloroethane	<50.0		50.0		ug/L			11/16/24 09:10	50
1,2-Dichloroethane	<50.0		50.0		ug/L			11/16/24 09:10	50
1,1-Dichloroethene	<100		100		ug/L			11/16/24 09:10	50
1,2-Dichloropropane	<50.0		50.0		ug/L			11/16/24 09:10	50
Ethylbenzene	<50.0		50.0		ug/L			11/16/24 09:10	50
2-Hexanone	<500		500		ug/L			11/16/24 09:10	50
Iodomethane	<500		500		ug/L			11/16/24 09:10	50
Methylene Chloride	<250		250		ug/L			11/16/24 09:10	50
4-Methyl-2-pentanone (MIBK)	1230		500		ug/L			11/16/24 09:10	50
Styrene	<50.0		50.0		ug/L			11/16/24 09:10	50
1,1,1,2-Tetrachloroethane	<50.0		50.0		ug/L			11/16/24 09:10	50
1,1,2,2-Tetrachloroethane	<50.0		50.0		ug/L			11/16/24 09:10	50
Tetrachloroethene	<50.0		50.0		ug/L			11/16/24 09:10	50
Toluene	171		50.0		ug/L			11/16/24 09:10	50
trans-1,4-Dichloro-2-butene	<500		500		ug/L			11/16/24 09:10	50
trans-1,2-Dichloroethene	<50.0		50.0		ug/L			11/16/24 09:10	50
trans-1,3-Dichloropropene	<250		250		ug/L			11/16/24 09:10	50
1,1,1-Trichloroethane	<50.0		50.0		ug/L			11/16/24 09:10	50
1,1,2-Trichloroethane	<50.0		50.0		ug/L			11/16/24 09:10	50
Trichloroethene	<50.0		50.0		ug/L			11/16/24 09:10	50
Trichlorofluoromethane	<200		200		ug/L			11/16/24 09:10	50
1,2,3-Trichloropropane	<50.0		50.0		ug/L			11/16/24 09:10	50
Vinyl acetate	<500		500		ug/L			11/16/24 09:10	50
Vinyl chloride	<50.0		50.0		ug/L			11/16/24 09:10	50
Xylenes, Total	<150		150		ug/L			11/16/24 09:10	50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	99		80 - 120		11/16/24 09:10	50

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: GU-1
 Date Collected: 11/12/24 17:30
 Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-8
 Matrix: Water

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	103		73 - 130		11/16/24 09:10	50
Toluene-d8 (Surr)	93		80 - 120		11/16/24 09:10	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.0550		0.0100		mg/L		11/18/24 09:30	11/18/24 18:27	1
Arsenic	0.141		0.0100		mg/L		11/18/24 09:30	11/18/24 18:27	1
Barium	0.181		0.0100		mg/L		11/18/24 09:30	11/18/24 18:27	1
Beryllium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:27	1
Cadmium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 18:27	1
Chromium	0.118		0.0250		mg/L		11/18/24 09:30	11/18/24 18:27	1
Cobalt	0.00917		0.00250		mg/L		11/18/24 09:30	11/18/24 18:27	1
Copper	<0.0250		0.0250		mg/L		11/18/24 09:30	11/18/24 18:27	1
Lead	0.00454		0.00250		mg/L		11/18/24 09:30	11/18/24 18:27	1
Nickel	0.0876		0.0250		mg/L		11/18/24 09:30	11/18/24 18:27	1
Selenium	<0.0250		0.0250		mg/L		11/18/24 09:30	11/18/24 18:27	1
Silver	<0.00500	*+	0.00500		mg/L		11/18/24 09:30	11/18/24 18:27	1
Thallium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 18:27	1
Vanadium	<0.0250		0.0250		mg/L		11/18/24 09:30	11/18/24 18:27	1
Zinc	<0.100		0.100		mg/L		11/18/24 09:30	11/18/24 18:27	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	35.0		15.0		mg/L			11/14/24 19:59	1

Client Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: Trip Blank

Lab Sample ID: 310-295139-9

Date Collected: 11/12/24 00:00

Matrix: Water

Date Received: 11/13/24 16:10

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			11/16/24 02:42	1
Acrylonitrile	<5.00		5.00		ug/L			11/16/24 02:42	1
Benzene	<0.500		0.500		ug/L			11/16/24 02:42	1
Bromochloromethane	<5.00		5.00		ug/L			11/16/24 02:42	1
Bromodichloromethane	<1.00		1.00		ug/L			11/16/24 02:42	1
Bromoform	<5.00		5.00		ug/L			11/16/24 02:42	1
Bromomethane	<4.00		4.00		ug/L			11/16/24 02:42	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/16/24 02:42	1
Carbon disulfide	<1.00		1.00		ug/L			11/16/24 02:42	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/16/24 02:42	1
Chlorobenzene	<1.00		1.00		ug/L			11/16/24 02:42	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/16/24 02:42	1
Chloroethane	<4.00		4.00		ug/L			11/16/24 02:42	1
Chloroform	<3.00		3.00		ug/L			11/16/24 02:42	1
Chloromethane	<3.00		3.00		ug/L			11/16/24 02:42	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			11/16/24 02:42	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 02:42	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/16/24 02:42	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/16/24 02:42	1
Dibromomethane	<1.00		1.00		ug/L			11/16/24 02:42	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 02:42	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 02:42	1
1,1-Dichloroethane	<1.00		1.00		ug/L			11/16/24 02:42	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/16/24 02:42	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/16/24 02:42	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/16/24 02:42	1
Ethylbenzene	<1.00		1.00		ug/L			11/16/24 02:42	1
2-Hexanone	<10.0		10.0		ug/L			11/16/24 02:42	1
Iodomethane	<10.0		10.0		ug/L			11/16/24 02:42	1
Methylene Chloride	<5.00		5.00		ug/L			11/16/24 02:42	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			11/16/24 02:42	1
Styrene	<1.00		1.00		ug/L			11/16/24 02:42	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 02:42	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 02:42	1
Tetrachloroethene	<1.00		1.00		ug/L			11/16/24 02:42	1
Toluene	<1.00		1.00		ug/L			11/16/24 02:42	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			11/16/24 02:42	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/16/24 02:42	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 02:42	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/16/24 02:42	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/16/24 02:42	1
Trichloroethene	<1.00		1.00		ug/L			11/16/24 02:42	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/16/24 02:42	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/16/24 02:42	1
Vinyl acetate	<10.0		10.0		ug/L			11/16/24 02:42	1
Vinyl chloride	<1.00		1.00		ug/L			11/16/24 02:42	1
Xylenes, Total	<3.00		3.00		ug/L			11/16/24 02:42	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120		11/16/24 02:42	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: Trip Blank

Lab Sample ID: 310-295139-9

Date Collected: 11/12/24 00:00

Matrix: Water

Date Received: 11/13/24 16:10

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

<u>Surrogate</u>	<u>%Recovery</u>	<u>Qualifier</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
Dibromofluoromethane (Surr)	113		73 - 130		11/16/24 02:42	1
Toluene-d8 (Surr)	92		80 - 120		11/16/24 02:42	1

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Definitions/Glossary

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
SDG: Loess Hills Regional Sanitary Landfill

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time. This does not meet regulatory requirements.

Metals

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

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)
310-295139-1	MW-14	102	104	92
310-295139-2	MW-7	104	103	92
310-295139-3	MW-8R	100	103	91
310-295139-4	MW-10R	101	103	91
310-295139-5	MW-11R	94	101	93
310-295139-6	MW-26R	99	104	90
310-295139-7	MW-29	109	105	88
310-295139-8	GU-1	99	103	93
310-295139-9	Trip Blank	101	113	92
LCS 310-439883/6	Lab Control Sample	99	102	93
LCS 310-439883/7	Lab Control Sample	99	104	92
MB 310-439883/5	Method Blank	105	104	86

Surrogate Legend

- BFB = 4-Bromofluorobenzene (Surr)
- DBFM = Dibromofluoromethane (Surr)
- TOL = Toluene-d8 (Surr)



QC Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

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

Lab Sample ID: MB 310-439883/5
Matrix: Water
Analysis Batch: 439883

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Acetone	<10.0		10.0		ug/L			11/16/24 01:11	1
Acrylonitrile	<5.00		5.00		ug/L			11/16/24 01:11	1
Benzene	<0.500		0.500		ug/L			11/16/24 01:11	1
Bromochloromethane	<5.00		5.00		ug/L			11/16/24 01:11	1
Bromodichloromethane	<1.00		1.00		ug/L			11/16/24 01:11	1
Bromoform	<5.00		5.00		ug/L			11/16/24 01:11	1
Bromomethane	<4.00		4.00		ug/L			11/16/24 01:11	1
2-Butanone (MEK)	<10.0		10.0		ug/L			11/16/24 01:11	1
Carbon disulfide	<1.00		1.00		ug/L			11/16/24 01:11	1
Carbon tetrachloride	<2.00		2.00		ug/L			11/16/24 01:11	1
Chlorobenzene	<1.00		1.00		ug/L			11/16/24 01:11	1
Chlorodibromomethane	<5.00		5.00		ug/L			11/16/24 01:11	1
Chloroethane	<4.00		4.00		ug/L			11/16/24 01:11	1
Chloroform	<3.00		3.00		ug/L			11/16/24 01:11	1
Chloromethane	<3.00		3.00		ug/L			11/16/24 01:11	1
cis-1,2-Dichloroethene	<1.00		1.00		ug/L			11/16/24 01:11	1
cis-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 01:11	1
1,2-Dibromo-3-Chloropropane	<5.00		5.00		ug/L			11/16/24 01:11	1
1,2-Dibromoethane (EDB)	<1.00		1.00		ug/L			11/16/24 01:11	1
Dibromomethane	<1.00		1.00		ug/L			11/16/24 01:11	1
1,2-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 01:11	1
1,4-Dichlorobenzene	<1.00		1.00		ug/L			11/16/24 01:11	1
1,1-Dichloroethane	<1.00		1.00		ug/L			11/16/24 01:11	1
1,2-Dichloroethane	<1.00		1.00		ug/L			11/16/24 01:11	1
1,1-Dichloroethene	<2.00		2.00		ug/L			11/16/24 01:11	1
1,2-Dichloropropane	<1.00		1.00		ug/L			11/16/24 01:11	1
Ethylbenzene	<1.00		1.00		ug/L			11/16/24 01:11	1
2-Hexanone	<10.0		10.0		ug/L			11/16/24 01:11	1
Iodomethane	<10.0		10.0		ug/L			11/16/24 01:11	1
Methylene Chloride	<5.00		5.00		ug/L			11/16/24 01:11	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0		ug/L			11/16/24 01:11	1
Styrene	<1.00		1.00		ug/L			11/16/24 01:11	1
1,1,1,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 01:11	1
1,1,2,2-Tetrachloroethane	<1.00		1.00		ug/L			11/16/24 01:11	1
Tetrachloroethene	<1.00		1.00		ug/L			11/16/24 01:11	1
Toluene	<1.00		1.00		ug/L			11/16/24 01:11	1
trans-1,4-Dichloro-2-butene	<10.0		10.0		ug/L			11/16/24 01:11	1
trans-1,2-Dichloroethene	<1.00		1.00		ug/L			11/16/24 01:11	1
trans-1,3-Dichloropropene	<5.00		5.00		ug/L			11/16/24 01:11	1
1,1,1-Trichloroethane	<1.00		1.00		ug/L			11/16/24 01:11	1
1,1,2-Trichloroethane	<1.00		1.00		ug/L			11/16/24 01:11	1
Trichloroethene	<1.00		1.00		ug/L			11/16/24 01:11	1
Trichlorofluoromethane	<4.00		4.00		ug/L			11/16/24 01:11	1
1,2,3-Trichloropropane	<1.00		1.00		ug/L			11/16/24 01:11	1
Vinyl acetate	<10.0		10.0		ug/L			11/16/24 01:11	1
Vinyl chloride	<1.00		1.00		ug/L			11/16/24 01:11	1
Xylenes, Total	<3.00		3.00		ug/L			11/16/24 01:11	1

QC Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

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

Lab Sample ID: MB 310-439883/5
Matrix: Water
Analysis Batch: 439883

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

<u>Surrogate</u>	<u>MB</u>	<u>MB</u>	<u>Limits</u>	<u>Prepared</u>	<u>Analyzed</u>	<u>Dil Fac</u>
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	105		80 - 120		11/16/24 01:11	1
Dibromofluoromethane (Surr)	104		73 - 130		11/16/24 01:11	1
Toluene-d8 (Surr)	86		80 - 120		11/16/24 01:11	1

Lab Sample ID: LCS 310-439883/6
Matrix: Water
Analysis Batch: 439883

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

<u>Analyte</u>	<u>Spike</u>	<u>LCS</u>	<u>LCS</u>	<u>Unit</u>	<u>D</u>	<u>%Rec</u>	<u>%Rec</u>
	Added	Result	Qualifier				Limits
Acetone	40.0	39.47		ug/L		99	50 - 150
Acrylonitrile	200	224.1		ug/L		112	50 - 150
Benzene	20.0	21.61		ug/L		108	72 - 124
Bromochloromethane	20.0	21.77		ug/L		109	73 - 130
Bromodichloromethane	20.0	20.73		ug/L		104	74 - 122
Bromoform	20.0	19.13		ug/L		96	61 - 122
2-Butanone (MEK)	40.0	42.09		ug/L		105	50 - 150
Carbon disulfide	20.0	21.83		ug/L		109	59 - 135
Carbon tetrachloride	20.0	21.82		ug/L		109	67 - 132
Chlorobenzene	20.0	19.61		ug/L		98	76 - 120
Chlorodibromomethane	20.0	18.91		ug/L		95	71 - 121
Chloroform	20.0	20.04		ug/L		100	72 - 125
cis-1,2-Dichloroethene	20.0	23.30		ug/L		117	74 - 123
cis-1,3-Dichloropropene	20.0	18.62		ug/L		93	71 - 125
1,2-Dibromo-3-Chloropropane	20.0	17.71		ug/L		89	50 - 150
1,2-Dibromoethane (EDB)	20.0	19.45		ug/L		97	75 - 125
Dibromomethane	20.0	21.10		ug/L		106	74 - 125
1,2-Dichlorobenzene	20.0	18.93		ug/L		95	74 - 120
1,4-Dichlorobenzene	20.0	18.75		ug/L		94	72 - 120
1,1-Dichloroethane	20.0	22.66		ug/L		113	70 - 127
1,2-Dichloroethane	20.0	19.66		ug/L		98	71 - 125
1,1-Dichloroethene	20.0	22.99		ug/L		115	63 - 132
1,2-Dichloropropane	20.0	21.35		ug/L		107	73 - 124
Ethylbenzene	20.0	19.93		ug/L		100	74 - 122
2-Hexanone	40.0	35.47		ug/L		89	60 - 140
Iodomethane	20.0	10.59		ug/L		53	10 - 150
Methylene Chloride	20.0	21.90		ug/L		109	50 - 150
4-Methyl-2-pentanone (MIBK)	40.0	35.85		ug/L		90	60 - 139
Styrene	20.0	20.35		ug/L		102	74 - 121
1,1,1,2-Tetrachloroethane	20.0	19.58		ug/L		98	71 - 120
1,1,2,2-Tetrachloroethane	20.0	19.51		ug/L		98	68 - 124
Tetrachloroethene	20.0	20.32		ug/L		102	71 - 130
Toluene	20.0	19.32		ug/L		97	74 - 123
trans-1,4-Dichloro-2-butene	20.0	16.23		ug/L		81	50 - 150
trans-1,2-Dichloroethene	20.0	23.07		ug/L		115	70 - 126
trans-1,3-Dichloropropene	20.0	20.64		ug/L		103	69 - 123
1,1,1-Trichloroethane	20.0	21.31		ug/L		107	73 - 129
1,1,2-Trichloroethane	20.0	18.86		ug/L		94	73 - 123
Trichloroethene	20.0	22.37		ug/L		112	72 - 126

QC Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

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

Lab Sample ID: LCS 310-439883/6
Matrix: Water
Analysis Batch: 439883

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	20.0	18.96		ug/L		95	65 - 127
Vinyl acetate	40.0	44.10		ug/L		110	50 - 150
Xylenes, Total	40.0	39.60		ug/L		99	73 - 123

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	102		73 - 130
Toluene-d8 (Surr)	93		80 - 120

Lab Sample ID: LCS 310-439883/7
Matrix: Water
Analysis Batch: 439883

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	19.22		ug/L		96	23 - 150
Chloroethane	20.0	19.22		ug/L		96	54 - 136
Chloromethane	20.0	21.40		ug/L		107	38 - 150
Trichlorofluoromethane	20.0	22.62		ug/L		113	54 - 149
Vinyl chloride	20.0	20.77		ug/L		104	56 - 140

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	99		80 - 120
Dibromofluoromethane (Surr)	104		73 - 130
Toluene-d8 (Surr)	92		80 - 120

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-439982/3
Matrix: Water
Analysis Batch: 439982

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	<0.200		0.200		mg/L			11/13/24 19:32	1
Sulfate	<1.00		1.00		mg/L			11/13/24 19:32	1

Lab Sample ID: LCS 310-439982/6
Matrix: Water
Analysis Batch: 439982

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nitrate as N	2.00	2.102		mg/L		105	90 - 110
Sulfate	10.0	10.12		mg/L		101	90 - 110

QC Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-439943/1-A
Matrix: Water
Analysis Batch: 440164

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 439943

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200		mg/L		11/18/24 09:30	11/18/24 17:07	1
Arsenic	<0.00200		0.00200		mg/L		11/18/24 09:30	11/18/24 17:07	1
Barium	<0.00200		0.00200		mg/L		11/18/24 09:30	11/18/24 17:07	1
Beryllium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 17:07	1
Cadmium	<0.000200		0.000200		mg/L		11/18/24 09:30	11/18/24 17:07	1
Chromium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:07	1
Cobalt	<0.000500		0.000500		mg/L		11/18/24 09:30	11/18/24 17:07	1
Copper	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:07	1
Lead	<0.000500		0.000500		mg/L		11/18/24 09:30	11/18/24 17:07	1
Nickel	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:07	1
Selenium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:07	1
Silver	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 17:07	1
Thallium	<0.00100		0.00100		mg/L		11/18/24 09:30	11/18/24 17:07	1
Vanadium	<0.00500		0.00500		mg/L		11/18/24 09:30	11/18/24 17:07	1
Zinc	<0.0200		0.0200		mg/L		11/18/24 09:30	11/18/24 17:07	1
Iron	<0.100		0.100		mg/L		11/18/24 09:30	11/18/24 17:07	1
Manganese	<0.0100		0.0100		mg/L		11/18/24 09:30	11/18/24 17:07	1

Lab Sample ID: LCS 310-439943/2-A
Matrix: Water
Analysis Batch: 440164

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 439943

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2092		mg/L		105	80 - 120
Arsenic	0.200	0.2123		mg/L		106	80 - 120
Barium	0.100	0.1064		mg/L		106	80 - 120
Beryllium	0.100	0.1050		mg/L		105	80 - 120
Cadmium	0.100	0.09686		mg/L		97	80 - 120
Chromium	0.100	0.09539		mg/L		95	80 - 120
Cobalt	0.100	0.09697		mg/L		97	80 - 120
Copper	0.200	0.1927		mg/L		96	80 - 120
Lead	0.200	0.2191		mg/L		110	80 - 120
Nickel	0.200	0.1932		mg/L		97	80 - 120
Selenium	0.400	0.4056		mg/L		101	80 - 120
Silver	0.100	0.1216	*+	mg/L		122	80 - 120
Thallium	0.100	0.1096		mg/L		110	80 - 120
Vanadium	0.100	0.1024		mg/L		102	80 - 120
Zinc	0.200	0.1825		mg/L		91	80 - 120
Iron	0.200	0.1935		mg/L		97	80 - 120
Manganese	0.100	0.09907		mg/L		99	80 - 120

Lab Sample ID: 310-295139-5 DU
Matrix: Water
Analysis Batch: 440164

Client Sample ID: MW-11R
Prep Type: Total/NA
Prep Batch: 439943

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<0.00200		<0.00200		mg/L		NC	20
Arsenic	0.0110		0.01067		mg/L		3	20
Barium	0.487		0.4828		mg/L		0.8	20

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

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

Lab Sample ID: 310-295139-5 DU
Matrix: Water
Analysis Batch: 440164

Client Sample ID: MW-11R
Prep Type: Total/NA
Prep Batch: 439943

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Cadmium	<0.000200		<0.000200		mg/L		NC	20
Chromium	<0.00500		<0.00500		mg/L		NC	20
Cobalt	0.0149		0.01483		mg/L		0.6	20
Copper	<0.00500		<0.00500		mg/L		NC	20
Lead	0.00287		0.002820		mg/L		2	20
Nickel	0.0475		0.04725		mg/L		0.4	20
Selenium	<0.00500		<0.00500		mg/L		NC	20
Silver	<0.00100	*+	<0.00100	*+	mg/L		NC	20
Thallium	<0.00100		<0.00100		mg/L		NC	20
Vanadium	0.00860		0.008414		mg/L		2	20
Zinc	0.0276		0.02758		mg/L		0.2	20
Iron	3.95		3.904		mg/L		1	20
Manganese	5.01		4.917		mg/L		2	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 310-440555/1-A
Matrix: Water
Analysis Batch: 440724

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 440555

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Mercury	<0.000200		0.000200		mg/L		11/21/24 15:25	11/22/24 15:10	1

Lab Sample ID: LCS 310-440555/2-A
Matrix: Water
Analysis Batch: 440724

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 440555

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Mercury	0.00167	0.001604		mg/L		96	80 - 120

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

Lab Sample ID: MB 410-576666/1
Matrix: Water
Analysis Batch: 576666

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

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Sulfide	<2.00		2.00		mg/L			11/19/24 08:22	1

Lab Sample ID: LCS 410-576666/2
Matrix: Water
Analysis Batch: 576666

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

Analyte	Spike Added	LCS	LCS	Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Sulfide	20.1	19.21		mg/L		96	77 - 110

QC Sample Results

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

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

Lab Sample ID: LCSD 410-576666/3
 Matrix: Water
 Analysis Batch: 576666

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Sulfide	20.1	19.02		mg/L		95	77 - 110	1	10

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

Lab Sample ID: MB 310-439795/1
 Matrix: Water
 Analysis Batch: 439795

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	<5.0		5.0		mg/L			11/14/24 19:59	1

Lab Sample ID: LCS 310-439795/2
 Matrix: Water
 Analysis Batch: 439795

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	111.0		mg/L		111	81 - 116

Lab Sample ID: MB 310-439911/1
 Matrix: Water
 Analysis Batch: 439911

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	<5.0		5.0		mg/L			11/15/24 13:46	1

Lab Sample ID: LCS 310-439911/2
 Matrix: Water
 Analysis Batch: 439911

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

QC Association Summary

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
SDG: Loess Hills Regional Sanitary Landfill

GC/MS VOA

Analysis Batch: 439883

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295139-1	MW-14	Total/NA	Water	8260D	
310-295139-2	MW-7	Total/NA	Water	8260D	
310-295139-3	MW-8R	Total/NA	Water	8260D	
310-295139-4	MW-10R	Total/NA	Water	8260D	
310-295139-5	MW-11R	Total/NA	Water	8260D	
310-295139-6	MW-26R	Total/NA	Water	8260D	
310-295139-7	MW-29	Total/NA	Water	8260D	
310-295139-8	GU-1	Total/NA	Water	8260D	
310-295139-9	Trip Blank	Total/NA	Water	8260D	
MB 310-439883/5	Method Blank	Total/NA	Water	8260D	
LCS 310-439883/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-439883/7	Lab Control Sample	Total/NA	Water	8260D	

HPLC/IC

Analysis Batch: 439982

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295139-3	MW-8R	Total/NA	Water	9056A	
310-295139-5	MW-11R	Total/NA	Water	9056A	
310-295139-5	MW-11R	Total/NA	Water	9056A	
310-295139-6	MW-26R	Total/NA	Water	9056A	
MB 310-439982/3	Method Blank	Total/NA	Water	9056A	
LCS 310-439982/6	Lab Control Sample	Total/NA	Water	9056A	

Metals

Prep Batch: 439943

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295139-1	MW-14	Total/NA	Water	3005A	
310-295139-2	MW-7	Total/NA	Water	3005A	
310-295139-3	MW-8R	Total/NA	Water	3005A	
310-295139-4	MW-10R	Total/NA	Water	3005A	
310-295139-5	MW-11R	Total/NA	Water	3005A	
310-295139-6	MW-26R	Total/NA	Water	3005A	
310-295139-7	MW-29	Total/NA	Water	3005A	
310-295139-8	GU-1	Total/NA	Water	3005A	
MB 310-439943/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-439943/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-295139-5 DU	MW-11R	Total/NA	Water	3005A	

Analysis Batch: 440164

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295139-1	MW-14	Total/NA	Water	6020B	439943
310-295139-2	MW-7	Total/NA	Water	6020B	439943
310-295139-3	MW-8R	Total/NA	Water	6020B	439943
310-295139-4	MW-10R	Total/NA	Water	6020B	439943
310-295139-5	MW-11R	Total/NA	Water	6020B	439943
310-295139-6	MW-26R	Total/NA	Water	6020B	439943
310-295139-7	MW-29	Total/NA	Water	6020B	439943
310-295139-8	GU-1	Total/NA	Water	6020B	439943
MB 310-439943/1-A	Method Blank	Total/NA	Water	6020B	439943
LCS 310-439943/2-A	Lab Control Sample	Total/NA	Water	6020B	439943

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QC Association Summary

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
SDG: Loess Hills Regional Sanitary Landfill

Metals (Continued)

Analysis Batch: 440164 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295139-5 DU	MW-11R	Total/NA	Water	6020B	439943

Prep Batch: 440555

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295139-3	MW-8R	Total/NA	Water	7470A	
MB 310-440555/1-A	Method Blank	Total/NA	Water	7470A	
LCS 310-440555/2-A	Lab Control Sample	Total/NA	Water	7470A	

Analysis Batch: 440724

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295139-3	MW-8R	Total/NA	Water	7470A	440555
MB 310-440555/1-A	Method Blank	Total/NA	Water	7470A	440555
LCS 310-440555/2-A	Lab Control Sample	Total/NA	Water	7470A	440555

General Chemistry

Analysis Batch: 439795

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295139-1	MW-14	Total/NA	Water	I-3765-85	
310-295139-2	MW-7	Total/NA	Water	I-3765-85	
310-295139-3	MW-8R	Total/NA	Water	I-3765-85	
310-295139-4	MW-10R	Total/NA	Water	I-3765-85	
310-295139-5	MW-11R	Total/NA	Water	I-3765-85	
310-295139-8	GU-1	Total/NA	Water	I-3765-85	
MB 310-439795/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-439795/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 439911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295139-6	MW-26R	Total/NA	Water	I-3765-85	
310-295139-7	MW-29	Total/NA	Water	I-3765-85	
MB 310-439911/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-439911/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 576666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-295139-1	MW-14	Total/NA	Water	9034	
310-295139-3	MW-8R	Total/NA	Water	9034	
MB 410-576666/1	Method Blank	Total/NA	Water	9034	
LCS 410-576666/2	Lab Control Sample	Total/NA	Water	9034	
LCSD 410-576666/3	Lab Control Sample Dup	Total/NA	Water	9034	

Lab Chronicle

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-14
Date Collected: 11/12/24 15:32
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	439883	FE5V	EET CF	11/16/24 05:22
Total/NA	Prep	3005A			439943	F5MW	EET CF	11/18/24 09:30
Total/NA	Analysis	6020B		1	440164	A6US	EET CF	11/18/24 17:53
Total/NA	Analysis	9034		1	576666	USE1	ELLE	11/19/24 08:22
Total/NA	Analysis	I-3765-85		1	439795	MDU9	EET CF	11/14/24 19:59

Client Sample ID: MW-7
Date Collected: 11/12/24 11:26
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-2
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	439883	FE5V	EET CF	11/16/24 05:45
Total/NA	Prep	3005A			439943	F5MW	EET CF	11/18/24 09:30
Total/NA	Analysis	6020B		1	440164	A6US	EET CF	11/18/24 17:56
Total/NA	Analysis	I-3765-85		1	439795	MDU9	EET CF	11/14/24 19:59

Client Sample ID: MW-8R
Date Collected: 11/12/24 14:43
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-3
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	439883	FE5V	EET CF	11/16/24 06:07
Total/NA	Analysis	9056A		1	439982	WZC8	EET CF	11/16/24 01:53
Total/NA	Prep	3005A			439943	F5MW	EET CF	11/18/24 09:30
Total/NA	Analysis	6020B		1	440164	A6US	EET CF	11/18/24 17:59
Total/NA	Prep	7470A			440555	QTZ5	EET CF	11/21/24 15:25
Total/NA	Analysis	7470A		1	440724	QTZ5	EET CF	11/22/24 16:03
Total/NA	Analysis	9034		1	576666	USE1	ELLE	11/19/24 08:22
Total/NA	Analysis	I-3765-85		1	439795	MDU9	EET CF	11/14/24 19:59

Client Sample ID: MW-10R
Date Collected: 11/12/24 13:25
Date Received: 11/13/24 16:10

Lab Sample ID: 310-295139-4
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	439883	FE5V	EET CF	11/16/24 06:30
Total/NA	Prep	3005A			439943	F5MW	EET CF	11/18/24 09:30
Total/NA	Analysis	6020B		1	440164	A6US	EET CF	11/18/24 18:02
Total/NA	Analysis	I-3765-85		1	439795	MDU9	EET CF	11/14/24 19:59

Lab Chronicle

Client: SCS Engineers
 Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
 SDG: Loess Hills Regional Sanitary Landfill

Client Sample ID: MW-11R

Lab Sample ID: 310-295139-5

Date Collected: 11/12/24 10:49

Matrix: Water

Date Received: 11/13/24 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	439883	FE5V	EET CF	11/16/24 06:53
Total/NA	Analysis	9056A		1	439982	WZC8	EET CF	11/14/24 01:37
Total/NA	Analysis	9056A		10	439982	WZC8	EET CF	11/14/24 11:45
Total/NA	Prep	3005A			439943	F5MW	EET CF	11/18/24 09:30
Total/NA	Analysis	6020B		1	440164	A6US	EET CF	11/18/24 18:04
Total/NA	Analysis	I-3765-85		1	439795	MDU9	EET CF	11/14/24 19:59

Client Sample ID: MW-26R

Lab Sample ID: 310-295139-6

Date Collected: 11/12/24 13:54

Matrix: Water

Date Received: 11/13/24 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	439883	FE5V	EET CF	11/16/24 07:16
Total/NA	Analysis	9056A		1	439982	WZC8	EET CF	11/14/24 02:42
Total/NA	Prep	3005A			439943	F5MW	EET CF	11/18/24 09:30
Total/NA	Analysis	6020B		1	440164	A6US	EET CF	11/18/24 18:10
Total/NA	Analysis	I-3765-85		1	439911	DGU1	EET CF	11/15/24 13:46

Client Sample ID: MW-29

Lab Sample ID: 310-295139-7

Date Collected: 11/12/24 09:57

Matrix: Water

Date Received: 11/13/24 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	439883	FE5V	EET CF	11/16/24 07:39
Total/NA	Prep	3005A			439943	F5MW	EET CF	11/18/24 09:30
Total/NA	Analysis	6020B		1	440164	A6US	EET CF	11/18/24 18:24
Total/NA	Analysis	I-3765-85		1	439911	DGU1	EET CF	11/15/24 13:46

Client Sample ID: GU-1

Lab Sample ID: 310-295139-8

Date Collected: 11/12/24 17:30

Matrix: Water

Date Received: 11/13/24 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		50	439883	FE5V	EET CF	11/16/24 09:10
Total/NA	Prep	3005A			439943	F5MW	EET CF	11/18/24 09:30
Total/NA	Analysis	6020B		1	440164	A6US	EET CF	11/18/24 18:27
Total/NA	Analysis	I-3765-85		1	439795	MDU9	EET CF	11/14/24 19:59

Client Sample ID: Trip Blank

Lab Sample ID: 310-295139-9

Date Collected: 11/12/24 00:00

Matrix: Water

Date Received: 11/13/24 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	439883	FE5V	EET CF	11/16/24 02:42

Lab Chronicle

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
SDG: Loess Hills Regional Sanitary Landfill

Laboratory References:

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

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

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Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
SDG: Loess Hills Regional Sanitary Landfill

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	361	03-01-26

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
9034		Water	Sulfide



Method Summary

Client: SCS Engineers
Project/Site: 2nd 2024 Semi-Annual Sampling (HMSP)

Job ID: 310-295139-1
SDG: Loess Hills Regional Sanitary Landfill

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
7470A	Mercury (CVAA)	SW846	EET CF
9034	Sulfide, Acid Soluble and Insoluble (Titrimetric)	SW846	ELLE
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

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

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Environment Testing
America



Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>11-13-24</u>	<u>1610</u>	<u>CGC</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee			
<input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID:	
Multiple Coolers?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler # <u>1</u> of <u>2</u>	
Cooler Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
<u>MW-14, MW-26R</u>			
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID:	<u>P</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? <input type="checkbox"/> Yes <input type="checkbox"/> No			
a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			





Environment Testing
America

Place COC scanning label
here

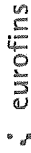
Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE <u>11-13-24</u>	TIME <u>1610</u>	Received By: <u>CGC</u>
Delivery Type: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input checked="" type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No If yes: Cooler ID: _____			
Multiple Coolers? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes: Cooler # <u>2</u> of <u>2</u>			
Cooler Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Cooler custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Sample Custody Seals Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No			
Trip Blank Present? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No If yes: Which VOA samples are in cooler? ↓			
Temperature Record			
Coolant: <input checked="" type="checkbox"/> Wet ice <input type="checkbox"/> Blue ice <input type="checkbox"/> Dry ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE			
Thermometer ID: <u>P</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>0.8</u>		Corrected Temp (°C): <u>0.8</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? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Chain of Custody Record

TestAmerica Des Moines SC
 214



Client Information			Lab P/N:			Carrier Tracking No(s)			COC No:											
Company: SCS Engineers			Miller, Samuel			State of Origin:			310-98189-26726 1											
Address: 1690 All State Court Suite 100			E-Mail: Samuel.Miller@et.eurofins.com			Page:			Page 1 of 2											
City: West Des Moines			Samuel Miller@et.eurofins.com			Job #:														
State, Zip: IA, 50265			PWSID:			Preservation Codes:			D - HNO3											
Phone: 515-776-9255(Tel)			PO #:			A - HCL			N - None											
Email: bmadson@scsengineers.com			27224020 00			CB - ZnAcetate/NaOH			B - NaOH											
Project Name: 2nd 2024 Semi-Annual Sampling (HMSP)			WO #:			Other:														
Site: Loess Hills Regional Sanitary Landfill			Project #:			Total Number of Containers														
			31013424																	
			SSOW#:																	
Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=Water, S=solid, O=wastewater, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	802B - Appendix I Metals	826D - Volatile Appendix I Sublist	1.3765.85 - Total Suspended Solids	904 - Sulfide	7470A - Mercury	9056A_ORGFM_28D, 9056A_ORGFM_48H	902B - (MOD) Appendix I Metals + Iron and Mn	902B, 7470A - Appendix II Metals	9012B - Cyanide, Total	9081B, 9082A, 9270E	826D - Volatile Appendix II Sublist	8161A - Appendix II Herbicides	8016C_DAI - Acetonitrile and Isobutanol	Special Instructions/Note:
MW-14	11/12/24	15:32		Water			X	X	X	X				X						
MW-17				Water			X	X	X											
MW-7	11/12/24	11:26		Water			X	X	X											
MW-8R	11/12/24	14:43	G	Water			X	X	X		X	X								
MW-10R	11/12/24	13:25	G	Water			X	X	X		X	X								
MW-11R	11/12/24	10:49	G	Water			X	X	X		X	X								
MW-25				Water			X	X	X											
MW-26R	11/12/24	13:54	G	Water			X	X	X		X	X								Plas-C 250 ml w/2 inc NOT
MW-27R				Water			X	X	X		X	X								
MW-28				Water			X	X	X		X	X								
MW-29	11/12/24	9:57	G	Water			X	X	X		X	X								

Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological
 Deliverable Requested I, II, III, IV, Other (specify)

Possible Hazard Identification
 Return To Client Disposal By Lab Archive For _____ Months
 Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

Special Instructions/QC Requirements:

Empty Kit Relinquished by	Date:	Time:	Method of Shipment:
Relinquished by Cole Tesar	11/13/24	12:00	Company SCS
Relinquished by			Company
Relinquished by			Company

Received by CGL Date Time: 11-13-24 1610 Company Eurofins
 Received by Date Time: Company
 Received by Date Time: Company
 Cooler Temperature(s) °C and Other Remarks:



Client Information
 Ben Madison
 SCS Engineers
 Address: 1690 All State Court Suite 100
 City: West Des Moines
 State, Zip: IA, 50265
 Phone: 515-776-9255 (Tel)
 Email: bmadson@scsengineers.com
 Project Name: 2nd 2024 Semi-Annual Sampling (HMSP)
 Site: Loess Hills Regional Sanitary Landfill

Carrier Tracking No(s): 310-98189-26726 2
 State of Origin: IA
 Job #: [Blank]
 Page 2 of 2

Analysis Requested

Lab PM: Miller, Samuel
 E-Mail: Samuel.Miller@et.eurofins.us

Sample ID	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=wastewater, BT=tissue, A=air)	Preservation Code	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	6020B - Appendix I Metals		6260D - Volatile Appendix I Sublsts	L 3765.85 - Total Suspended Solids	Total Number of Containers	Special Instructions/Note
								Δ	No				
GU-1	11/12/24	17:36	G	Water		X	X	X	X	X	X		
SW-4				Water		X	X	X	X	X	X		
MW-D				Water		X	X	X	X	X	X		
Trip Blank 1				Water									
Trip Blank 2				Water									

Possible Hazard Identification
 Non-Hazard Flammable Skin Irritant Poison B Unknown Radiological

Deliverable Requested I, II, III, IV, Other (specify) _____

Empty Kit Relinquished by _____ Date: _____ Method of Shipment: _____

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: _____

Relinquished by		Date/Time	Company
Colte Tesar		11/13/24 17:00	SCS
Received by	CGC	11-13-24 1610	KACOBHUS
Received by			
Received by			
Custody Seals Intact:	Cooler Temperature(s) °C and Other Remarks:		
Δ Yes Δ No			



Eurofins Cedar Falls

3019 Venture Way
 Cedar Falls, IA 50613
 Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler: N/A		Lab PM: Miller, Samuel		Carrier Tracking No(s): N/A		COC No: 310-78388.1				
Client Contact: Shipping/Receiving		Phone: N/A		E-Mail: Samuel.Miller@et.eurofins.com		State of Origin: Iowa		Page 1 of 1				
Company: Eurofins Lancaster Laboratories Environm				Accreditations Required (See note): State - Iowa; State Program - Iowa				Job #: 310-295139-1				
Address: 2425 New Holland Pike, Lancaster PA, 17601		Due Date Requested: 11/26/2024		Analysis Requested				Preservation Codes:				
City: Lancaster		TAT Requested (days): N/A										
State, Zip: PA, 17601		PO #: N/A		Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers				
Phone: 717-656-2300(Tel)		WO #: N/A										
Email: N/A		Project #: 31013424		9034/ Sulfide				Other: N/A				
Project Name: 2nd 2024 Semi-Annual Sampling (HMSP)		SSOW#: N/A										
Site: 310-SCS Loess Hills												
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)		Perform MS/MSD (Yes or No)		Total Number of containers	Special Instructions/Note:	
		Preservation Code:										
MW-14 (310-295139-1)		11/12/24	15:32 Central	G	Water			X			1	
MW-8R (310-295139-3)		11/12/24	14:43 Central	G	Water			X			1	
<p>Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.</p>												
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)						
Unconfirmed						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months						
Deliverable Requested: I, II, III, IV, Other (specify)				Primary Deliverable Rank: 2		Special Instructions/QC Requirements:						
Empty Kit Relinquished by:				Date:		Time:		Method of Shipment:				
Relinquished by: <i>[Signature]</i>		Date/Time: 11/14/24 12:25		Company:		Received by:		Date/Time:		Company:		
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:		Company:		
Relinquished by:		Date/Time:		Company:		Received by: <i>[Signature]</i>		Date/Time: 11/15/24 09:50		Company: BUET		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:				R:3.7 C13.8				

W

- 1
- 2
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- 14
- 15

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-295139-1
SDG Number: Loess Hills Regional Sanitary Landfill

Login Number: 295139
List Number: 1
Creator: Hirsch, Preston

List Source: Eurofins Cedar Falls

Question	Answer	Comment
Radioactivity wasn't checked or is < /= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is < 6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-295139-1

SDG Number: Loess Hills Regional Sanitary Landfill

Login Number: 295139

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Number: 2

List Creation: 11/15/24 03:00 PM

Creator: Santiago, Nathaniel

Question	Answer	Comment
The cooler's custody seal is 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 acceptable, where thermal pres is required ($\leq 6^{\circ}\text{C}$, not frozen).	True	
Cooler Temperature is recorded.	True	
WV: Container Temp acceptable, where thermal pres is required ($\leq 6^{\circ}\text{C}$, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	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	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	



Appendix B-2
Data Validation

Completed by: Semir Omerovic
 Date of Sampling: 4/3/2024
 Lab Report Date: 4/18/2024
 Site Name: Loess Hills Regional Sanitary Landfill
 Project Type: April 2024 Retest
 Lab Report Number: 310-278378-1

OK NO N/A NOTES

Sample Collection and Sample Handling

Chain of Custody	X			
Temperature	X			
Preservation	X			
Condition	X			
Case Narrative	X			
Holding Times	X			

Analytical Sensitivity and Blanks

Method Blank Detections			X	
Trip Blank Detections			X	

Accuracy

ICV/CCV	X			
LCS/LCSD	X			
MS/MSD	X			
Surrogates (organics only)	X			
Other QA QC samples	X			

Precision

QA/QC Sample RPDs	X			
Field Duplicates			X	

Completed by: Semir Omerovic
 Date of Sampling: 6/19/2024
 Lab Report Date: 7/8/2024
 Site Name: Loess Hills Regional Sanitary Landfill
 Project Type: Supplemental - 1st Semi-Annual Sampling Event
 Lab Report Number: 310-284194-1

OK NO N/A NOTES

Sample Collection and Sample Handling

Chain of Custody	X			
Temperature	X			
Preservation	X			
Condition	X			
Case Narrative	X			
Holding Times		X		Method 9056A_ORGFM_48H: The following sample(s) was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: MW-31 (310-284194-1).

Analytical Sensitivity and Blanks

Method Blank Detections	X			No detections.
Trip Blank Detections			X	

Accuracy

ICV/CCV	X			
LCS/LCSD	X			
MS/MSD	X			
Surrogates (organics only)	X			
Other QA QC samples	X			

Precision

QA/QC Sample RPDs	X			
Field Duplicates			X	

Completed by: Semir Omerovic
 Date of Sampling: 6/18/2024
 Lab Report Date: 7/16/2024
 Site Name: Loess Hills Regional Sanitary Landfill
 Project Type: HMSP - 1st Semi-Annual Sampling Event
 Lab Report Number: 310-284193-1

OK NO N/A NOTES

Sample Collection and Sample Handling

Chain of Custody

X			
---	--	--	--

Temperature

	X		The following samples were received at the laboratory outside the required temperature criteria: MW-14, MW-7, MW-8R, MW-10R, MW-11R, MW-26R, MW-27R, MW-29, MW-D, Trip Blank 1, Trip Blank 2 and Trip Blank 3. This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to proceed with analysis.
--	---	--	---

Preservation

X			
---	--	--	--

Condition

	X		Method 8270E: Internal standard (ISTD) response for the following samples were outside of acceptance limits: MW-7, MW-10R and MW-11R. The ISTD fails low, causing results to be biased high. Since all associated analytes are non detects, results will be reported.
--	---	--	---

Case Narrative

X			
---	--	--	--

Holding Times

X			
---	--	--	--

Analytical Sensitivity and Blanks

Method Blank Detections

X			No detections.
---	--	--	----------------

Trip Blank Detections

X			No detections.
---	--	--	----------------

Accuracy

ICV/CCV

	X		<p>Method 8260D: The continuing calibration verification (CCV) associated with batch 310-425596 recovered above the upper control limit for Methyl methacrylate(26.9%D), 4-Methyl-2-pentanone(26.2%D), and Bromoform(28.4%D). 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 310-425596/3).</p> <p>Method 8270E: The continuing calibration verification (CCV) associated with batch 310-426234 recovered above the upper control limit for Hexachlorocyclopentadiene (27.3%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.</p>
--	---	--	--

Completed by: Semir Omerovic
 Date of Sampling: 6/18/2024
 Lab Report Date: 7/16/2024
 Site Name: Loess Hills Regional Sanitary Landfill
 Project Type: HMSP - 1st Semi-Annual Sampling Event
 Lab Report Number: 310-284193-1

OK NO N/A NOTES

	OK	NO	N/A	NOTES
LCS/LCSD		X		<p>Method 8270E: The laboratory control sample (LCS) for preparation batch 310-425691 and analytical batch 310-426230 recovered outside control limits for the following analytes: Famphur. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.</p> <p>Method 8270E: The laboratory control sample and/or the laboratory control sample duplicate (LCS/LCSD) for preparation batch 310-425691 and analytical batch 310-426230 recovered outside control limits for the following analyte(s): p-Phenylene diamine, p-Phenylene diamine has been identified as a poor performing analyte when analyzed using this method; therefore, re-extraction/reanalysis was not performed.</p> <p>Method 8151A: The laboratory control sample duplicate (LCSD) for preparation batch 410-521860 and analytical batch 410-522037 recovered outside the lower control limits for the following analytes: 2,4-D and Silvex (2,4,5-TP). The associated samples were re-prepared outside holding time and the LCSD is within control limits. Results are reported from both trials. MW-7, MW-10R and MW-11R.</p>
MS/MSD	X			
Surrogates (organics only)		X		Method 8151A: Surrogate recovery for the following sample was outside control limits (high) : MW-7. Reextraction was performed outside of holding time with acceptable results.
Other QA QC samples	X			
Precision				
QA/QC Sample RPDs	X			
Field Duplicates	X			Sample MW-27R and duplicate sample MW-D had less than 50% RPD for analyzed parameters.

Completed by: Semir Omerovic
 Date of Sampling: 8/22/2024
 Lab Report Date: 9/4/2024
 Site Name: Loess Hills Regional Sanitary Landfill
 Project Type: August 2024 Background
 Lab Report Number: 310-288931-1

OK NO N/A NOTES

Sample Collection and Sample Handling

Chain of Custody	X			
Temperature	X			
Preservation	X			
Condition	X			
Case Narrative	X			
Holding Times	X			

Analytical Sensitivity and Blanks

Method Blank Detections	X			No detections.
Trip Blank Detections			X	

Accuracy

ICV/CCV	X			
LCS/LCSD	X			
MS/MSD	X			
Surrogates (organics only)	X			
Other QA QC samples	X			

Precision

QA/QC Sample RPDs	X			
Field Duplicates			X	

Completed by: Semir Omerovic
 Date of Sampling: 11/12/2024
 Lab Report Date: 11/19/2024
 Site Name: Loess Hills Regional Sanitary Landfill
 Project Type: Supplemental - 2nd Semi-Annual Sampling Event
 Lab Report Number: 310-295137-1

OK NO N/A NOTES

Sample Collection and Sample Handling

Chain of Custody	X			
Temperature	X			
Preservation	X			
Condition	X			
Case Narrative	X			
Holding Times	X			

Analytical Sensitivity and Blanks

Method Blank Detections	X			No detections.
Trip Blank Detections			X	

Accuracy

ICV/CCV	X			
LCS/LCSD	X			
MS/MSD	X			
Surrogates (organics only)	X			
Other QA QC samples	X			

Precision

QA/QC Sample RPDs	X			
Field Duplicates			X	

Completed by: Semir Omerovic
 Date of Sampling: 11/12/2024
 Lab Report Date: 11/25/2024
 Site Name: Loess Hills Regional Sanitary Landfill
 Project Type: HMSP - 2nd Semi-Annual Sampling Event
 Lab Report Number: 310-295139-1

OK NO N/A NOTES

Sample Collection and Sample Handling

Chain of Custody	X		
Temperature	X		
Preservation		X	Method 8260D: The following sample was collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The sample was analyzed within the 7-day holding time specified for unpreserved samples: GU-1 (310-295139-8).
Condition		X	Method 8260D: The following sample was diluted due to the nature of the sample matrix: GU-1 (310-295139-8). Elevated reporting limits (RLs) are provided. Method 6020B: Due to the difficult matrix, only 10 mL was used for digestion. GU-1 (310-295139-8)
Case Narrative	X		
Holding Times		X	Method 9056A_ORGFM_48H: The following sample(s) was received with less than 2 days remaining on the holding time or less than one shift (8 hours) remaining on a test with a holding time of 48 hours or less. As such, the laboratory had insufficient time remaining to perform the analysis within holding time: MW-8R (310-295139-3).

Analytical Sensitivity and Blanks


Method Blank Detections	X		No detections.
Trip Blank Detections	X		No detections.

Accuracy

ICV/CCV		X	Method 8260D: The continuing calibration verification (CCV) associated with batch 310-439883 recovered outside control limits for Iodomethane (-57.9%D). The LCS associated with this CCV passes CCV criteria for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-439883/3).
LCS/LCSD		X	Method 6020B: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 310-439943 and analytical batch 310-440164 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.
MS/MSD	X		
Surrogates (organics only)	X		
Other QA QC samples	X		

Precision

QA/QC Sample RPDs	X		
Field Duplicates		X	No duplicate sample collected.



Appendix C
Summary of Groundwater Chemistry

SCS ENGINEERS

Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Total Metals Constituents														
Antimony, mg/L (CAS NO - 7440-36-0)														
2/3/2009	N/A	N/A	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	< 0.006
7/8/2009	N/A	N/A	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	< 0.006
7/8/2009	N/A	N/A	N/A	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	< 0.006	< 0.006	0.0062	< 0.006	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	< 0.006	< 0.006	< 0.012	< 0.006	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	< 0.006
3/9/2010	N/A	N/A	N/A	N/A	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	< 0.006	N/A	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	< 0.006	< 0.006	0.00765	< 0.006	0.0072	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	< 0.006	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	< 0.006	N/A	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	N/A	N/A	< 0.006	< 0.006	N/A	N/A
10/26/2011	N/A	N/A	N/A	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	< 0.006	N/A	N/A	N/A	N/A	N/A	< 0.006	N/A	N/A	< 0.006	< 0.006	N/A	N/A
4/23/2012	N/A	< 0.006	N/A	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	N/A	N/A	< 0.006	< 0.006	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	< 0.006	N/A	N/A	N/A	N/A	N/A	< 0.012	N/A	N/A	< 0.006	< 0.006	N/A	N/A
8/27/2012	N/A	< 0.006	N/A	< 0.006	< 0.006	< 0.006	N/A	N/A	N/A	N/A	< 0.006	< 0.006	N/A	N/A
8/27/2012	N/A	N/A	N/A	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	< 0.006	N/A	< 0.006	N/A	< 0.006	N/A	N/A	N/A	N/A	< 0.006	< 0.006	N/A	N/A
3/21/2013	N/A	< 0.006	N/A	< 0.006	N/A	< 0.006	N/A	N/A	N/A	N/A	< 0.006	< 0.006	N/A	N/A
3/21/2013	N/A	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	< 0.006	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.006	< 0.006	N/A	N/A
9/25/2013	N/A	0.000601	N/A	< 0.006	< 0.006	0.000618	0.00147	N/A	N/A	N/A	0.00144	0.000801	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00154	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	< 0.006	< 0.006	< 0.006	N/A	N/A	N/A	N/A	< 0.006	< 0.006	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.006	N/A	N/A
9/4/2014	N/A	< 0.006	N/A	< 0.006	< 0.006	< 0.006	< 0.006	< 0.006	N/A	N/A	< 0.006	< 0.006	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.006	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A
9/15/2015	N/A	0.0004*	< 0.001	< 0.001	< 0.001	0.000575*	< 0.001	< 0.001	N/A	0.000447*	< 0.001	< 0.001	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	< 0.001	N/A	N/A
9/27/2016	0.00244	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	< 0.001	< 0.001	N/A	N/A
9/27/2016	0.00295	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A
5/3/2017	0.000762*	0.000427*	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	0.00025*	< 0.001	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	< 0.001	< 0.001	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A
3/19/2018	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A	N/A	< 0.001	< 0.001	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A
9/18/2018	< 0.003	N/A	< 0.003	< 0.003	N/A	< 0.003	N/A	< 0.003	N/A	N/A	< 0.003	< 0.003	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	< 0.003	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A	0.00379
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.003	N/A	N/A	< 0.003	N/A	N/A	N/A
9/5/2019	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	< 0.002	N/A	N/A	N/A
3/10/2020	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	N/A	N/A	< 0.001	< 0.001	N/A	N/A
8/26/2020	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A	N/A	< 0.001	< 0.001	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	0.00155	0.00195	N/A	N/A	N/A	N/A
5/10/2021	< 0.002	N/A	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	< 0.002
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	< 0.002	N/A	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	< 0.002	N/A	N/A	N/A	N/A
9/9/2021	< 0.002	N/A	N/A	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	< 0.002	< 0.002	< 0.002	N/A	< 0.002
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	< 0.002	N/A	N/A
3/8/2022	< 0.002	N/A	N/A	0.00227	< 0.002	< 0.002	< 0.002	N/A	< 0.002	N/A	< 0.002	< 0.002	N/A	< 0.002
3/8/2022	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	< 0.002	N/A	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	< 0.002	N/A	< 0.002	< 0.002	N/A	< 0.002
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	< 0.002	N/A	N/A	< 0.002	< 0.002	< 0.002	< 0.002	N/A	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A
4/27/2023	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	< 0.002	N/A	N/A
9/13/2023	< 0.002	N/A	N/A	< 0.002	< 0.002	< 0.002	< 0.002	N/A	< 0.002	< 0.002	< 0.002	< 0.002	N/A	< 0.002
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A
6/18/2024	< 0.002	N/A	N/A	< 0.002	< 0.002	< 0.002	< 0.002	N/A	< 0.002	< 0.002	N/A	< 0.002	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A
11/12/2024	< 0.002	N/A	0.055	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	< 0.002	N/A	< 0.002	N/A	N/A
Arsenic, mg/L (CAS NO - 7440-38-2)														
2/3/2009	N/A	N/A	< 0.001	0.00269	0.00678	0.00749	0.00342	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	0.0127	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	< 0.001	0.0013	0.0109	0.0051	0.00298	N/A	N/A	N/A	N/A	N/A	N/A	0.00293
7/8/2009	N/A	N/A	< 0.001	< 0.001	0.00901	0.00618	0.00893	N/A	N/A	N/A	N/A	N/A	N/A	0.00743
7/8/2009	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	< 0.001	0.00267	0.0134	0.0201	0.0105	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	0.012	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	0.00101	0.00139	0.00969	0.0156	0.00647	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	0.007	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	< 0.001	< 0.001	0.00927	0.00913	0.00617	N/A	N/A	N/A	N/A	N/A	N/A	0.00486
3/9/2010	N/A	N/A	N/A	N/A	0.0101	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	0.0154	N/A	0.0121	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	< 0.001	< 0.001	0.0142	0.015	0.00819	N/A	N/A	N/A	N/A	N/A	N/A	N/A
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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SOP-01-72

	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Total Metals Constituents															
Barium, mg/L (CAS NO - 7440-39-3)															
	5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.452	N/A	N/A	1.63	0.329	N/A	N/A
	9/5/2019	0.27	0.25	0.336	0.55	0.898	0.573	0.284	0.529	N/A	0.1	1.89	0.33	N/A	N/A
	9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.529	N/A	N/A	N/A	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.532	N/A	N/A	1.73	N/A	N/A	N/A
	3/10/2020	0.257	N/A	0.356	0.638	0.916	0.634	N/A	0.577	N/A	N/A	1.69	0.373	N/A	N/A
	5/6/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.329	N/A	N/A
	8/26/2020	0.251	0.248	N/A	0.584	0.913	0.514	N/A	N/A	N/A	N/A	1.66	0.343	N/A	N/A
	8/26/2020	N/A	N/A	N/A	N/A	N/A	0.569	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	0.773	N/A	0.518	0.706	N/A	N/A	N/A	N/A
	5/10/2021	0.247	N/A	0.31	0.6	0.446	0.54	0.553	0.505	0.766	0.712	1.75	0.331	N/A	0.238
	5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.331	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.803	0.735	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.774	N/A	N/A	N/A	N/A	N/A
	9/9/2021	0.275	N/A	N/A	0.619	0.46	0.564	0.643	N/A	0.686	N/A	1.62	0.352	N/A	0.345
	9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.349	N/A	N/A
	3/8/2022	0.292	N/A	N/A	0.652	0.475	0.583	0.827	N/A	0.826	N/A	1.6	0.375	N/A	0.393
	3/8/2022	N/A	N/A	N/A	N/A	N/A	0.587	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	8/8/2022	0.3	N/A	0.251	0.64	0.512	0.599	0.708	N/A	0.674	N/A	1.66	0.337	N/A	0.379
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	0.742	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/27/2023	0.222	N/A	N/A	0.669	0.392	0.529	0.689	N/A	1.33	0.788	N/A	0.293	N/A	N/A
	4/27/2023	N/A	N/A	N/A	0.629	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/13/2023	0.278	N/A	N/A	0.597	0.416	0.526	0.665	N/A	0.967	0.749	N/A	0.325	N/A	0.164
	9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.331	N/A	N/A
	6/18/2024	0.274	N/A	N/A	0.223	0.446	0.534	0.642	N/A	0.762	0.72	N/A	0.33	N/A	N/A
	6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.724	N/A	N/A	N/A	N/A
	11/12/2024	0.266	N/A	0.181	0.328	0.402	0.513	0.487	N/A	0.799	N/A	N/A	0.328	N/A	N/A
Beryllium, mg/L (CAS NO - 7440-41-7)															
	2/3/2009	N/A	N/A	< 0.001	0.00127	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2/3/2009	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/28/2009	N/A	N/A	< 0.001	< 0.001	0.00256	< 0.001	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001
	7/8/2009	N/A	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	0.00612
	7/8/2009	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/8/2009	N/A	N/A	< 0.001	< 0.001	0.00214	< 0.001	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/30/2009	N/A	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3/9/2010	N/A	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	0.00157
	3/9/2010	N/A	N/A	N/A	< 0.001	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	6/24/2010	N/A	N/A	N/A	N/A	< 0.001	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	N/A	N/A	< 0.001	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/21/2011	N/A	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/21/2011	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/26/2011	N/A	0.00289	N/A	< 0.001	0.00103	< 0.001	< 0.001	0.0164	N/A	N/A	0.00852	0.00369	N/A	N/A
	10/26/2011	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/19/2011	N/A	< 0.004	N/A	N/A	N/A	N/A	N/A	< 0.004	N/A	N/A	< 0.004	< 0.004	N/A	N/A
	4/23/2012	N/A	0.0056	N/A	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	N/A	N/A	0.0074	< 0.004	N/A	N/A
	4/23/2012	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	7/11/2012	N/A	0.00403	N/A	N/A	N/A	N/A	N/A	0.00776	N/A	N/A	0.00496	< 0.001	N/A	N/A
	8/27/2012	N/A	0.00138	N/A	< 0.001	0.00151	< 0.001	N/A	N/A	N/A	N/A	0.00267	0.00181	N/A	N/A
	8/27/2012	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	0.0116	N/A	< 0.001	N/A	< 0.001	N/A	N/A	N/A	N/A	0.00729	< 0.001	N/A	N/A
	3/21/2013	N/A	0.00938	N/A	< 0.001	N/A	< 0.001	N/A	N/A	N/A	N/A	0.0093	< 0.001	N/A	N/A
	3/21/2013	N/A	0.0132	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5/29/2013	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00753	< 0.001	N/A	N/A
	9/25/2013	N/A	0.000946	N/A	0.00018	< 0.001	0.00031	0.00077	N/A	N/A	N/A	0.0103	0.0017	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0125	N/A	N/A	N/A
	3/12/2014	N/A	N/A	N/A	< 0.001	0.000321	< 0.001	N/A	N/A	N/A	N/A	0.00212	0.00307	N/A	N/A
	3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00413	N/A	N/A
	9/4/2014	N/A	0.000521	N/A	< 0.001	< 0.001	0.000525	< 0.001	< 0.001	N/A	N/A	0.00118	0.000559	N/A	N/A
	9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00147	N/A	N/A	N/A
	5/6/2015	N/A	N/A	N/A	0.000077	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A
	5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000058	N/A	N/A
	9/15/2015	N/A	0.000082*	< 0.001	< 0.001	0.000044*	< 0.001	0.000067*	0.000135*	N/A	0.000045*	0.000085*	< 0.001	N/A	N/A
	9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000128*	N/A	N/A	N/A	N/A	N/A	N/A
	5/10/2016	N/A	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A	N/A
	5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A
	9/27/2016	< 0.001	0.000231*	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	< 0.001	< 0.001	N/A	N/A
	9/27/2016	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A
	5/3/2017	< 0.001	0.000127*	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	< 0.001	< 0.001	N/A	N/A
	5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A
	10/24/2017	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	< 0.001	< 0.001	N/A	N/A
	10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A
	3/19/2018	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A	N/A	< 0.001	< 0.001	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A
	9/18/2018	< 0.001	N/A	< 0.001	< 0.001	N/A	< 0.001	N/A	< 0.001	N/A	N/A	< 0.001	< 0.001	N/A	N/A
	9/18/2018	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/10/2019	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A	< 0.001
	4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A
	5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	< 0.001	N/A	N/A	N/A
	9/5/2019	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A	N/A
	9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	< 0.002	N/A	N/A	N/A
	3/10/2020	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	N/A	N/A	< 0.001	< 0.001	N/A	N/A
	8/26/2020	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A	N/A	< 0.001	< 0.001	N/A	N/A
	8/26/2020	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	< 0.001	< 0.001	N/A	N/A	N/A	N/A
	5/10/2021	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001
	5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	< 0.001	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	< 0.001	N/A	N/A	N/A	

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Total Metals Constituents														
Cadmium, mg/L (CAS NO - 7440-43-9)														
2/3/2009	N/A	N/A	< 0.0005	0.00115	0.00119	0.000904	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	0.000975	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	< 0.0005	< 0.0005	0.00214	< 0.0005	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005
7/8/2009	N/A	N/A	< 0.0005	< 0.0005	< 0.0005	0.00145	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	0.00556
7/8/2009	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	< 0.0005	0.00083	0.00242	0.00174	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	< 0.0005	0.00079	0.00091	0.00132	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	< 0.0005	< 0.0005	< 0.0005	0.000645	0.0014	N/A	N/A	N/A	N/A	N/A	N/A	0.0013
3/9/2010	N/A	N/A	N/A	N/A	0.000645	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	0.00196	N/A	0.00163	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	< 0.0005	< 0.0005	0.00105	< 0.0005	0.000924	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	0.000816	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	< 0.0005	< 0.0005	0.00226	0.000947	0.00157	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	0.000893	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	< 0.0005	N/A	< 0.0005	0.0012	0.000602	0.00078	0.00203	N/A	N/A	0.00115	0.000649	N/A	N/A
10/26/2011	N/A	N/A	N/A	0.000508	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	0.0021	N/A	N/A	N/A	N/A	N/A	0.0066	N/A	N/A	0.0015	0.0012	N/A	N/A
4/23/2012	N/A	0.0024	N/A	0.0018	0.0038	0.001	0.0034	0.0051	N/A	N/A	0.0038	0.0024	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	0.0026	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	0.000606	N/A	N/A	N/A	N/A	N/A	0.00301	N/A	N/A	0.00131	0.00142	N/A	N/A
8/27/2012	N/A	< 0.0005	N/A	0.00215	0.006	0.00193	N/A	N/A	N/A	N/A	0.000897	0.00259	N/A	N/A
8/27/2012	N/A	N/A	N/A	0.000765	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	0.00367	N/A	0.00159	N/A	0.00102	N/A	N/A	N/A	N/A	0.00111	0.00104	N/A	N/A
3/21/2013	N/A	0.00382	N/A	0.00611	N/A	0.00254	N/A	N/A	N/A	N/A	0.00188	0.00294	N/A	N/A
3/21/2013	N/A	0.0262	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	0.00147	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00127	0.00083	N/A	N/A
9/25/2013	N/A	0.00175	N/A	0.0006	0.0002	0.00304	0.00178	N/A	N/A	N/A	0.00198	0.00133	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00226	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	0.00122	0.00666	0.000652	N/A	N/A	N/A	N/A	0.000564	0.0012	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00119	N/A	N/A
9/4/2014	N/A	0.000749	N/A	0.000494	0.000462	0.000864	0.000739	0.000338	N/A	N/A	0.000565	0.000587	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000371	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	0.000229	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000285	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000389	N/A	N/A
9/15/2015	N/A	0.000506	< 0.0005	0.000139*	0.000303*	0.000273*	0.000131*	0.000365*	N/A	0.000175*	0.00018*	0.000211*	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000141*	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	0.000043*	N/A	0.000048*	< 0.0005	0.000066*	< 0.0005	0.00008*	N/A	< 0.0005	0.000134*	0.000203*	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000134*	N/A	N/A
9/27/2016	0.000045*	0.000038*	N/A	< 0.0005	< 0.0005	0.000043*	< 0.0005	0.000148*	N/A	N/A	0.000065*	0.000101*	N/A	N/A
9/27/2016	0.000052*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000059*	N/A	N/A	N/A
5/3/2017	0.000069*	0.000173*	N/A	< 0.0005	< 0.0005	0.000062*	0.000145*	0.000222*	N/A	N/A	0.000062*	0.000082*	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000118*	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	< 0.0005	< 0.0005	N/A	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
3/19/2018	< 0.0005	N/A	< 0.0005	< 0.0005	< 0.0005	< 0.0005	N/A	N/A	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
9/18/2018	< 0.0005	N/A	< 0.0005	0.00062	N/A	< 0.0005	N/A	< 0.0005	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	N/A	< 0.0005	< 0.0005	< 0.0005	N/A	< 0.0005
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	< 0.0005	N/A	N/A	N/A
9/5/2019	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	N/A	< 0.0001	< 0.0001	< 0.0001	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0001	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0001	N/A	N/A	0.00028	N/A	N/A	N/A
3/10/2020	< 0.0001	N/A	< 0.0001	< 0.0001	< 0.0001	< 0.0001	N/A	< 0.0001	N/A	< 0.0001	< 0.0001	< 0.0001	N/A	N/A
8/26/2020	< 0.0001	< 0.0001	N/A	< 0.0001	0.000491	< 0.0001	N/A	N/A	N/A	N/A	0.00107	< 0.0001	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	< 0.0001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	0.000189	N/A	< 0.0001	0.000291	N/A	N/A	N/A	N/A
5/10/2021	< 0.0001	N/A	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.000132	< 0.0001	0.000134	< 0.0001	N/A	0.000106
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0001	< 0.0001	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0001	< 0.0001	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0001	< 0.0001	N/A	N/A	N/A	N/A
9/9/2021	< 0.0001	N/A	N/A	0.000118	< 0.0001	0.000678	< 0.0001	N/A	< 0.0001	N/A	0.000148	0.000132	N/A	< 0.0001
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000107	N/A	N/A
3/8/2022	< 0.0001	N/A	N/A	0.00061	< 0.0001	< 0.0001	< 0.0001	N/A	< 0.0001	N/A	0.000328	< 0.0001	N/A	0.000308
3/8/2022	N/A	N/A	N/A	N/A	N/A	< 0.0001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	< 0.0001	N/A	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001	N/A	< 0.0001	N/A	0.000349	0.000116	N/A	< 0.0001
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	< 0.0002	N/A	N/A	< 0.0002	< 0.0002	< 0.0002	< 0.0002	N/A	0.000231	< 0.0002	N/A	< 0.0002	N/A	N/A
4/27/2023	N/A	N/A	N/A	< 0.0002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	< 0.0002	N/A	N/A	< 0.0002	< 0.0002	< 0.0002	< 0.0002	N/A	0.000256	< 0.0002	N/A	< 0.0002	N/A	0.000286
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0002	N/A	N/A
6/18/2024	< 0.0002	N/A	N/A	< 0.0002	0.000261	< 0.0002	< 0.0002	N/A	< 0.0002	< 0.0002	N/A	< 0.0002	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0002	N/A	N/A	N/A
11/12/2024	< 0.0002	N/A	< 0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002	N/A	0.000884	N/A	N/A	< 0.0002	N/A	N/A
Chromium, mg/L (CAS NO - 7440-47-3)														
2/3/2009	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	< 0.02
7/8/2009	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	< 0.02
7/8/2009	N/A	N/A	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	< 0.02
3/9/2010	N/A	N/A	N/A	N/A	N/A	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	< 0.02	N/A	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A
9/30/														

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Total Metals Constituents															
Cobalt, mg/L (CAS NO - 7440-48-4)															
	5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	0.00915	N/A	N/A	N/A
	9/5/2019	0.000506	< 0.0005	0.000892	< 0.0005	0.00245	< 0.0005	0.0208	< 0.0005	N/A	0.0117	0.00601	< 0.0005	N/A	N/A
	9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	0.00526	N/A	N/A	N/A
	3/10/2020	< 0.0005	N/A	0.00179	< 0.0005	0.00236	< 0.0005	N/A	< 0.0005	N/A	N/A	0.00738	< 0.0005	N/A	N/A
	8/26/2020	< 0.0005	< 0.0005	N/A	< 0.0005	0.00177	< 0.0005	N/A	N/A	N/A	N/A	0.00481	< 0.0005	N/A	N/A
	8/26/2020	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	0.00881	N/A	0.00601	0.00369	N/A	N/A	N/A	N/A
	5/10/2021	< 0.0005	N/A	0.00197	< 0.0005	< 0.0005	< 0.0005	0.00761	< 0.0005	0.00789	0.00826	0.0107	< 0.0005	N/A	0.000953
	5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00594	0.00938	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00978	N/A	N/A	N/A	N/A
	9/9/2021	< 0.0005	N/A	N/A	< 0.0005	< 0.0005	< 0.0005	0.00381	N/A	0.00508	N/A	0.0113	< 0.0005	N/A	0.000698
	9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A
	3/8/2022	< 0.0005	N/A	N/A	0.000786	< 0.0005	< 0.0005	0.00141	N/A	0.0059	N/A	0.00328	< 0.0005	N/A	0.00108
	3/8/2022	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	8/8/2022	< 0.0005	N/A	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.00312	N/A	0.00629	N/A	0.0048	< 0.0005	N/A	0.00188
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	0.00267	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/27/2023	< 0.0005	N/A	N/A	< 0.0005	< 0.0005	< 0.0005	0.000775	N/A	0.00832	0.0122	N/A	< 0.0005	N/A	N/A
	4/27/2023	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/13/2023	< 0.0005	N/A	N/A	< 0.0005	< 0.0005	< 0.0005	0.000889	N/A	0.00666	0.00919	N/A	< 0.0005	N/A	0.000969
	9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A
	6/18/2024	< 0.0005	N/A	N/A	< 0.0005	0.000829	< 0.0005	0.00238	N/A	0.00506	0.00963	N/A	< 0.0005	N/A	N/A
	6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00955	N/A	N/A	N/A	N/A
	11/12/2024	< 0.0005	N/A	0.00917	< 0.0005	< 0.0005	< 0.0005	0.0149	N/A	0.005	N/A	N/A	< 0.0005	N/A	N/A
Copper, mg/L (CAS NO - 7440-50-8)															
	2/3/2009	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2/3/2009	N/A	N/A	N/A	0.0212	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/28/2009	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	< 0.02
	7/8/2009	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	0.0728
	7/8/2009	N/A	N/A	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/8/2009	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/30/2009	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3/9/2010	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	0.0355
	3/9/2010	N/A	N/A	N/A	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	6/24/2010	N/A	N/A	N/A	N/A	< 0.02	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	N/A	N/A	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/21/2011	N/A	N/A	< 0.02	0.0284	0.0253	< 0.02	0.033	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/21/2011	N/A	N/A	N/A	0.0323	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/26/2011	N/A	0.0246	N/A	< 0.02	0.0204	< 0.02	< 0.02	0.0854	N/A	N/A	0.0711	< 0.02	N/A	N/A
	10/26/2011	N/A	N/A	N/A	0.0215	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/19/2011	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A	< 0.02	N/A	N/A	0.0227	< 0.02	N/A	N/A
	4/23/2012	N/A	0.0553	N/A	< 0.02	0.0279	< 0.02	< 0.02	< 0.02	N/A	N/A	0.109	< 0.02	N/A	N/A
	4/23/2012	N/A	N/A	N/A	N/A	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	7/11/2012	N/A	0.0234	N/A	N/A	N/A	N/A	N/A	0.0712	N/A	N/A	0.0437	< 0.02	N/A	N/A
	8/27/2012	N/A	< 0.02	N/A	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A	N/A	0.0233	< 0.02	N/A	N/A
	8/27/2012	N/A	N/A	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	0.0942	N/A	< 0.02	N/A	< 0.02	N/A	N/A	N/A	N/A	0.048	< 0.02	N/A	N/A
	3/21/2013	N/A	0.067	N/A	0.0244	N/A	< 0.02	N/A	N/A	N/A	N/A	0.0463	< 0.02	N/A	N/A
	3/21/2013	N/A	0.0684	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5/29/2013	N/A	N/A	0.0732	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0436	< 0.02	N/A	N/A
	9/25/2013	N/A	0.0105	N/A	0.0405	< 0.02	0.013	0.00226	N/A	N/A	N/A	0.042	0.0142	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0453	N/A	N/A	N/A
	3/12/2014	N/A	N/A	N/A	0.00511	0.00796	0.00358	N/A	N/A	N/A	N/A	0.016	0.0153	N/A	N/A
	3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0158	N/A	N/A	N/A
	9/4/2014	N/A	0.00518	N/A	< 0.02	0.00746	0.012	< 0.02	0.00446	N/A	N/A	0.00942	0.00585	N/A	N/A
	9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.011	N/A	N/A	N/A
	5/6/2015	N/A	N/A	N/A	0.0014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00108	N/A	N/A
	5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00205	N/A	N/A
	9/15/2015	N/A	0.00162*	< 0.002	0.000868*	< 0.002	< 0.002	< 0.002	0.00184*	N/A	< 0.002	0.00113*	< 0.002	N/A	N/A
	9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00207	N/A	N/A	N/A	N/A	N/A	N/A
	5/10/2016	N/A	0.00226*	N/A	< 0.005	0.00241*	< 0.005	< 0.005	< 0.005	N/A	< 0.005	0.00374*	< 0.005	N/A	N/A
	5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00386*	N/A	N/A	N/A
	9/27/2016	< 0.005	< 0.005	N/A	< 0.005	0.00166*	< 0.005	< 0.005	< 0.005	N/A	N/A	< 0.005	< 0.005	N/A	N/A
	9/27/2016	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A
	5/3/2017	< 0.005	< 0.005	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	0.00287*	< 0.005	N/A	N/A
	5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A
	10/24/2017	< 0.005	< 0.005	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	< 0.005	< 0.005	N/A	N/A
	10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A
	3/19/2018	< 0.005	N/A	< 0.005	< 0.005	0.00554	< 0.005	N/A	N/A	N/A	N/A	< 0.005	< 0.005	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A
	9/18/2018	0.00432	N/A	0.00263	0.00271	N/A	< 0.002	N/A	0.00215	N/A	N/A	0.00267	< 0.002	N/A	N/A
	9/18/2018	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/10/2019	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	< 0.005	< 0.005	< 0.005	N/A	0.00626
	4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A
	5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	< 0.002	N/A	N/A	N/A
	9/5/2019	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	< 0.005	< 0.005	< 0.005	N/A	N/A
	9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	< 0.01	N/A	N/A	N/A
	3/10/2020	< 0.005	N/A	< 0.005	< 0.005	< 0.005	< 0.005	N/A	< 0.005	N/A	N/A	< 0.005	< 0.005	N/A	N/A
	8/26/2020	< 0.005	< 0.005	N/A	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	< 0.005	< 0.005	N/A	N/A
	8/26/2020	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	< 0.005	< 0.005	N/A	N/A	N/A	N/A
	5/10/2021	< 0.005	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00947	< 0.005	< 0.005	< 0.005	N/A	< 0.005
	5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	< 0.005	N/A	N/A	N/A	N/A

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Total Metals Constituents														
Lead, mg/L (CAS NO - 7439-92-1)														
2/3/2009	N/A	N/A	< 0.004	0.011	0.00902	0.00615	< 0.004	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	0.0177	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	< 0.004	0.00599	0.0194	< 0.004	< 0.004	N/A	N/A	N/A	N/A	N/A	N/A	< 0.004
7/8/2009	N/A	N/A	< 0.004	< 0.004	0.00609	0.00409	< 0.004	N/A	N/A	N/A	N/A	N/A	N/A	0.109
7/8/2009	N/A	N/A	N/A	0.00436	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	< 0.004	0.00901	0.0216	0.0064	0.00756	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 0.004	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	< 0.004	0.00754	0.0106	0.00736	0.00556	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	0.00536	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	< 0.004	< 0.004	0.00692	0.00459	0.00549	N/A	N/A	N/A	N/A	N/A	N/A	0.0318
3/9/2010	N/A	N/A	N/A	N/A	0.007	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	0.00671	N/A	0.0074	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	< 0.004	< 0.004	0.00489	0.00543	0.00732	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	< 0.004	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	0.00578	0.00515	< 0.004	0.00826	0.0193	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	0.0101	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	0.0158	N/A	0.00688	0.00722	< 0.004	< 0.004	0.0381	N/A	N/A	0.0286	0.0224	N/A	N/A
10/26/2011	N/A	N/A	N/A	0.009	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	< 0.004	N/A	N/A	N/A	N/A	N/A	0.005	N/A	N/A	0.0239	0.018	N/A	N/A
4/23/2012	N/A	0.041	N/A	0.0137	0.0256	< 0.004	0.0112	0.0096	N/A	N/A	0.0876	0.0127	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	< 0.004	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	0.0164	N/A	N/A	N/A	N/A	N/A	0.0708	N/A	N/A	0.0329	0.00896	N/A	N/A
8/27/2012	N/A	0.0126	N/A	0.00983	0.012	0.00446	N/A	N/A	N/A	N/A	0.0249	0.021	N/A	N/A
8/27/2012	N/A	N/A	N/A	0.0102	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	0.0871	N/A	0.0199	N/A	< 0.004	N/A	N/A	N/A	N/A	0.0346	0.00471	N/A	N/A
3/21/2013	N/A	0.0503	N/A	0.0185	N/A	0.00867	N/A	N/A	N/A	N/A	0.0246	0.00858	N/A	N/A
3/21/2013	N/A	0.0479	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	0.0432	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0375	0.0072	N/A	N/A
9/25/2013	N/A	0.0068	N/A	0.004	< 0.004	0.00752	0.00666	N/A	N/A	N/A	0.038	0.0202	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0418	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	0.00203	0.00122	< 0.004	N/A	N/A	N/A	N/A	0.0108	0.0204	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0263	N/A	N/A
9/4/2014	N/A	0.00213	N/A	< 0.004	< 0.004	0.00499	0.00383	0.00183	N/A	N/A	0.00592	0.00537	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00878	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	0.00158	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000264	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000692	N/A	N/A
9/15/2015	N/A	0.00985	< 0.0005	0.000723	0.000556	0.000105*	0.000373*	0.00247	N/A	0.000595	0.000791	0.000544	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00158	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	0.000437*	N/A	< 0.0005	0.000388*	0.000236*	< 0.0005	< 0.0005	N/A	0.00041*	0.00093	0.000293*	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000928	N/A	N/A	N/A
9/27/2016	0.000655	0.00111	N/A	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.00026*	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
9/27/2016	0.000407*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A
5/3/2017	0.000455*	0.00114	N/A	< 0.0005	< 0.0005	< 0.0005	0.000713	0.000372*	N/A	N/A	0.00172	< 0.0005	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	< 0.0005	0.00135	N/A	< 0.0005	< 0.0005	< 0.0005	0.000696	0.0123	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
3/19/2018	< 0.0005	N/A	< 0.0005	0.00419	0.000695	0.000579	N/A	N/A	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
9/18/2018	0.00121	N/A	< 0.0005	< 0.0005	N/A	< 0.0005	N/A	< 0.0005	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	N/A	0.000757	< 0.0005	< 0.0005	N/A	0.0256
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	< 0.0005	N/A	N/A	N/A
9/5/2019	0.00144	< 0.0005	0.000671	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	N/A	< 0.0005	< 0.0005	< 0.0005	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	< 0.001	N/A	N/A	N/A
3/10/2020	< 0.0005	N/A	0.00339	0.0166	< 0.0005	< 0.0005	N/A	< 0.0005	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
8/26/2020	< 0.0005	< 0.0005	N/A	< 0.0005	< 0.0005	< 0.0005	N/A	N/A	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	0.00563	N/A	0.00151	0.00131	N/A	N/A	N/A	N/A
5/10/2021	< 0.0005	N/A	< 0.0005	< 0.0005	0.000653	< 0.0005	0.00129	< 0.0005	0.00275	0.00166	< 0.0005	< 0.0005	N/A	0.000967
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00115	N/A	N/A	N/A	N/A
9/9/2021	< 0.0005	N/A	N/A	< 0.0005	< 0.0005	< 0.0005	< 0.0005	N/A	< 0.0005	N/A	< 0.0005	< 0.0005	N/A	< 0.0005
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	< 0.0005	N/A	N/A
3/8/2022	< 0.0005	N/A	N/A	0.000643	< 0.0005	< 0.0005	< 0.0005	N/A	< 0.0005	N/A	< 0.0005	< 0.0005	N/A	0.00103
3/8/2022	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	< 0.0005	N/A	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	N/A	< 0.0005	N/A	< 0.0005	< 0.0005	N/A	0.00177
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	< 0.0005	N/A	N/A	< 0.0005	0.000744	< 0.0005	< 0.0005	N/A	0.0019	0.00197	N/A	< 0.0005	N/A	N/A
4/27/2023	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	< 0.0005	N/A	N/A	< 0.0005	< 0.0005	0.00078	< 0.0005	N/A	0.00197	0.00201	N/A	< 0.0005	N/A	0.0014
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A
6/18/2024	0.00087	N/A	N/A	0.0007	0.00121	0.000676	< 0.0005	N/A	< 0.0005	< 0.0005	N/A	< 0.0005	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A
11/12/2024	< 0.0005	N/A	0.00454	< 0.0005	0.000953	< 0.0005	0.00287	N/A	0.00675	N/A	N/A	< 0.0005	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	< 0.0002	N/A	< 0.0002	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	N/A	N/A	< 0.0002	N/A	< 0.0002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	< 0.0002	N/A	< 0.0002	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/4/2014	N/A	N/A	N/A	< 0.0002	N/A	< 0.0002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0002	N/A	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	< 0.0002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	N/A	N/A	N/A	< 0.0002	N/A	< 0.0002	< 0.0002	< 0.0002	N/A	N/A	< 0.0002	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0002	N/A	N/A	< 0.0002	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0002	N/A	< 0.0002	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0002	N/A	< 0.0002	N/A	N/A	N/A
3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0002	N/A	N/A	N/A	N/A	N/A
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0002	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	N/A	N/A	N/A	N/A	0.000222	N/A	N/A	N/A	N/A	N/A	< 0.0002	N/A	N/A	N/A
4/3/2024	N/A	N/A	N/A	N/A	0.000209	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/18/2024	N/A	N/A	N/A	< 0.0002	0.000695	< 0.0002	<							

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Summary of Groundwater Chemistry
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	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Total Metals Constituents Nickel, mg/L (CAS NO - 7440-02-0)	6/24/2010	N/A	N/A	N/A	N/A	< 0.05	< 0.05	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	< 0.05	< 0.05	< 0.05	< 0.05	0.0953	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	N/A	N/A	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/21/2011	N/A	N/A	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/26/2011	N/A	< 0.05	N/A	< 0.05	< 0.05	< 0.05	< 0.05	0.0849	N/A	N/A	< 0.05	< 0.05	N/A	N/A
	10/26/2011	N/A	N/A	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/19/2011	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	< 0.05	N/A	N/A	< 0.05	< 0.05	N/A	N/A
	4/23/2012	N/A	0.076	N/A	< 0.05	< 0.05	< 0.05	0.0566	< 0.05	N/A	N/A	0.0941	< 0.05	N/A	N/A
	4/23/2012	N/A	N/A	N/A	N/A	N/A	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	7/11/2012	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	< 0.05	N/A	N/A	< 0.05	< 0.05	N/A	N/A
	8/27/2012	N/A	< 0.05	N/A	< 0.05	< 0.05	< 0.05	< 0.05	N/A	N/A	N/A	< 0.05	< 0.05	N/A	N/A
	8/27/2012	N/A	N/A	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	0.154	N/A	< 0.05	N/A	< 0.05	N/A	N/A	N/A	N/A	< 0.05	< 0.05	N/A	N/A
	3/21/2013	N/A	0.154	N/A	< 0.05	N/A	< 0.05	N/A	N/A	N/A	N/A	< 0.05	< 0.05	N/A	N/A
	3/21/2013	N/A	0.199	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5/29/2013	N/A	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.05	< 0.05	N/A	N/A
	9/25/2013	N/A	0.00747	N/A	0.0144	0.0349	0.00737	0.0637	N/A	N/A	N/A	0.0296	0.0178	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.029	N/A	N/A	N/A
	3/12/2014	N/A	N/A	N/A	0.00394	0.053	0.00296	N/A	N/A	N/A	N/A	0.0127	0.0167	N/A	N/A
	3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0163	N/A	N/A
	9/4/2014	N/A	0.00997	N/A	0.00908	0.0276	0.0118	0.0588	0.00726	N/A	N/A	0.0146	0.0122	N/A	N/A
	9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0116	N/A	N/A	N/A
	5/6/2015	N/A	N/A	N/A	0.00139	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00278	N/A	N/A
	5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00393	N/A	N/A
	9/15/2015	N/A	0.000861*	0.00661	0.00227*	0.0035*	0.00164*	0.0192	0.00211*	N/A	N/A	0.0338	0.005	0.00229*	N/A
	9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00181*	N/A	N/A	N/A	N/A	N/A	N/A
	5/10/2016	N/A	< 0.005	N/A	0.00329*	0.00261*	0.00286*	0.0234	< 0.005	N/A	N/A	0.0156	0.0104	0.00261*	N/A
	5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0101	N/A	N/A	N/A
	9/27/2016	< 0.005	< 0.005	N/A	0.00353*	0.0208	0.00508	0.0343	< 0.005	N/A	N/A	0.0135	0.00159*	N/A	N/A
	9/27/2016	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0113	N/A	N/A	N/A
	5/3/2017	< 0.005	0.0014*	N/A	0.00218*	0.0255	0.00223*	0.0341	0.000983*	N/A	N/A	0.0624	0.00118*	N/A	N/A
	5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00102*	N/A	N/A	N/A	N/A	N/A	N/A
	10/24/2017	< 0.005	< 0.005	N/A	< 0.005	0.00953	< 0.005	0.0227	< 0.005	N/A	N/A	0.0119	< 0.005	N/A	N/A
	10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A
	3/19/2018	< 0.005	N/A	< 0.005	0.00693	0.0798	< 0.005	N/A	N/A	N/A	N/A	0.0092	< 0.005	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A
	9/18/2018	0.00232	N/A	0.0142	0.00231	N/A	< 0.002	N/A	< 0.002	N/A	N/A	0.0527	< 0.002	N/A	N/A
	9/18/2018	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2/22/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0453	N/A	N/A	N/A
	4/10/2019	< 0.005	< 0.005	< 0.005	< 0.005	0.0153	< 0.005	0.022	< 0.005	N/A	0.0114	0.0464	< 0.005	N/A	0.2
	4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A
	5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	0.0711	N/A	N/A	N/A
	9/5/2019	< 0.005	< 0.005	0.00504	< 0.005	0.00679	< 0.005	0.0277	< 0.005	N/A	0.00518	0.0434	< 0.005	N/A	N/A
	9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	0.0404	N/A	N/A	N/A
	3/10/2020	< 0.005	N/A	0.00771	0.0101	0.0102	< 0.005	N/A	< 0.005	N/A	N/A	0.0535	< 0.005	N/A	N/A
	8/26/2020	< 0.005	< 0.005	N/A	< 0.005	0.00928	< 0.005	N/A	N/A	N/A	N/A	0.0366	< 0.005	N/A	N/A
	8/26/2020	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	0.019	N/A	0.0102	0.0218	N/A	N/A	N/A	N/A
	5/10/2021	< 0.005	N/A	< 0.005	< 0.005	< 0.005	< 0.005	0.0256	< 0.005	0.0129	0.0209	0.0719	< 0.005	N/A	0.00722
	5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00809	0.023	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0259	N/A	N/A	N/A	N/A
	9/9/2021	< 0.005	N/A	N/A	< 0.005	< 0.005	< 0.005	0.0149	N/A	0.00911	N/A	0.0731	< 0.005	N/A	0.00643
	9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A
3/8/2022	< 0.005	N/A	N/A	< 0.005	< 0.005	< 0.005	0.00567	N/A	0.005	N/A	0.0296	< 0.005	N/A	0.00902	
3/8/2022	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
8/8/2022	< 0.005	N/A	< 0.005	< 0.005	0.00555	< 0.005	0.0146	N/A	0.0142	N/A	0.038	< 0.005	N/A	0.0101	
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	0.0121	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/27/2023	< 0.005	N/A	N/A	< 0.005	0.00656	< 0.005	< 0.005	N/A	0.0154	0.0342	N/A	< 0.005	N/A	N/A	
4/27/2023	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/13/2023	< 0.005	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005	N/A	0.018	0.013	N/A	< 0.005	N/A	0.00843	
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	
6/18/2024	< 0.005	N/A	N/A	< 0.005	0.0128	< 0.005	0.00986	N/A	0.0153	0.0158	N/A	< 0.005	N/A	N/A	
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0195	N/A	N/A	N/A	N/A	
11/12/2024	< 0.005	N/A	0.0876	< 0.005	0.00805	< 0.005	0.0475	N/A	0.0212	N/A	N/A	< 0.005	N/A	N/A	
Selenium, mg/L (CAS NO - 7782-49-2)	2/3/2009	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2/3/2009	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/28/2009	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005
	7/8/2009	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005
	7/8/2009	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005
	10/8/2009	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/30/2009	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3/9/2010	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005
	3/9/2010	N/A	N/A	N/A	N/A	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	6/24/2010	N/A	N/A	N/A	N/A	< 0.005	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/21/2011	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/21/2011	N/A	N/A	N/A											

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Summary of Groundwater Chemistry
 Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Total Metals Constituents Silver, mg/L (CAS NO - 7440-22-4)	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	< 0.001	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A
	9/9/2021	< 0.001	N/A	N/A	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	N/A	< 0.001	< 0.001	N/A	< 0.001
	9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A
	3/8/2022	< 0.001	N/A	N/A	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	N/A	< 0.001	< 0.001	N/A	< 0.001
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	8/8/2022	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	N/A	< 0.001	< 0.001	N/A	< 0.001
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/27/2023	< 0.001	N/A	N/A	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	< 0.001	N/A	< 0.001	N/A	N/A
	4/27/2023	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/13/2023	< 0.001	N/A	N/A	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	< 0.001	N/A	< 0.001	N/A	< 0.001
	9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A
	6/18/2024	< 0.001	N/A	N/A	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	< 0.001	N/A	< 0.001	N/A	N/A
	6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A
	11/12/2024	< 0.001	N/A	< 0.005	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	N/A	N/A	< 0.001	N/A
	Thallium, mg/L (CAS NO - 7440-28-0)	2/3/2009	N/A	N/A	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009		N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009		N/A	N/A	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002
7/8/2009		N/A	N/A	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002
7/8/2009		N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009		N/A	N/A	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009		N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009		N/A	N/A	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009		N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010		N/A	N/A	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002
3/9/2010		N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010		N/A	N/A	N/A	N/A	< 0.002	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010		N/A	N/A	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010		N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011		N/A	N/A	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011		N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011		N/A	N/A	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A	< 0.002	< 0.002	N/A
10/26/2011		N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011		N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	< 0.002	< 0.002	N/A
4/23/2012		N/A	< 0.002	N/A	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A	< 0.002	< 0.002	N/A
4/23/2012		N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012		N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	< 0.002	< 0.002	N/A	N/A
8/27/2012		N/A	< 0.002	N/A	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A	< 0.002	< 0.002	< 0.002	N/A
8/27/2012		N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013		N/A	< 0.002	N/A	< 0.002	N/A	< 0.002	N/A	< 0.002	N/A	N/A	N/A	< 0.002	< 0.002	N/A
3/21/2013		N/A	< 0.002	N/A	< 0.002	N/A	< 0.002	N/A	< 0.002	N/A	N/A	N/A	< 0.002	< 0.002	N/A
3/21/2013		N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013		N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	< 0.002	N/A
9/25/2013		N/A	< 0.002	N/A	0.000636	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A	< 0.002	< 0.002	N/A
9/25/2013		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A
3/12/2014		N/A	N/A	N/A	< 0.002	< 0.002	0.000633	N/A	N/A	N/A	N/A	N/A	< 0.002	< 0.002	N/A
3/12/2014		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A
9/4/2014		N/A	< 0.002	N/A	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	< 0.002	< 0.002	N/A
9/4/2014		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A
5/6/2015		N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A
5/6/2015		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A
9/15/2015		N/A	< 0.001	< 0.001	< 0.001	< 0.001	0.000034*	< 0.001	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A
9/15/2015		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016		N/A	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A
5/10/2016		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	< 0.001	N/A
9/27/2016		< 0.001	< 0.001	N/A	< 0.001	< 0.001	0.000035*	< 0.001	< 0.001	< 0.001	N/A	N/A	< 0.001	< 0.001	N/A
9/27/2016		< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A
5/3/2017		< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	< 0.001	< 0.001	N/A
5/3/2017		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A
10/24/2017		< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	< 0.001	< 0.001	N/A
10/24/2017		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A
3/19/2018		< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A	N/A	< 0.001	< 0.001	N/A
3/19/2018		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A
9/18/2018		< 0.002	N/A	< 0.002	< 0.002	N/A	< 0.002	N/A	< 0.002	N/A	N/A	N/A	< 0.002	< 0.002	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/10/2019	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A	
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	< 0.002	N/A	N/A	
9/5/2019	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	N/A	
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	< 0.002	N/A	N/A	
3/10/2020	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	< 0.001	N/A	N/A	< 0.001	< 0.001	N/A	
8/26/2020	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A	N/A	< 0.001	< 0.001	N/A	
8/26/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	< 0.001	< 0.001	N/A	N/A	N/A	N/A	
5/10/2021	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	< 0.001	N/A	N/A	
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	
9/															

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG	
Total Metals Constituents Tin, mg/L (CAS NO - 7440-31-5)	9/27/2016	N/A	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	
	5/3/2017	N/A	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	10/24/2017	N/A	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	3/19/2018	N/A	N/A	N/A	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	9/18/2018	N/A	N/A	N/A	< 0.005	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	4/10/2019	N/A	N/A	N/A	< 0.005	N/A	< 0.005	< 0.005	< 0.005	N/A	N/A	< 0.005	N/A	N/A	N/A	
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	< 0.01	N/A	N/A	N/A	
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	< 0.005	N/A	N/A	N/A	N/A	
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	
	9/13/2023	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	
	6/18/2024	N/A	N/A	N/A	< 0.005	N/A	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Vanadium, mg/L (CAS NO - 7440-62-2)	2/3/2009	N/A	N/A	< 0.05	0.0598	< 0.05	< 0.05	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		2/3/2009	N/A	N/A	N/A	< 0.05	< 0.05	< 0.05	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		4/28/2009	N/A	N/A	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	< 0.05
		7/8/2009	N/A	N/A	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	< 0.05
		7/8/2009	N/A	N/A	N/A	< 0.05	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		10/8/2009	N/A	N/A	< 0.05	< 0.05	0.0551	< 0.05	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		12/30/2009	N/A	N/A	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		3/9/2010	N/A	N/A	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	< 0.05
3/9/2010		N/A	N/A	N/A	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
6/24/2010		N/A	N/A	N/A	N/A	< 0.05	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/30/2010		N/A	N/A	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/30/2010		N/A	N/A	N/A	N/A	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/21/2011		N/A	N/A	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/21/2011		N/A	N/A	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10/26/2011		N/A	< 0.05	N/A	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	N/A	N/A	N/A	0.0985	< 0.05	N/A	
10/26/2011		N/A	N/A	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
12/19/2011		N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	< 0.05	N/A	N/A	< 0.05	< 0.05	N/A	N/A	
4/23/2012		N/A	0.0707	N/A	< 0.05	0.051	< 0.05	< 0.05	< 0.05	N/A	N/A	0.154	< 0.05	N/A	N/A	
4/23/2012		N/A	N/A	N/A	N/A	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
7/11/2012		N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	< 0.05	N/A	N/A	0.0688	< 0.05	N/A	N/A	
8/27/2012		N/A	< 0.05	N/A	< 0.05	0.0522	< 0.05	N/A	N/A	N/A	N/A	< 0.05	< 0.05	N/A	N/A	
8/27/2012		N/A	N/A	N/A	< 0.05	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
1/23/2013		N/A	0.201	N/A	< 0.05	N/A	< 0.05	N/A	N/A	N/A	N/A	0.0732	< 0.05	N/A	N/A	
3/21/2013		N/A	0.152	N/A	< 0.05	N/A	< 0.05	N/A	< 0.05	N/A	N/A	0.0985	< 0.05	N/A	N/A	
3/21/2013		N/A	0.174	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
5/29/2013		N/A	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0675	< 0.05	N/A	N/A	
9/25/2013		N/A	0.0153	N/A	0.0634	0.00385	0.0104	0.00546	N/A	N/A	N/A	0.0929	0.01	N/A	N/A	
9/25/2013		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0815	N/A	N/A	N/A	
3/12/2014		N/A	N/A	N/A	0.00679	0.0175	0.00369	N/A	N/A	N/A	N/A	0.0377	0.0148	N/A	N/A	
3/12/2014		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0169	N/A	N/A	
9/4/2014		N/A	0.00898	N/A	0.00451	0.00705	0.0156	0.00607	0.00457	N/A	N/A	0.0181	0.00551	N/A	N/A	
9/4/2014		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0223	N/A	N/A	N/A	
5/6/2015		N/A	N/A	N/A	0.00312	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000751	N/A	N/A	
5/6/2015		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000891	N/A	N/A	
9/15/2015		N/A	0.00275*	0.00052*	0.00259*	0.00277*	0.000992*	0.00121*	0.0035*	N/A	0.000661*	0.00306*	0.000971*	N/A	N/A	
9/15/2015		N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00301*	N/A	N/A	N/A	N/A	N/A	N/A	
5/10/2016		N/A	0.0022*	N/A	0.003*	0.00232*	0.000813*	0.000817*	0.00197*	N/A	0.000571*	0.00238*	0.000799*	N/A	N/A	
5/10/2016		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0024*	N/A	N/A	N/A	
9/27/2016		0.00324*	0.00407*	N/A	0.00273*	0.00158*	0.000783*	0.00103*	0.0023*	N/A	N/A	0.00189*	0.000509*	N/A	N/A	
9/27/2016		0.00271*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
11/22/2016		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00207*	N/A	N/A	N/A	
5/3/2017		0.00384*	0.00443*	N/A	0.00204*	0.00144*	< 0.005	0.00142*	0.00203*	N/A	N/A	0.00404*	< 0.005	N/A	N/A	
5/3/2017		N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.002*	N/A	N/A	N/A	N/A	N/A	N/A	
10/24/2017		< 0.005	< 0.005	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	< 0.005	< 0.005	N/A	N/A	
10/24/2017		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	< 0.005	N/A	N/A	
3/19/2018		< 0.005	N/A	< 0.005	0.00955	< 0.005	< 0.005	N/A	N/A	N/A	N/A	< 0.005	< 0.005	N/A	N/A	
3/19/2018		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	
9/18/2018		0.00503	N/A	< 0.005	< 0.005	N/A	< 0.005	N/A	0.00533	N/A	N/A	0.00668	< 0.005	N/A	N/A	
9/18/2018		N/A	N/A	N/A	N/A	N/A	0.00506	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
2/22/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	
4/10/2019		< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	< 0.005	< 0.005	< 0.005	N/A	0.361	
4/10/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	< 0.005	N/A	N/A	N/A		
9/5/2019	0.00531	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	< 0.005	< 0.005	< 0.005	N/A	N/A		
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	< 0.005	N/A	N/A		
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	< 0.01	N/A	N/A	N/A		
3/10/2020	< 0.005	N/A	0.00829	< 0.005	< 0.005	< 0.005	N/A	< 0.005	N/A	N/A	< 0.005	< 0.005	N/A	N/A		
8/26/2020	< 0.005	< 0.005	N/A	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	< 0.01	< 0.005	N/A	N/A		
8/26/2020	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	0.0128	N/A	< 0.005	< 0.005	N/A	N/A	N/A	N/A		
5/10/2021	< 0.005	N/A	< 0.005	< 0.005	< 0.005	< 0.005	0.00518	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	< 0.005		
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A		
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	< 0.005	N/A	N/A	N/A	N/A		
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A		
9/9/2021	< 0.005	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	< 0.005	< 0.005	< 0.005	N/A	< 0.005		
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	< 0.005	N/A	N/A		
3/8/2022	< 0.005	N/A	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	< 0.005	< 0.005	< 0.005	N/A	<		

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Total Metals Constituents	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Total Suspended Solids, mg/L (CAS NO - TSS)	9/9/2021	3.4	N/A	N/A	< 1.9	3.3	< 1.9	3.4	N/A	11.4	N/A	4.1	4.9	N/A	4.6
	9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.8	N/A	N/A
	3/8/2022	< 5	N/A	N/A	< 5	< 5	< 5	12	N/A	20	N/A	19	5.7	N/A	14.7
	3/8/2022	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	8/8/2022	< 1.9	N/A	9	< 1.9	< 1.9	< 1.9	28.5	N/A	16.5	N/A	17.4	13	N/A	56
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	13	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/27/2023	3	N/A	N/A	< 8.6	70.7	< 1.9	8.3	N/A	290	504	N/A	< 1.9	N/A	N/A
	4/27/2023	N/A	N/A	N/A	2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/13/2023	4.2	N/A	N/A	< 1.9	7.1	2.4	21.8	N/A	56	153	N/A	1.9	N/A	97.5
	9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.6	N/A	N/A
	4/3/2024	N/A	N/A	N/A	N/A	< 1.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	6/18/2024	33.3	N/A	N/A	5.4	67	2.4	13.3	N/A	33	33	N/A	< 1.9	N/A	N/A
	6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	21.8	N/A	N/A	N/A	N/A
	8/22/2024	N/A	N/A	N/A	N/A	50.3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/12/2024	4.4	N/A	35	2.1	50.4	6	499	N/A	423	N/A	N/A	4	N/A	N/A

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.

Denotes Confirmed Outlier. Statistically Excluded.

Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
1,1,1,2-Tetrachloroethane, ug/L (CAS NO - 630-20-6)														
2/3/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<5	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
3/9/2010	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/26/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	<2	N/A	<2	<2	<2	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
8/27/2012	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/4/2014	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/15/2015	N/A	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
9/27/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/27/2016	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/3/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
3/19/2018	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/18/2018	<1	N/A	<1	<1	N/A	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	<10
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
9/5/2019	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
3/10/2020	<1	N/A	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	<1	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A
5/10/2021	<1	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
9/9/2021	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
3/8/2022	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
3/8/2022	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
8/8/2022	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
4/27/2023	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	<1
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/18/2024	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
11/12/2024	<1	N/A	<50	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	N/A	N/A
1,1,1-Trichloroethane, ug/L (CAS NO - 71-55-6)														
2/3/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5
3/9/2010	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/26/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Appendix I VOC Constituents	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG	
1,1,1-Trichloroethane, ug/L (CAS NO - 71-55-6)	9/25/2013	N/A	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A	
	9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	
	3/12/2014	N/A	N/A	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	
	3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	9/4/2014	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A	
	9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
	5/6/2015	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	9/15/2015	N/A	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	<1	N/A	N/A
	9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
	5/10/2016	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	<1	<1	N/A	N/A
	5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A
	9/27/2016	<1	<1	N/A	0.174*	0.376*	0.373*	0.445*	<1	N/A	N/A	<1	<1	N/A	N/A	N/A
	9/27/2016	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
	5/3/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	<1	N/A	N/A
	5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
	10/24/2017	<1	<1	N/A	<1	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
	10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	3/19/2018	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	9/18/2018	<1	N/A	<1	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
	9/18/2018	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/10/2019	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	<1	N/A	<10
	4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
	5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
	9/5/2019	<1	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
	9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
	3/10/2020	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
	8/26/2020	<1	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	8/26/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	<1	N/A	N/A	N/A	N/A
	5/10/2021	<1	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1
	5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A
	9/9/2021	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
	9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	3/8/2022	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
	3/8/2022	N/A	N/A	N/A	N/A	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	8/8/2022	<1	N/A	<1	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/27/2023	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
	4/27/2023	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/13/2023	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	<1
	9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
	6/18/2024	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
	6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
	11/12/2024	<1	N/A	<50	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	N/A
1,1,2,2-Tetrachloroethane, ug/L (CAS NO - 79-34-5)	2/3/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	2/3/2009	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/28/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	
	7/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	
	7/8/2009	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/30/2009	N/A	N/A	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3/9/2010	N/A	N/A	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
	3/9/2010	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	6/24/2010	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/21/2011	N/A	N/A	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/21/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/26/2011	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
	10/26/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/19/2011	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	<1	<1	N/A	N/A
	4/23/2012	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
	4/23/2012	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	7/11/2012	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
	8/27/2012	N/A	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	8/27/2012	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	3/21/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	3/21/2013	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5/29/2013	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	9/25/2013	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
	3/12/2014	N/A	N/A	N/A	<1	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
	9/4/2014	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
	9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
	5/6/2015	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
	5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
	9/15/2015	N/A	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	<1	N/A	N/A
	9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
	5/10/2016	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	<1	<1	N/A	N/A
	5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
	9/27/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
	9/27/2016	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
	5/3/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
	5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
	10/24/2017	<1	<1	N/A	<1	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
	10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	3/19/2018	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	9/18															

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Summary of Groundwater Chemistry
 Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
1,1,2,2-Tetrachloroethane, ug/L (CAS NO - 79-34-5)														
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/10/2020	<1	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
8/26/2020	<1	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	<1	N/A	N/A	N/A	N/A
5/10/2021	<1	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
9/9/2021	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
3/8/2022	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
3/8/2022	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	<1
4/27/2023	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	<1
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/18/2024	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
11/12/2024	<1	N/A	<50	<1	<1	<1	<1	N/A	<1	N/A	<1	N/A	<1	N/A
1,1,2-Trichloroethane, ug/L (CAS NO - 79-00-5)														
2/3/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<1	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5
3/9/2010	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/26/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	<1
4/23/2012	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
9/4/2014	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/15/2015	N/A	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
9/27/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/27/2016	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/3/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
3/19/2018	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/18/2018	<1	N/A	<1	<1	N/A	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	<10
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
9/5/2019	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
3/10/2020	<1	N/A	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	<1	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	<1	N/A	N/A	N/A	N/A
5/10/2021	<1	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
9/9/2021	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1
3/8/2022	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
3/8/2022	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	<1	N/A	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	<1
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	<1
4/27/2023	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	<1
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/18/2024	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
11/12/2024	<1	N/A	<50	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	N/A

SCS ENGINEERS

Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
1,1-Dichloroethane, ug/L (CAS NO - 75-34-3)														
2/3/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
3/9/2010	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/26/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	<1	N/A	<1	<1	1.1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	<1	N/A	<1	<1	1.04	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<1	N/A	<1	N/A	1.38	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	<1	N/A	1.8	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	<1	N/A	<1	<1	1.63	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	<1	<1	1.93	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/4/2014	N/A	<1	N/A	<1	<1	1.54	0.398*	<1	N/A	N/A	<1	<1	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/15/2015	N/A	<1	<1	<1	<1	2.27	0.567*	<1	N/A	<1	<1	<1	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	<1	N/A	<1	0.238*	1.53	<1	<1	N/A	<1	<1	<1	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
9/27/2016	<1	<1	N/A	<1	0.392*	1.82	0.407*	<1	N/A	N/A	<1	<1	N/A	N/A
9/27/2016	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/3/2017	<1	<1	N/A	0.301*	0.431*	2.04	0.478*	<1	N/A	N/A	<1	<1	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<1	<1	N/A	<1	<1	1.83	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
3/19/2018	<1	N/A	<1	<1	<1	2.09	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/18/2018	<1	N/A	<1	<1	N/A	1.61	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	1.7	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<1	<1	<1	<1	<1	1.78	<1	<1	N/A	<1	<1	<1	N/A	<10
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
9/5/2019	<1	<1	<1	<1	<1	1.54	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
3/10/2020	<1	N/A	<1	<1	<1	1.57	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	<1	<1	N/A	<1	<1	1.36	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	1.49	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	1.94	2.81	N/A	N/A	N/A	N/A
5/10/2021	<1	N/A	<1	<1	<1	1.29	<1	<1	2.34	2.49	<1	<1	N/A	<1
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.15	2.59	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.65	N/A	N/A	N/A	N/A
9/9/2021	<1	N/A	N/A	<1	<1	1.63	<1	N/A	2.01	N/A	<1	<1	N/A	<1
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/8/2022	<1	N/A	N/A	<1	<1	1.56	<1	N/A	1.63	N/A	<1	<1	N/A	<1
3/8/2022	N/A	N/A	N/A	N/A	N/A	1.54	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	<1	N/A	<1	<1	<1	1.46	<1	N/A	1.5	N/A	<1	<1	N/A	<1
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<1	N/A	N/A	<1	<1	2.49	<1	N/A	1.01	2.84	N/A	<1	N/A	N/A
4/27/2023	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<1	N/A	N/A	<1	<1	1.8	<1	N/A	<1	3.14	N/A	<1	N/A	<1
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/18/2024	<1	N/A	N/A	<1	<1	2.05	<1	N/A	1.22	4.38	N/A	<1	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	4.2	N/A	N/A	N/A	N/A
11/12/2024	<1	N/A	<50	<1	<1	1.71	<1	N/A	<1	N/A	N/A	<1	N/A	N/A
1,1-Dichloroethene, ug/L (CAS NO - 75-35-4)														
2/3/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	<2
7/8/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	<2
7/8/2009	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	<2	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	<2	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	<2
3/9/2010	N/A	N/A	N/A	<2	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	<2	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<2	N/A	<2	<2	<2	<2	<2	N/A	N/A	<2	<2	N/A	N/A
10/26/2011	N/A	N/A	N/A	<2	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<2	N/A	<2	<2	<2	<2	N/A	<2	N/A	<2	<2	N/A	N/A
8/27/2012	N/A	<2	N/A	<2	<2	<2	<2	N/A	N/A	N/A	<2	<2	N/A	N/A
8/27/2012	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<2	N/A	<2	N/A	<2	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
3/21/2013	N/A	<2	N/A	<2	N/A	<2	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
3/21/2013	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A

SCS ENGINEERS

Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
1,1-Dichloroethene, ug/L (CAS NO - 75-35-4)														
9/25/2013	N/A	< 2	N/A	< 2	< 2	< 2	< 2	N/A	N/A	N/A	< 2	< 2	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	< 2	< 2	< 2	N/A	N/A	N/A	N/A	< 2	< 2	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A
9/4/2014	N/A	< 2	N/A	< 2	< 2	< 2	< 2	< 2	N/A	N/A	< 2	< 2	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A
9/15/2015	N/A	< 2	< 2	< 2	< 2	< 2	< 2	< 2	N/A	< 2	< 2	< 2	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	< 2	N/A	< 2	< 2	< 2	< 2	< 2	N/A	< 2	< 2	< 2	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A
9/27/2016	< 2	< 2	N/A	< 2	0.183*	< 2	0.153*	< 2	N/A	N/A	< 2	< 2	N/A	N/A
9/27/2016	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A
5/3/2017	< 2	< 2	N/A	< 2	< 2	< 2	< 2	< 2	N/A	N/A	< 2	< 2	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	< 2	< 2	N/A	< 2	< 2	< 2	< 2	< 2	N/A	N/A	< 2	< 2	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A
3/19/2018	< 2	N/A	< 2	< 2	< 2	< 2	N/A	N/A	N/A	N/A	< 2	< 2	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A
9/18/2018	< 2	N/A	< 2	< 2	N/A	< 2	N/A	< 2	N/A	N/A	< 2	< 2	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	N/A	< 2	< 2	< 2	N/A	< 20
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	< 2	N/A	N/A	N/A
9/5/2019	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	N/A	< 2	< 2	< 2	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	< 2	N/A	N/A	N/A
3/10/2020	< 2	N/A	< 2	< 2	< 2	< 2	N/A	< 2	N/A	N/A	< 2	< 2	N/A	N/A
8/26/2020	< 2	< 2	N/A	< 2	< 2	< 2	N/A	N/A	N/A	N/A	< 2	< 2	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	< 2	< 2	N/A	N/A	N/A	N/A
5/10/2021	< 2	N/A	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	N/A	< 2
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	< 2	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	< 2	N/A	N/A	N/A	N/A	N/A
9/9/2021	< 2	N/A	N/A	< 2	< 2	< 2	< 2	N/A	< 2	N/A	< 2	< 2	N/A	< 2
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A
3/8/2022	< 2	N/A	N/A	< 2	< 2	< 2	< 2	N/A	< 2	N/A	< 2	< 2	N/A	< 2
3/8/2022	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	< 2	N/A	< 2	< 2	< 2	< 2	< 2	N/A	< 2	N/A	< 2	< 2	N/A	< 2
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	< 2	N/A	N/A	< 2	< 2	< 2	< 2	N/A	< 2	< 2	N/A	< 2	N/A	N/A
4/27/2023	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	< 2	N/A	N/A	< 2	< 2	< 2	< 2	N/A	< 2	< 2	N/A	< 2	N/A	< 2
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A
6/18/2024	< 2	N/A	N/A	< 2	< 2	< 2	< 2	N/A	< 2	< 2	N/A	< 2	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A
11/12/2024	< 2	N/A	< 100	< 2	< 2	< 2	< 2	N/A	< 2	N/A	N/A	< 2	N/A	N/A
1,2,3-Trichloropropane, ug/L (CAS NO - 96-18-4)														
2/3/2009	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1
7/8/2009	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1
7/8/2009	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	< 1	< 2.5	< 2.5	< 2.5	< 2.5	N/A	N/A	N/A	N/A	N/A	N/A	< 2.5
3/9/2010	N/A	N/A	N/A	N/A	< 2.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	< 1	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	< 1	< 1	N/A	N/A
10/26/2011	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	< 1	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	< 1	< 1	N/A	N/A
4/23/2012	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	< 1	< 1	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	< 1	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	< 1	< 1	N/A	N/A
8/27/2012	N/A	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A	< 1	< 1	N/A	N/A
8/27/2012	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
3/21/2013	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
3/21/2013	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
9/25/2013	N/A	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A	< 1	< 1	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
9/4/2014	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	< 1	< 1	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
9/15/2015	N/A	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A
9/27/2016	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	< 1	< 1	N/A	N/A
9/27/2016	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A
5/3/2017	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	< 1	< 1	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	< 1	< 1	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
3/19/2018	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	< 1	< 1	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
9/18/2018	< 1	N/A	< 1	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	< 1	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	< 10
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
5/31/														

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Summary of Groundwater Chemistry
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	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents															
1,2,3-Trichloropropane, ug/L (CAS NO - 96-18-4)															
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
	3/10/2020	<1	N/A	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
	8/26/2020	<1	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	8/26/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	<1	N/A	N/A	N/A	N/A
	5/10/2021	<1	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1
	5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
	9/9/2021	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
	9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
	3/8/2022	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
	3/8/2022	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	8/8/2022	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/27/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
	4/27/2023	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/13/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	<1
	9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
	6/18/2024	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
	6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
	11/12/2024	<1	N/A	<50	<1	<1	<1	<1	N/A	<1	N/A	<1	N/A	N/A	N/A
1,2-Dibromo-3-Chloropropane, ug/L (CAS NO - 96-12-8)															
	2/3/2009	N/A	N/A	<0.86	<0.86	<0.86	<0.86	<0.86	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2/3/2009	N/A	N/A	N/A	<0.86	<0.86	<0.86	<0.86	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/28/2009	N/A	N/A	<0.86	<0.86	<0.86	<0.86	<0.86	N/A	N/A	N/A	N/A	N/A	N/A	<0.86
	7/8/2009	N/A	N/A	<0.86	<0.86	<0.86	<0.86	<0.86	N/A	N/A	N/A	N/A	N/A	N/A	<0.86
	7/8/2009	N/A	N/A	N/A	<0.86	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/8/2009	N/A	N/A	<0.498	<0.498	<0.498	<0.498	<0.498	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<0.498	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/30/2009	N/A	N/A	<0.498	<0.498	<0.498	<0.498	<0.498	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<0.498	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3/9/2010	N/A	N/A	<0.498	<0.498	<0.498	<0.498	<0.498	N/A	N/A	N/A	N/A	N/A	N/A	<0.498
	3/9/2010	N/A	N/A	N/A	N/A	<0.498	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	6/24/2010	N/A	N/A	N/A	N/A	<10	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	<0.498	<0.498	<0.498	<0.498	<0.498	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	N/A	N/A	N/A	<0.498	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/21/2011	N/A	N/A	<0.12	<0.12	<0.12	<0.12	<0.12	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/21/2011	N/A	N/A	N/A	<0.12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/26/2011	N/A	<0.12	N/A	<0.12	<0.12	<0.12	<0.12	<0.12	N/A	N/A	<0.12	<0.12	N/A	N/A
	10/26/2011	N/A	N/A	N/A	<0.12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/19/2011	N/A	<0.2	N/A	N/A	N/A	N/A	N/A	<0.2	N/A	N/A	<0.2	<0.2	N/A	N/A
	4/23/2012	N/A	<0.2	N/A	<0.2	<0.2	<0.2	<0.2	N/A	N/A	N/A	<0.2	<0.2	N/A	N/A
	4/23/2012	N/A	N/A	N/A	N/A	N/A	<0.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	7/11/2012	N/A	<0.12	N/A	N/A	N/A	N/A	N/A	<0.12	N/A	N/A	<0.12	<0.12	N/A	N/A
	8/27/2012	N/A	<0.12	N/A	<0.12	<0.12	<0.12	<0.12	N/A	N/A	N/A	<0.12	<0.12	N/A	N/A
	8/27/2012	N/A	N/A	N/A	<0.12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	<0.12	N/A	<0.12	N/A	<0.12	N/A	N/A	N/A	N/A	<0.12	<0.12	N/A	N/A
	3/21/2013	N/A	<0.12	N/A	<0.12	N/A	<0.12	N/A	N/A	N/A	N/A	<0.12	<0.12	N/A	N/A
	3/21/2013	N/A	<0.12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5/29/2013	N/A	N/A	<0.12	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.12	<0.12	N/A	N/A
	9/25/2013	N/A	<0.12	N/A	<0.12	<0.12	<0.12	<0.12	N/A	N/A	N/A	<0.12	<0.12	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.12	N/A	N/A	N/A
	3/12/2014	N/A	N/A	N/A	<0.12	<0.12	<0.12	N/A	N/A	N/A	N/A	<0.12	<0.12	N/A	N/A
	3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.12	N/A	N/A
	9/4/2014	N/A	<0.12	N/A	<0.12	<0.12	<0.12	<0.12	<0.12	N/A	N/A	<0.12	<0.12	N/A	N/A
	9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.12	N/A	N/A	N/A
	5/6/2015	N/A	N/A	N/A	<0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.5	N/A	N/A
	5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.5	N/A	N/A
	9/15/2015	N/A	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	<0.5	<0.5	<0.5	N/A	N/A
	9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.5	N/A	N/A	N/A	N/A	N/A	N/A
	5/10/2016	N/A	<0.5	N/A	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	<0.5	<0.5	<0.5	N/A	N/A
	5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.5	N/A	N/A	N/A
	9/27/2016	<0.5	<0.5	N/A	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	N/A	<0.5	<0.5	N/A	N/A
	9/27/2016	<0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.5	N/A	N/A	N/A
	5/3/2017	<0.5	<0.5	N/A	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	N/A	<0.5	<0.5	N/A	N/A
	5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.5	N/A	N/A	N/A	N/A	N/A	N/A
	10/24/2017	<0.5	<0.5	N/A	<0.5	<0.5	<0.5	<0.5	<0.5	N/A	N/A	<0.5	<0.5	N/A	N/A
	10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.5	N/A	N/A
	3/19/2018	<0.5	N/A	<0.5	<0.5	<0.5	<0.5	N/A	N/A	N/A	N/A	<0.5	<0.5	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<0.5	N/A	N/A
	9/18/2018	<0.5	N/A	<0.5	<0.5	N/A	<0.5	N/A	<0.5	N/A	N/A	<0.5	<0.5	N/A	N/A
	9/18/2018	N/A	N/A	N/A	N/A	N/A	<0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/10/2019	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	N/A	<1.2	<1.2	<1.2	N/A	<1.2
	4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1.2	N/A	N/A
	5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1.2	N/A	N/A	<1.2	N/A	N/A	N/A
	9/5/2019	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	N/A	<1.2	<1.2	<1.2	N/A	N/A
	9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1.2	N/A	N/A	N/A	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1.2	N/A	N/A	<1.2	N/A	N/A	N/A
	3/10/2020	<1.2	N/A	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	N/A	<1.2	<1.2	<1.2	N/A	N/A
	8/26/2020	<1.2	<1.2	N/A	<1.2	<1.2	<1.2	N/A	N/A	N/A	N/A	<1.2	<1.2	N/A	N/A
	8/26/2020	N/A	N/A	N/A	N/A	N/A	<1.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1.2	N/A	<1.2	<1.2	N/A	N/A	N/A	N/A
	5/10/2021	<5	N/A	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	N/A	<5
	5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A
	9/9/2021	<5	N/A	N/A	<5	<5	<5	<5	N/A	<5	N/A	<5	<5	N/A	<5
	9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	<5	N/A	<5
	3/8/2022	<5	N/A	N/A	<5	<5	<5	<5	N/A	<5	N/A	<5	<5	N/A	<5
	3/8/2022	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A
	8/8/2022	<5	N/A	N/A	N/A	N/A	<5	<5	N/A	<5	N/A	<5	<5	N/A	<5
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	<5	N/A	N/A	N/A	N/A	N/A
	4/27/2023	<5	N/A	N/A	<5	<5	<5	<5	N/A	<5	<5	N/A	<5	N/A	<5
	4/27/2023	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/13/2023	<5	N/A	N/A	<5	<5	<5	<5	N/A	<5	<5	N/A	<5	N/A	<5
	9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A
	6/18/2024	<5	N/A	N/A	<5	<5	<5	<5	N/A	<5	<5				

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
1,2-Dibromoethane [EDB], ug/L (CAS NO - 106-93-4)														
2/3/2009	N/A	N/A	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	< 0.25	< 0.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	N/A	N/A	N/A	N/A	N/A	N/A	< 0.25
7/8/2009	N/A	N/A	< 0.25	< 0.25	< 0.25	< 0.25	< 0.25	N/A	N/A	N/A	N/A	N/A	N/A	< 0.25
7/8/2009	N/A	N/A	N/A	< 0.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	< 0.255	< 0.255	< 0.255	< 0.255	< 0.255	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 0.255	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	< 0.255	< 0.255	< 0.255	< 0.255	< 0.255	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 0.255	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	< 0.255	< 0.255	< 0.255	< 0.255	< 0.255	N/A	N/A	N/A	N/A	N/A	N/A	< 0.255
3/9/2010	N/A	N/A	N/A	N/A	< 0.255	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	< 0.255	< 0.255	< 0.255	< 0.255	< 0.255	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	< 0.255	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	< 0.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	< 0.13	N/A	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	N/A	N/A	< 0.13	< 0.13	N/A	N/A
10/26/2011	N/A	N/A	N/A	< 0.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	< 0.05	N/A	N/A	< 0.05	< 0.05	N/A	N/A
4/23/2012	N/A	< 0.05	N/A	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	N/A	N/A	< 0.05	< 0.05	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	< 0.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	< 0.13	N/A	N/A	N/A	N/A	N/A	< 0.13	N/A	N/A	< 0.13	< 0.13	N/A	N/A
8/27/2012	N/A	< 0.13	N/A	< 0.13	< 0.13	< 0.13	N/A	N/A	N/A	N/A	< 0.13	< 0.13	N/A	N/A
8/27/2012	N/A	N/A	N/A	< 0.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	< 0.13	N/A	< 0.13	N/A	< 0.13	N/A	N/A	N/A	N/A	< 0.13	< 0.13	N/A	N/A
3/21/2013	N/A	< 0.13	N/A	< 0.13	N/A	< 0.13	N/A	N/A	N/A	N/A	< 0.13	< 0.13	N/A	N/A
3/21/2013	N/A	< 0.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	< 0.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.13	< 0.13	N/A	N/A
9/25/2013	N/A	< 0.13	N/A	< 0.13	< 0.13	< 0.13	< 0.13	N/A	N/A	N/A	< 0.13	< 0.13	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.13	< 0.13	N/A	N/A
3/12/2014	N/A	N/A	N/A	< 0.13	< 0.13	< 0.13	N/A	N/A	N/A	N/A	< 0.13	< 0.13	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.13	N/A	N/A
9/4/2014	N/A	< 0.13	N/A	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	N/A	N/A	< 0.13	< 0.13	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.13	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	< 0.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.13	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.13	N/A	N/A
9/15/2015	N/A	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	N/A	< 0.13	< 0.13	< 0.13	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.13	N/A	N/A	< 0.13	< 0.13	N/A	N/A
5/10/2016	N/A	< 0.13	N/A	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	N/A	< 0.13	< 0.13	< 0.13	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.13	< 0.13	N/A	N/A
9/27/2016	< 0.13	< 0.13	N/A	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	N/A	N/A	< 0.13	< 0.13	N/A	N/A
9/27/2016	< 0.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.13	N/A	N/A	N/A
5/3/2017	< 0.13	< 0.13	N/A	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	N/A	N/A	< 0.13	< 0.13	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.13	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	< 0.13	< 0.13	N/A	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	N/A	N/A	< 0.13	< 0.13	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.13	< 0.13	N/A	N/A
3/19/2018	< 0.13	N/A	< 0.13	< 0.13	< 0.13	< 0.13	N/A	N/A	N/A	N/A	< 0.13	< 0.13	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.13	N/A	N/A
9/18/2018	< 0.13	N/A	< 0.13	< 0.13	N/A	< 0.13	N/A	< 0.13	N/A	N/A	< 0.13	< 0.13	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	< 0.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	N/A	< 0.34	< 0.34	< 0.34	N/A	< 3.4
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.34	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.34	N/A	N/A	< 0.34	N/A	N/A	N/A
9/5/2019	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	< 0.34	N/A	< 0.34	< 0.34	< 0.34	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.34	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.34	N/A	N/A	< 0.34	N/A	N/A	N/A
3/10/2020	< 0.34	N/A	< 0.34	< 0.34	< 0.34	< 0.34	N/A	< 0.34	N/A	N/A	< 0.34	< 0.34	N/A	N/A
8/26/2020	< 0.34	< 0.34	N/A	< 0.34	< 0.34	< 0.34	N/A	N/A	N/A	N/A	< 0.34	< 0.34	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	< 0.34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 0.34	< 0.34	N/A	< 0.34	< 0.34	N/A	N/A	N/A
5/10/2021	< 1	N/A	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A	< 1
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A
9/9/2021	< 1	N/A	N/A	< 1	< 1	< 1	< 1	N/A	< 1	N/A	< 1	< 1	N/A	< 1
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
3/8/2022	< 1	N/A	N/A	< 1	< 1	< 1	< 1	N/A	< 1	N/A	< 1	< 1	N/A	< 1
3/8/2022	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	N/A	< 1	< 1	N/A	< 1
8/8/2022	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	< 1	N/A	N/A	< 1	< 1	< 1	< 1	N/A	< 1	< 1	N/A	< 1	N/A	N/A
4/27/2023	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	< 1	N/A	N/A	< 1	< 1	< 1	< 1	N/A	< 1	< 1	N/A	< 1	N/A	< 1
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
6/18/2024	< 1	N/A	N/A	< 1	< 1	< 1	< 1	N/A	< 1	< 1	N/A	< 1	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A
11/12/2024	< 1	N/A	< 50	< 1	< 1	< 1	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A
1,2-Dichlorobenzene, ug/L (CAS NO - 95-50-1)														
2/3/2009	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1
7/8/2009	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1
7/8/2009	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1
3/9/2010	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	< 1	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	< 1	< 1	N/A	N/A
10/26/2011	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	< 1	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	< 1	< 1	N	

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
1,2-Dichlorobenzene, ug/L (CAS NO - 95-50-1)														
9/25/2013	N/A	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/12/2014	N/A	N/A	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A
9/4/2014	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/15/2015	N/A	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
9/27/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/27/2016	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/3/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
3/19/2018	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/18/2018	<1	N/A	<1	<1	N/A	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	<10
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
9/5/2019	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
3/10/2020	<1	N/A	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	<1	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	<1	N/A	N/A	N/A	N/A
5/10/2021	<1	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A
9/9/2021	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/8/2022	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	N/A	<1
3/8/2022	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
8/8/2022	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
4/27/2023	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	<1
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/18/2024	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
11/12/2024	<1	N/A	<50	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	N/A
1,2-Dichloroethane, ug/L (CAS NO - 107-06-2)														
2/3/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	1.01
3/9/2010	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/26/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	<2	N/A	<2	<2	<2	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
8/27/2012	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/4/2014	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/15/2015	N/A	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
9/27/2016	<1	<1	N/A	<1	<1	0.193*	<1	<1	N/A	N/A	0.227*	<1	N/A	N/A
9/27/2016	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/3/2017	<1	<1	N/A	<1	<1	<1	0.374*	<1	N/A	N/A	0.424*	0.202*	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
3/19/2018	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/18/2018	<1	N/A	<1	<1	N/A	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	<10
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
9/5/2019	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG	
Appendix I VOC Constituents 1,2-Dichloroethane, ug/L (CAS NO - 107-06-2)	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A	
	3/10/2020	<1	N/A	<1	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	<1	<1	
	8/26/2020	<1	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	<1	N/A	
	8/26/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	<1	N/A	N/A	N/A	N/A	
	5/10/2021	<1	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	
	9/9/2021	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	<1	
	9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	
	3/8/2022	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	<1	
	3/8/2022	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	8/8/2022	<1	N/A	<1	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	<1	
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	4/27/2023	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	
	4/27/2023	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	9/13/2023	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	<1	
	9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	
	6/18/2024	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	
	6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	
	11/12/2024	<1	N/A	<50	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	
	1,2-Dichloropropane, ug/L (CAS NO - 78-87-5)	2/3/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		2/3/2009	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		4/28/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009		N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	
7/8/2009		N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10/8/2009		N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10/8/2009		N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
12/30/2009		N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
12/30/2009		N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
3/9/2010		N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	
3/9/2010		N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
6/24/2010		N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/30/2010		N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/30/2010		N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/21/2011		N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/21/2011		N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10/26/2011		N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	
10/26/2011		N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
12/19/2011		N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	
4/23/2012		N/A	<1	N/A	<1	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	
4/23/2012		N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
7/11/2012		N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	
8/27/2012		N/A	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	
8/27/2012		N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
1/23/2013		N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	
3/21/2013		N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	
3/21/2013		N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
5/29/2013		N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	
9/25/2013		N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	
9/25/2013		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	
3/12/2014		N/A	N/A	N/A	<1	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	
3/12/2014		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	
9/4/2014		N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	
9/4/2014		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	
5/6/2015		N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	
5/6/2015		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	
9/15/2015		N/A	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	<1	N/A	
9/15/2015		N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	
5/10/2016		N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	<1	<1	N/A	
5/10/2016		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	
9/27/2016		<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	
9/27/2016		<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
11/22/2016		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	
5/3/2017		<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	
5/3/2017		N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	
10/24/2017		<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	
10/24/2017		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	
3/19/2018		<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	
3/19/2018		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	
9/18/2018		<1	N/A	<1	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	<1	<1	N/A	
9/18/2018		N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	
4/10/2019		<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	<1	<10	
4/10/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	
5/31/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	<1	N/A	N/A	
9/5/2019		<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	<1	N/A	
9/5/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	
11/21/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	<1	N/A	N/A	
3/10/2020		<1	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	<1	N/A	
8/26/2020		<1	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	
8/26/2020		N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10/27/2020		N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	<1	N/A	N/A	N/A	
5/10/2021		<1	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
5/10/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	
6/14/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	
6/14/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	
9/9/2021		<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	<1	
9/9/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	
3/8/2022		<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	<1	
3/8/2022		N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
8/8/2022		<1	N/A	<1	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	<1	
8/8/2022		N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/27/2023		<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	1.21	N/A	<1	N/A	
4/27/2023		N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/13/2023		<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	<1	
9/13/2023		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	
6/18/2024		<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	
6/18/2024		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	
11/12/2024		<1	N/A	<50	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
1,4-Dichlorobenzene, ug/L (CAS NO - 106-46-7)														
2/3/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
3/9/2010	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/26/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/4/2014	N/A	<1	N/A	<1	<1	<1	0.939*	<1	N/A	N/A	<1	<1	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/15/2015	N/A	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
9/27/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/27/2016	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/3/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<1	<1	N/A	<1	<1	<1	1.91	<1	N/A	N/A	<1	<1	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
3/19/2018	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/18/2018	<1	N/A	<1	<1	N/A	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<1	<1	<1	<1	<1	<1	4.06	<1	N/A	<1	<1	<1	N/A	<10
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
9/5/2019	<1	<1	<1	<1	<1	<1	3.82	<1	N/A	<1	<1	<1	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
3/10/2020	<1	N/A	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	<1	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A
5/10/2021	<1	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
9/9/2021	<1	N/A	N/A	<1	<1	<1	1.19	N/A	<1	N/A	<1	<1	N/A	<1
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/8/2022	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
3/8/2022	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	<1	N/A	<1	<1	<1	<1	1.23	N/A	<1	N/A	<1	<1	N/A	<1
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	1.27	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<1	N/A	N/A	<1	<1	<1	1.21	N/A	<1	<1	N/A	<1	N/A	N/A
4/27/2023	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<1	N/A	N/A	<1	<1	<1	1.26	N/A	<1	<1	N/A	<1	N/A	<1
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/18/2024	<1	N/A	N/A	<1	<1	<1	1.61	N/A	<1	<1	N/A	<1	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
11/12/2024	<1	N/A	<50	<1	<1	<1	1.35	N/A	<1	N/A	N/A	<1	N/A	N/A
2-Butanone, ug/L (CAS NO - 78-93-3)														
2/3/2009	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	461
7/8/2009	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	35.2
7/8/2009	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	839
3/9/2010	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<10	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<10	N/A	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	N/A	N/A
10/26/2011	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<10	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	<10	<10	N/A	N/A
4/23/2012	N/A	<10	N/A	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<10	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	<10	<10	N/A	N/A
8/27/2012	N/A	<10	N/A	<10	<10	<10	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A
8/27/2012	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<10	N/A	<10	N/A	<10	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A
3/21/2013	N/A	<10	N/A	<10	N/A	<10	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A
3/21/2013	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
2-Butanone, ug/L (CAS NO - 78-93-3)														
9/25/2013	N/A	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A
9/4/2014	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
9/15/2015	N/A	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	4.32*	< 10	< 10	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
9/27/2016	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
9/27/2016	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
5/3/2017	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	4.95*	< 10	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
3/19/2018	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
9/18/2018	< 10	N/A	< 10	< 10	N/A	< 10	N/A	< 10	N/A	N/A	< 10	< 10	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	< 10	< 10	17.2	< 10	< 10	< 10	11.3	< 10	N/A	< 10	< 10	< 10	N/A	< 100
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	< 10	N/A	N/A	N/A
9/5/2019	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	< 10	N/A	N/A	N/A
3/10/2020	< 10	N/A	< 10	< 10	< 10	< 10	N/A	< 10	N/A	N/A	< 10	< 10	N/A	N/A
8/26/2020	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	< 10	< 10	N/A	N/A	N/A	N/A
5/10/2021	< 10	N/A	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	< 10
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A	N/A	N/A
9/9/2021	< 10	N/A	N/A	< 10	< 10	< 10	< 10	N/A	< 10	N/A	< 10	< 10	N/A	< 10
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/8/2022	< 10	N/A	N/A	< 10	< 10	< 10	< 10	N/A	< 10	N/A	< 10	< 10	N/A	< 10
3/8/2022	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	< 10	N/A	< 10	< 10	N/A	< 10
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	< 10	N/A	N/A	< 10	< 10	< 10	< 10	N/A	< 10	< 10	N/A	< 10	N/A	N/A
4/27/2023	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	< 10	N/A	N/A	< 10	< 10	< 10	< 10	N/A	< 10	< 10	N/A	< 10	N/A	< 10
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
6/18/2024	< 10	N/A	N/A	< 10	< 10	< 10	< 10	N/A	< 10	< 10	N/A	< 10	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A
11/12/2024	< 10	N/A	23400	< 10	< 10	< 10	< 10	N/A	< 10	N/A	< 10	< 10	N/A	N/A
2-Hexanone, ug/L (CAS NO - 591-78-6)														
2/3/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	23.2
7/8/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10
7/8/2009	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10
3/9/2010	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	N/A
10/26/2011	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	< 10	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	< 10	< 10	N/A	N/A
4/23/2012	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	< 10	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	< 10	< 10	N/A	N/A
8/27/2012	N/A	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	N/A
8/27/2012	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	< 10	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/21/2013	N/A	< 10	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/21/2013	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
9/25/2013	N/A	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
9/4/2014	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
9/15/2015	N/A	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
9/27/2016	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
9/27/2016	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
5/3/2017	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
3/19/2018	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
9/18/2018	< 10	N/A	< 10	< 10	N/A	< 10	N/A	< 10	N/A					

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Summary of Groundwater Chemistry
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Appendix I VOC Constituents	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG	
2-Hexanone, ug/L (CAS NO - 591-78-6)	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	< 10	N/A	N/A	N/A	
	3/10/2020	< 10	N/A	< 10	< 10	< 10	< 10	N/A	< 10	N/A	N/A	< 10	< 10	N/A	N/A	
	8/26/2020	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A	
	8/26/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	5/10/2021	< 10	N/A	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	< 10	
	5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	9/9/2021	< 10	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	< 10	
	9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	3/8/2022	< 10	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	< 10	
	3/8/2022	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	8/8/2022	< 10	N/A	< 10	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	< 10	
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	
	4/27/2023	< 10	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	< 10	
	4/27/2023	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	9/13/2023	< 10	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	< 10	
	9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	6/18/2024	< 10	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	< 10	
	6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	
	11/12/2024	< 10	N/A	< 500	< 10	< 10	< 10	< 10	< 10	N/A	< 10	N/A	< 10	N/A	< 10	
	4-Methyl-2-Pentanone, ug/L (CAS NO - 108-10-1)	2/3/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		2/3/2009	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		4/28/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10
		7/8/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10
		7/8/2009	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009		N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10/8/2009		N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
12/30/2009		N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
12/30/2009		N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
3/9/2010		N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
3/9/2010		N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
6/24/2010		N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/30/2010		N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/30/2010		N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/21/2011		N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/21/2011		N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10/26/2011		N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	
10/26/2011		N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
12/19/2011		N/A	< 10	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	< 10	< 10	N/A	
4/23/2012		N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	
4/23/2012		N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
7/11/2012		N/A	< 10	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	< 10	< 10	N/A	
8/27/2012		N/A	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	
8/27/2012		N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
1/23/2013		N/A	< 10	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	
3/21/2013		N/A	< 10	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	
3/21/2013		N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
5/29/2013		N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	
9/25/2013		N/A	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	
9/25/2013		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	
3/12/2014		N/A	N/A	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	
3/12/2014		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	
9/4/2014		N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	
9/4/2014		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	
5/6/2015		N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	
5/6/2015		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	
9/15/2015		N/A	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	< 10	N/A	
9/15/2015		N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	
5/10/2016		N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	< 10	N/A	
5/10/2016		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	
9/27/2016		< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	
9/27/2016		< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
11/22/2016		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	
5/3/2017		< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	
5/3/2017		N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	
10/24/2017		< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	
10/24/2017		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	
3/19/2018		< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	
3/19/2018		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	
9/18/2018		< 10	N/A	< 10	< 10	N/A	< 10	N/A	< 10	N/A	N/A	N/A	< 10	< 10	N/A	
9/18/2018		N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/10/2019		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	< 10	N/A	
4/10/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	
5/31/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	< 10	N/A	N/A	
9/5/2019		< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	< 10	N/A	
9/5/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	
11/21/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	< 10	N/A	N/A	
3/10/2020		< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	< 10	N/A	N/A	< 10	< 10	N/A	
8/26/2020		< 10	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	
8/26/2020		N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10/27/2020		N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	< 10	< 10	N/A	N/A	N/A	
5/10/2021		< 10	N/A	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	
5/10/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	
6/14/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A	N/A	
6/14/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	
9/9/2021		< 10	N/A	N/A	< 10	< 10										

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SOP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
Acetone, ug/L (CAS NO - 67-64-1)														
2/3/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	11.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	322
7/8/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	27.9
7/8/2009	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	365
3/9/2010	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
10/26/2011	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	< 10	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	< 10	< 10	N/A	N/A
4/23/2012	N/A	< 10	N/A	31.9	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	< 10	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	< 10	< 10	N/A	N/A
8/27/2012	N/A	< 10	N/A	13.1	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
8/27/2012	N/A	N/A	N/A	12.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	< 10	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/21/2013	N/A	< 10	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/21/2013	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
9/25/2013	N/A	< 10	N/A	< 10	4.42*	< 10	< 10	N/A	N/A	N/A	< 10	1.86*	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	1.98*	13.5	< 10	N/A	N/A	N/A	N/A	2.72*	1.92*	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.59*	N/A	N/A
9/4/2014	N/A	3.54*	N/A	< 10	15	< 10	32.8	2.68*	N/A	N/A	< 10	< 10	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.15*	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
9/15/2015	N/A	< 10	< 10	< 10	< 10	2.88*	23.4	< 10	N/A	35.3	< 10	< 10	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
9/27/2016	2.41*	< 10	N/A	< 10	2.56*	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
9/27/2016	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
5/3/2017	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/19/2018	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
9/18/2018	< 10	N/A	< 10	< 10	N/A	< 10	N/A	< 10	N/A	N/A	< 10	< 10	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	< 10	< 10	73.8	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	< 100
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	< 10	< 10	N/A	N/A
9/5/2019	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	< 10	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	< 10	< 10	N/A	N/A
3/10/2020	< 10	N/A	< 10	< 10	< 10	< 10	N/A	< 10	N/A	N/A	< 10	< 10	N/A	N/A
8/26/2020	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	< 10	21.5	N/A	N/A	N/A	N/A
5/10/2021	< 10	N/A	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	< 10
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A
9/9/2021	< 10	N/A	N/A	< 10	< 10	< 10	< 10	N/A	< 10	N/A	< 10	< 10	N/A	< 10
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/8/2022	< 10	N/A	N/A	< 10	< 10	< 10	< 10	N/A	< 10	N/A	< 10	< 10	N/A	< 10
3/8/2022	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	< 10	N/A	< 10	< 10	N/A	< 10
8/8/2022	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	< 10	N/A	N/A	< 10	< 10	< 10	< 10	N/A	< 10	13.3	N/A	< 10	N/A	N/A
4/27/2023	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	< 10	N/A	N/A	< 10	< 10	< 10	< 10	N/A	< 10	< 10	N/A	< 10	N/A	< 10
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
6/18/2024	< 10	N/A	N/A	< 10	< 10	< 10	< 10	N/A	< 10	< 10	N/A	< 10	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
11/12/2024	< 10	N/A	24800	< 10	< 10	< 10	< 10	N/A	< 10	N/A	N/A	< 10	N/A	N/A
Acrylonitrile, ug/L (CAS NO - 107-13-1)														
2/3/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10
7/8/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10
7/8/2009	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10
3/9/2010	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
10/26/2011	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	< 5	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	< 5	< 5	N/A	N/A
4/23/2012	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	< 5	< 5	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	< 10	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	< 10	< 10	N/A	N/A
8/27/2012	N/A	< 10	N/A	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
8/27/2012	N/A													

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
Acrylonitrile, ug/L (CAS NO - 107-13-1)														
9/25/2013	N/A	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/12/2014	N/A	N/A	N/A	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A
9/4/2014	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
9/15/2015	N/A	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	0.98*	< 10	< 10	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	< 10	N/A	N/A
5/10/2016	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	2.08*	< 10	< 10	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
9/27/2016	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
9/27/2016	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
5/3/2017	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
3/19/2018	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
9/18/2018	< 10	N/A	< 10	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	< 100
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	< 10	N/A	N/A	N/A
9/5/2019	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	< 10	N/A	N/A	N/A
3/10/2020	< 10	N/A	< 10	< 10	< 10	< 10	N/A	< 10	N/A	N/A	< 10	< 10	N/A	N/A
8/26/2020	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	< 10	< 10	N/A	N/A	N/A	N/A
5/10/2021	< 5	N/A	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A	< 5
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	< 5	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	< 5	N/A	N/A	N/A	N/A
9/9/2021	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	< 5	N/A	< 5	< 5	N/A	< 5
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	< 5	N/A	< 5	N/A	N/A
3/8/2022	< 5	N/A	N/A	< 5	< 5	< 5	< 5	N/A	< 5	N/A	< 5	< 5	N/A	< 5
3/8/2022	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A
8/8/2022	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	< 5	N/A	< 5	< 5	N/A	< 5
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	< 5	N/A	N/A	< 5	< 5	< 5	< 5	N/A	< 5	< 5	N/A	< 5	N/A	N/A
4/27/2023	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	< 5	N/A	N/A	< 5	< 5	< 5	< 5	N/A	< 5	< 5	N/A	< 5	N/A	< 5
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A
6/18/2024	< 5	N/A	N/A	< 5	< 5	< 5	< 5	N/A	< 5	< 5	N/A	< 5	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A
11/12/2024	< 5	N/A	< 250	< 5	< 5	< 5	< 5	N/A	< 5	N/A	N/A	< 5	N/A	N/A
Benzene, ug/L (CAS NO - 71-43-2)														
2/3/2009	N/A	N/A	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	1.22
7/8/2009	N/A	N/A	< 0.5	< 0.5	< 0.5	< 0.5	1.82	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5
7/8/2009	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	< 0.5	< 0.5	< 0.5	< 0.5	1.29	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	1.13	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	< 0.5	< 0.5	0.73	< 0.5	1.89	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	1.49	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	1.11	< 0.5	< 0.5	< 0.5	3.89	N/A	N/A	N/A	N/A	N/A	N/A	1.89
3/9/2010	N/A	N/A	N/A	< 0.5	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	< 0.5	< 0.5	N/A	3.36	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	< 0.5	< 0.5	< 0.5	< 0.5	1.64	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	< 0.5	< 0.5	< 0.5	< 0.5	2.42	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	< 0.5	N/A	< 0.5	< 0.5	< 0.5	3.52	< 0.5	N/A	N/A	N/A	< 0.5	< 0.5	N/A
10/26/2011	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	< 0.5	< 0.5	N/A	N/A
4/23/2012	N/A	< 0.5	N/A	< 0.5	< 0.5	< 0.5	3.2	< 0.5	N/A	N/A	< 0.5	< 0.5	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	< 0.5	< 0.5	N/A	N/A
8/27/2012	N/A	< 0.5	N/A	< 0.5	< 0.5	< 0.5	N/A	N/A	N/A	N/A	< 0.5	< 0.5	N/A	N/A
8/27/2012	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	< 0.5	N/A	< 0.5	N/A	< 0.5	N/A	N/A	N/A	N/A	< 0.5	< 0.5	N/A	N/A
3/21/2013	N/A	< 0.5	N/A	< 0.5	N/A	< 0.5	N/A	N/A	N/A	N/A	< 0.5	< 0.5	N/A	N/A
3/21/2013	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	< 0.5	N/A	N/A
9/25/2013	N/A	< 0.5	N/A	< 0.5	< 0.5	< 0.5	2.06	N/A	N/A	N/A	< 0.5	< 0.5	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	< 0.5	< 0.5	< 0.5	N/A	N/A	N/A	N/A	< 0.5	< 0.5	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	< 0.5	N/A	N/A
9/4/2014	N/A	< 0.5	N/A	< 0.5	0.56	< 0.5	3.68	< 0.5	N/A	N/A	< 0.5	< 0.5	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A
9/15/2015	N/A	< 0.5	1.06	0.114*	0.172*	< 0.5	2.62	< 0.5	N/A	< 0.5	< 0.5	< 0.5	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	< 0.5	N/A	< 0.5	0.555	< 0.5	1.43	< 0.5	N/A	< 0.5	0.497*	< 0.5	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.534	N/A	N/A	N/A
9/27/2016	< 0.5	< 0.5	N/A	0.136*	0.734	0.141*	1.39	< 0.5	N/A	N/A	0.741	< 0.5	N/A	N/A
9/27/2016	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	< 0.5	N/A	N/A	0.137*	0.894	0.197*	2.13	< 0.5	N/A	N/A	0.334*	N/A	N/A
5/3/2017	< 0.5	< 0.5	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A	2.3	< 0.5	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A
8/29/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A
10/24/2017	< 0.5	< 0.5	N/A	< 0.5	0.626	< 0.5	1.78	< 0.5	N/A	N/A	< 0.5	< 0.5	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A
3/19/2018	< 0.5	N/A	< 0.5	< 0.5	0.568	< 0.5	N/A	N/A	N/A	N/A	< 0.5	< 0.5	N/A	N/A
3/19/2018	N													

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
Benzene, ug/L (CAS NO - 71-43-2)														
9/5/2019	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	3.36	< 0.5	N/A	< 0.5	0.796	< 0.5	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	0.522	N/A	N/A	N/A
3/10/2020	< 0.5	N/A	< 0.5	< 0.5	0.708	< 0.5	N/A	< 0.5	N/A	N/A	1.03	< 0.5	N/A	N/A
8/26/2020	< 0.5	< 0.5	N/A	< 0.5	0.581	< 0.5	N/A	N/A	N/A	N/A	< 0.5	< 0.5	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	0.6	< 0.5	N/A	N/A	N/A	N/A
5/10/2021	< 0.5	N/A	< 0.5	< 0.5	< 0.5	< 0.5	2.63	< 0.5	0.681	< 0.5	0.928	< 0.5	N/A	< 0.5
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.652	< 0.5	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A
9/9/2021	< 0.5	N/A	N/A	< 0.5	< 0.5	< 0.5	2.35	N/A	0.804	N/A	0.558	< 0.5	N/A	< 0.5
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A
3/8/2022	< 0.5	N/A	N/A	< 0.5	< 0.5	< 0.5	< 0.5	N/A	0.621	N/A	< 0.5	< 0.5	N/A	< 0.5
3/8/2022	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	< 0.5	N/A	< 0.5	< 0.5	< 0.5	< 0.5	1.45	N/A	0.834	N/A	< 0.5	< 0.5	N/A	< 0.5
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	1.69	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	< 0.5	N/A	N/A	< 0.5	< 0.5	< 0.5	1.3	N/A	0.696	< 0.5	N/A	< 0.5	N/A	N/A
4/27/2023	N/A	N/A	N/A	0.534	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	< 0.5	N/A	N/A	0.587	< 0.5	< 0.5	0.96	N/A	< 0.5	< 0.5	N/A	< 0.5	N/A	< 0.5
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A
6/18/2024	< 0.5	N/A	N/A	< 0.5	< 0.5	< 0.5	0.937	N/A	< 0.5	< 0.5	N/A	< 0.5	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A	N/A	N/A	N/A
11/12/2024	< 0.5	N/A	46.1	< 0.5	< 0.5	< 0.5	1.44	N/A	< 0.5	N/A	< 0.5	N/A	< 0.5	N/A
Bromochloromethane, ug/L (CAS NO - 74-97-5)														
2/3/2009	N/A	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5
7/8/2009	N/A	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5
7/8/2009	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5
3/9/2010	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	< 5	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	< 5	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	< 5	< 5	N/A	N/A
10/26/2011	N/A	N/A	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	< 5	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	< 5	< 5	N/A	N/A
4/23/2012	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	< 5	< 5	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	< 5	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	< 5	< 5	N/A	N/A
8/27/2012	N/A	< 5	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A	< 5	< 5	N/A	N/A
8/27/2012	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	< 5	N/A	< 5	N/A	< 5	N/A	N/A	N/A	N/A	< 5	< 5	N/A	N/A
3/21/2013	N/A	< 5	N/A	< 5	N/A	< 5	N/A	N/A	N/A	N/A	< 5	< 5	N/A	N/A
3/21/2013	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	< 5	N/A	N/A
9/25/2013	N/A	< 5	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A	< 5	< 5	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	< 5	< 5	< 5	N/A	N/A	N/A	N/A	< 5	< 5	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A
9/4/2014	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	< 5	< 5	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	< 5	N/A	N/A
9/15/2015	N/A	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A	< 5	< 5	< 5	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	< 5	< 5	< 5	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A
9/27/2016	< 5	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	< 5	< 5	N/A	N/A
9/27/2016	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A
5/3/2017	< 5	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	< 5	< 5	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	< 5	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	< 5	< 5	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	< 5	N/A	N/A
3/19/2018	< 5	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	< 5	< 5	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A
9/18/2018	< 5	N/A	< 5	< 5	N/A	< 5	N/A	< 5	N/A	N/A	< 5	< 5	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A	< 5	< 5	< 5	N/A	< 50
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	< 5	N/A	N/A	N/A
9/5/2019	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A	< 5	< 5	< 5	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	< 5	N/A	N/A	N/A
3/10/2020	< 5	N/A	< 5	< 5	< 5	< 5	N/A	< 5	N/A	N/A	< 5	< 5	N/A	N/A
8/26/2020	< 5	< 5	N/A	< 5	< 5	< 5	N/A	N/A	N/A	N/A	< 5	< 5	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	< 5	N/A	N/A	N/A	N/A
5/10/2021	< 5	N/A	< 5	< 5	< 5	< 5	< 5	< 5	N/A	< 5	< 5	< 5	N/A	< 5
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	< 5	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A
9/9/2021	< 5	N/A	N/A	< 5	< 5	< 5	< 5	N/A	< 5	N/A	< 5	< 5	N/A	< 5
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A
3/8/2022	< 5	N/A	N/A	< 5	< 5	< 5	< 5	N/A	< 5	N/A	< 5	< 5	N/A	< 5
3/8/2022	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	< 5	N/A	< 5	< 5	N/A	< 5
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	< 5	N/A	N/A	< 5	< 5	< 5	< 5	N/A	< 5	< 5	N/A	< 5	N/A	N/A
4/27/2023	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	< 5	N/A	N/A	< 5	< 5	< 5	< 5	N/A	< 5	< 5	N/A	< 5	N/A	< 5
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A
6/18/2024	< 5	N/A	N/A	< 5	< 5	< 5	< 5	N/A	< 5	< 5	N/A	< 5	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A
11/12/2024	< 5	N/A	< 250	< 5										

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Summary of Groundwater Chemistry
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Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
Bromodichloromethane, ug/L (CAS NO - 75-27-4)														
2/3/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5
3/9/2010	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<5	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/26/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/4/2014	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/15/2015	N/A	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
9/27/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/27/2016	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/3/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
3/19/2018	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/18/2018	<1	N/A	<1	<1	N/A	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	<10
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
9/5/2019	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
3/10/2020	<1	N/A	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	<1	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A
5/10/2021	<1	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
9/9/2021	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
3/8/2022	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
3/8/2022	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
4/27/2023	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	<1
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/18/2024	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
11/12/2024	<1	N/A	<50	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	N/A	N/A
Bromoform, ug/L (CAS NO - 75-25-2)														
2/3/2009	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5
7/8/2009	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5
7/8/2009	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5
3/9/2010	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<5	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<5	N/A	<5	<5	<5	<5	<5	N/A	N/A	<5	<5	N/A	N/A
10/26/2011	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<5	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	<5	<5	N/A	N/A
4/23/2012	N/A	<5	N/A	<5	<5	<5	<5	<5	N/A	N/A	<5	<5	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<5	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	<5	<5	N/A	N/A
8/27/2012	N/A	<5	N/A	<5	<5	<5	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A
8/27/2012	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<5	N/A	<5	N/A	<5	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A
3/21/2013	N/A	<5	N/A	<5	N/A	<5	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A
3/21/2013	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
Carbon Tetrachloride, ug/L (CAS NO - 56-23-5)														
2/3/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	<2
7/8/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	<2
7/8/2009	N/A	N/A	N/A	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	<10
3/9/2010	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<4	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<2	N/A	<2	<2	<2	<2	<2	N/A	N/A	<2	<2	N/A	N/A
10/26/2011	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<2	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	<2	<2	N/A	N/A
4/23/2012	N/A	<2	N/A	<2	<2	<2	<2	<2	N/A	N/A	<2	<2	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<2	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	<2	<2	N/A	N/A
8/27/2012	N/A	<2	N/A	<2	<2	<2	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
8/27/2012	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<2	N/A	<2	N/A	<2	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
3/21/2013	N/A	<2	N/A	<2	N/A	<2	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
3/21/2013	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
9/25/2013	N/A	<2	N/A	<2	<2	<2	<2	N/A	N/A	N/A	<2	<2	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	<2	<2	<2	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A
9/4/2014	N/A	<2	N/A	<2	<2	<2	<2	<2	N/A	N/A	<2	<2	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A
9/15/2015	N/A	<2	<2	<2	<2	<2	<2	<2	N/A	<2	<2	<2	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	<2	N/A	N/A	N/A	N/A
5/10/2016	N/A	<2	N/A	<2	<2	<2	<2	<2	N/A	<2	<2	<2	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A
9/27/2016	<2	<2	N/A	<2	<2	<2	<2	<2	N/A	N/A	<2	<2	N/A	N/A
9/27/2016	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A
5/3/2017	<2	<2	N/A	<2	<2	<2	<2	<2	N/A	N/A	<2	<2	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<2	<2	N/A	<2	<2	<2	<2	<2	N/A	N/A	<2	<2	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A
3/19/2018	<2	N/A	<2	<2	<2	<2	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A
9/18/2018	<2	N/A	<2	<2	N/A	<2	N/A	<2	N/A	N/A	<2	<2	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<2	<2	<2	<2	<2	<2	<2	<2	N/A	<2	<2	<2	N/A	<20
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	<2	N/A	N/A	N/A
9/5/2019	<2	<2	<2	<2	<2	<2	<2	<2	N/A	<2	<2	<2	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	<2	N/A	N/A	N/A
3/10/2020	<2	N/A	<2	<2	<2	<2	N/A	<2	N/A	N/A	<2	<2	N/A	N/A
8/26/2020	<2	<2	N/A	<2	<2	<2	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	<2	N/A	<2	N/A	N/A	N/A
5/10/2021	<2	N/A	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	N/A	<2
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A
9/9/2021	<2	N/A	N/A	<2	<2	<2	<2	N/A	<2	N/A	<2	<2	N/A	<2
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
3/8/2022	<2	N/A	N/A	<2	<2	<2	<2	N/A	<2	N/A	<2	<2	N/A	<2
3/8/2022	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	<2	N/A	<2	<2	<2	<2	<2	N/A	<2	N/A	<2	<2	N/A	<2
8/8/2022	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<2	N/A	N/A	<2	<2	<2	<2	N/A	<2	<2	N/A	<2	N/A	N/A
4/27/2023	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<2	N/A	N/A	<2	<2	<2	<2	N/A	<2	<2	N/A	<2	N/A	<2
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A
6/18/2024	<2	N/A	N/A	<2	<2	<2	<2	N/A	<2	<2	N/A	<2	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A
11/12/2024	<2	N/A	<100	<2	<2	<2	<2	N/A	<2	N/A	N/A	<2	N/A	N/A
Chlorobenzene, ug/L (CAS NO - 108-90-7)														
2/3/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5
3/9/2010	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/26/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SOP-01-72

Appendix I VOC Constituents	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Chlorobenzene, ug/L (CAS NO - 108-90-7)	9/25/2013	N/A	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A	< 1	< 1	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
	3/12/2014	N/A	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
	3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A
	9/4/2014	N/A	< 1	N/A	< 1	< 1	< 1	0.26*	< 1	N/A	N/A	< 1	< 1	N/A	N/A
	9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A
	5/6/2015	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
	5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
	9/15/2015	N/A	< 1	0.329*	< 1	< 1	< 1	0.309*	< 1	N/A	< 1	< 1	< 1	N/A	N/A
	9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	< 1	N/A	N/A
	5/10/2016	N/A	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A
	5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A
	9/27/2016	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	< 1	< 1	N/A	N/A
	9/27/2016	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A
	5/3/2017	< 1	< 1	N/A	< 1	< 1	< 1	0.295*	< 1	N/A	N/A	< 1	< 1	N/A	N/A
	5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A
	10/24/2017	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	< 1	< 1	N/A	N/A
	10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
	3/19/2018	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
	9/18/2018	< 1	N/A	< 1	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	< 1	N/A	N/A
	9/18/2018	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/10/2019	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	< 10
	4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
	5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	< 1	N/A	N/A
	9/5/2019	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A
	9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	< 1	N/A	N/A	N/A
	3/10/2020	< 1	N/A	< 1	< 1	< 1	< 1	N/A	< 1	N/A	N/A	< 1	< 1	N/A	N/A
	8/26/2020	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
	8/26/2020	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	< 1	< 1	N/A	N/A	N/A	N/A
	5/10/2021	< 1	N/A	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1.22	< 1	< 1	N/A	< 1
	5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	1.5	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	< 1	N/A	N/A	N/A	N/A
	9/9/2021	< 1	N/A	N/A	< 1	< 1	< 1	< 1	N/A	< 1	N/A	< 1	< 1	N/A	< 1
	9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
	3/8/2022	< 1	N/A	N/A	< 1	< 1	< 1	< 1	N/A	< 1	N/A	< 1	< 1	N/A	< 1
	3/8/2022	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	8/8/2022	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A	< 1	N/A	< 1	< 1	N/A	< 1
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/27/2023	< 1	N/A	N/A	< 1	< 1	< 1	< 1	N/A	< 1	2.66	N/A	< 1	N/A	N/A
	4/27/2023	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/13/2023	< 1	N/A	N/A	< 1	< 1	< 1	< 1	N/A	< 1	2.64	N/A	< 1	N/A	< 1
	9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
	6/18/2024	< 1	N/A	N/A	< 1	< 1	< 1	< 1	N/A	< 1	2.64	N/A	< 1	N/A	N/A
	6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.68	N/A	N/A	N/A	N/A
	11/12/2024	< 1	N/A	< 50	< 1	< 1	< 1	< 1	N/A	< 1	N/A	N/A	< 1	N/A	N/A
Chlorodibromomethane, ug/L (CAS NO - 124-48-1)	2/3/2009	N/A	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2/3/2009	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/28/2009	N/A	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5
	7/8/2009	N/A	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5
	7/8/2009	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/8/2009	N/A	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/30/2009	N/A	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3/9/2010	N/A	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5
	3/9/2010	N/A	N/A	N/A	N/A	< 5	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	6/24/2010	N/A	N/A	N/A	N/A	< 5	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/21/2011	N/A	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/21/2011	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/26/2011	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	< 5	< 5	N/A	N/A
	10/26/2011	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/19/2011	N/A	< 5	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	< 5	< 5	N/A	N/A
	4/23/2012	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	< 5	< 5	N/A	N/A
	4/23/2012	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	7/11/2012	N/A	< 5	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	< 5	< 5	N/A	N/A
	8/27/2012	N/A	< 5	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A	< 5	< 5	N/A	N/A
	8/27/2012	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	< 5	N/A	< 5	N/A	< 5	N/A	N/A	N/A	N/A	< 5	< 5	N/A	N/A
	3/21/2013	N/A	< 5	N/A	< 5	N/A	< 5	N/A	N/A	N/A	N/A	< 5	< 5	N/A	N/A
	3/21/2013	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5/29/2013	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	< 5	N/A	N/A
	9/25/2013	N/A	< 5	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A	< 5	< 5	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A
	3/12/2014	N/A	N/A	N/A	< 5	< 5	< 5	N/A	N/A	N/A	N/A	< 5	< 5	N/A	N/A
	3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A
	9/4/2014	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	N/A	< 5	< 5	N/A	N/A
	9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A
	5/6/2015	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A
	5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A
	9/15/2015	N/A	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A	< 5	< 5	< 5	N/A	N/A
	9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A	N/A	N/A	N/A
	5/10/2016	N/A	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A	< 5	< 5	< 5	N/A	N/A
	5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A	N/A	N/A
	9/27/2016	< 5	< 5	N/A											

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
Chlorodibromomethane, ug/L (CAS NO - 124-48-1)														
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	<5	N/A	N/A	N/A
3/10/2020	<5	N/A	<5	<5	<5	<5	<5	<5	N/A	<5	<5	<5	<5	<5
8/26/2020	<5	<5	N/A	<5	<5	<5	<5	N/A	N/A	N/A	<5	<5	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	<5	<5	N/A	N/A	N/A	N/A
5/10/2021	<5	N/A	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A
9/9/2021	<5	N/A	N/A	<5	<5	<5	<5	N/A	<5	N/A	<5	<5	N/A	<5
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A
3/8/2022	<5	N/A	N/A	<5	<5	<5	<5	N/A	<5	N/A	<5	<5	N/A	<5
3/8/2022	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	<5	N/A	<5	<5	<5	<5	<5	N/A	<5	N/A	<5	<5	N/A	<5
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<5	N/A	N/A	<5	<5	<5	<5	N/A	<5	<5	N/A	<5	N/A	N/A
4/27/2023	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<5	N/A	N/A	<5	<5	<5	<5	N/A	<5	<5	N/A	<5	N/A	<5
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A
6/18/2024	<5	N/A	N/A	<5	<5	<5	<5	N/A	<5	<5	N/A	<5	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A
11/12/2024	<5	N/A	<250	<5	<5	<5	<5	N/A	<5	N/A	<5	N/A	N/A	N/A
Chloroethane, ug/L (CAS NO - 75-00-3)														
2/3/2009	N/A	N/A	<4	<4	<4	<4	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<4	<4	6.94	<4	7.33	N/A	N/A	N/A	N/A	N/A	N/A	<4
7/8/2009	N/A	N/A	<4	<4	6.6	<4	4.67	N/A	N/A	N/A	N/A	N/A	N/A	<4
7/8/2009	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<4	<4	5.2	<4	4.35	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<4	<4	15.3	<4	6.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	8.14	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<4	<4	6.83	<4	4.89	N/A	N/A	N/A	N/A	N/A	N/A	<4
3/9/2010	N/A	N/A	N/A	N/A	7.48	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	6.83	N/A	5.22	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<4	<4	13.1	<4	5.48	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<4	<4	33	<4	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<4	N/A	<4	<4	<4	<4	<4	N/A	N/A	<4	<4	N/A	N/A
10/26/2011	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<4	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	<4	<4	N/A	N/A
4/23/2012	N/A	<4	N/A	<4	<4	<4	<4	<4	N/A	N/A	<4	<4	N/A	<4
4/23/2012	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<4	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	<4	<4	N/A	N/A
8/27/2012	N/A	<4	N/A	<4	<4	<4	<4	N/A	N/A	N/A	<4	<4	N/A	N/A
8/27/2012	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<4	N/A	<4	N/A	<4	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
3/21/2013	N/A	<4	N/A	<4	N/A	<4	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
3/21/2013	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
9/25/2013	N/A	<4	N/A	0.866*	0.902*	1.06*	2.02*	N/A	N/A	N/A	<4	<4	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	<4	<4	1.39*	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
9/4/2014	N/A	<4	N/A	<4	10.4	<4	<4	<4	N/A	N/A	<4	<4	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A
9/15/2015	N/A	<4	<4	<4	3.52*	3.1*	1.93*	<4	N/A	1.14*	<4	<4	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	<4	N/A	1.52*	8.62	1.45*	3.29*	<4	N/A	<4	1.23*	<4	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A
9/27/2016	<4	<4	N/A	2.56*	7.02	1.99*	0.95*	<4	N/A	N/A	<4	<4	N/A	N/A
9/27/2016	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A
5/3/2017	<4	<4	N/A	0.881*	10.9	2.05*	2.01*	<4	N/A	N/A	1.6*	<4	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<4	<4	N/A	4.7	10.1	<4	<4	<4	N/A	N/A	<4	<4	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A
3/19/2018	<4	N/A	<4	<4	4.55	<4	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A
9/18/2018	<4	N/A	<4	<4	N/A	<4	N/A	<4	N/A	N/A	<4	<4	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	<4	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<4	<4	<4	<4	<4	<4	<4	<4	N/A	<4	<4	<4	N/A	<40
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	<4	N/A	N/A	N/A
9/5/2019	<4	<4	<4	<4	4.9	<4	<4	<4	N/A	<4	<4	<4	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	<4	N/A	N/A	N/A
3/10/2020	<4	N/A	<4	<4	4.89	<4	N/A	<4	N/A	N/A	<4	<4	N/A	N/A
8/26/2020	<4	<4	N/A	<4	4.57	<4	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	<4	<4	N/A	<4	N/A	<4	N/A	N/A	N/A
5/10/2021	<4	N/A	<4	<4	<4	<4	41.5	<4	<4	<4	<4	<4	N/A	<4
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A
9/9/2021	<4	N/A	N/A	<4	<4	<4	<4	N/A	<4	N/A	<4	<4	N/A	<4
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
3/8/2022	<4	N/A	N/A	<4	<4	<4	<4	N/A	<4	N/A	<4	<4	N/A	<4
3/8/2022	N/A	N/A	N/A	N/A	N/A	<4	N/A	<4	N/A	<4	N/A	N/A	N/A	N/A
8/8/2022	<4	N/A	<4	<4	<4	<4	<4	<4	N/A	<4	<4	<4	N/A	<4
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<4	N/A	N/A	<4	<4	<4	<4	<4	N/A	<4	<4	<4	N/A	N/A
4/27/2023	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<4	N/A	N/A	<4	<4	<4	<4	<4	N/A	<4	<4	<4	N/A	<4
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A
6/18/2024	<4	N/A	N/A	<4	<4	<4	<4	<4	N/A	<4	<4	<4	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A
11/12/2024	<4	N/A	<200	<4	<4	<4	<4	<4	N/A	<4	N/A	<4	N/A	N/A

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
Chloroform, ug/L (CAS NO - 67-66-3)														
2/3/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
3/9/2010	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/26/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<2	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	<2	<2	N/A	N/A
8/27/2012	N/A	<2	N/A	<2	<2	<2	<2	N/A	N/A	N/A	<2	<2	N/A	N/A
8/27/2012	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/12/2014	N/A	N/A	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A
9/4/2014	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/15/2015	N/A	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
9/27/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/27/2016	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/3/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
3/19/2018	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/18/2018	<3	N/A	<3	<3	N/A	<3	N/A	<3	N/A	N/A	<3	<3	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<3	<3	<3	<3	<3	<3	<3	<3	N/A	<3	<3	<3	N/A	<30
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	<3	N/A	N/A	N/A
9/5/2019	<3	<3	<3	<3	<3	<3	<3	<3	N/A	<3	<3	<3	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	<3	N/A	N/A	N/A
3/10/2020	<3	N/A	<3	<3	<3	<3	N/A	<3	N/A	N/A	<3	<3	N/A	N/A
8/26/2020	<3	<3	N/A	<3	<3	<3	N/A	N/A	N/A	N/A	<3	<3	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	<3	N/A	<3	<3	N/A	N/A
5/10/2021	<3	N/A	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	N/A	<3
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	<3	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A
9/9/2021	<3	N/A	N/A	<3	<3	<3	<3	N/A	<3	N/A	<3	<3	N/A	<3
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	<3	N/A	N/A
3/8/2022	<3	N/A	N/A	<3	<3	<3	<3	N/A	<3	N/A	<3	<3	N/A	<3
3/8/2022	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	<3	N/A	<3	<3	<3	<3	<3	N/A	<3	N/A	<3	<3	N/A	<3
8/8/2022	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<3	N/A	N/A	<3	<3	<3	<3	N/A	<3	<3	N/A	<3	N/A	N/A
4/27/2023	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<3	N/A	N/A	<3	<3	<3	<3	N/A	<3	<3	N/A	<3	N/A	<3
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A
6/18/2024	<3	N/A	N/A	<3	<3	<3	<3	N/A	<3	<3	N/A	<3	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A
11/12/2024	<3	N/A	<150	<3	<3	<3	<3	N/A	<3	N/A	<3	<3	N/A	N/A
Chloromethane, ug/L (CAS NO - 74-87-3)														
2/3/2009	N/A	N/A	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	<3
7/8/2009	N/A	N/A	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	<3
7/8/2009	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	<3
3/9/2010	N/A	N/A	N/A	N/A	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<3	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<3	N/A	<3	<3	<3	<3	<3	N/A	<3	<3	<3	N/A	N/A
10/26/2011	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<3	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	<3	<3	N/A	N/A
4/23/2012	N/A	<3	N/A	<3	<3	<3	<3	<3	N/A	N/A	<3	<3	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<3	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	<3	<3	N/A	N/A
8/27/2012	N/A	<3	N/A	<3	<3	<3	<3	N/A	N/A	N/A	<3	<3	N/A	N/A
8/27/2012	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<3	N/A	<3	N/A	<3	N/A	N/A	N/A	N/A	<3	<3	N/A	N/A
3/21/2013	N/A	<3	N/A	<3	N/A	<3	N/A	N/A	N/A	N/A	<3	<3	N/A	N/A
3/21/2013	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	<3	N/A	N/A

SCS ENGINEERS

Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
Chloromethane, ug/L (CAS NO - 74-87-3)														
9/25/2013	N/A	< 3	N/A	< 3	< 3	< 3	< 3	N/A	N/A	N/A	< 3	< 3	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	< 3	< 3	< 3	N/A	N/A	N/A	N/A	< 3	< 3	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	< 3	N/A
9/4/2014	N/A	< 3	N/A	< 3	< 3	< 3	< 3	< 3	N/A	N/A	< 3	< 3	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	< 3	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A
9/15/2015	N/A	< 3	< 3	< 3	< 3	< 3	< 3	< 3	N/A	< 3	< 3	< 3	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	< 3	N/A	< 3	< 3	< 3	< 3	< 3	N/A	< 3	< 3	< 3	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A
9/27/2016	< 3	< 3	N/A	< 3	< 3	< 3	< 3	< 3	N/A	N/A	< 3	< 3	N/A	N/A
9/27/2016	0.36*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A
5/3/2017	1.17*	0.325*	N/A	< 3	< 3	< 3	< 3	< 3	N/A	N/A	< 3	< 3	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	< 3	< 3	N/A	< 3	< 3	< 3	< 3	< 3	N/A	N/A	< 3	< 3	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A
3/19/2018	< 3	N/A	< 3	< 3	< 3	< 3	N/A	N/A	N/A	N/A	< 3	< 3	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A
9/18/2018	< 3	N/A	< 3	< 3	N/A	< 3	N/A	< 3	N/A	N/A	< 3	< 3	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	N/A	< 3	< 3	< 3	N/A	< 30
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	< 3	N/A	N/A	N/A
9/5/2019	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	N/A	< 3	< 3	< 3	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	< 3	N/A	N/A	N/A
3/10/2020	< 3	N/A	< 3	< 3	< 3	< 3	N/A	< 3	N/A	N/A	< 3	< 3	N/A	N/A
8/26/2020	< 3	< 3	N/A	< 3	< 3	< 3	N/A	N/A	N/A	N/A	< 3	< 3	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	< 3	< 3	N/A	N/A	N/A	N/A
5/10/2021	< 3	N/A	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	N/A	< 3
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	< 3	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	< 3	N/A	N/A	N/A	N/A
9/9/2021	< 3	N/A	N/A	< 3	< 3	< 3	< 3	N/A	< 3	N/A	< 3	< 3	N/A	< 3
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A
3/8/2022	< 3	N/A	N/A	< 3	< 3	< 3	< 3	N/A	< 3	N/A	< 3	< 3	N/A	< 3
3/8/2022	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3
8/8/2022	< 3	N/A	< 3	< 3	< 3	< 3	< 3	N/A	< 3	N/A	< 3	< 3	N/A	< 3
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3
4/27/2023	< 3	N/A	N/A	< 3	< 3	< 3	< 3	N/A	< 3	< 3	N/A	< 3	N/A	N/A
4/27/2023	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	< 3	N/A	N/A	< 3	< 3	< 3	< 3	N/A	< 3	< 3	N/A	< 3	N/A	< 3
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A
6/18/2024	< 3	N/A	N/A	< 3	< 3	< 3	< 3	N/A	< 3	< 3	N/A	< 3	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A
11/12/2024	< 3	N/A	< 150	< 3	< 3	< 3	< 3	N/A	< 3	N/A	N/A	< 3	N/A	N/A
cis-1,2-Dichloroethene, ug/L (CAS NO - 156-59-2)														
2/3/2009	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	< 1	< 1	2.69	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1
7/8/2009	N/A	N/A	< 1	< 1	4.27	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1
7/8/2009	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	< 1	< 1	2.5	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	< 1	< 1	9.39	< 1	1.08	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	1	< 1	4.71	< 1	1.58	N/A	N/A	N/A	N/A	N/A	N/A	< 1
3/9/2010	N/A	N/A	N/A	N/A	4.96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	5.22	N/A	2.17	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	< 1	< 1	7.21	< 1	1.23	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	< 1	< 1	3.53	< 1	1.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	< 1	N/A	< 1	2.51	< 1	2.82	< 1	N/A	N/A	N/A	< 1	< 1	N/A
10/26/2011	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	< 1	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	< 1	< 1	N/A
4/23/2012	N/A	< 1	N/A	< 1	5.4	< 1	2.5	< 1	N/A	N/A	N/A	< 1	< 1	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	< 1	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	< 1	< 1	N/A
8/27/2012	N/A	< 1	N/A	< 1	2.21	< 1	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A
8/27/2012	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	< 1	N/A	< 1	N/A	1.06	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A
3/21/2013	N/A	< 1	N/A	< 1	N/A	1.72	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A
3/21/2013	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A
9/25/2013	N/A	< 1	N/A	< 1	1.8	2.01	2.1	N/A	N/A	N/A	N/A	< 1	< 1	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
3/12/2014	N/A	N/A	N/A	< 1	1.34	2.48	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A
9/4/2014	N/A	< 1	N/A	< 1	18.2	1.94	2.73	< 1	N/A	N/A	N/A	< 1	< 1	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
5/6/2015	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A
9/15/2015	N/A	< 1	1.43	0.668*	4.64	3.81	2.92	< 1	N/A	< 1	< 1	< 1	< 1	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	< 1	N/A	0.236*	12.4	3.54	2.08	< 1	N/A	< 1	< 1	< 1	< 1	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A
9/27/2016	< 1	< 1	N/A	1.64	15.7	4.61	1.53	< 1	N/A	N/A	N/A	< 1	< 1	N/A
9/27/2016	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
5/3/2017	< 1	< 1	N/A	2.88	21.3	7.05	2.65	< 1	N/A	N/A	N/A	< 1	< 1	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	< 1	< 1	N/A	4.1	14.4	6.19	2.11	< 1	N/A	N/A	N/A	< 1	< 1	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A
3/19/2018	< 1	N/A	< 1	4.13	17.5	7.08	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A
9/18/2018	< 1	N/A	< 1	4.52	N/A	6.2	N/A	< 1	N/A	N/A	N/A	< 1	< 1	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	6.41	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	< 1	< 1	< 1	4.19	11.1	7.44	3.35	< 1	N/A	< 1	< 1	< 1	< 1	< 10
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
Ethylbenzene, ug/L (CAS NO - 100-41-4)														
2/3/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	1.65
7/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	3.1
3/9/2010	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/26/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/4/2014	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/15/2015	N/A	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
9/27/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/27/2016	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/3/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
3/19/2018	<1	N/A	<1	1.03	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/18/2018	<1	N/A	<1	<1	N/A	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	<10
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
9/5/2019	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
3/10/2020	<1	N/A	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	<1	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A
5/10/2021	<1	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
9/9/2021	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/8/2022	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
3/8/2022	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
8/8/2022	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
4/27/2023	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	<1
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/18/2024	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
11/12/2024	<1	N/A	<50	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	N/A	N/A
Iodomethane, ug/L (CAS NO - 74-88-4)														
2/3/2009	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<20	<20	<20	<20	<20	N/A	N/A	N/A	N/A	N/A	N/A	<20
7/8/2009	N/A	N/A	<20	<20	<20	<20	<20	N/A	N/A	N/A	N/A	N/A	N/A	<20
7/8/2009	N/A	N/A	N/A	<20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<20	<20	<20	<20	<20	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<20	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	<10
3/9/2010	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<50	N/A	<50	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<20	<20	<20	<20	<20	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<20	N/A	<20	<20	<20	<20	<20	N/A	N/A	<20	<20	N/A	N/A
10/26/2011	N/A	N/A	N/A	<20	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<10	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	<10	<10	N/A	N/A
4/23/2012	N/A	<10	N/A	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<20	N/A	N/A	N/A	N/A	N/A	<20	N/A	N/A	<20	<20	N/A	N/A
8/27/2012	N/A	<10	N/A	<10	<10	<10	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A
8/27/2012	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<10	N/A	<10	N/A	<10	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A
3/21/2013	N/A	<10	N/A	<10	N/A	<10	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A
3/21/2013	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A

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Summary of Groundwater Chemistry
 Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG	
Appendix I VOC Constituents	Methylene Bromide, ug/L (CAS NO - 74-95-3)															
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A	
	3/10/2020	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	<1	<1	
	8/26/2020	<1	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	
	8/26/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	<1	N/A	N/A	N/A	
	5/10/2021	<1	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	
	5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	
	9/9/2021	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	<1	
	9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	
	3/8/2022	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	<1	
	3/8/2022	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	8/8/2022	<1	N/A	<1	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	<1	
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	
	4/27/2023	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	
	4/27/2023	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	9/13/2023	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	<1	
	9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	
	6/18/2024	<1	N/A	N/A	<1	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	
	6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	
	11/12/2024	<1	N/A	<50	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	N/A	N/A	
	Methylene Chloride, ug/L (CAS NO - 75-09-2)	2/3/2009	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009		N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/28/2009		N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
7/8/2009		N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5	
7/8/2009		N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10/8/2009		N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10/8/2009		N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
12/30/2009		N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
12/30/2009		N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
3/9/2010		N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5	
3/9/2010		N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
6/24/2010		N/A	N/A	N/A	N/A	<5	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/30/2010		N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/30/2010		N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/21/2011		N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/21/2011		N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10/26/2011		N/A	<5	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	<5	<5	N/A	
10/26/2011		N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
12/19/2011		N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	<5	<5	N/A	
4/23/2012		N/A	<5	N/A	<5	<5	<5	<5	<5	<5	N/A	N/A	<5	<5	N/A	
4/23/2012		N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
7/11/2012		N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	<5	<5	N/A	
8/27/2012		N/A	<5	N/A	<5	<5	<5	<5	N/A	N/A	N/A	N/A	<5	<5	N/A	
8/27/2012		N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
1/23/2013		N/A	<5	N/A	<5	N/A	<5	N/A	N/A	N/A	N/A	N/A	<5	<5	N/A	
3/21/2013		N/A	<5	N/A	<5	N/A	<5	N/A	N/A	N/A	N/A	N/A	<5	<5	N/A	
3/21/2013		N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
5/29/2013		N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	<5	N/A	
9/25/2013		N/A	<5	N/A	<5	<5	0.453*	1.24*	N/A	N/A	N/A	N/A	<5	<5	N/A	
9/25/2013		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	
3/12/2014		N/A	N/A	N/A	0.223*	<5	0.316*	N/A	N/A	N/A	N/A	N/A	0.228*	0.33*	N/A	
3/12/2014		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.212*	N/A	N/A	
9/4/2014		N/A	<5	N/A	<5	<5	<5	1.12*	<5	N/A	N/A	N/A	<5	<5	N/A	
9/4/2014		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	
5/6/2015		N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	
5/6/2015		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	
9/15/2015		N/A	<5	<5	<5	<5	<5	1.6*	<5	N/A	<5	<5	<5	<5	N/A	
9/15/2015		N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	
5/10/2016		N/A	<5	N/A	<5	<5	0.373*	0.791*	<5	N/A	<5	<5	<5	<5	N/A	
5/10/2016		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	
9/27/2016		0.264*	0.202*	N/A	0.724*	0.746*	0.804*	1.16*	0.29*	N/A	N/A	N/A	0.269*	0.268*	N/A	
9/27/2016		0.301*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
11/22/2016		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	
5/3/2017		0.306*	0.489*	N/A	<5	0.288*	0.408*	1.49*	0.312*	N/A	N/A	N/A	0.362*	0.355*	N/A	
5/3/2017		N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.372*	N/A	N/A	N/A	N/A	N/A	N/A	
10/24/2017		<5	<5	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	<5	<5	N/A	
10/24/2017		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	<5	N/A	
3/19/2018		<5	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	<5	<5	N/A	
3/19/2018		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	<5	N/A	
9/18/2018		<5	N/A	<5	<5	N/A	<5	N/A	<5	N/A	N/A	N/A	<5	<5	N/A	
9/18/2018		N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/10/2019		<5	<5	<5	<5	<5	<5	<5	<5	N/A	<5	<5	<5	<5	<50	
4/10/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	
5/31/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	<5	N/A	N/A	
9/5/2019		<5	<5	<5	<5	<5	<5	<5	<5	N/A	<5	<5	<5	<5	N/A	
9/5/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	
11/21/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	<5	N/A	N/A	
3/10/2020		<5	N/A	<5	<5	<5	<5	<5	N/A	<5	N/A	N/A	<5	<5	N/A	
8/26/2020		<5	<5	N/A	<5	<5	<5	<5	N/A	N/A	N/A	N/A	<5	<5	N/A	
8/26/2020		N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10/27/2020		N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	<5	<5	N/A	N/A	N/A	
5/10/2021		<5	N/A	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	
5/10/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	
6/14/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A	N/A	
6/14/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A	N/A	
9/9/2021		<5	N/A	N/A	<5	<5	<5	<5	<5	N/A	<5	N/A	<5	<5	<5	
9/9/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	<5	
3/8/2022		<5	N/A	N/A	<5	<5	<5	<5	<5	N/A	<5	N/A	<5	<5	<5	
3/8/2022		N/A	N/A	N/A	N/A	N/A	<5	N/A	<5	N/A	<5	N/A	N/A	N/A	<5	
8/8/2022		N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5	
8/8/2022		<5	N/A	N/A	<5	<5	<5	<5	<5	N/A	<5	N/A	<5	<5	<5	
4/27/2023		<5	N/A	N/A	<5	<5	<5	<5	<5	N/A	<5	<5	N/A	<5	N/A	
4/27/2023		N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/13/2023		<5	N/A	N/A	<5	<5	<5	<5	<5	N/A	<5	<5	N/A	<5	<5	
9/13/2023		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	
6/18/2024		<5	N/A	N/A	<5	<5	<5	<5	<5	N/A	<5	<5	N/A	<5	N/A	
6/18/2024		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A	N/A	
11/12/2024		<5	N/A	<250	<5	<5	<5	<5	<5	N/A	<5	N/A	<5	N/A	N/A	

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Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
Styrene, ug/L (CAS NO - 100-42-5)														
2/3/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5
3/9/2010	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/26/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/4/2014	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/15/2015	N/A	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	<1	N/A	<1	<1	0.122*	<1	<1	N/A	0.187*	<1	<1	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
9/27/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
9/27/2016	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/3/2017	<1	<1	N/A	<1	<1	0.102*	<1	<1	N/A	N/A	<1	<1	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<1	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
3/19/2018	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	<1	<1	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/18/2018	<1	N/A	<1	<1	N/A	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	<10
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
9/5/2019	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
3/10/2020	<1	N/A	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	<1	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A
5/10/2021	<1	N/A	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	N/A	<1
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
9/9/2021	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/8/2022	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
3/8/2022	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
8/8/2022	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
4/27/2023	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	<1
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/18/2024	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A
11/12/2024	<1	N/A	<50	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	N/A	N/A
Tetrachloroethene, ug/L (CAS NO - 127-18-4)														
2/3/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<1	<1	1.02	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5
3/9/2010	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
10/26/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	<1	N/A	<1	<1	<1	<1	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	1.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	<1	N/A	<1	<1	1.16	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<1	N/A	<1	N/A	1.34	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	<1	N/A	1.41	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
trans-1,3-Dichloropropene, ug/L (CAS NO - 10061-02-6)														
2/3/2009	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5
7/8/2009	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5
7/8/2009	N/A	N/A	N/A	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5
3/9/2010	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<5	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<5	N/A	<5	<5	<5	<5	<5	N/A	N/A	<5	<5	N/A	N/A
10/26/2011	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<5	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	<5	<5	N/A	N/A
4/23/2012	N/A	<5	N/A	<5	<5	<5	<5	<5	N/A	N/A	<5	<5	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<5	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	<5	<5	N/A	N/A
8/27/2012	N/A	<5	N/A	<5	<5	<5	<5	N/A	N/A	N/A	<5	<5	N/A	N/A
8/27/2012	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<5	N/A	<5	N/A	<5	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A
3/21/2013	N/A	<5	N/A	<5	N/A	<5	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A
3/21/2013	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A
9/25/2013	N/A	<5	N/A	<5	<5	<5	<5	N/A	N/A	N/A	<5	<5	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	<5	<5	<5	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A
9/4/2014	N/A	<5	N/A	<5	<5	<5	<5	<5	N/A	N/A	<5	<5	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A
9/15/2015	N/A	<5	<5	<5	<5	<5	<5	<5	N/A	<5	<5	<5	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	<5	N/A	<5	<5	<5	<5	<5	N/A	<5	<5	<5	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A
9/27/2016	<5	<5	N/A	<5	<5	<5	<5	<5	N/A	N/A	<5	<5	N/A	N/A
9/27/2016	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A
5/3/2017	<5	<5	N/A	<5	<5	<5	<5	<5	N/A	N/A	<5	<5	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<5	<5	N/A	<5	<5	<5	<5	<5	N/A	N/A	<5	<5	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A
3/19/2018	<5	N/A	<5	<5	<5	<5	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A
9/18/2018	<5	N/A	<5	<5	N/A	<5	N/A	<5	N/A	N/A	<5	<5	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<5	<5	<5	<5	<5	<5	<5	<5	N/A	<5	<5	<5	N/A	<50
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	<5	N/A	N/A	N/A
9/5/2019	<5	<5	<5	<5	<5	<5	<5	<5	N/A	<5	<5	<5	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	<5	N/A	N/A	N/A
3/10/2020	<5	N/A	<5	<5	<5	<5	N/A	<5	N/A	N/A	<5	<5	N/A	N/A
8/26/2020	<5	<5	N/A	<5	<5	<5	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	<5	N/A	<5	N/A	N/A	N/A
5/10/2021	<5	N/A	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	N/A	<5
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A
9/9/2021	<5	N/A	N/A	<5	<5	<5	<5	N/A	<5	N/A	<5	<5	N/A	<5
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A
3/8/2022	<5	N/A	N/A	<5	<5	<5	<5	N/A	<5	N/A	<5	<5	N/A	<5
3/8/2022	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	<5	N/A	<5	<5	<5	<5	<5	N/A	<5	N/A	<5	<5	N/A	<5
8/8/2022	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<5	N/A	N/A	<5	<5	<5	<5	N/A	<5	<5	N/A	<5	N/A	N/A
4/27/2023	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<5	N/A	N/A	<5	<5	<5	<5	N/A	<5	<5	N/A	<5	N/A	<5
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A
6/18/2024	<5	N/A	N/A	<5	<5	<5	<5	N/A	<5	<5	N/A	<5	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A
11/12/2024	<5	N/A	<250	<5	<5	<5	<5	N/A	<5	N/A	N/A	<5	N/A	N/A
trans-1,4-Dichloro-2-Butene, ug/L (CAS NO - 110-57-6)														
2/3/2009	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	<10
7/8/2009	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	<10
7/8/2009	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<50	<50	<50	<50	<50	N/A	N/A	N/A	N/A	N/A	N/A	<50
3/9/2010	N/A	N/A	N/A	N/A	<50	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<10	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<10	N/A	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	N/A	N/A
10/26/2011	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<10	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	<10	<10	N/A	N/A
4/23/2012	N/A	<10	N/A	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<10	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	<10	<10	N/A	N/A
8/27/2012	N/A	<10	N/A	<10	<10	<10	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A
8/27/2012	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<10	N/A	<10	N/A	<10	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A
3/21/2013	N/A	<10	N/A	<10	N/A	<10	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A
3/21/2013	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A

SCS ENGINEERS

Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
trans-1,4-Dichloro-2-Butene, ug/L (CAS NO - 110-57-6)														
9/25/2013	N/A	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/12/2014	N/A	N/A	N/A	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A
9/4/2014	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
9/15/2015	N/A	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
9/27/2016	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
9/27/2016	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
5/3/2017	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	< 10	< 10	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
3/19/2018	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	N/A	N/A	< 10	< 10	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
9/18/2018	< 10	N/A	< 10	< 10	N/A	< 10	N/A	< 10	N/A	N/A	< 10	< 10	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	< 100
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	< 10	N/A	N/A	N/A
9/5/2019	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	< 10	N/A	N/A	N/A
3/10/2020	< 10	N/A	< 10	< 10	< 10	< 10	N/A	< 10	N/A	N/A	< 10	< 10	N/A	N/A
8/26/2020	< 10	< 10	N/A	< 10	< 10	< 10	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	< 10	< 10	N/A	N/A	N/A	N/A
5/10/2021	< 10	N/A	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A	< 10
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A
9/9/2021	< 10	N/A	N/A	< 10	< 10	< 10	< 10	N/A	< 10	N/A	< 10	< 10	N/A	< 10
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
3/8/2022	< 10	N/A	N/A	< 10	< 10	< 10	< 10	N/A	< 10	N/A	< 10	< 10	N/A	< 10
3/8/2022	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A	< 10	N/A	< 10	< 10	N/A	< 10
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	< 10	N/A	N/A	< 10	< 10	< 10	< 10	N/A	< 10	< 10	N/A	< 10	N/A	N/A
4/27/2023	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	< 10	N/A	N/A	< 10	< 10	< 10	< 10	N/A	< 10	< 10	N/A	< 10	N/A	< 10
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A
6/18/2024	< 10	N/A	N/A	< 10	< 10	< 10	< 10	N/A	< 10	< 10	N/A	< 10	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A
11/12/2024	< 10	N/A	< 500	< 10	< 10	< 10	< 10	N/A	< 10	N/A	< 10	< 10	N/A	N/A
Trichloroethene, ug/L (CAS NO - 79-01-6)														
2/3/2009	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1
7/8/2009	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1
7/8/2009	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	< 1	< 1	1.24	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1
3/9/2010	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	1.09	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	< 1	< 1	1.42	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	< 1	< 1	< 1	< 1	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A	< 1	< 1	N/A	N/A
10/26/2011	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	< 1	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	< 1	< 1	N/A	N/A
4/23/2012	N/A	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A	< 1	< 1	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	< 1	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	< 1	< 1	N/A	N/A
8/27/2012	N/A	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A	< 1	< 1	N/A	N/A
8/27/2012	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
3/21/2013	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
3/21/2013	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
9/25/2013	N/A	< 1	N/A	< 1	< 1	0.604*	< 1	N/A	N/A	N/A	< 1	< 1	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	< 1	< 1	0.61*	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
9/4/2014	N/A	< 1	N/A	< 1	0.438*	< 1	< 1	< 1	N/A	N/A	< 1	< 1	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
9/15/2015	N/A	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	< 1	N/A	< 1	0.536*	0.422*	< 1	< 1	N/A	< 1	< 1	< 1	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A
9/27/2016	< 1	< 1	N/A	< 1	0.752*	0.839*	< 1	< 1	N/A	N/A	< 1	< 1	N/A	N/A
9/27/2016	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A
5/3/2017	< 1	< 1	N/A	< 1	1.72	0.857*	< 1	< 1	N/A	N/A	< 1	< 1	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	< 1	< 1	N/A	< 1	< 1	1.03	< 1	< 1	N/A	N/A	< 1	< 1	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
3/19/2018	< 1	N/A	< 1	< 1	1.22	< 1	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A
9/18/2018	< 1	N/A	< 1	< 1	N/A	< 1	N/A	< 1	N/A	N/A	< 1	< 1	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	< 1	< 1												

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents															
Trichloroethene, ug/L (CAS NO - 79-01-6)															
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
	3/10/2020	<1	N/A	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
	8/26/2020	<1	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
	8/26/2020	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A
	5/10/2021	<1	N/A	<1	<1	<1	<1	<1	<1	<1	1.15	<1	<1	N/A	<1
	5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	1.1	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.56	N/A	N/A	N/A	N/A
	9/9/2021	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
	9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
	3/8/2022	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
	3/8/2022	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	8/8/2022	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/27/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	3.4	N/A	<1	N/A	N/A
	4/27/2023	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/13/2023	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	3.37	N/A	<1	N/A	<1
	9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
	6/18/2024	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	3.56	N/A	<1	N/A	N/A
	6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.33	N/A	N/A	N/A	N/A
Trichlorofluoromethane, ug/L (CAS NO - 75-69-4)															
	2/3/2009	N/A	N/A	<4	<4	<4	<4	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	2/3/2009	N/A	N/A	N/A	<4	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/28/2009	N/A	N/A	<4	<4	<4	<4	<4	N/A	N/A	N/A	N/A	N/A	N/A	<4
	7/8/2009	N/A	N/A	<4	<4	<4	<4	<4	N/A	N/A	N/A	N/A	N/A	N/A	<4
	7/8/2009	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/8/2009	N/A	N/A	<4	<4	<4	<4	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/30/2009	N/A	N/A	<4	<4	<4	<4	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	3/9/2010	N/A	N/A	<4	<4	<4	<4	<4	N/A	N/A	N/A	N/A	N/A	N/A	<4
	3/9/2010	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	6/24/2010	N/A	N/A	N/A	N/A	<4	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	<4	<4	<4	<4	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/30/2010	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/21/2011	N/A	N/A	<4	<4	<4	<4	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/21/2011	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/26/2011	N/A	<4	N/A	<4	<4	<4	<4	<4	N/A	N/A	<4	<4	N/A	N/A
	10/26/2011	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	12/19/2011	N/A	<4	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	<4	<4	N/A	N/A
	4/23/2012	N/A	<4	N/A	<4	<4	<4	<4	<4	N/A	N/A	<4	<4	N/A	N/A
	4/23/2012	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	7/11/2012	N/A	<4	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	<4	<4	N/A	N/A
	8/27/2012	N/A	<5	N/A	<5	<5	<5	N/A	N/A	N/A	N/A	<5	<5	N/A	N/A
	8/27/2012	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	<4	N/A	<4	N/A	<4	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
	3/21/2013	N/A	<4	N/A	<4	N/A	<4	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
	3/21/2013	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5/29/2013	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
	9/25/2013	N/A	<4	N/A	<4	<4	<4	<4	N/A	N/A	N/A	<4	<4	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A
	3/12/2014	N/A	N/A	N/A	<4	<4	<4	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
	3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
	9/4/2014	N/A	<4	N/A	<4	<4	<4	<4	N/A	N/A	N/A	<4	<4	N/A	N/A
	9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A
	5/6/2015	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A
	5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A
	9/15/2015	N/A	<4	<4	<4	<4	<4	<4	N/A	<4	<4	<4	<4	N/A	N/A
	9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A
	5/10/2016	N/A	<4	N/A	<4	<4	<4	<4	<4	N/A	<4	<4	<4	N/A	N/A
	5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A
	9/27/2016	<4	<4	N/A	<4	<4	<4	<4	N/A	N/A	N/A	<4	<4	N/A	N/A
	9/27/2016	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A
	5/3/2017	<4	<4	N/A	<4	<4	<4	<4	<4	N/A	N/A	<4	<4	N/A	N/A
	5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A
	10/24/2017	<4	<4	N/A	<4	<4	<4	<4	<4	N/A	N/A	<4	<4	N/A	N/A
	10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
	3/19/2018	<4	N/A	<4	<4	<4	<4	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
	9/18/2018	<4	N/A	<4	<4	N/A	<4	N/A	<4	N/A	N/A	<4	<4	N/A	N/A
	9/18/2018	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/10/2019	<4	<4	<4	<4	<4	<4	<4	<4	N/A	<4	<4	<4	N/A	<40
	4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
	5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	<4	N/A	N/A	N/A
	9/5/2019	<4	<4	<4	<4	<4	<4	<4	<4	N/A	<4	<4	<4	N/A	N/A
	9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	<4	N/A	N/A	N/A
	3/10/2020	<4	N/A	<4	<4	<4	<4	N/A	<4	N/A	N/A	<4	<4	N/A	N/A
	8/26/2020	<4	<4	N/A	<4	<4	<4	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
	8/26/2020	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	<4	N/A	<4	N/A	N/A	N/A
	5/10/2021	<4	N/A	<4	<4	<4	<4	<4	<4	<4	<4	<4	<4	N/A	<4
	5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A
	9/9/2021	<4	N/A	N/A	<4	<4	<4	<4	N/A	<4	N/A	<4	<4	N/A	<4
	9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
	3/8/2022	<4	N/A	N/A	<4	<4	<4	<4	N/A	<4	N/A	<4	<4	N/A	<4
	3/8/2022	N/A	N/A	N/A	N/A	N/A	<4	N/A	<4	N/A	<4	N/A	N/A	N/A	N/A
	8/8/2022	<4	N/A	<4	<4	<4	<4	<4	N/A	<4	N/A	<4	<4	N/A	<4
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/27/2023	<4	N/A	N/A	<4	<4	<4	<4	N/A	<4	<4	<4	<4	N/A	N/A
	4/27/2023	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/13/2023	<4	N/A	N/A	<4	<4	<4	<4	N/A	<4	<4	<4	<4	N/A	<4
	9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
	6/18/2024	<4	N/A	N/A	<4	<4	<4	<4	N/A	<4	<4	<4	<4	N/A	N/A
	6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A
	11/12/2024	<4	N/A	<200	<4	<4	<4	<4	N/A	<4	<4	N/A	<4	N/A	N/A

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
Vinyl Acetate, ug/L (CAS NO - 108-05-4)														
2/3/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	<2
7/8/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	<2
7/8/2009	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A	N/A	<10
3/9/2010	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<2	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<4	<4	<4	<4	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<2	N/A	<2	<2	<2	<2	<2	N/A	N/A	<2	<2	N/A	N/A
10/26/2011	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<5	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	<5	<5	N/A	N/A
4/23/2012	N/A	<5	N/A	<5	<5	<5	<5	<5	N/A	N/A	<5	<5	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<20	N/A	N/A	N/A	N/A	N/A	<20	N/A	N/A	<20	<20	N/A	N/A
8/27/2012	N/A	<10	N/A	<10	<10	<10	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A
8/27/2012	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<2	N/A	<2	N/A	<2	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
3/21/2013	N/A	<2	N/A	<2	N/A	<2	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
3/21/2013	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
9/25/2013	N/A	<2	N/A	<2	<2	<2	<2	N/A	N/A	N/A	<2	<2	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	<2	<2	<2	N/A	N/A	N/A	N/A	<2	<2	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A
9/4/2014	N/A	<2	N/A	<2	<2	<2	<2	<2	N/A	N/A	<2	<2	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A
9/15/2015	N/A	<10	<10	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	<10	N/A	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A
9/27/2016	<10	<10	N/A	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	N/A	N/A
9/27/2016	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A
5/3/2017	<10	<10	N/A	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<10	<10	N/A	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A
3/19/2018	<10	N/A	<10	<10	<10	<10	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A
9/18/2018	<10	N/A	<10	<10	N/A	<10	N/A	<10	N/A	N/A	<10	<10	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<10	<10	<10	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	N/A	<100
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	<10	N/A	N/A	N/A
9/5/2019	<10	<10	<10	<10	<10	<10	<10	<10	N/A	N/A	<10	<10	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	<10	N/A	N/A	N/A
3/10/2020	<10	N/A	<10	<10	<10	<10	N/A	<10	N/A	N/A	<10	<10	N/A	N/A
8/26/2020	<10	<10	N/A	<10	<10	<10	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	<10	N/A	<10	N/A	N/A	N/A
5/10/2021	<10	N/A	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	N/A	<10
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	<10	N/A	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A
9/9/2021	<10	N/A	N/A	<10	<10	<10	<10	N/A	<10	N/A	<10	<10	N/A	<10
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A
3/8/2022	<10	N/A	N/A	<10	<10	<10	<10	N/A	<10	N/A	<10	<10	N/A	<10
3/8/2022	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
8/8/2022	<10	N/A	<10	<10	<10	<10	<10	N/A	<10	N/A	<10	<10	N/A	<10
8/8/2022	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<10	N/A	N/A	<10	<10	<10	<10	N/A	<10	<10	N/A	<10	N/A	N/A
4/27/2023	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<10	N/A	N/A	<10	<10	<10	<10	N/A	<10	<10	N/A	<10	N/A	<10
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A
6/18/2024	<10	N/A	N/A	<10	<10	<10	<10	N/A	<10	<10	N/A	<10	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A
11/12/2024	<10	N/A	<500	<10	<10	<10	<10	<10	N/A	<10	N/A	<10	N/A	N/A
Vinyl Chloride, ug/L (CAS NO - 75-01-4)														
2/3/2009	N/A	N/A	<1	<1	<1	<1	1.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<1	<1	2.43	<1	2.4	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	1.11	<1	1.61	<1	3.25	N/A	N/A	N/A	N/A	N/A	N/A	<1
7/8/2009	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<1	<1	1.29	<1	3.16	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	N/A	2.46	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<1	<1	5.04	<1	4.23	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.13	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<1	<1	2.38	<1	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1
3/9/2010	N/A	N/A	N/A	N/A	2.43	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	2.67	N/A	3.88	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<1	<1	3.82	<1	3.14	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<1	<1	<1	<1	4.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<1	N/A	<1	<1	<1	3.14	<1	N/A	N/A	<1	<1	N/A	N/A
10/26/2011	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	<1	N/A	<1	1	<1	4.6	<1	N/A	N/A	<1	<1	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<1	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/27/2012	N/A	<4	N/A	<4	<4	<4	N/A	N/A	N/A	N/A	<4	<4	N/A	N/A
8/27/2012	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	<1	N/A	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/21/2013	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Appendix I VOC Constituents														
Vinyl Chloride, ug/L (CAS NO - 75-01-4)														
5/29/2013	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	<1	N/A	<1	<1	0.457*	4.04	N/A	N/A	N/A	<1	<1	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	<1	<1	0.211*	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/4/2014	N/A	<1	N/A	<1	2.97	<1	5.53	<1	N/A	N/A	<1	<1	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/15/2015	N/A	<1	0.639*	<1	<1	0.365*	<1	<1	N/A	<1	<1	<1	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
5/10/2016	N/A	<1	N/A	<1	<1	0.609*	<1	<1	N/A	<1	0.138*	<1	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.159*	N/A	N/A	N/A
9/27/2016	<1	<1	N/A	<1	2.1	0.618*	2.79	<1	N/A	N/A	<1	<1	N/A	N/A
9/27/2016	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A
5/3/2017	<1	<1	N/A	<1	<1	<1	4.38	<1	N/A	N/A	0.186*	<1	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<1	<1	N/A	<1	1.25	<1	1.71	<1	N/A	N/A	<1	<1	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
3/19/2018	<1	N/A	<1	<1	1.47	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
9/18/2018	<1	N/A	<1	<1	N/A	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<1	<1	<1	<1	<1	<1	3.37	<1	N/A	<1	<1	<1	N/A	<10
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
9/5/2019	<1	<1	<1	<1	<1	<1	2.74	<1	N/A	<1	<1	<1	N/A	N/A
9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A
3/10/2020	<1	N/A	<1	<1	<1	<1	N/A	<1	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	<1	<1	N/A	<1	<1	<1	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A
8/26/2020	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	1.09	<1	N/A	N/A	N/A	N/A
5/10/2021	<1	N/A	<1	<1	<1	<1	1.55	<1	<1	<1	<1	<1	N/A	<1
5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
9/9/2021	<1	N/A	N/A	<1	<1	<1	1.80	N/A	<1	N/A	<1	<1	N/A	<1
9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
3/8/2022	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
3/8/2022	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
8/8/2022	<1	N/A	<1	<1	<1	<1	<1	N/A	<1	N/A	<1	<1	N/A	<1
8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	1.24	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/27/2023	<1	N/A	N/A	<1	<1	<1	1.43	N/A	<1	<1	N/A	<1	N/A	N/A
4/27/2023	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/13/2023	<1	N/A	N/A	<1	<1	<1	1.14	N/A	<1	<1	N/A	<1	N/A	<1
9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A	N/A
6/18/2024	<1	N/A	N/A	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1	N/A	N/A	N/A	N/A
11/12/2024	<1	N/A	<50	<1	<1	<1	<1	N/A	<1	<1	N/A	<1	N/A	N/A
Xylenes, total, ug/L (CAS NO - 1330-20-7)														
2/3/2009	N/A	N/A	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2/3/2009	N/A	N/A	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/28/2009	N/A	N/A	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	5.41
7/8/2009	N/A	N/A	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	<3
7/8/2009	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/8/2009	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	<6	<6	<6	<6	<6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/30/2009	N/A	N/A	N/A	N/A	N/A	N/A	<6	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3/9/2010	N/A	N/A	<5	<7.5	<7.5	<7.5	<7.5	N/A	N/A	N/A	N/A	N/A	N/A	7.76
3/9/2010	N/A	N/A	N/A	N/A	<7.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
6/24/2010	N/A	N/A	N/A	N/A	<3	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/30/2010	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/21/2011	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
10/26/2011	N/A	<3	N/A	<3	<3	<3	<3	<3	N/A	N/A	<3	<3	N/A	N/A
10/26/2011	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
12/19/2011	N/A	<3	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	<3	<3	N/A	N/A
4/23/2012	N/A	<3	N/A	<3	<3	<3	<3	<3	N/A	N/A	<3	<3	N/A	N/A
4/23/2012	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7/11/2012	N/A	<3	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	<3	<3	N/A	N/A
8/27/2012	N/A	<3	N/A	<3	<3	<3	N/A	N/A	N/A	N/A	<3	<3	N/A	N/A
8/27/2012	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013	N/A	<3	N/A	<3	N/A	<3	N/A	N/A	N/A	N/A	<3	<3	N/A	N/A
3/21/2013	N/A	<3	N/A	<3	N/A	<3	N/A	N/A	N/A	N/A	<3	<3	N/A	N/A
3/21/2013	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
5/29/2013	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	<3	N/A	N/A
9/25/2013	N/A	<3	N/A	<3	<3	<3	<3	N/A	N/A	N/A	<3	<3	N/A	N/A
9/25/2013	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A
3/12/2014	N/A	N/A	N/A	<3	<3	<3	N/A	N/A	N/A	N/A	<3	<3	N/A	N/A
3/12/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A
9/4/2014	N/A	<3	N/A	<3	<3	<3	<3	<3	N/A	N/A	<3	<3	N/A	N/A
9/4/2014	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A
5/6/2015	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A
5/6/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A
9/15/2015	N/A	<3	<3	<3	<3	<3	<3	<3	N/A	<3	<3	<3	N/A	N/A
9/15/2015	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	<3	<3	<3	N/A	N/A
5/10/2016	N/A	<3	N/A	<3	<3	<3	<3	<3	N/A	<3	<3	<3	N/A	N/A
5/10/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	<3	<3	N/A	N/A
9/27/2016	<3	<3	N/A	<3	<3	<3	<3	<3	N/A	N/A	<3	<3	N/A	N/A
9/27/2016	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A
5/3/2017	<3	<3	N/A	<3	<3	<3	<3	<3	N/A	N/A	<3	<3	N/A	N/A
5/3/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A
10/24/2017	<3	<3	N/A	<3	<3	<3	<3	<3	N/A	N/A	<3	<3	N/A	N/A
10/24/2017	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A
3/19/2018	<3	N/A	<3	<3	<3	<3	N/A	N/A	N/A	N/A	<3	<3	N/A	N/A
3/19/2018	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A
9/18/2018	<3	N/A	<3	<3	N/A	<3	N/A	<3	N/A	<3	<3	<3	N/A	N/A
9/18/2018	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019	<3	<3	<3	<3	<3	<3	<3	<3	N/A	<3	<3	<3	N/A	<30
4/10/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	<3	N/A	N/A
5/31/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<3	N/A	N/A	<3	N/A	N/A	N/A

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Appendix I VOC Constituents	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Xylenes, total, ug/L (CAS NO - 1330-20-7)	9/5/2019	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	N/A	< 3	< 3	< 3	N/A	N/A
	9/5/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	< 3	N/A	N/A	N/A
	3/10/2020	< 3	N/A	< 3	< 3	< 3	< 3	N/A	< 3	N/A	N/A	< 3	< 3	N/A	N/A
	8/26/2020	< 3	< 3	N/A	< 3	< 3	< 3	N/A	N/A	N/A	N/A	< 3	< 3	N/A	N/A
	8/26/2020	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/27/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	< 3	< 3	N/A	N/A	N/A	N/A
	5/10/2021	< 3	N/A	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	N/A	< 3
	5/10/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	< 3	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	< 3	N/A	N/A	N/A	N/A
	9/9/2021	< 3	N/A	N/A	< 3	< 3	< 3	< 3	N/A	< 3	N/A	< 3	< 3	N/A	< 3
	9/9/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A
	3/8/2022	< 3	N/A	N/A	< 3	< 3	< 3	< 3	N/A	< 3	N/A	< 3	< 3	N/A	< 3
	3/8/2022	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	8/8/2022	< 3	N/A	< 3	< 3	< 3	< 3	< 3	N/A	< 3	N/A	< 3	< 3	N/A	< 3
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/27/2023	< 3	N/A	N/A	< 3	< 3	< 3	< 3	N/A	< 3	< 3	N/A	< 3	N/A	N/A
	4/27/2023	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/13/2023	< 3	N/A	N/A	< 3	< 3	< 3	< 3	N/A	< 3	< 3	N/A	< 3	N/A	< 3
	9/13/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A
	6/18/2024	< 3	N/A	N/A	< 3	< 3	< 3	< 3	N/A	< 3	< 3	N/A	< 3	N/A	N/A
	6/18/2024	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A	N/A	N/A	N/A
11/12/2024	< 3	N/A	< 150	< 3	< 3	< 3	< 3	N/A	< 3	N/A	< 3	N/A	< 3	N/A	
M&P-Xylene, ug/L (CAS NO - 179601-23-1)	7/11/2012	N/A	< 2	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	< 2	< 2	N/A	N/A
	8/27/2012	N/A	< 2	N/A	< 2	< 2	< 2	N/A	N/A	N/A	N/A	< 2	< 2	N/A	N/A
	8/27/2012	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	< 2	N/A	< 2	N/A	< 2	N/A	N/A	N/A	N/A	< 2	< 2	N/A	N/A
	3/21/2013	N/A	< 2	N/A	< 2	N/A	< 2	N/A	N/A	N/A	N/A	< 2	< 2	N/A	N/A
	3/21/2013	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
O-Xylene, ug/L (CAS NO - 95-47-6)	5/29/2013	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	< 2	N/A	N/A
	7/11/2012	N/A	< 1	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	< 1	< 1	N/A	N/A
	8/27/2012	N/A	< 1	N/A	< 1	< 1	< 1	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
	8/27/2012	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
	3/21/2013	N/A	< 1	N/A	< 1	N/A	< 1	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A
3/21/2013	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
5/29/2013	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A	

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.

Denotes Confirmed Outlier. Statistically Excluded.

Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Other Constituents	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
1,4-Naphthoquinone, ug/L (CAS NO - 130-15-4)	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10.4	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A	N/A	N/A
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
	9/13/2023	N/A	N/A	N/A	N/A	< 9.8	N/A	N/A	N/A	N/A	< 12.5	N/A	N/A	N/A	N/A
	6/18/2024	N/A	N/A	N/A	< 10.6	N/A	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	6/24/2010	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	< 10.5	N/A	< 10.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/4/2014	N/A	N/A	N/A	< 10.4	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1,4-Phenylenediamine, ug/L (CAS NO - 106-50-3)	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/10/2019	N/A	N/A	N/A	< 10.5	N/A	< 10.5	< 10.5	< 10.5	N/A	N/A	< 10.6	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	< 10.3	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10.4	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
	9/13/2023	N/A	N/A	N/A	N/A	< 9.8	N/A	N/A	N/A	N/A	< 12.5	N/A	N/A	N/A	N/A
	6/18/2024	N/A	N/A	N/A	< 10.6	N/A	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1-Naphthylamine, ug/L (CAS NO - 134-32-7)	6/24/2010	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	< 10.5	N/A	< 10.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/4/2014	N/A	N/A	N/A	< 10.4	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/10/2019	N/A	N/A	N/A	< 10.5	N/A	< 10.5	< 10.5	< 10.5	N/A	N/A	< 10.6	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	< 10.3	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10.4	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A
2,2-Dichloropropane, ug/L (CAS NO - 594-20-7)	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
	9/13/2023	N/A	N/A	N/A	N/A	< 9.8	N/A	N/A	N/A	N/A	< 12.5	N/A	N/A	N/A	N/A
	6/18/2024	N/A	N/A	N/A	< 10.6	N/A	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	6/24/2010	N/A	N/A	N/A	N/A	< 4	N/A	< 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	N/A	N/A	< 4	N/A	< 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	< 4	N/A	< 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/4/2014	N/A	N/A	N/A	< 4	N/A	< 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	< 4	N/A	< 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,3,4,6-Tetrachlorophenol, ug/L (CAS NO - 58-90-2)	4/10/2019	N/A	N/A	N/A	< 4	N/A	< 4	< 4	< 4	N/A	N/A	< 4	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A	< 4	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 4	< 4	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A	N/A	N/A	N/A
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A	N/A	N/A	N/A	N/A
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A	N/A	N/A	N/A	N/A
	9/13/2023	N/A	N/A	N/A	N/A	< 4	N/A	N/A	N/A	N/A	< 4	N/A	N/A	N/A	N/A
	6/18/2024	N/A	N/A	N/A	< 4	N/A	< 4	< 4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	6/24/2010	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4,5-T [2C], ug/L (CAS NO - 93-76-5)	9/25/2013	N/A	N/A	N/A	N/A	< 10.5	N/A	< 10.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/4/2014	N/A	N/A	N/A	< 10.4	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/10/2019	N/A	N/A	N/A	< 10.5	N/A	< 10.5	< 10.5	< 10.5	N/A	N/A	< 10.6	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	< 10.3	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10.4	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A	N/A	N/A
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
2,4,5-T [2C], ug/L (CAS NO - 93-76-5)	9/13/2023	N/A	N/A	N/A	N/A	< 9.8	N/A	N/A	N/A	N/A	< 12.5	N/A	N/A	N/A	N/A
	6/18/2024	N/A	N/A	N/A	< 10.6	N/A	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	6/24/2010	N/A	N/A	N/A	N/A	< 0.5	N/A	< 0.54	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	N/A	N/A	< 1	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	< 1.04	N/A	< 1.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/4/2014	N/A	N/A	N/A	< 1.04	N/A	< 1.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1.07	N/A	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	< 1.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/10/2019	N/A	N/A	N/A	< 1.11	N/A	< 1.01	< 1.04	< 1.08	N/A	N/A	< 1.07	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1.08	N/A	N/A	< 1.09	N/A	N/A	N/A
2,4,5-TP [Silvex] [2C], ug/L (CAS NO - 93-72-1)	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1.05	< 1.16	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1.15	N/A	N/A	N/A	N/A
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.152	N/A	N/A	N/A	N/A	N/A
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.155	N/A	N/A	N/A	N/A	N/A
	9/13/2023	N/A	N/A	N/A	N/A	< 0.151	N/A	N/A	N/A	N/A	< 0.177	N/A	N/A	N/A	N/A
	6/18/2024	N/A	N/A	N/A	< 0.149	N/A	< 0.148	< 0.157	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	6/24/2010	N/A	N/A	N/A	N/A	< 0.5	N/A	< 0.54	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	N/A	N/A	< 1	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	< 1.04	N/A	< 1.05	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/4/2014	N/A	N/A	N/A	< 1.04	N/A	< 1.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4,5-TP [Silvex] [2C], ug/L (CAS NO - 93-72-1)	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1.07	N/A	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	< 1.04	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/10/2019	N/A	N/A	N/A	< 1.11	N/A	< 1.01	< 1.04	< 1.08	N/A	N/A	< 1.07	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1.08	N/A	N/A	< 1.09	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1.05	< 1.16	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1.15	N/A	N/A	N/A	N/A
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0507	N/A	N/A	N/A	N/A	N/A
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0517	N/A	N/A	N/A	N/A	N/A
	9/13/2023	N/A	N/A	N/A	N/A	< 0.0503	N/A	N/A	N/A	N/A	< 0.0589	N/A	N/A	N/A	N/A
	6/18/2024	N/A	N/A	N/A	< 0.0496	N/A	< 0.0492	< 0.0524	N/A	N/A	N/A	N/A	N/A	N/A	N/A
2,4,5-Trichlorophenol, ug/L (CAS NO - 95-95-4)	6/														

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Other Constituents	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Acenaphthylene, ug/L (CAS NO - 208-96-8)	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10.4	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
	9/13/2023	N/A	N/A	N/A	N/A	< 9.8	N/A	N/A	N/A	N/A	< 12.5	N/A	N/A	N/A	N/A
6/18/2024	N/A	N/A	N/A	< 10.6	N/A	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acetonitrile, ug/L (CAS NO - 75-05-8)	6/24/2010	N/A	N/A	N/A	N/A	< 10000	N/A	< 10000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	N/A	N/A	< 10000	N/A	< 10000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	839*	N/A	951*	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/4/2014	N/A	N/A	N/A	< 10000	N/A	< 10000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10000	N/A	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	< 10000	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/10/2019	N/A	N/A	N/A	< 10000	N/A	< 10000	< 10000	< 10000	N/A	N/A	< 10000	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	< 10000	N/A	N/A	N/A	< 10000	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10000	< 10000	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10000	N/A	N/A	N/A	N/A
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10000	N/A	N/A	N/A	N/A	N/A
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10000	N/A	N/A	N/A	N/A	N/A
	9/13/2023	N/A	N/A	N/A	N/A	< 10000	N/A	N/A	N/A	N/A	< 10000	N/A	N/A	N/A	N/A
	6/18/2024	N/A	N/A	N/A	< 10000	N/A	< 10000	< 10000	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Acetophenone, ug/L (CAS NO - 98-86-2)	6/24/2010	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013		N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/25/2013		N/A	N/A	N/A	N/A	< 10.5	N/A	< 10.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/4/2014		N/A	N/A	N/A	< 10.4	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
3/19/2018		N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019		N/A	N/A	N/A	< 10.5	N/A	< 10.5	< 10.5	< 10.5	N/A	N/A	< 10.6	N/A	N/A	N/A
11/21/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	< 10.3	N/A	N/A	N/A
6/14/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10.4	N/A	N/A	N/A	N/A
6/14/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A
3/8/2022		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
8/8/2022		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
9/13/2023		N/A	N/A	N/A	N/A	< 9.8	N/A	N/A	N/A	N/A	< 12.5	N/A	N/A	N/A	N/A
6/18/2024		N/A	N/A	N/A	< 10.6	N/A	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Acrolein, ug/L (CAS NO - 107-02-8)		6/24/2010	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/4/2014	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
	4/10/2019	N/A	N/A	N/A	< 10	N/A	< 10	< 10	N/A	N/A	N/A	< 10	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
	9/13/2023	N/A	N/A	N/A	N/A	< 9.8	N/A	N/A	N/A	N/A	< 12.5	N/A	N/A	N/A	N/A
	6/18/2024	N/A	N/A	N/A	< 10.6	N/A	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Aldrin, ug/L (CAS NO - 309-00-2)	6/24/2010	N/A	N/A	N/A	N/A	< 0.032	N/A	< 0.032	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013		N/A	N/A	N/A	< 0.032	N/A	< 0.032	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/25/2013		N/A	N/A	N/A	N/A	< 0.646	N/A	< 0.032	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/4/2014		N/A	N/A	N/A	< 0.032	N/A	< 0.0337	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0333	N/A	N/A	N/A
3/19/2018		N/A	N/A	N/A	N/A	< 1.67	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019		N/A	N/A	N/A	< 0.0344	N/A	< 0.034	< 0.0344	< 0.0344	N/A	N/A	< 0.034	N/A	N/A	N/A
11/21/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.033	N/A	N/A	< 0.033	N/A	N/A	N/A
6/14/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.064	< 0.064	N/A	N/A	N/A	N/A
6/14/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.064	N/A	N/A	N/A	N/A
3/8/2022		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0615	N/A	N/A	N/A	N/A	N/A
8/8/2022		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.064	N/A	N/A	N/A	N/A	N/A
9/13/2023		N/A	N/A	N/A	N/A	< 0.0711	N/A	N/A	N/A	N/A	< 0.0762	N/A	N/A	N/A	N/A
6/18/2024		N/A	N/A	N/A	< 0.0933	N/A	< 0.0916	< 0.0943	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Anthracene, ug/L (CAS NO - 120-12-7)		6/24/2010	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	< 10.5	N/A	< 10.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/4/2014	N/A	N/A	N/A	< 10.4	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	< 10.4	N/A	< 10	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/10/2019	N/A	N/A	N/A	< 10.5	N/A	< 10.5	< 10.5	< 10.5	N/A	N/A	< 10.6	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	< 10.3	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10.4	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
	9/13/2023	N/A	N/A	N/A	N/A	< 9.8	N/A	N/A	N/A	N/A	< 12.5	N/A	N/A	N/A	N/A
	6/18/2024	N/A	N/A	N/A	< 10.6	N/A	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Benzo [a] anthracene, ug/L (CAS NO - 56-55-3)	6/24/2010	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013		N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/25/2013		N/A	N/A	N/A	N/A	< 10.5	N/A	< 10.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
9/4/2014		N/A	N/A	N/A	< 10.4	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A
3/19/2018		N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
4/10/2019		N/A	N/A	N/A	< 10.5	N/A	< 10.5	< 10.5	< 10.5	N/A	N/A	< 10.6	N/A	N/A	N/A
11/21/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	< 10.3	N/A	N/A	N/A
6/14/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10.4	N/A	N/A	N/A	N/A
6/14/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A
3/8/2022		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
8/8/2022		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A
9/13/2023		N/A	N/A	N/A	N/A	< 9.8	N/A	N/A	N/A	N/A	< 12.5	N/A	N/A	N/A	N/A
6/18/2024		N/A	N/A	N/A	< 10.6	N/A	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Benzo [a] pyrene, ug/L (CAS NO - 50-32-8)		6/24/2010	N/A	N/A	N/A	N									

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Other Constituents	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG	
Pronamide, ug/L (CAS NO - 23950-58-5)	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10.4	N/A	N/A	N/A	N/A	
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	
	9/13/2023	N/A	N/A	N/A	N/A	< 9.8	N/A	N/A	N/A	N/A	< 12.5	N/A	N/A	N/A	N/A	
	6/18/2024	N/A	N/A	N/A	< 10.6	N/A	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Propionitrile, ug/L (CAS NO - 107-12-0)	6/24/2010	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	1/23/2013	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	9/25/2013	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	9/4/2014	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	
	3/19/2018	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	4/10/2019	N/A	N/A	N/A	< 10	N/A	< 10	< 10	< 10	N/A	N/A	< 10	N/A	N/A	N/A	
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A	N/A	N/A	
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A	N/A	
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	
	9/13/2023	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	
	6/18/2024	N/A	N/A	N/A	< 10	N/A	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Pyrene, ug/L (CAS NO - 129-00-0)	6/24/2010	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		1/23/2013	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		9/25/2013	N/A	N/A	N/A	N/A	< 10.5	N/A	< 10.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		9/4/2014	N/A	N/A	N/A	< 10.4	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
11/22/2016		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	
3/19/2018		N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/10/2019		N/A	N/A	N/A	< 10.5	N/A	< 10.5	< 10.5	< 10.5	N/A	N/A	< 10.6	N/A	N/A	N/A	
11/21/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	< 10.3	N/A	N/A	N/A	
6/14/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10.4	N/A	N/A	N/A	N/A	
6/14/2021		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A	N/A	
3/8/2022		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	
8/8/2022		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	
9/13/2023		N/A	N/A	N/A	N/A	< 9.8	N/A	N/A	N/A	N/A	< 12.5	N/A	N/A	N/A	N/A	
6/18/2024		N/A	N/A	N/A	< 10.6	N/A	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Safrole, ug/L (CAS NO - 94-59-7)		6/24/2010	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		1/23/2013	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		9/25/2013	N/A	N/A	N/A	N/A	< 10.5	N/A	< 10.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		9/4/2014	N/A	N/A	N/A	< 10.4	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	
	3/19/2018	N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	4/10/2019	N/A	N/A	N/A	< 10.5	N/A	< 10.5	< 10.5	< 10.5	N/A	N/A	< 10.6	N/A	N/A	N/A	
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	< 10.3	N/A	N/A	N/A	
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10.4	N/A	N/A	N/A	N/A	
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10.4	N/A	N/A	N/A	N/A	
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	
	9/13/2023	N/A	N/A	N/A	N/A	< 9.8	N/A	N/A	N/A	N/A	< 12.5	N/A	N/A	N/A	N/A	
	6/18/2024	N/A	N/A	N/A	< 10.6	N/A	< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	Sulfide, mg/L (CAS NO - 18496-25-8)	6/24/2010	N/A	N/A	N/A	N/A	< 1	N/A	1.9	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		9/30/2010	N/A	N/A	N/A	N/A	N/A	N/A	0.37	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		4/21/2011	N/A	N/A	N/A	N/A	N/A	N/A	1.4	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		4/23/2012	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A
1/23/2013		N/A	N/A	N/A	< 1	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/25/2013		N/A	N/A	N/A	N/A	0.177*	N/A	0.811*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/4/2014		N/A	< 1	N/A	< 1	N/A	< 1	0.448*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/15/2015		N/A	< 1	N/A	N/A	N/A	N/A	0.876*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
5/10/2016		N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/27/2016		N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
11/22/2016		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	
5/3/2017		< 1	< 1	N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10/24/2017		< 1	< 1	N/A	N/A	N/A	N/A	4.34	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
3/19/2018		< 1	N/A	N/A	N/A	2.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
9/18/2018		1.14	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
11/15/2018		N/A	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
2/22/2019		N/A	N/A	N/A	N/A	4.45	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
4/10/2019		< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	< 1	N/A	< 1	N/A	N/A	N/A	
9/5/2019		< 1	< 1	N/A	N/A	< 1	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
11/21/2019		N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A	N/A	< 1	N/A	N/A	N/A	
3/10/2020		< 1	N/A	N/A	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
8/26/2020		< 10	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
10/27/2020		N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	
5/10/2021		< 10	N/A	N/A	N/A	< 10	N/A	27.5	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A	N/A	N/A		
6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1	N/A	N/A	N/A	N/A		
9/9/2021	< 1	N/A	N/A	N/A	< 1	N/A	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
3/8/2022	< 2	N/A	N/A	N/A	< 2	N/A	< 2	N/A	< 2	N/A	N/A	N/A	N/A	N/A		
8/8/2022	< 2	N/A	N/A	N/A	< 2	N/A	< 2	N/A	< 2	N/A	N/A	N/A	N/A	N/A		
4/27/2023	< 2	N/A	N/A	N/A	N/A	N/A	< 2	N/A	< 2	N/A	N/A	N/A	N/A	N/A		
9/13/2023	< 2	N/A	N/A	N/A	< 2	N/A	< 2	N/A	< 2	< 2	N/A	N/A	N/A	N/A		
6/18/2024	< 2	N/A	N/A	< 2	< 2	< 2	< 2	N/A	< 2	N/A	N/A	N/A	N/A	N/A		
11/12/2024	< 2	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Thionazin, ug/L (CAS NO - 297-97-2)	6/24/2010	N/A	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	1/23/2013	N/A	N/A	N/A	< 10	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	9/25/2013	N/A	N/A	N/A	N/A	< 10.5	N/A	< 10.1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	9/4/2014	N/A	N/A	N/A	< 10.4	N/A	< 10	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A	N/A	N/A	
	3/19/2018	N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	4/10/2019	N/A	N/A	N/A	< 10.5	N/A	< 10.5	< 10.5	< 10.5	N/A	N/A	< 10.6	N/A	N/A	N/A	
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10.2	N/A	N/A	< 10.3	N/A	N/A	N/A	
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10.4	N/A	N/A	N/A	N/A	
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A	N/A	N/A	
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10	N/A	N/A	N/A	N/A	
	8/8/2022															

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Summary of Groundwater Chemistry
Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Other Constituents	Sample Date	MW-14 UPG	MW-17 UPG	GU-1 DNG	MW-7 DNG	MW-8R DNG	MW-10R DNG	MW-11R DNG	MW-25 DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-29 DNG	MW-31 DNG	SW-4 DNG
Toxaphene, ug/L (CAS NO - 8001-35-2)	6/24/2010	N/A	N/A	N/A	N/A	< 2	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	1/23/2013	N/A	N/A	N/A	< 2	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/25/2013	N/A	N/A	N/A	N/A	< 40.4	N/A	< 2	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	9/4/2014	N/A	N/A	N/A	< 2	N/A	< 2.11	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/22/2016	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2.08	N/A	N/A	N/A
	3/19/2018	N/A	N/A	N/A	N/A	< 104	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/10/2019	N/A	N/A	N/A	< 2.15	N/A	< 2.13	< 2.15	< 2.15	N/A	N/A	< 2.13	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2.06	N/A	N/A	< 2.06	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	< 2	N/A	N/A	N/A	N/A
	6/14/2021	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A
	3/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1.92	N/A	N/A	N/A	N/A	N/A
	8/8/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A	N/A	N/A	N/A	N/A
	9/13/2023	N/A	N/A	N/A	N/A	< 2.22	N/A	N/A	N/A	N/A	< 2.38	N/A	N/A	N/A	N/A
	6/18/2024	N/A	N/A	N/A	< 1.87	N/A	< 1.83	< 1.89	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.

Denotes Confirmed Outlier. Statistically Excluded.

Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.

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Summary of Groundwater Chemistry
 Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Total Metals Constituents	Sample Date	MW-8R DNG	MW-11R DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-31 DNG
Cobalt, mg/L (CAS NO - 7440-48-4)	2/3/2009	< 0.02	< 0.02	N/A	N/A	N/A	N/A
	4/28/2009	< 0.02	< 0.02	N/A	N/A	N/A	N/A
	7/8/2009	< 0.02	< 0.02	N/A	N/A	N/A	N/A
	10/8/2009	< 0.02	< 0.02	N/A	N/A	N/A	N/A
	10/8/2009	N/A	< 0.02	N/A	N/A	N/A	N/A
	12/30/2009	0.0117	0.00691	N/A	N/A	N/A	N/A
	12/30/2009	N/A	0.00774	N/A	N/A	N/A	N/A
	3/9/2010	0.012	0.0039	N/A	N/A	N/A	N/A
	3/9/2010	0.0109	N/A	N/A	N/A	N/A	N/A
	6/24/2010	0.0137	0.00647	N/A	N/A	N/A	N/A
	9/30/2010	0.0117	0.0219	N/A	N/A	N/A	N/A
	4/21/2011	0.00549	0.00815	N/A	N/A	N/A	N/A
	10/26/2011	0.00547	0.00698	N/A	N/A	0.0532	N/A
	12/19/2011	N/A	N/A	N/A	N/A	0.007	N/A
	4/23/2012	0.0076	0.0143	N/A	N/A	0.0455	N/A
	7/11/2012	N/A	N/A	N/A	N/A	0.0276	N/A
	8/27/2012	0.00828	N/A	N/A	N/A	0.0138	N/A
	1/23/2013	N/A	N/A	N/A	N/A	0.032	N/A
	3/21/2013	N/A	N/A	N/A	N/A	0.0634	N/A
	5/29/2013	N/A	N/A	N/A	N/A	0.0386	N/A
	9/25/2013	0.0141	0.02	N/A	N/A	0.0424	N/A
	9/25/2013	N/A	N/A	N/A	N/A	0.0388	N/A
	3/12/2014	0.0276	N/A	N/A	N/A	0.0064	N/A
	8/7/2014	0.00693	0.0105	N/A	N/A	0.00428	N/A
	8/7/2014	N/A	N/A	N/A	N/A	0.00484	N/A
	9/4/2014	0.0162	0.0179	N/A	N/A	0.005	N/A
	9/4/2014	N/A	N/A	N/A	N/A	0.00517	N/A
	9/15/2015	0.000438*	0.0122	N/A	0.0373	0.000778	N/A
	5/10/2016	0.00329	0.0158	N/A	0.0177	0.00193	N/A
	5/10/2016	N/A	N/A	N/A	N/A	0.00182	N/A
	9/27/2016	0.0157	0.0233	N/A	N/A	0.00219	N/A
	11/22/2016	N/A	N/A	N/A	N/A	0.0015	N/A
	5/3/2017	0.0237	0.0196	N/A	N/A	0.00776	N/A
	10/24/2017	0.0124	0.0143	N/A	N/A	0.00142	N/A
	3/19/2018	0.0302	N/A	N/A	N/A	0.00087	N/A
	9/18/2018	N/A	N/A	N/A	N/A	0.0057	N/A
	2/22/2019	N/A	N/A	N/A	N/A	0.00553	N/A
	4/10/2019	0.0162	0.0154	N/A	0.0164	0.00577	N/A
	5/31/2019	N/A	N/A	N/A	N/A	0.00915	N/A
	9/5/2019	0.00245	0.0208	N/A	0.0117	0.00601	N/A
11/21/2019	N/A	N/A	N/A	N/A	0.00526	N/A	
3/10/2020	0.00236	N/A	N/A	N/A	0.00738	N/A	
8/26/2020	0.00177	N/A	N/A	N/A	0.00481	N/A	
10/27/2020	N/A	0.00881	0.00601	0.00369	N/A	0.00995	
5/10/2021	< 0.0005	0.00761	0.00789	0.00826	0.0107	N/A	
6/14/2021	N/A	N/A	0.00594	0.00978	N/A	N/A	
6/14/2021	N/A	N/A	N/A	0.00938	N/A	N/A	
9/9/2021	< 0.0005	0.00381	0.00508	N/A	0.0113	N/A	
3/8/2022	< 0.0005	0.00141	0.0059	N/A	0.00328	0.00529	
8/8/2022	< 0.0005	0.00267	0.00629	N/A	0.0048	0.00649	
8/8/2022	N/A	0.00312	N/A	N/A	N/A	N/A	
4/27/2023	< 0.0005	0.000775	0.00832	0.0122	N/A	0.00525	
9/13/2023	< 0.0005	0.000889	0.00666	0.00919	N/A	0.00488	
6/18/2024	0.000829	0.00238	0.00506	0.00955	N/A	N/A	
6/18/2024	N/A	N/A	N/A	0.00963	N/A	N/A	
11/12/2024	< 0.0005	0.0149	0.005	N/A	N/A	N/A	

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Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

	Sample Date	MW-8R DNG	MW-11R DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-31 DNG
Total Metals Constituents							
Total Suspended Solids, mg/L (CAS NO - TSS)	3/12/2014	670	N/A	N/A	N/A	5470	N/A
	8/7/2014	1320	280	N/A	N/A	4720	N/A
	8/7/2014	N/A	N/A	N/A	N/A	2140	N/A
	9/4/2014	94	245	N/A	N/A	901	N/A
	9/4/2014	N/A	N/A	N/A	N/A	1700	N/A
	5/6/2015	236	129	N/A	N/A	960	N/A
	8/19/2015	N/A	N/A	N/A	N/A	105	N/A
	9/15/2015	60.1	15.9	N/A	28	50.6	N/A
	5/10/2016	73	2.75	N/A	17.3	44.8	N/A
	5/10/2016	N/A	N/A	N/A	N/A	39	N/A
	9/27/2016	67.3	7	N/A	N/A	1.5*	N/A
	11/22/2016	N/A	N/A	N/A	N/A	1.13*	N/A
	5/3/2017	67.9	33.5	N/A	N/A	35.3	N/A
	10/24/2017	37.9	15.8	N/A	N/A	4.5	N/A
	3/19/2018	63.3	N/A	N/A	N/A	2.1	N/A
	9/18/2018	N/A	N/A	N/A	N/A	1.9	N/A
	11/15/2018	82	N/A	N/A	N/A	< 1.9	N/A
	2/22/2019	43	N/A	N/A	N/A	< 1.9	N/A
	4/10/2019	30.5	8	N/A	20.8	1.9	N/A
	5/31/2019	N/A	N/A	N/A	N/A	2.1	N/A
	9/5/2019	58	3	N/A	30.4	2.9	N/A
	11/21/2019	N/A	N/A	N/A	N/A	4.3	N/A
	3/10/2020	36.3	N/A	N/A	N/A	2.8	N/A
	8/26/2020	36.9	N/A	N/A	N/A	< 1.9	N/A
	10/27/2020	N/A	450	70.5	64	N/A	78
	5/10/2021	39.6	255	88	29	3.8	N/A
	6/14/2021	N/A	N/A	6	95.7	N/A	N/A
	6/14/2021	N/A	N/A	N/A	147	N/A	N/A
	9/9/2021	3.3	3.4	11.4	N/A	4.1	107
	3/8/2022	< 5	12	20	N/A	19	75
	8/8/2022	< 1.9	28.5	16.5	N/A	17.4	72
	8/8/2022	N/A	13	N/A	N/A	N/A	N/A
	4/27/2023	70.7	8.3	290	504	N/A	107
	9/13/2023	7.1	21.8	56	153	N/A	116
	4/3/2024	< 1.9	N/A	N/A	N/A	N/A	N/A
	6/18/2024	67	13.3	33	33	N/A	107
	6/18/2024	N/A	N/A	N/A	21.8	N/A	N/A
	8/22/2024	50.3	N/A	N/A	N/A	N/A	N/A
	11/12/2024	50.4	499	423	N/A	N/A	84

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.

Denotes Confirmed Outlier. Statistically Excluded.

Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.

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Summary of Groundwater Chemistry Loess Hills Regional Sanitary Landfill - 65-SDP-01-72

Other Constituents	Sample Date	MW-8R DNG	MW-11R DNG	MW-26R DNG	MW-27R DNG	MW-28 DNG	MW-31 DNG
Iron, Total, mg/L (CAS NO - 7439-89-6)	5/10/2016	30	3.47	N/A	N/A	N/A	N/A
	9/27/2016	42.7	0.96	N/A	N/A	N/A	N/A
	5/3/2017	46.9	5.09	N/A	N/A	N/A	N/A
	10/24/2017	37.6	1.72	N/A	N/A	N/A	N/A
	9/9/2021	< 0.1	5.47	N/A	N/A	0.109	59.8
	3/8/2022	< 0.1	5.41	N/A	N/A	0.148	32.9
	8/8/2022	< 0.1	3.71	N/A	N/A	0.214	52.9
	4/27/2023	N/A	4.28	58.2	N/A	N/A	49.6
	9/13/2023	N/A	4.4	7.15	N/A	N/A	53
	6/18/2024	0.206	3.17	2.46	1.27	N/A	47.4
	6/18/2024	N/A	N/A	N/A	1.28	N/A	N/A
11/12/2024	0.172	3.95	2.09	N/A	N/A	54.9	
Manganese, mg/L (CAS NO - 7439-96-5)	5/10/2016	4.22	2.76	N/A	N/A	N/A	N/A
	9/27/2016	1.95	3.68	N/A	N/A	N/A	N/A
	5/3/2017	1.61	3.23	N/A	N/A	N/A	N/A
	10/24/2017	1.25	3.78	N/A	N/A	N/A	N/A
	9/9/2021	0.18	1.61	N/A	N/A	3.09	9.27
	3/8/2022	0.148	1.29	N/A	N/A	0.32	8.27
	8/8/2022	0.251	1.76	N/A	N/A	0.71	9.1
	4/27/2023	N/A	1.9	4.33	N/A	N/A	9.07
	9/13/2023	N/A	1.97	3.26	N/A	N/A	9.24
	6/18/2024	1.07	2.37	2.9	4.57	N/A	8.61
	6/18/2024	N/A	N/A	N/A	4.5	N/A	N/A
11/12/2024	0.455	5.01	1.5	N/A	N/A	10.7	
Nitrate (NO3), mg/L (CAS NO - 14797-55-8)	5/10/2016	0.772	< 0.1	N/A	N/A	N/A	N/A
	9/27/2016	0.0494*	0.194	N/A	N/A	N/A	N/A
	5/3/2017	< 0.1	< 0.1	N/A	N/A	N/A	N/A
	10/24/2017	0.726	0.693	N/A	N/A	N/A	N/A
	9/9/2021	< 0.1	< 0.1	N/A	N/A	0.332	0.226
	3/8/2022	< 2	0.662	N/A	N/A	2.59	< 0.1
	8/8/2022	< 0.1	< 0.1	N/A	N/A	0.371	0.27
	4/27/2023	N/A	0.404	< 0.2	N/A	N/A	0.284
	9/13/2023	N/A	0.972	< 0.2	N/A	N/A	0.539
	6/18/2024	< 0.2	< 0.2	< 0.2	< 0.2	N/A	< 0.2
	6/18/2024	N/A	N/A	N/A	< 0.2	N/A	N/A
11/12/2024	< 0.2	< 0.2	< 0.2	N/A	N/A	< 0.2	
Sulfate, mg/L (CAS NO - 14808-79-8)	5/10/2016	41	220	N/A	N/A	N/A	N/A
	9/27/2016	43.4	190	N/A	N/A	N/A	N/A
	5/3/2017	75.2	195	N/A	N/A	N/A	N/A
	10/24/2017	66.6	194	N/A	N/A	N/A	N/A
	11/21/2019	N/A	N/A	N/A	N/A	47.9	N/A
	9/9/2021	66.3	121	N/A	N/A	54.5	< 1
	3/8/2022	1430	114	N/A	N/A	51.5	< 1
	8/8/2022	67.3	118	N/A	N/A	48.7	< 1
	4/27/2023	N/A	116	14.8	N/A	N/A	< 5
	9/13/2023	N/A	102	12.8	N/A	N/A	< 5
	6/18/2024	70.5	102	15.2	30.6	N/A	< 1
6/18/2024	N/A	N/A	N/A	30.5	N/A	N/A	
11/12/2024	73.7	100	13.1	N/A	N/A	< 1	

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.
Denotes Confirmed Outlier. Statistically Excluded.

Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.

Appendix D

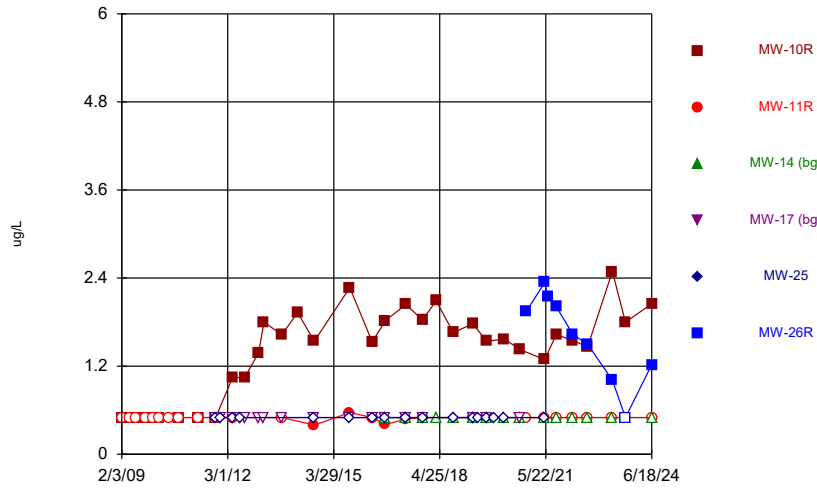
Statistical Methodology and Statistical Output

Attachment A

1st 2024 Semi-Annual Statistical Output

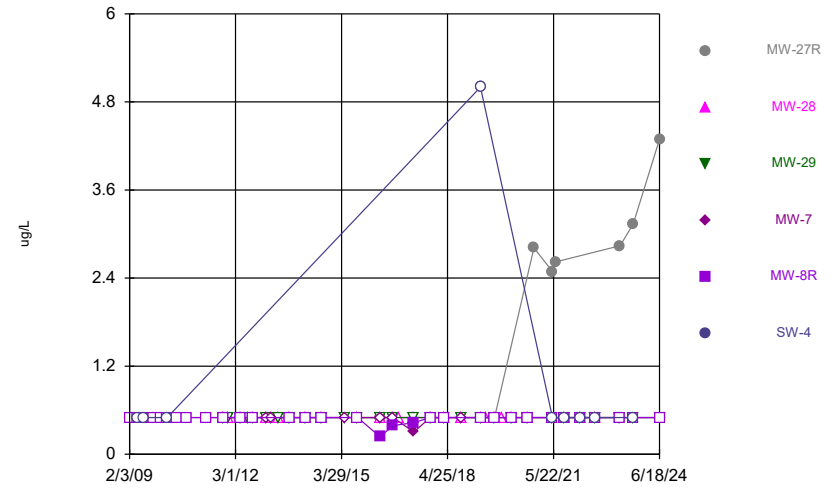
Time Series Graphs

Time Series



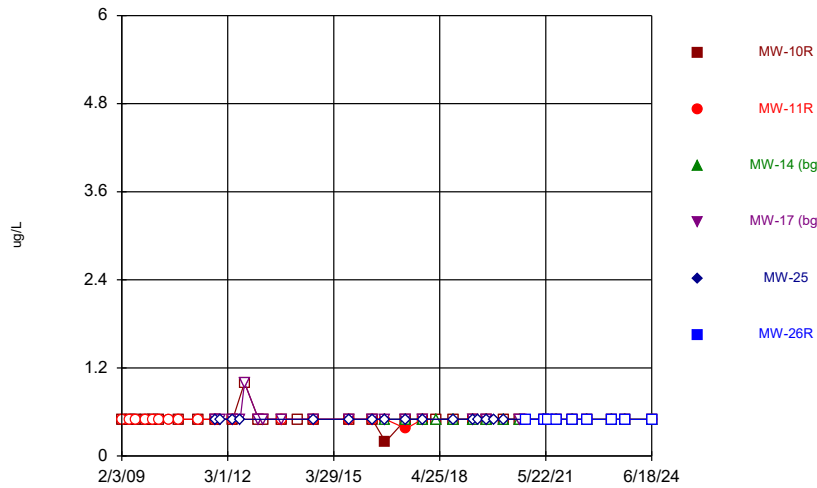
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



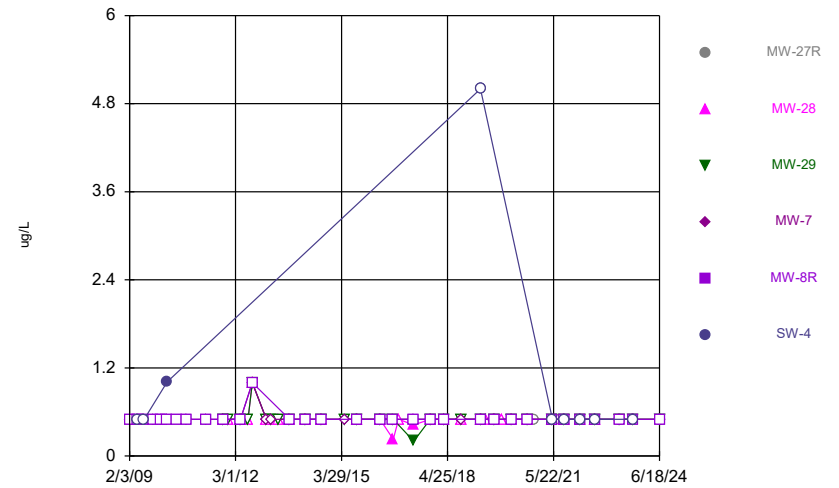
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Time Series



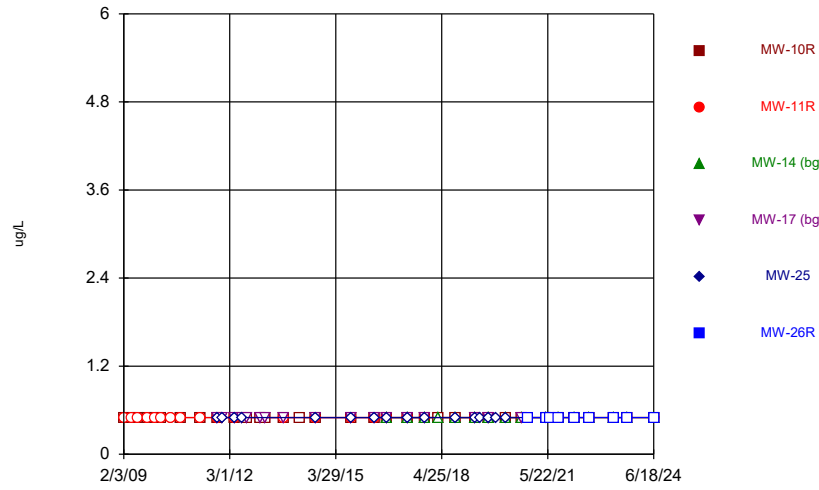
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Time Series



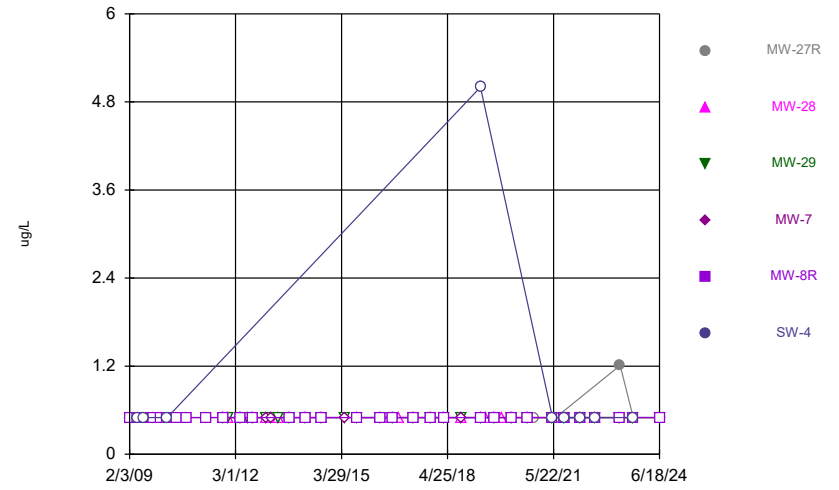
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Time Series



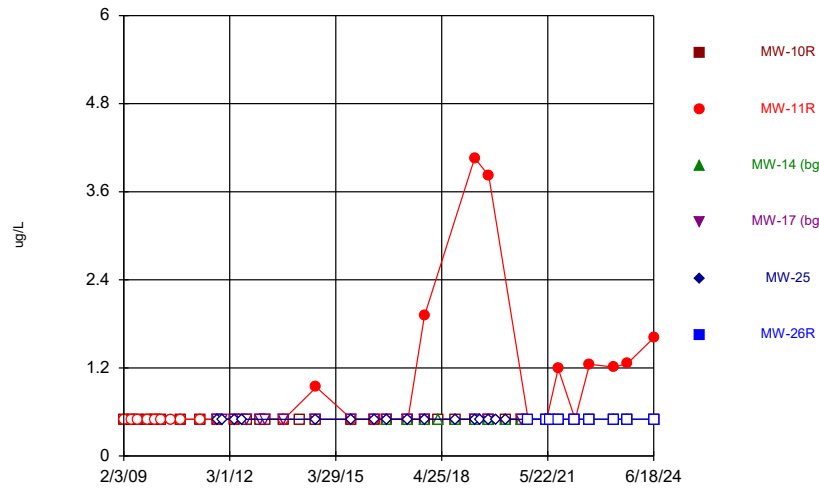
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Time Series



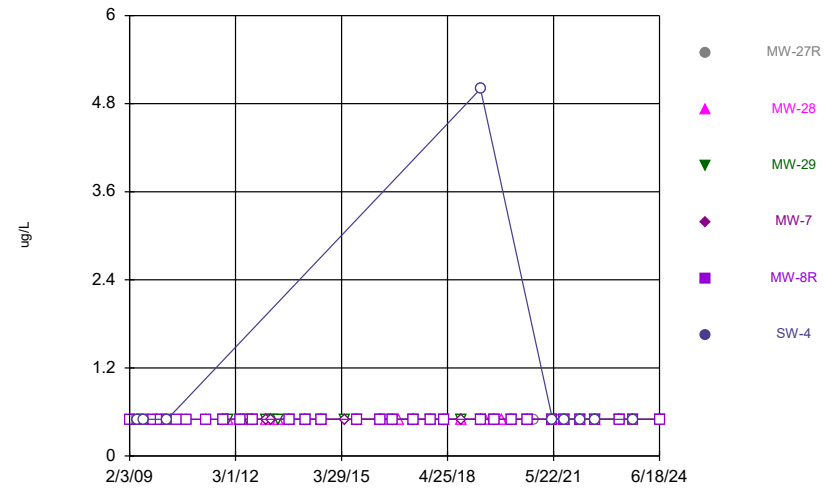
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



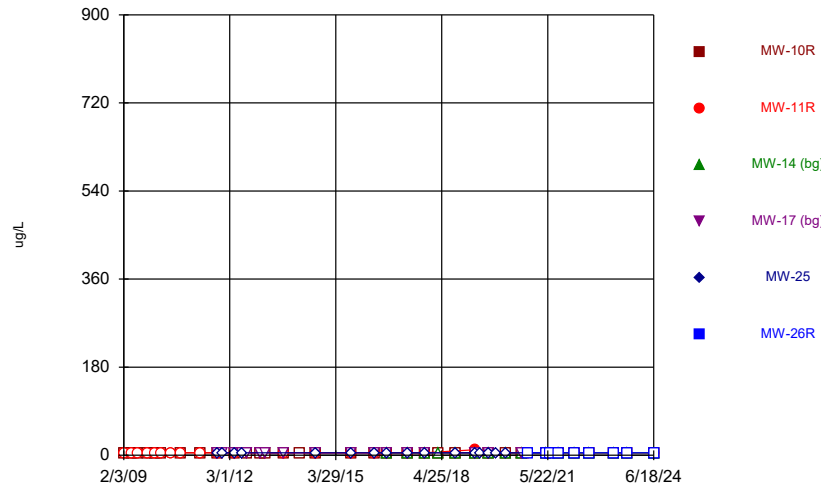
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Time Series



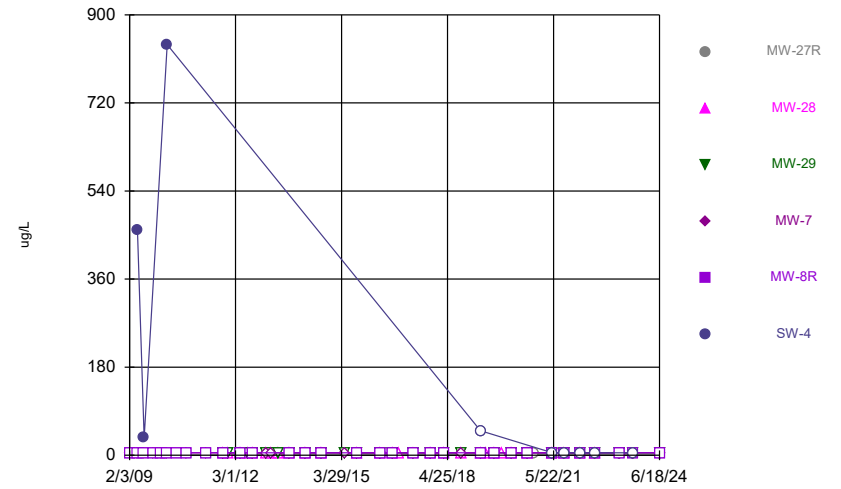
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Time Series



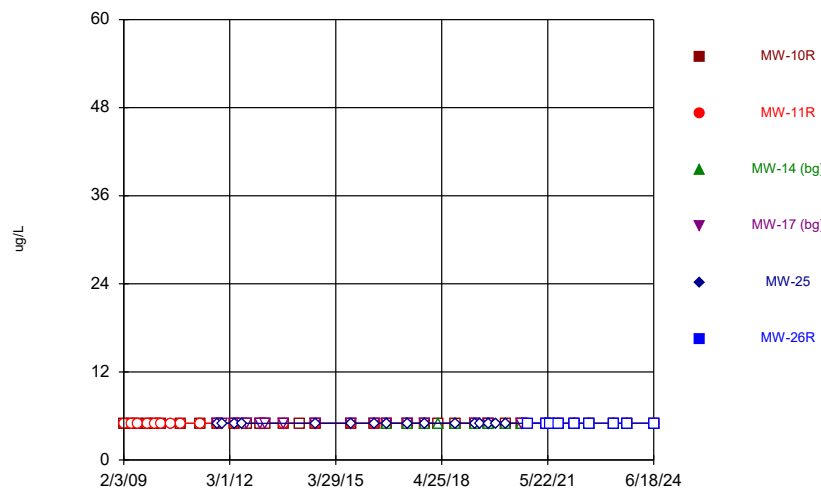
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Time Series



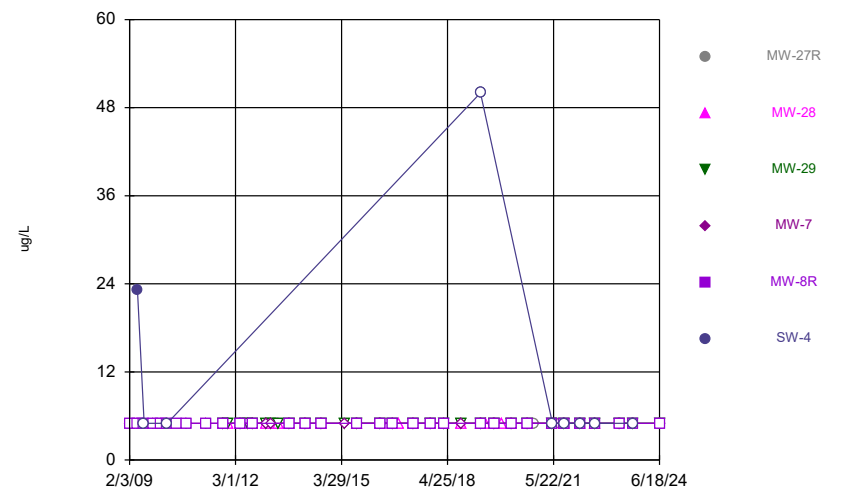
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Time Series



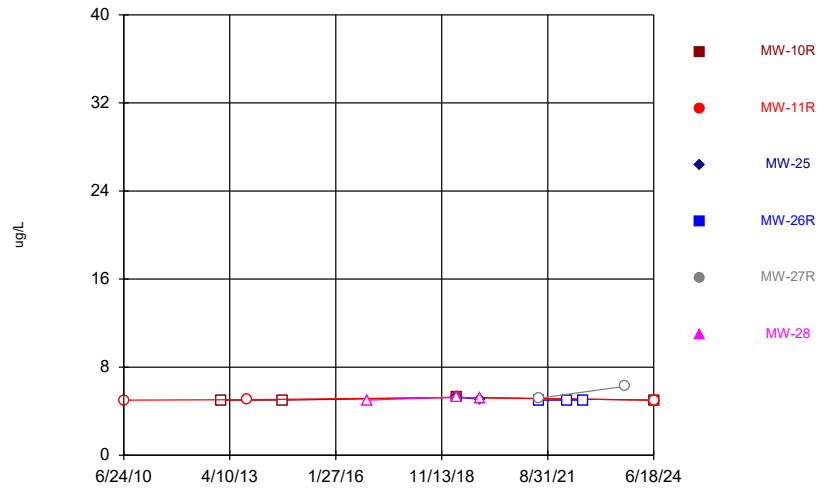
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



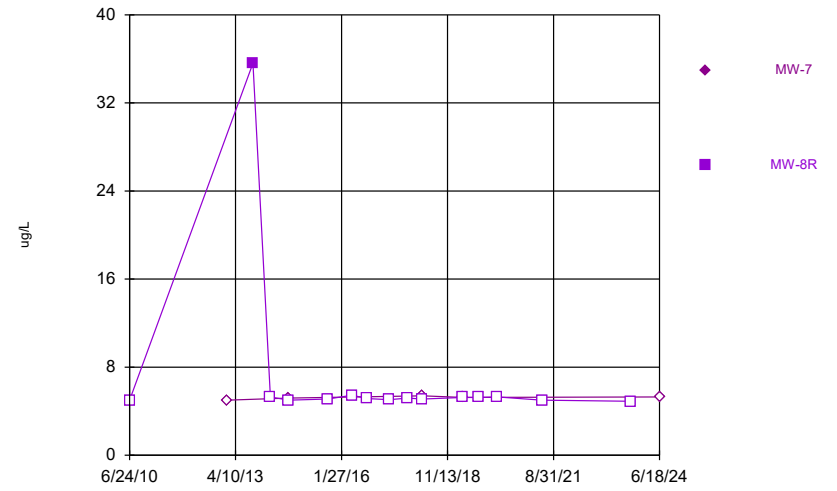
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Time Series



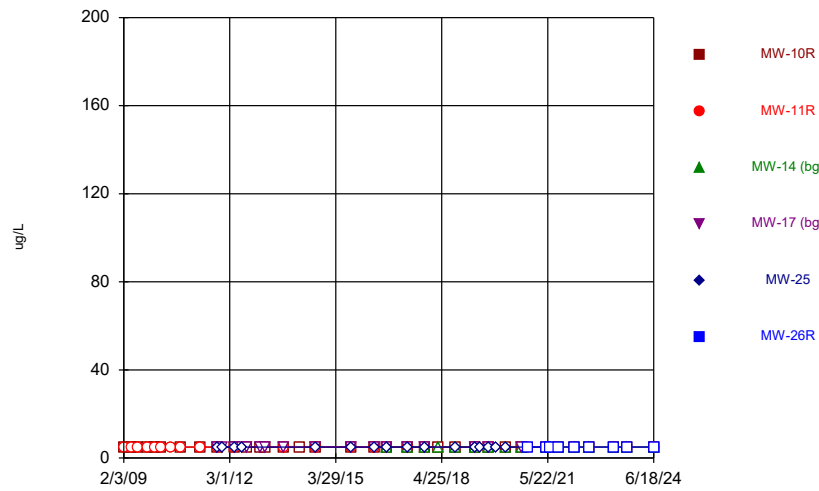
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



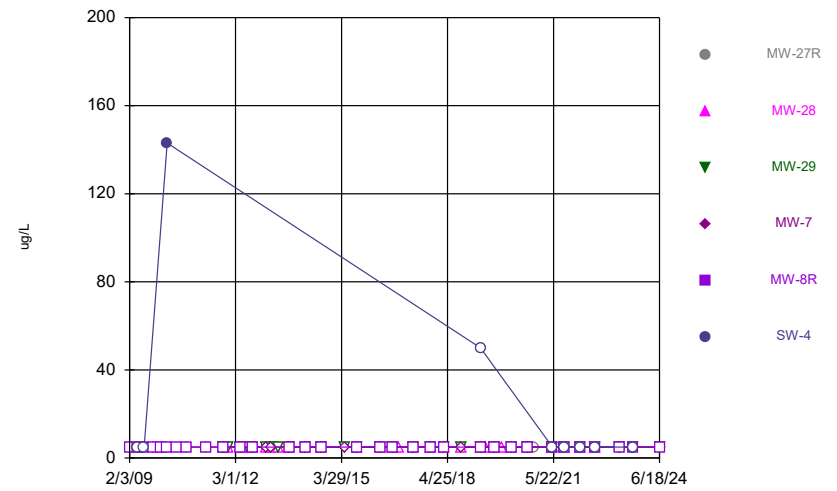
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Time Series



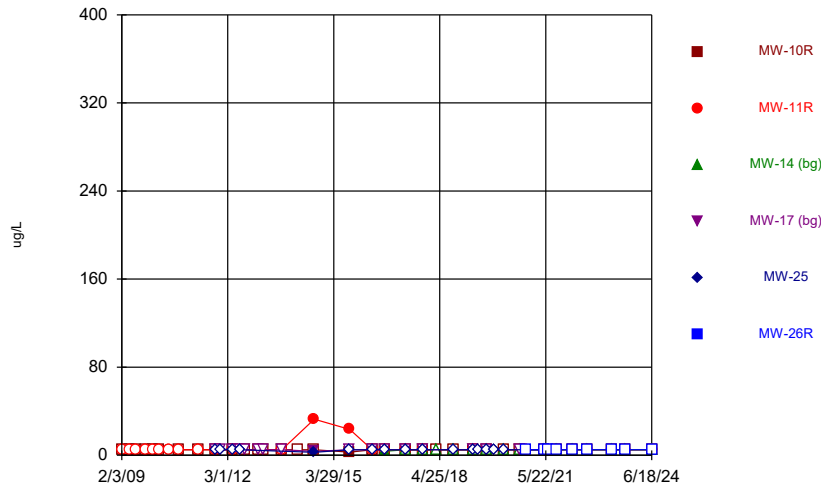
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



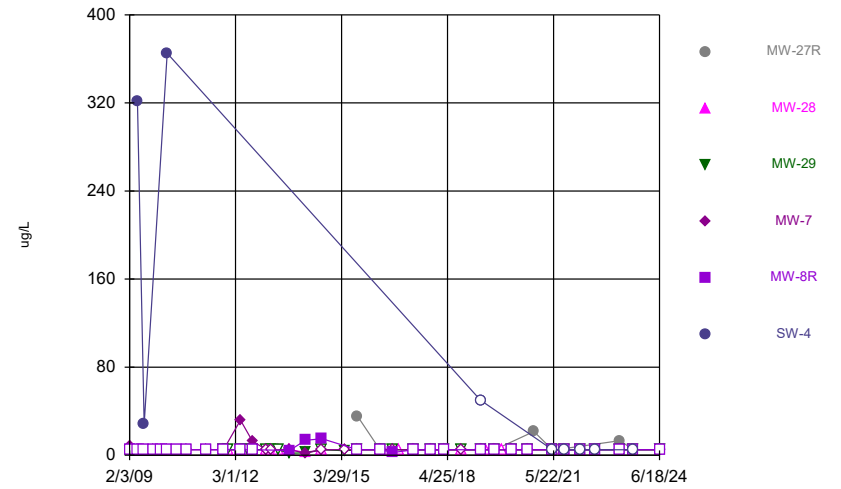
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Time Series



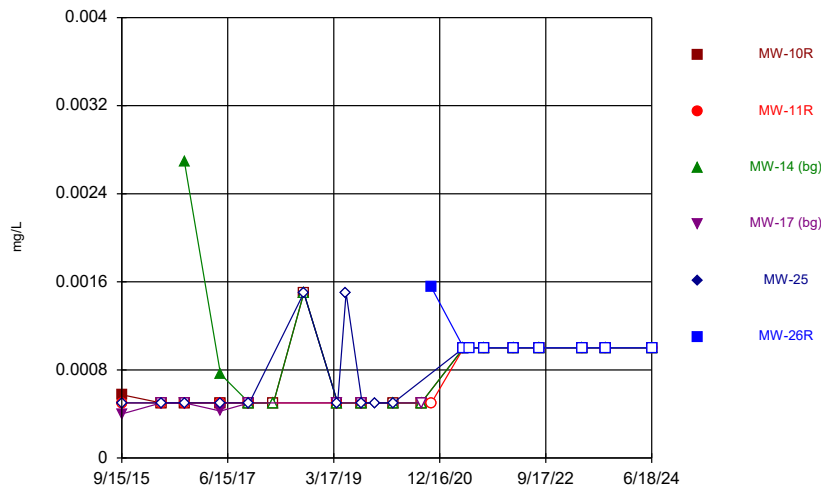
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Time Series



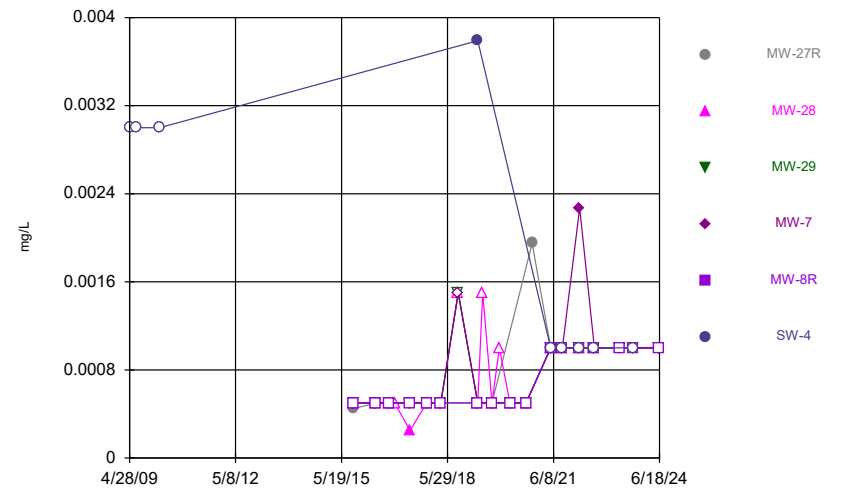
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Time Series



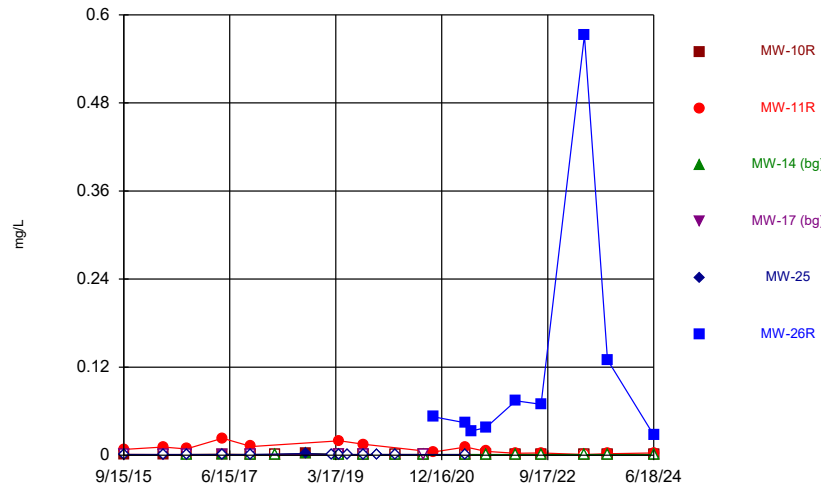
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Time Series



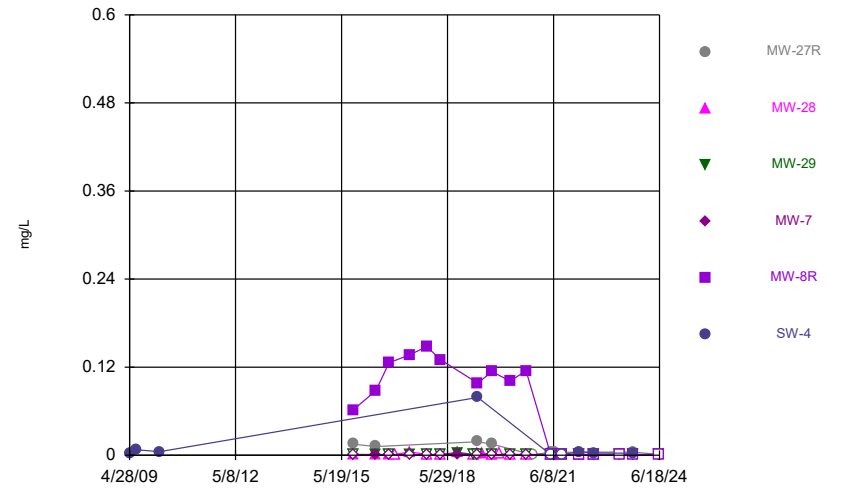
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Time Series



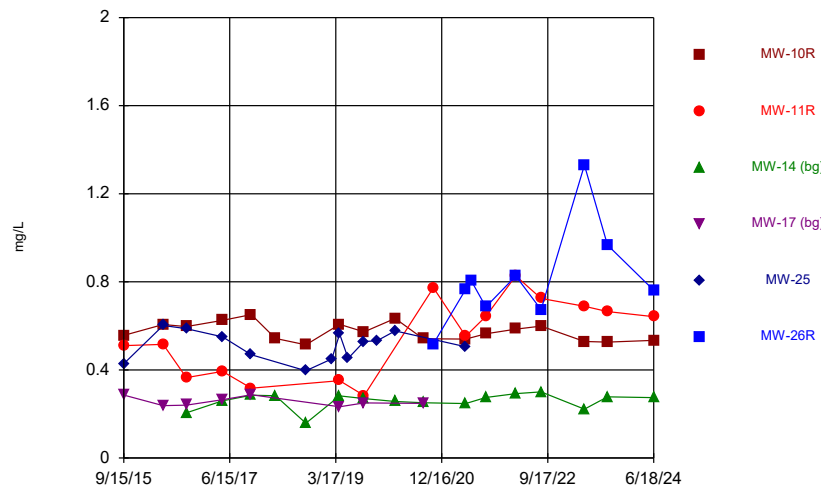
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Time Series



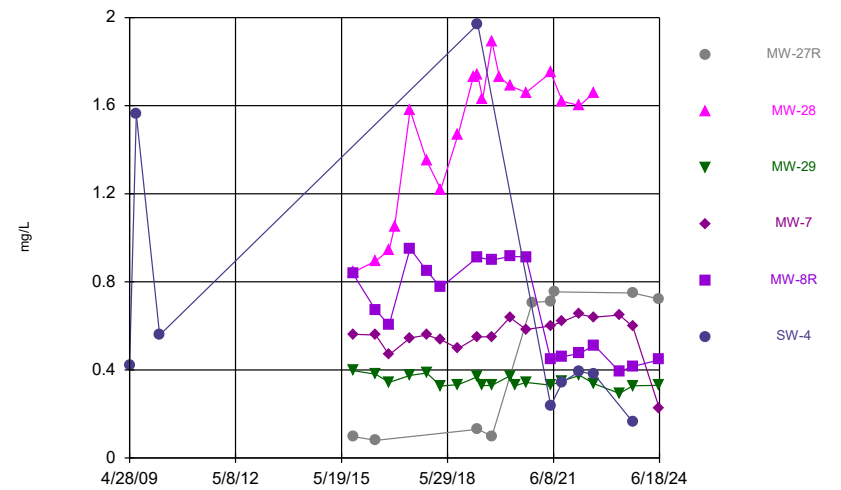
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Time Series



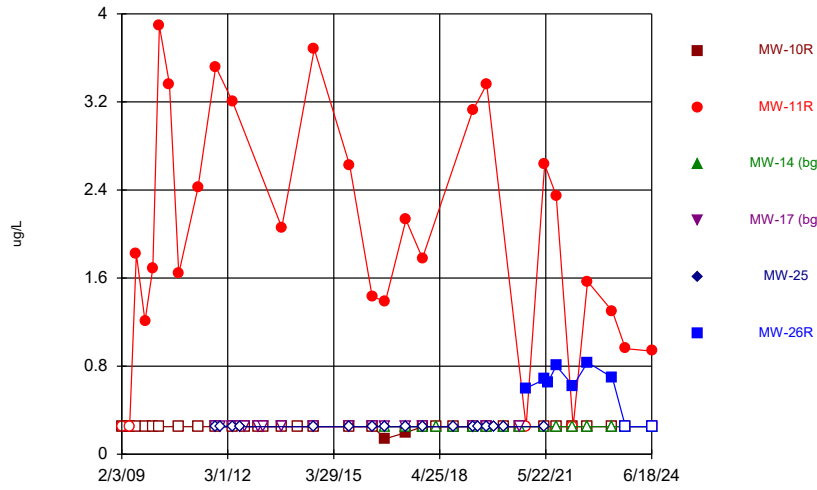
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Time Series



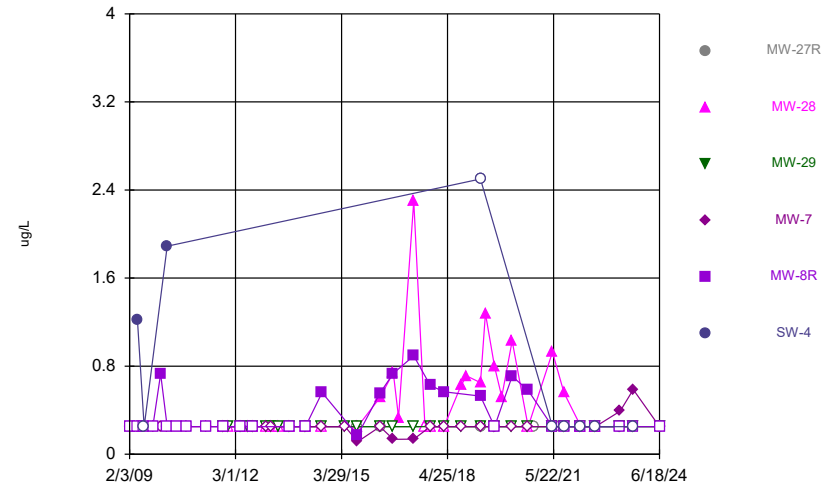
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Time Series



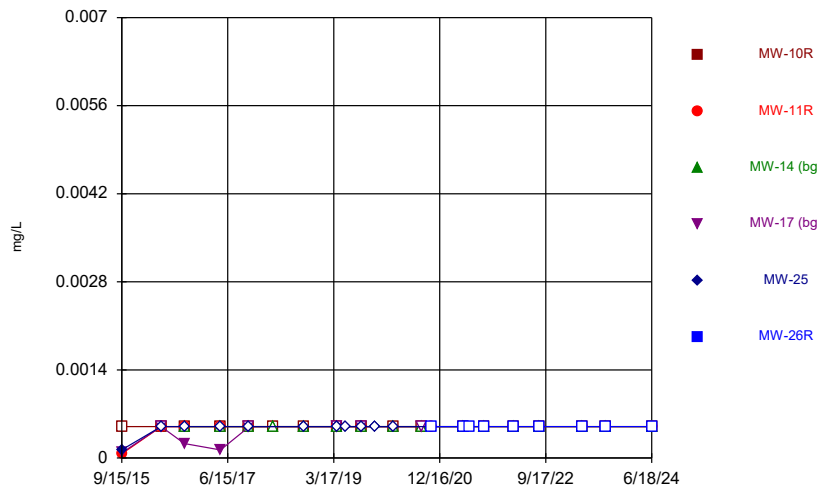
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



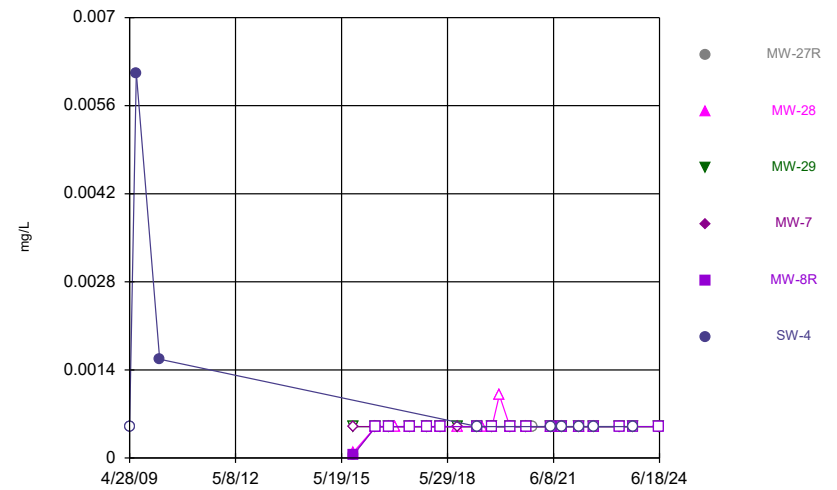
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Time Series



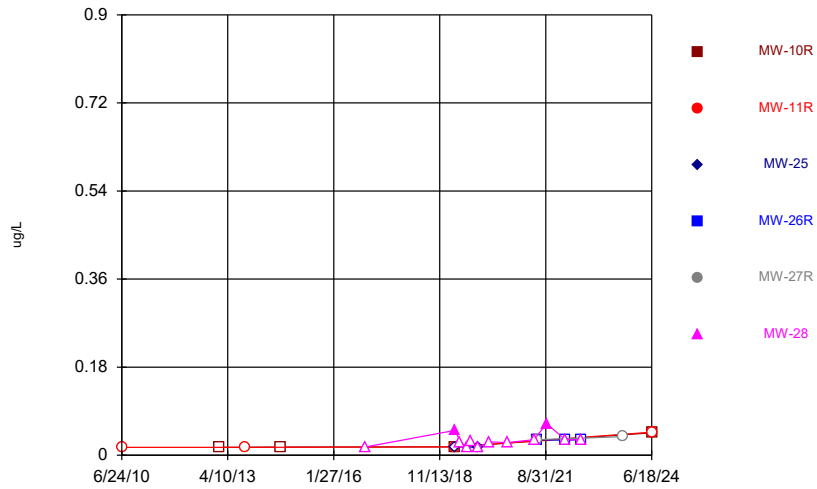
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



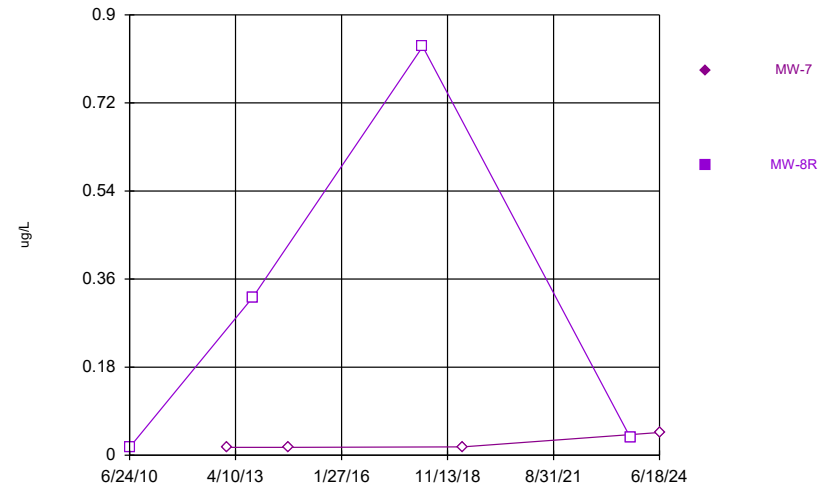
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Time Series



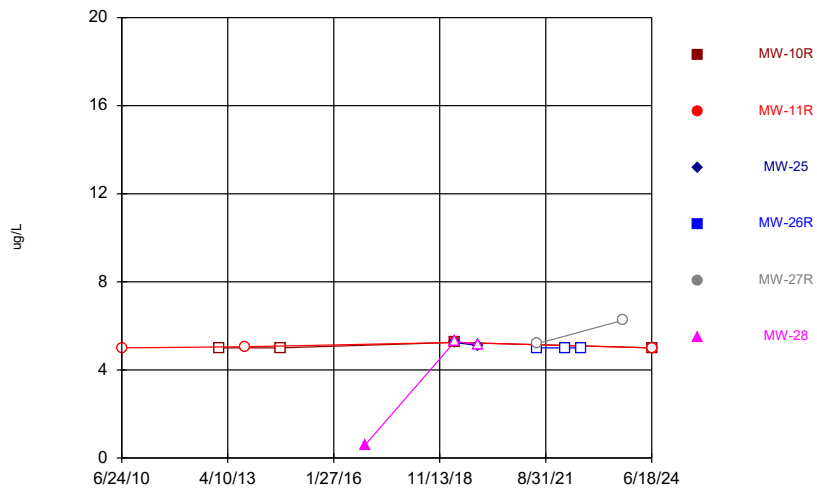
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



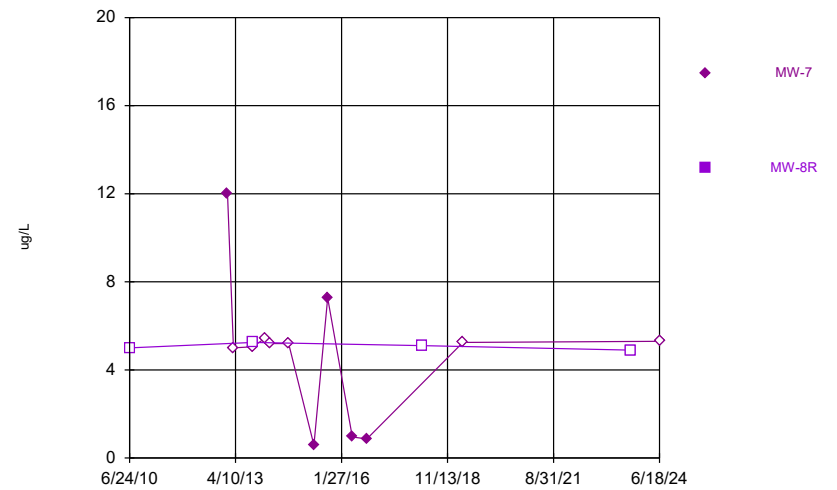
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



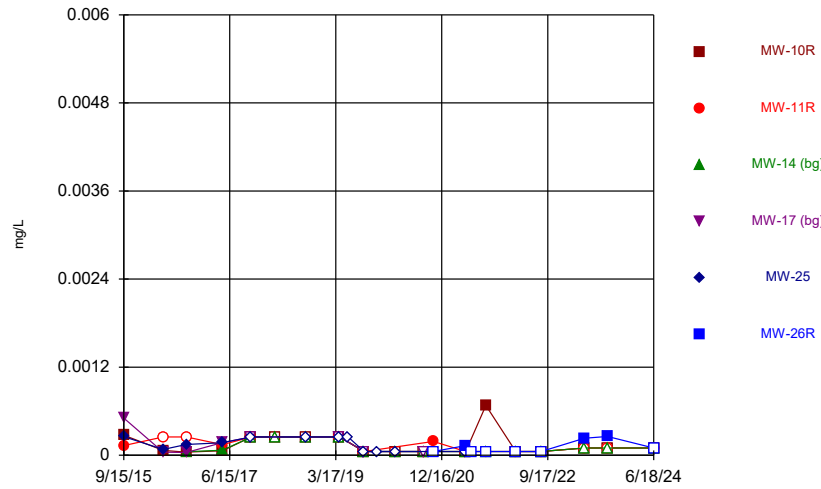
Constituent: Bis[2-ethylhexyl]phthalate Analysis Run 7/22/2024 3:28 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



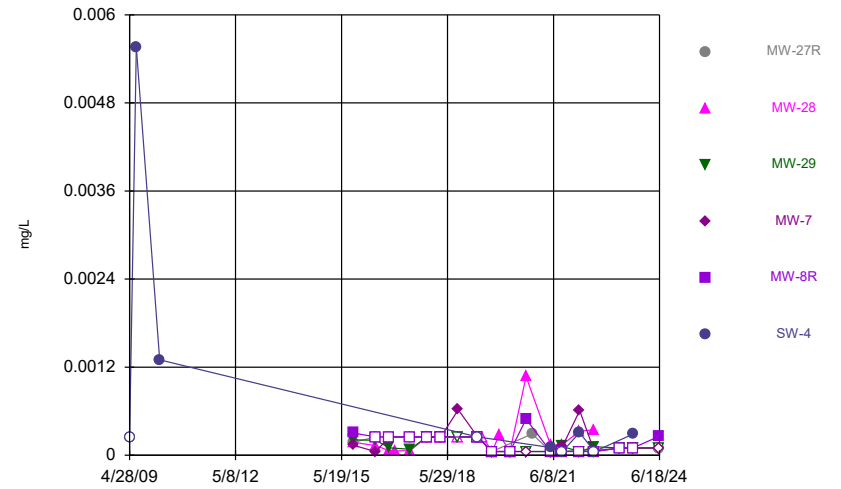
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Time Series



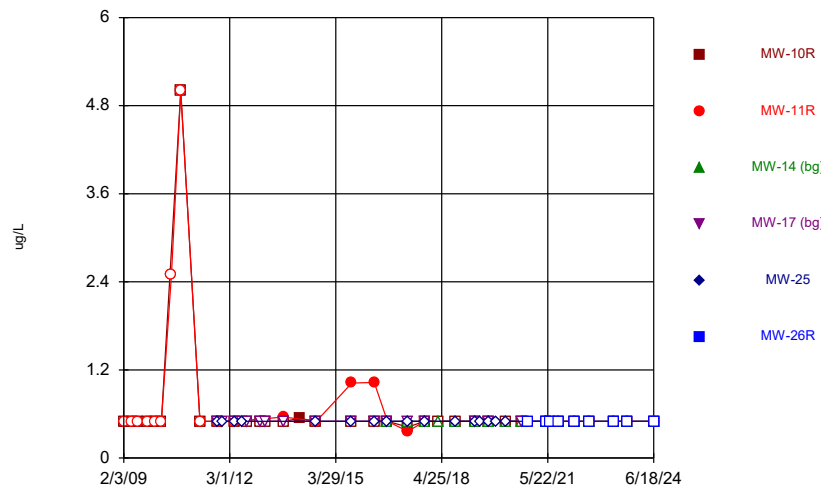
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



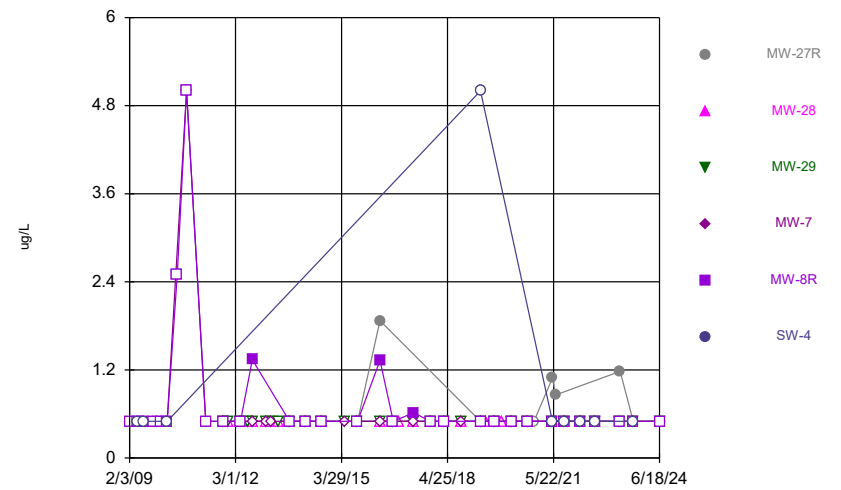
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Time Series



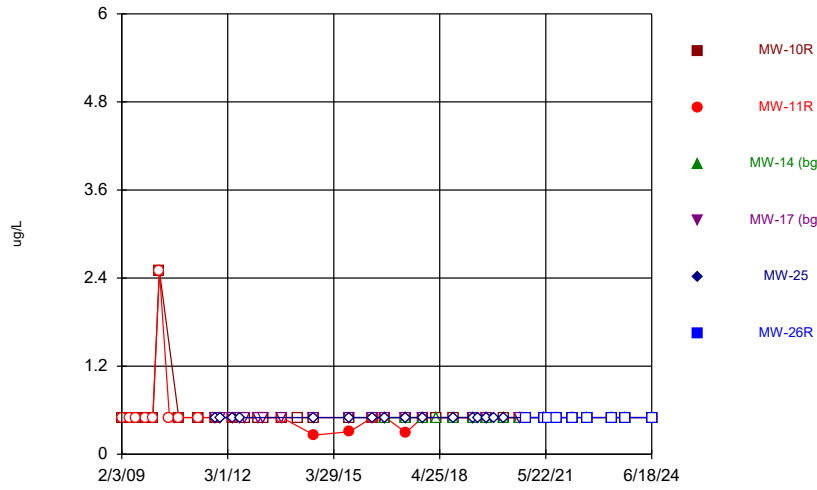
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Time Series



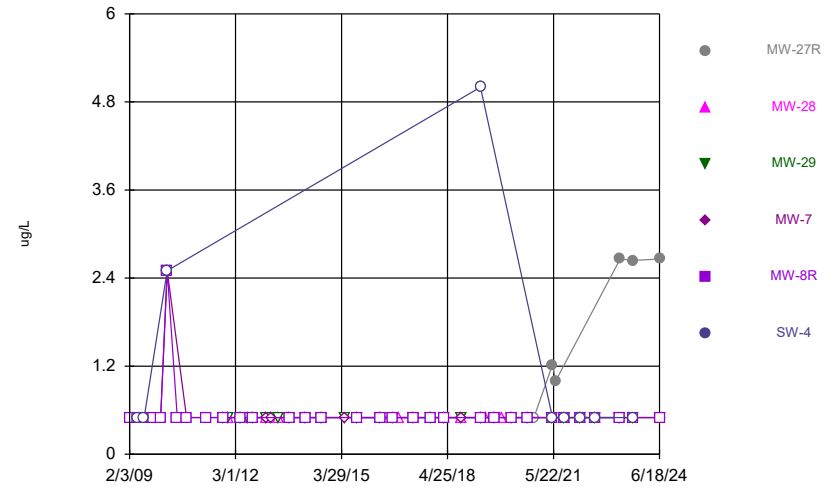
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Time Series



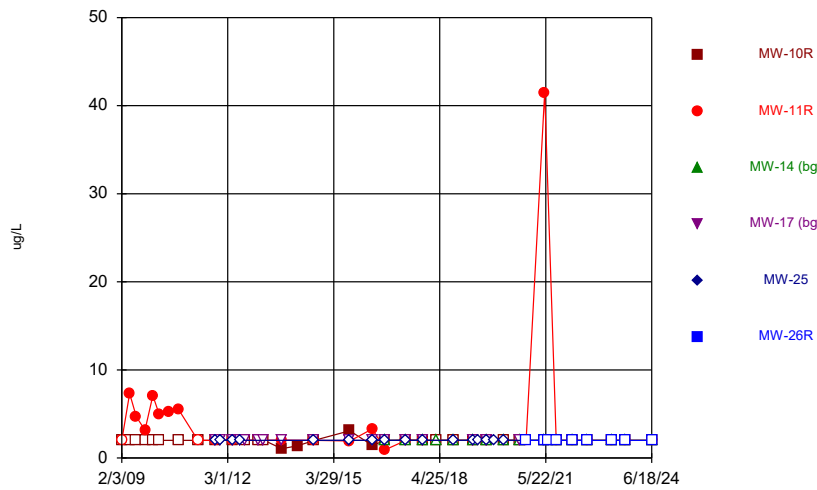
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Time Series



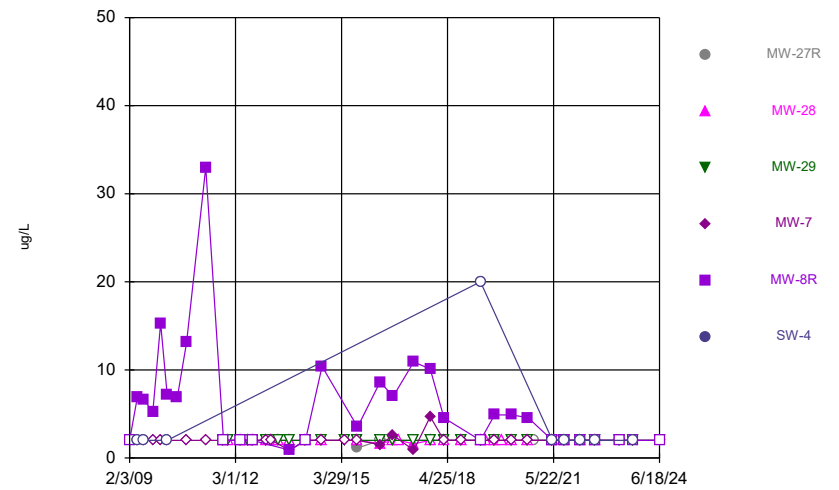
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



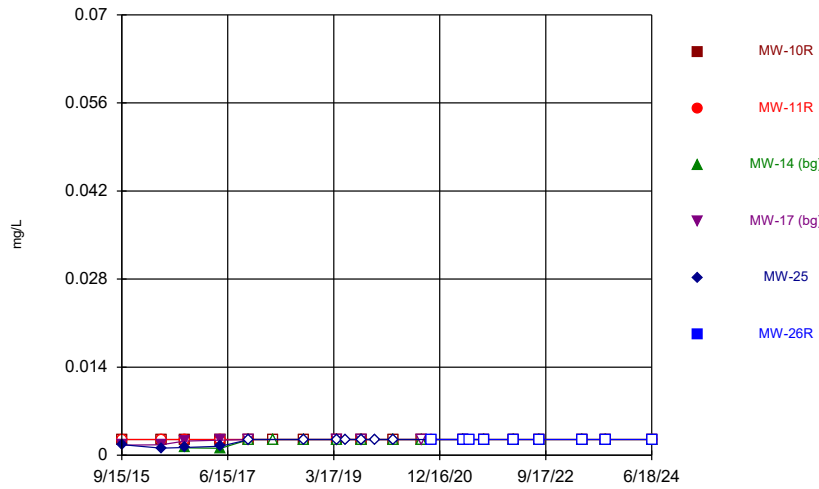
Constituent: Chloroethane Analysis Run 7/22/2024 3:28 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



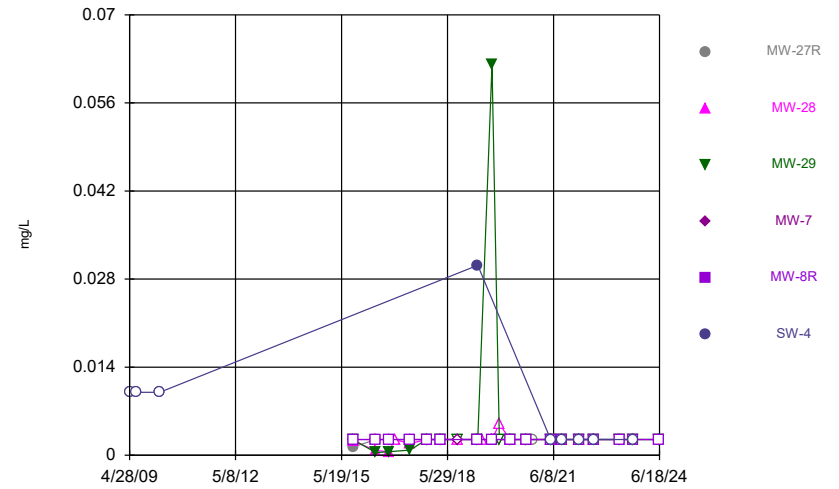
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



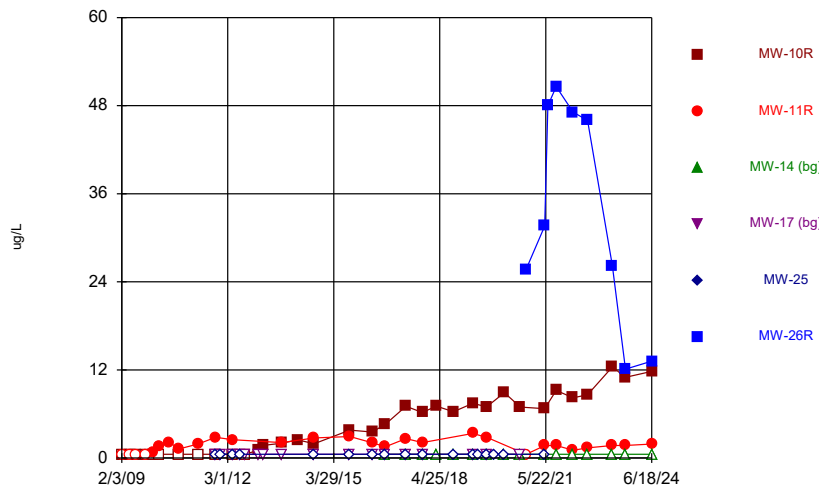
Constituent: Chromium Analysis Run 7/22/2024 3:28 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



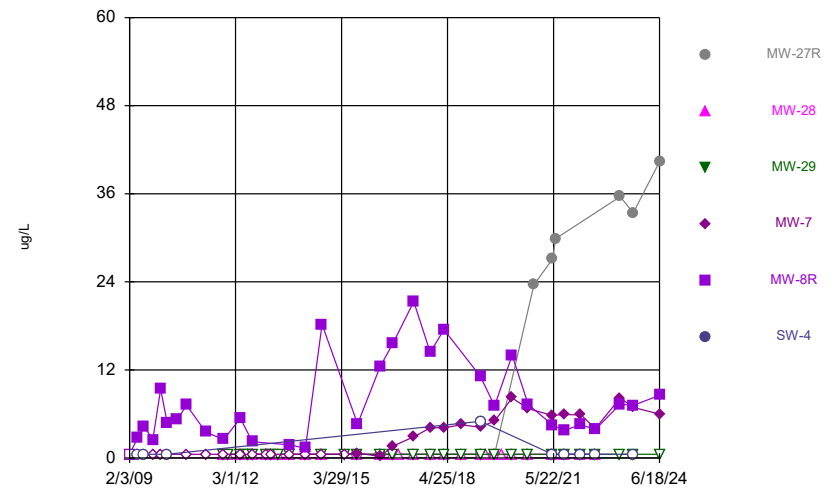
Constituent: Chromium Analysis Run 7/22/2024 3:28 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



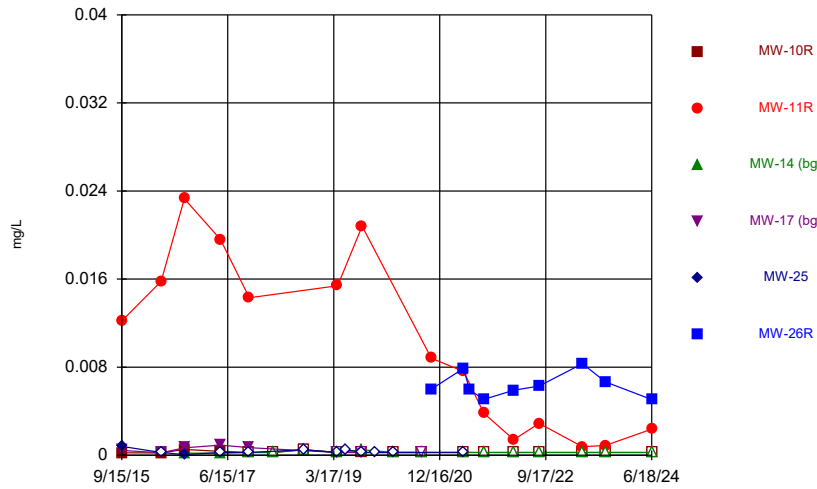
Constituent: cis-1,2-Dichloroethene Analysis Run 7/22/2024 3:28 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



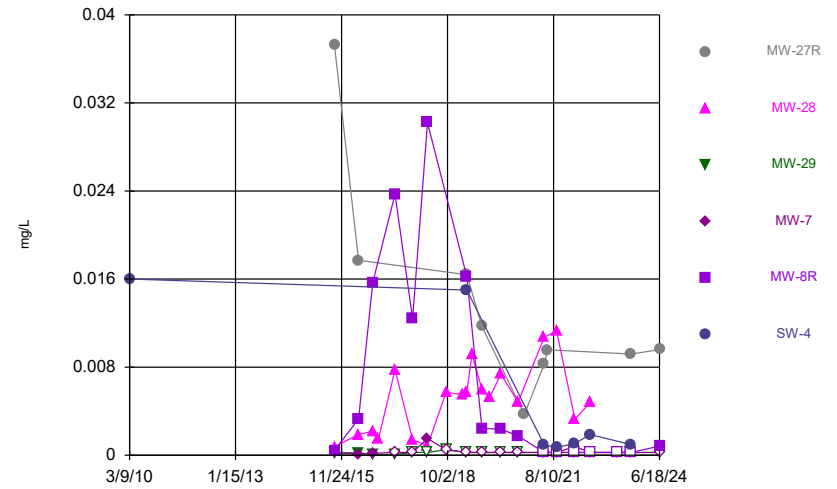
Constituent: cis-1,2-Dichloroethene Analysis Run 7/22/2024 3:28 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



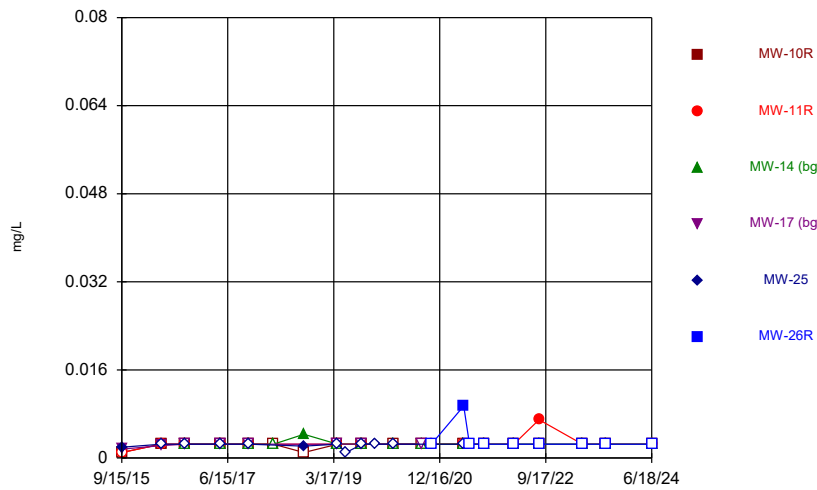
Constituent: Cobalt Analysis Run 7/22/2024 3:28 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



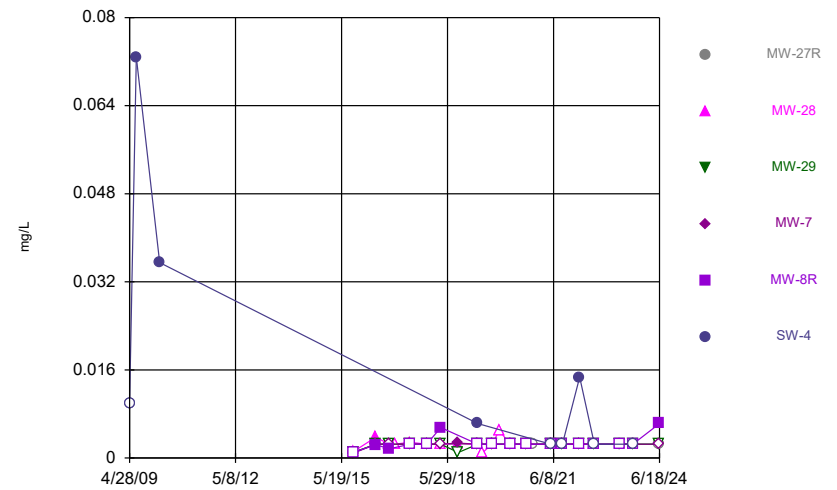
Constituent: Cobalt Analysis Run 7/22/2024 3:28 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



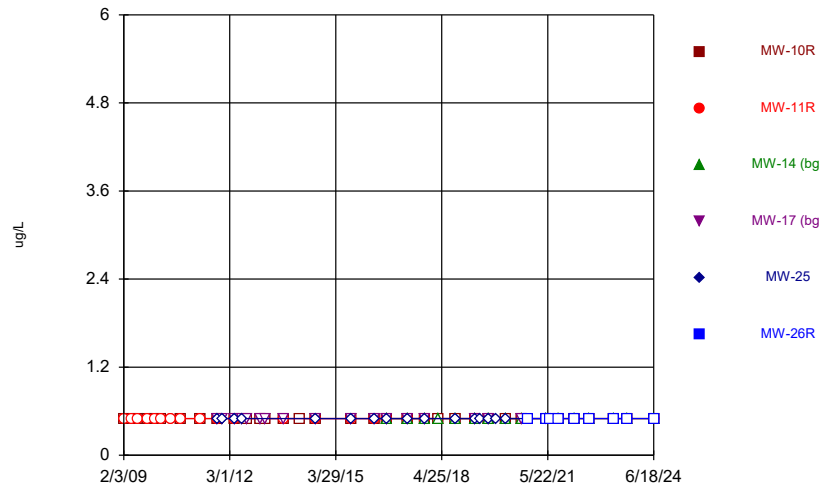
Constituent: Copper Analysis Run 7/22/2024 3:28 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



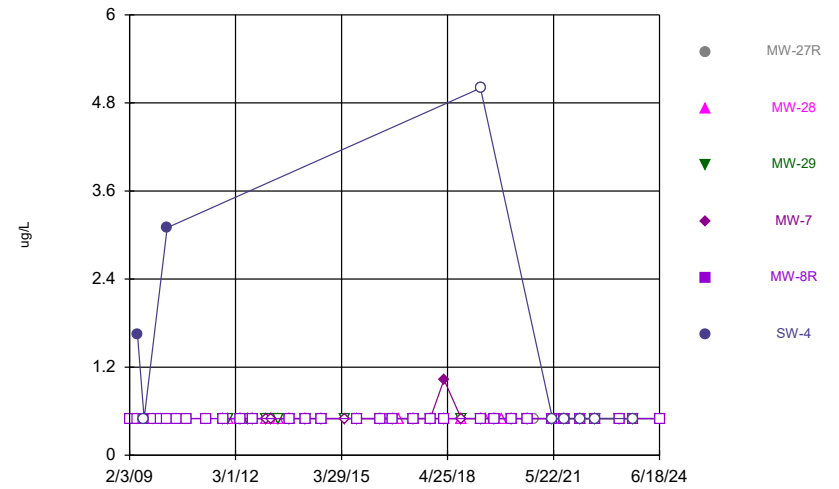
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



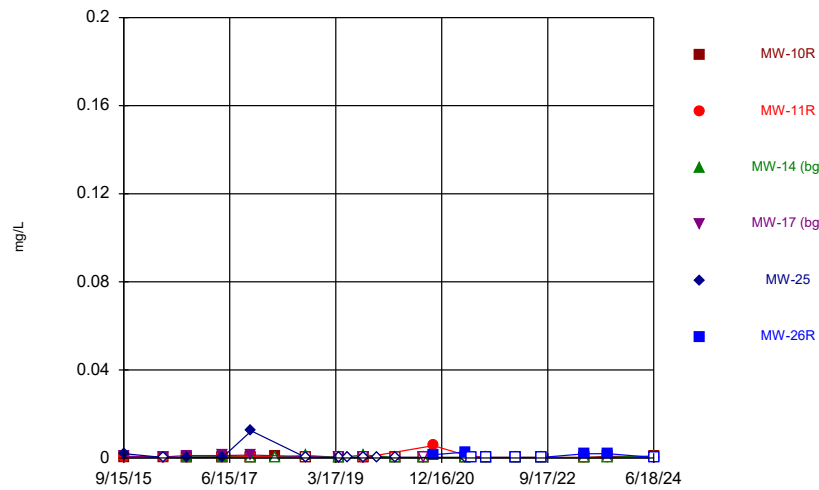
Constituent: Ethylbenzene Analysis Run 7/22/2024 3:28 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



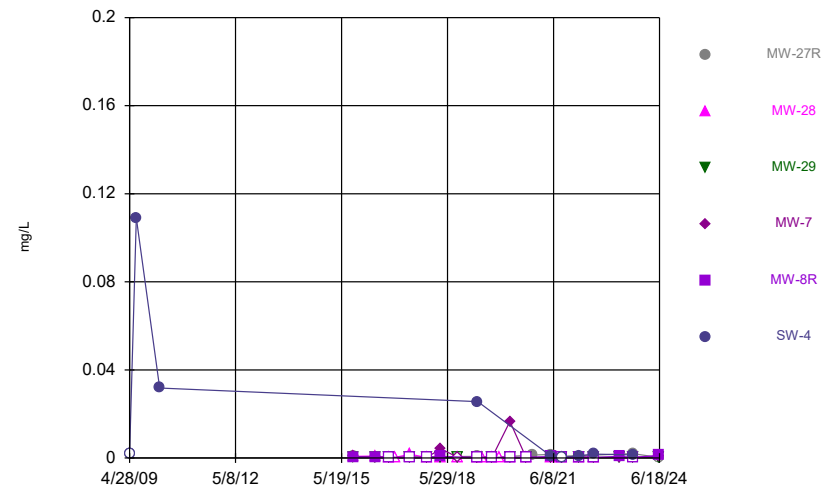
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



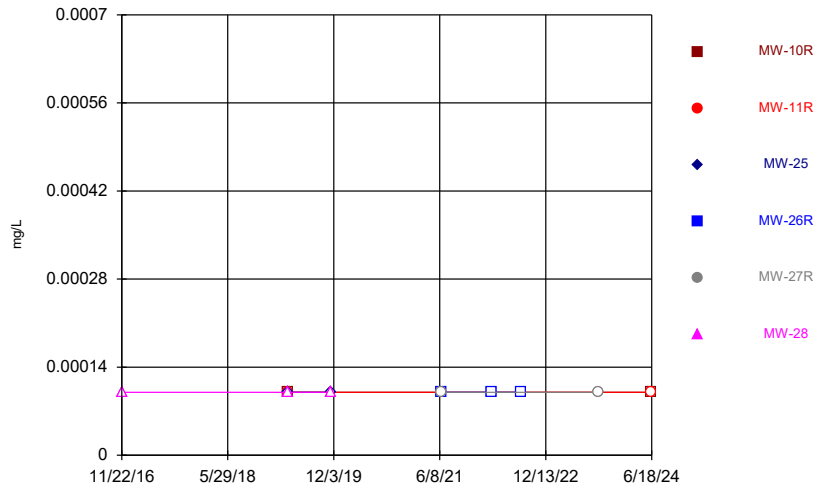
Constituent: Lead Analysis Run 7/22/2024 3:28 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



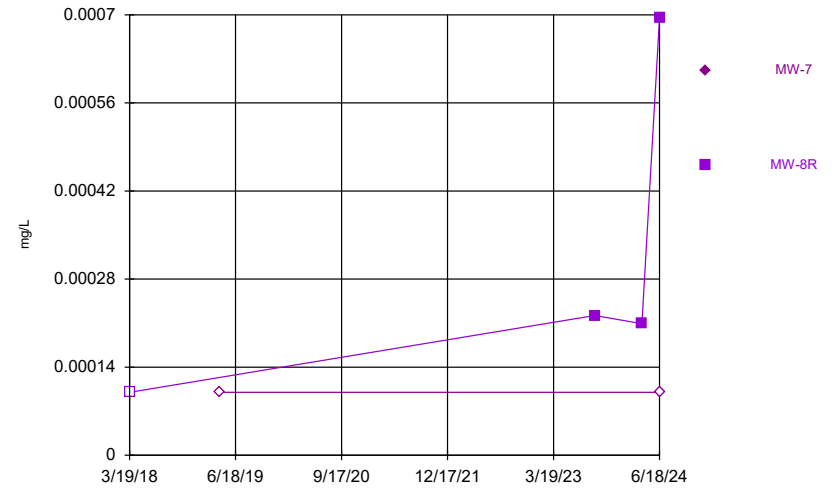
Constituent: Lead Analysis Run 7/22/2024 3:28 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



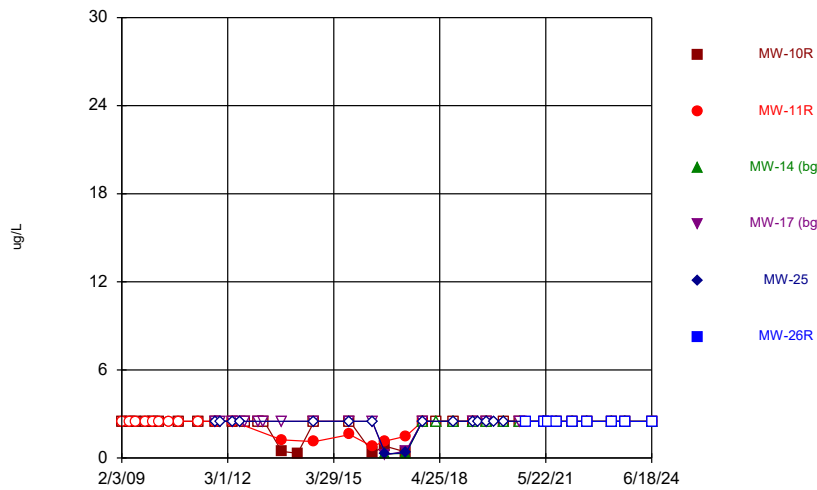
Constituent: Mercury Analysis Run 7/22/2024 3:28 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



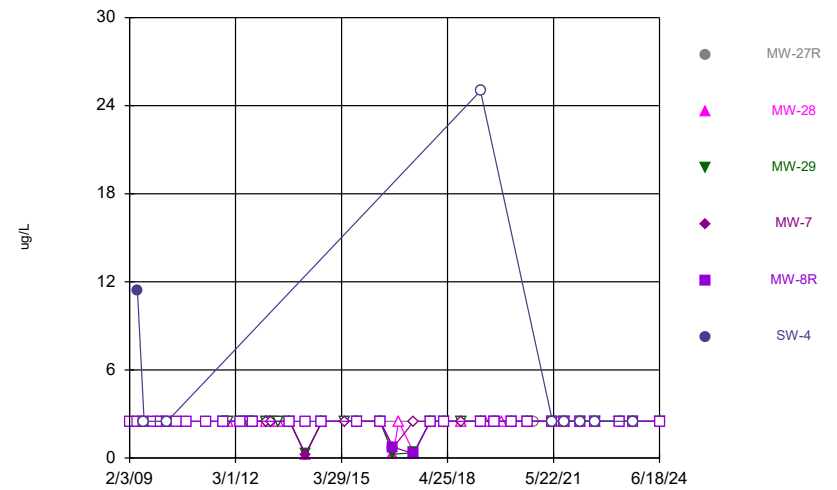
Constituent: Mercury Analysis Run 7/22/2024 3:28 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



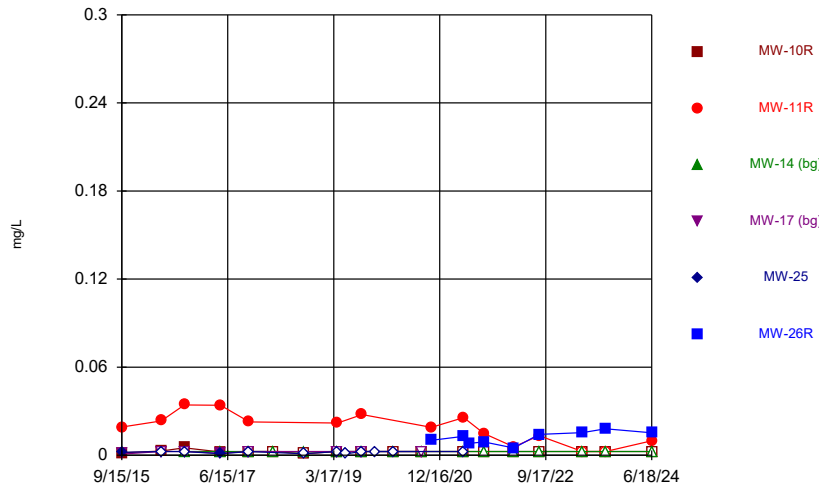
Constituent: Methylene Chloride Analysis Run 7/22/2024 3:28 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



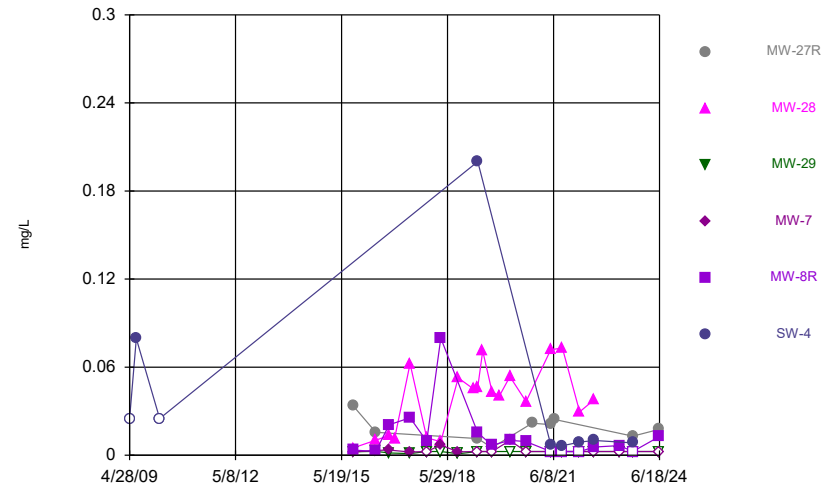
Constituent: Methylene Chloride Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



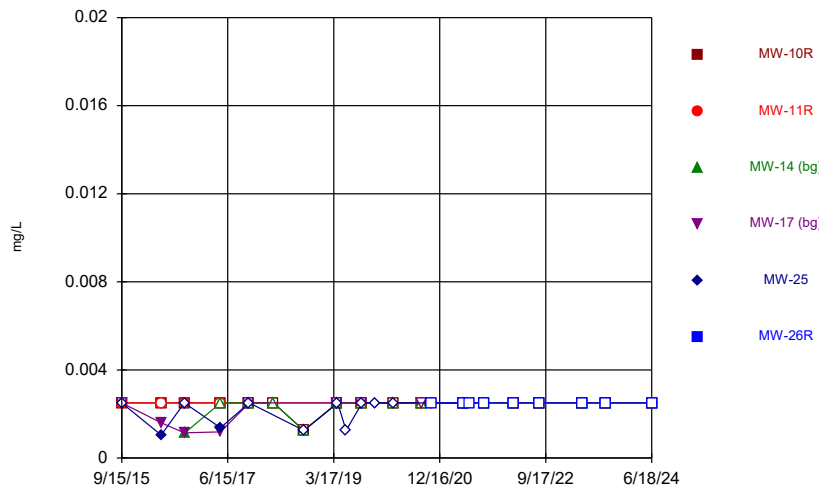
Constituent: Nickel Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



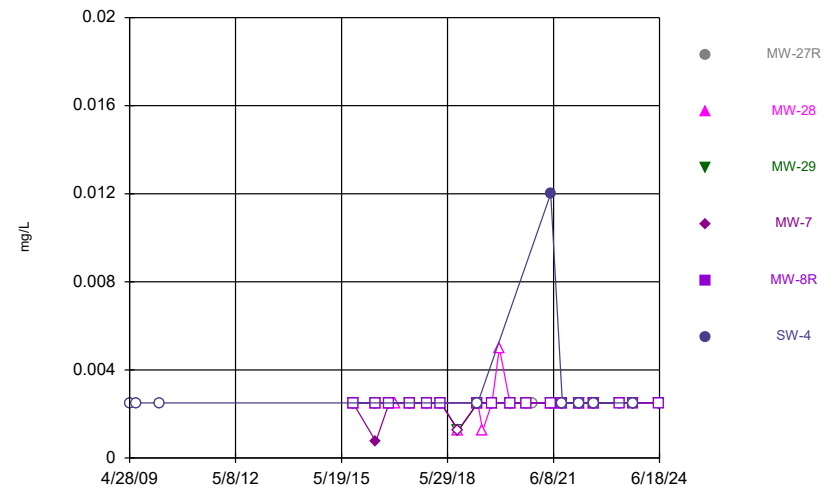
Constituent: Nickel Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



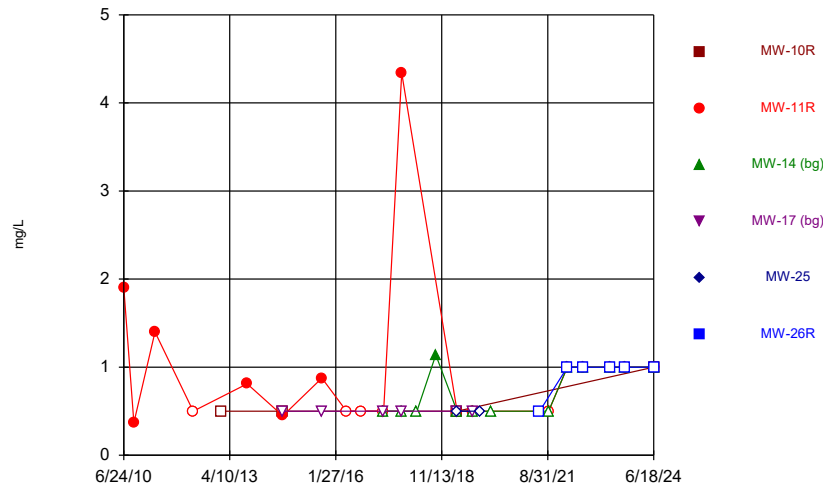
Constituent: Selenium Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



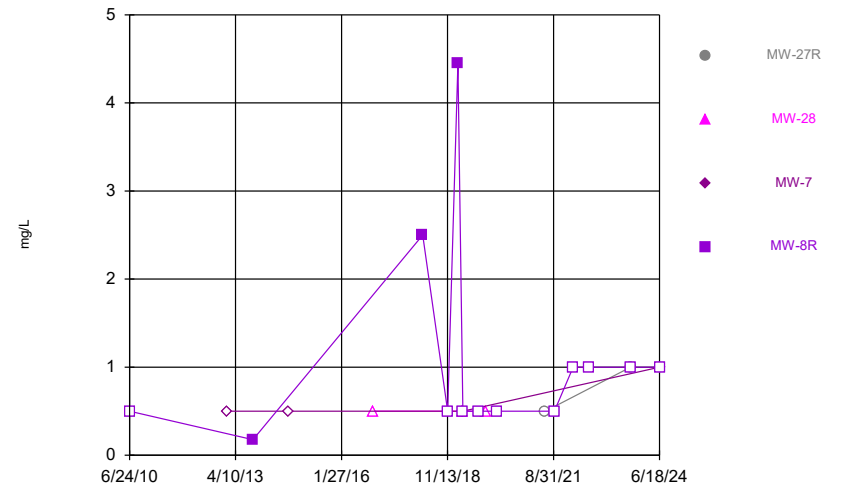
Constituent: Selenium Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



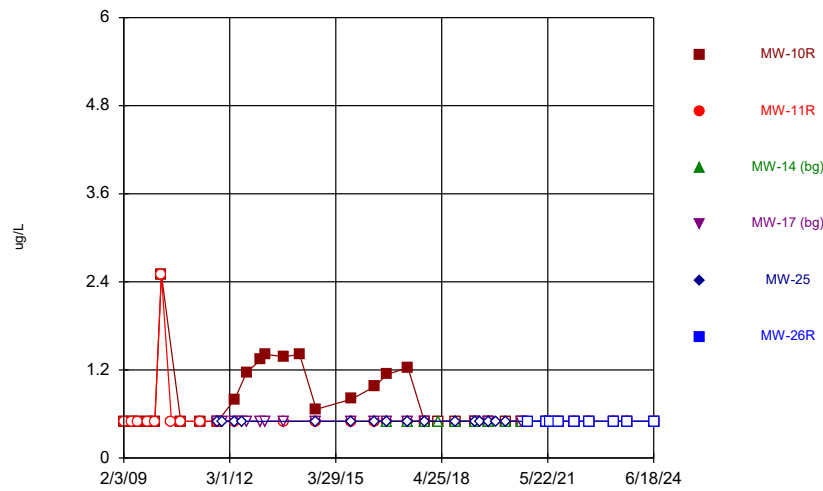
Constituent: Sulfide Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



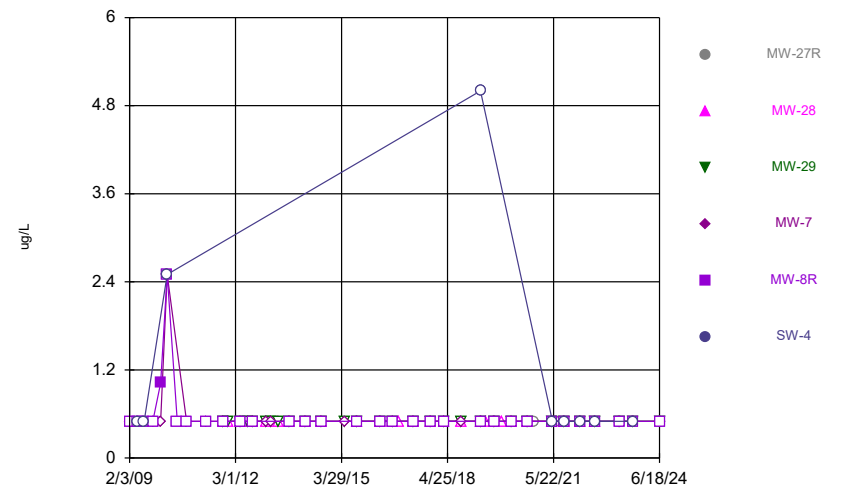
Constituent: Sulfide Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



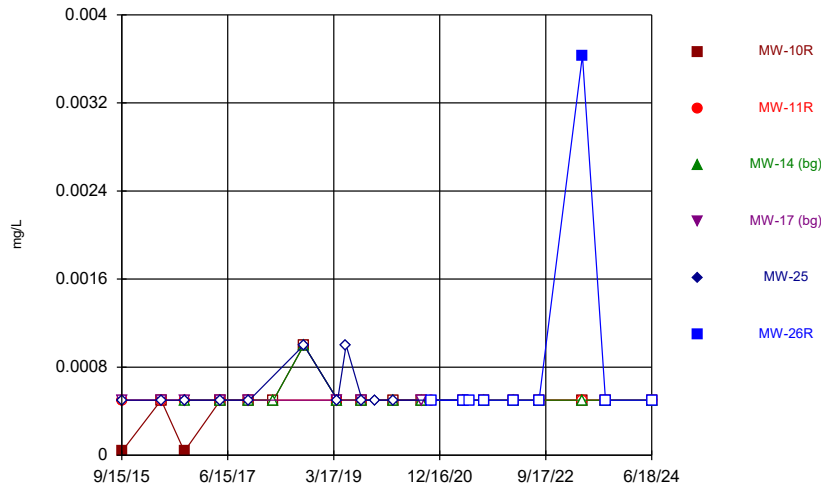
Constituent: Tetrachloroethene Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



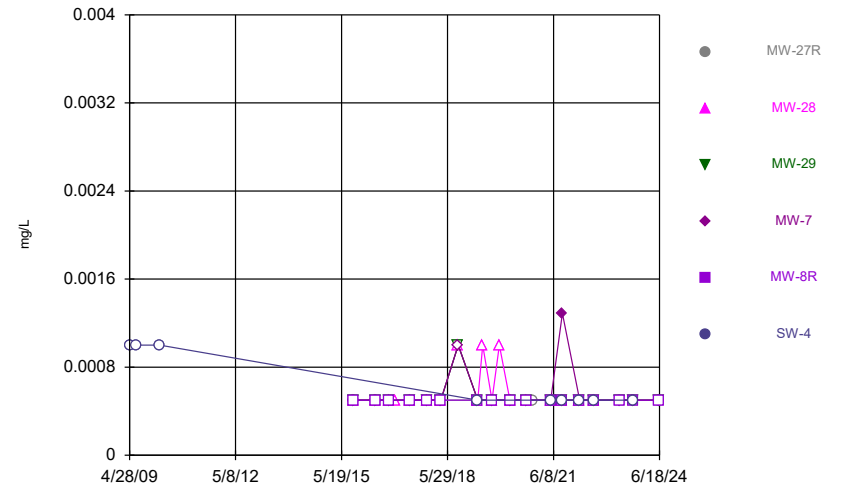
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



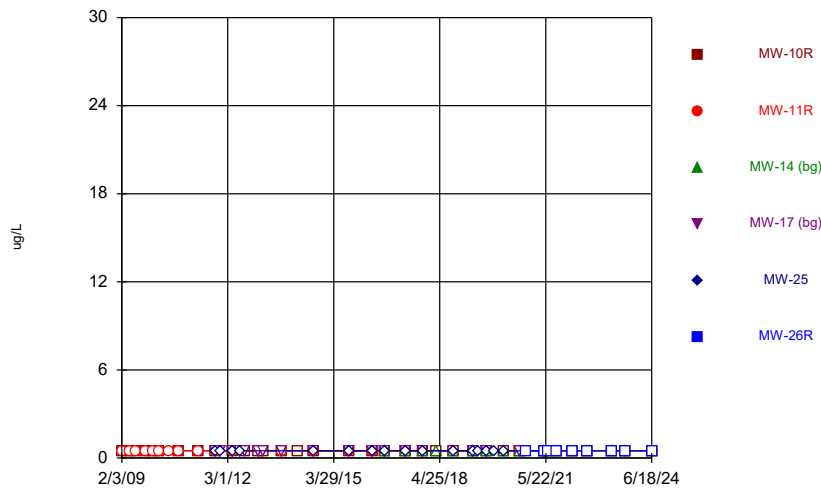
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



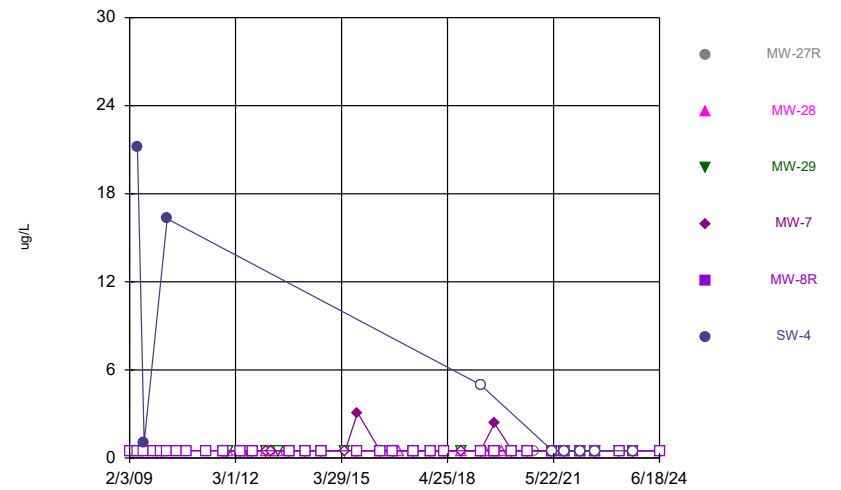
Constituent: Thallium Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



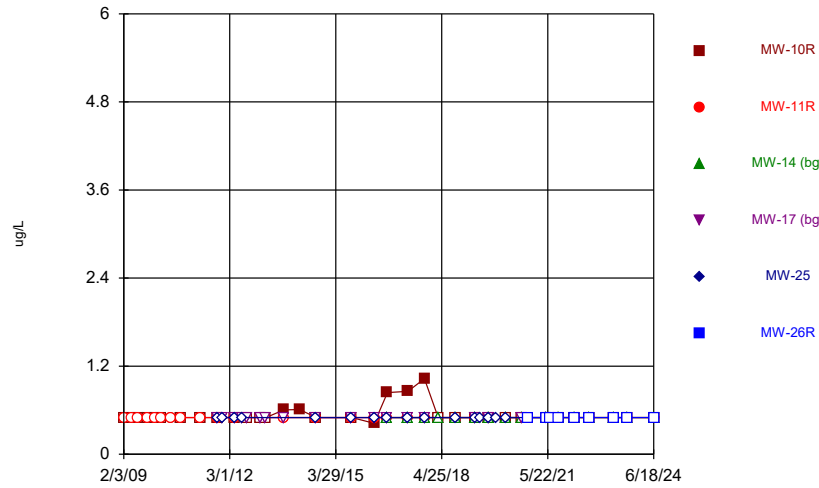
Constituent: Toluene Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



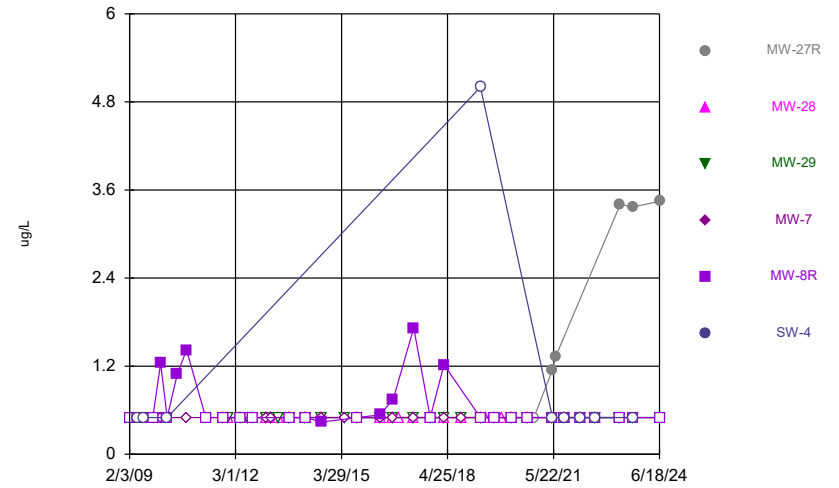
Constituent: Toluene Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



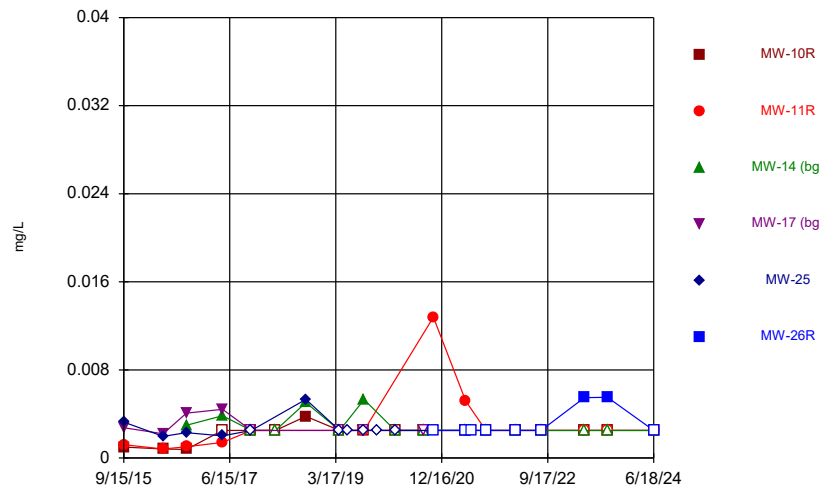
Constituent: Trichloroethene Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



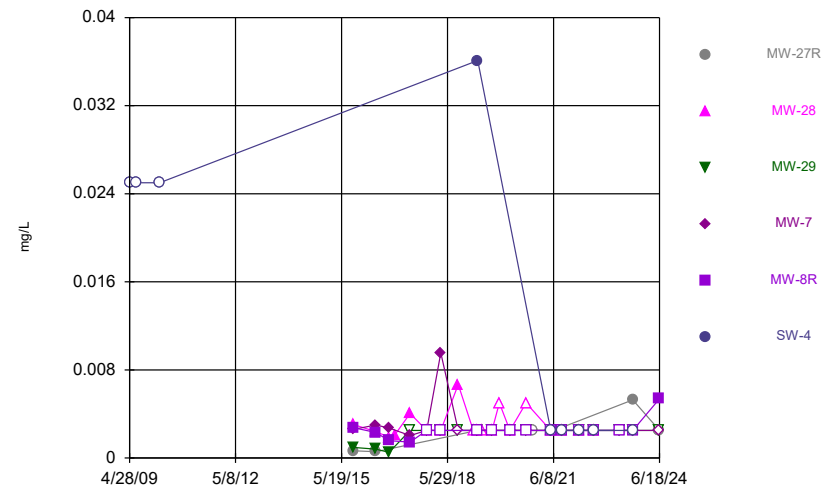
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



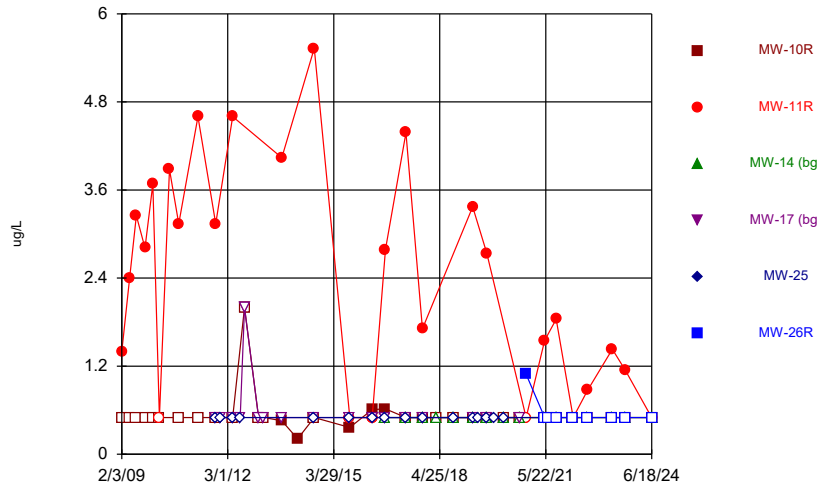
Constituent: Vanadium Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



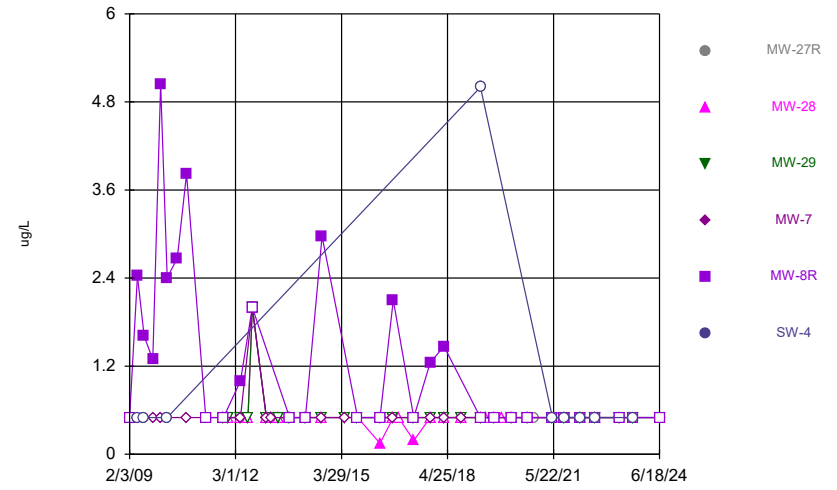
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



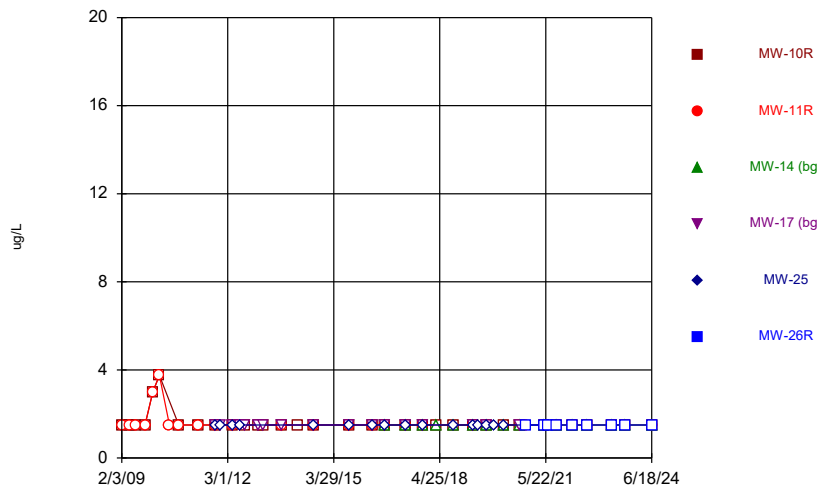
Constituent: Vinyl chloride Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



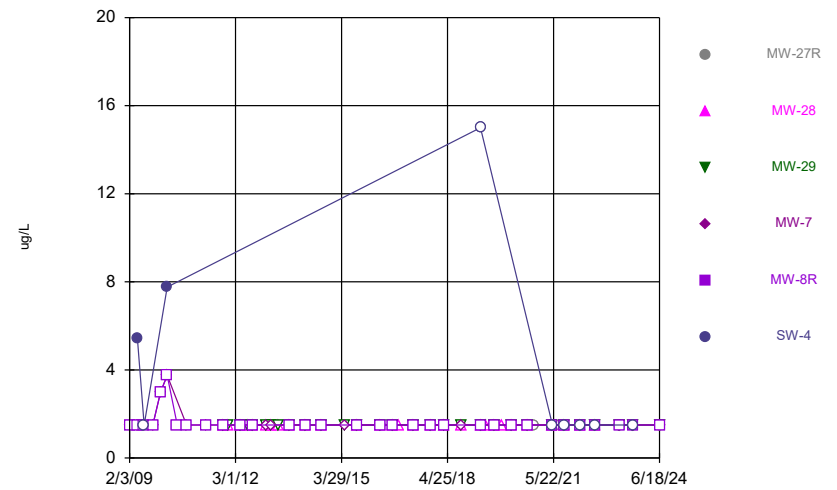
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



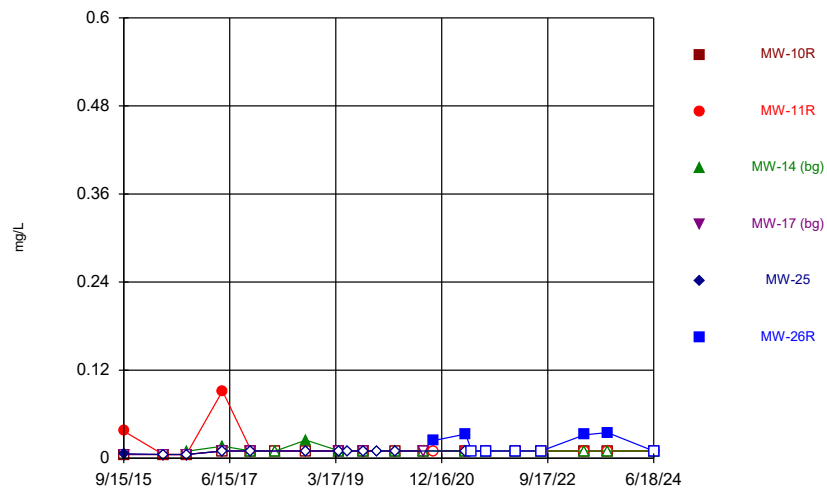
Constituent: Xylenes, total Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



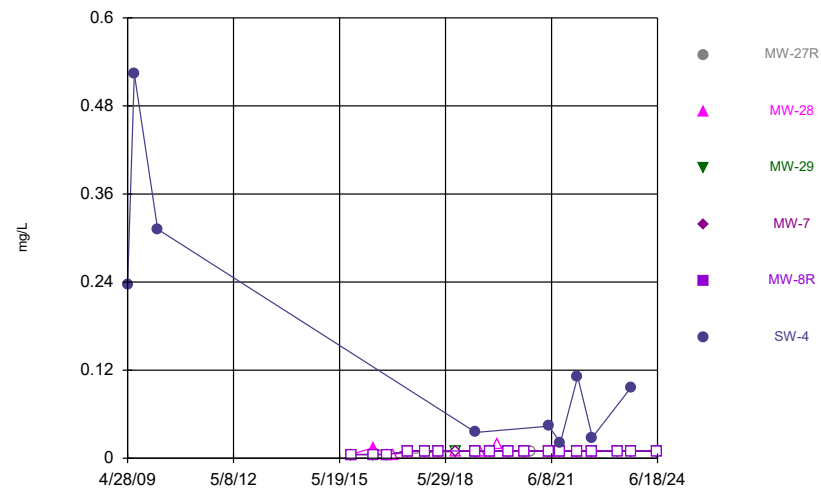
Constituent: Xylenes, total Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



Constituent: Zinc Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



Constituent: Zinc Analysis Run 7/22/2024 3:29 PM View: 2024SSN - Time Series
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Outliers Table and Graphs

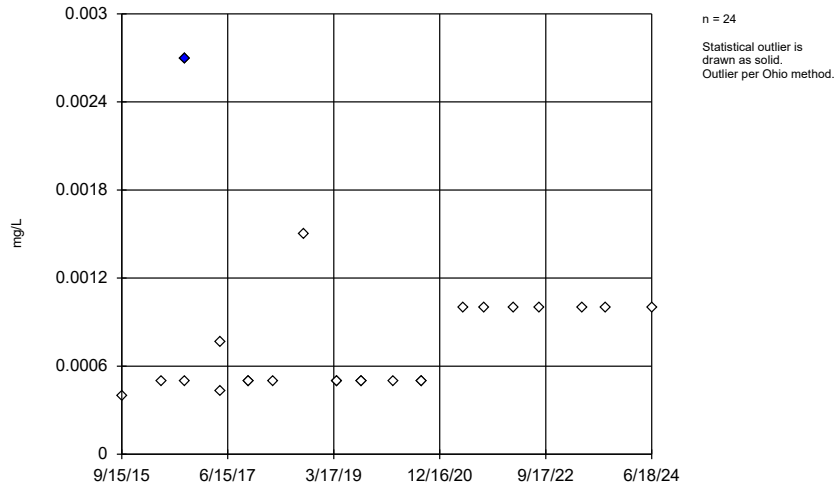
Outlier Analysis

Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master Printed 7/22/2024, 4:15 PM

<u>Constituent</u>	<u>Well</u>	<u>Outlier</u>	<u>Value(s)</u>	<u>Date(s)</u>	<u>Method</u>	<u>Alpha</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Normality Test</u>
Antimony (mg/L)	MW-14,MW-17	Yes	0.002695	n/a w/combined bg	OH	NaN	24	0.0007827	0.0004993	n/a
Arsenic (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.001026	0.0001868	n/a
Barium (mg/L)	MW-14,MW-17	Yes	0.158	n/a w/combined bg	Rosner/OH	0.01	24	0.2578	0.03186	ShapiroWilk
Beryllium (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.0004558	0.0001215	n/a
Cadmium (mg/L)	MW-14,MW-17	Yes	0.000506	n/a w/combined bg	OH	NaN	24	0.0001303	0.0001173	n/a
Chromium (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.0023	0.000433	n/a
Cobalt (mg/L)	MW-14,MW-17	Yes	0.000671,0.000915,0.000687	n/a w/combined bg	NP (nrm)/OH	NaN	24	0.0003368	0.0001871	ShapiroWilk
Copper (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.002529	0.0004234	n/a
Lead (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	NP (nrm)/OH	NaN	24	0.0005372	0.000417	ShapiroWilk
Nickel (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.002378	0.0003942	n/a
Selenium (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.002242	0.0005204	n/a
Silver (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.0004753	0.00008466	n/a
Vanadium (mg/L)	MW-14,MW-17	Yes	0.00503,0.00531,0.00407,0.00443	n/a w/combined bg	NP (nrm)/OH	NaN	24	0.002942	0.000884	ShapiroWilk
Zinc (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.01024	0.003793	n/a

Ohio EPA 0715 Outlier Algorithm, Pooled Background

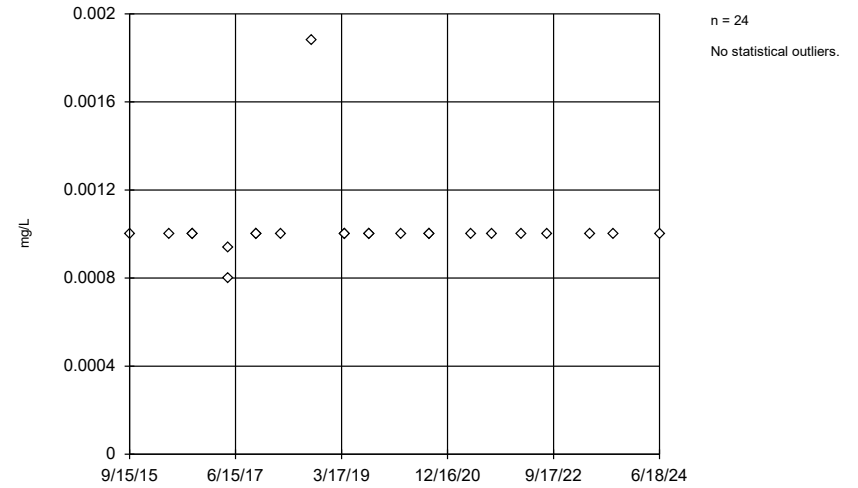
MW-14,MW-17



Constituent: Antimony Analysis Run 7/22/2024 4:07 PM View: 2024SSN - BG Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

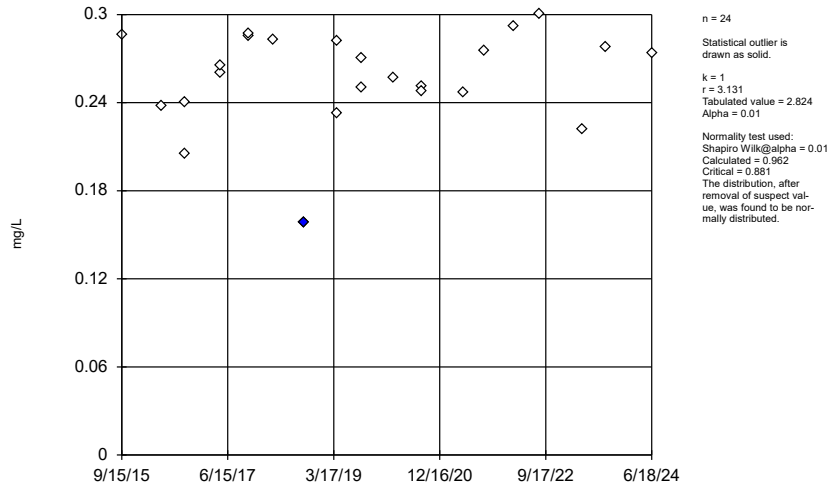
MW-14,MW-17



Constituent: Arsenic Analysis Run 7/22/2024 4:07 PM View: 2024SSN - BG Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Rosner's Outlier Test / Ohio EPA 0715 Outlier Algorithm, Pooled Background

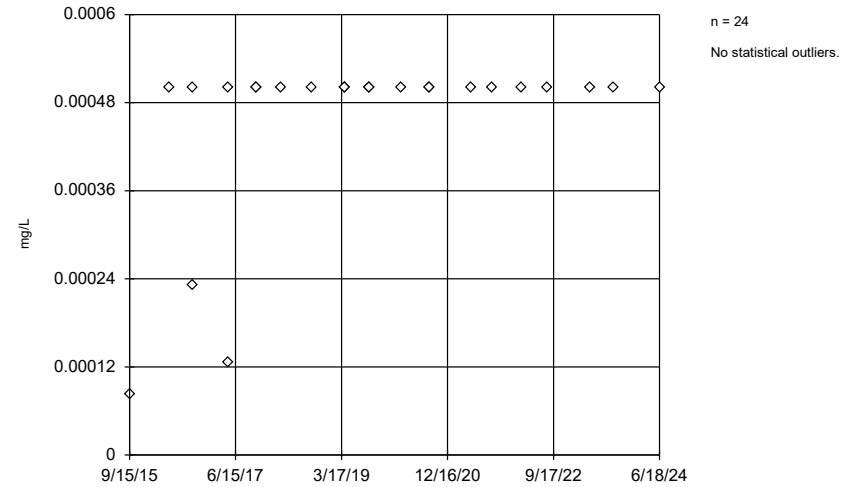
MW-14,MW-17



Constituent: Barium Analysis Run 7/22/2024 4:07 PM View: 2024SSN - BG Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

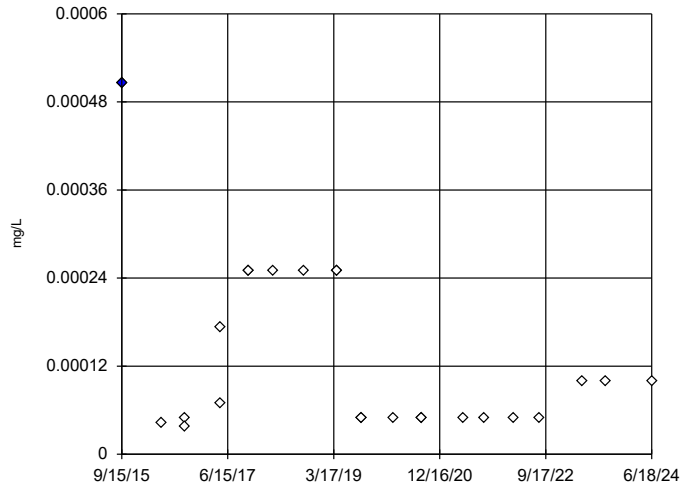
MW-14,MW-17



Constituent: Beryllium Analysis Run 7/22/2024 4:07 PM View: 2024SSN - BG Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-14,MW-17

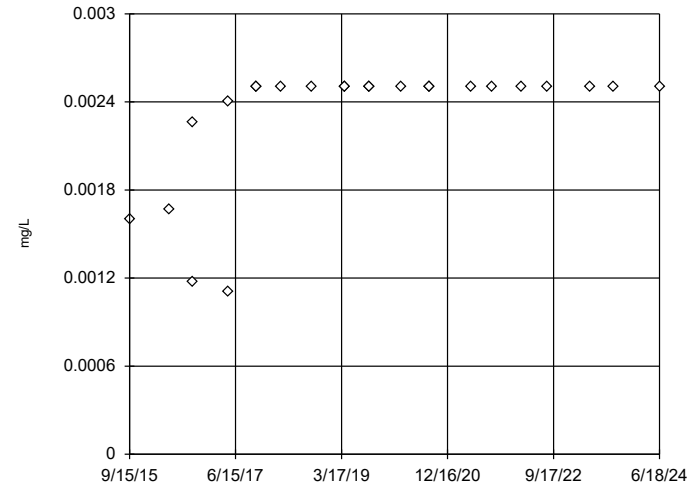


n = 24
 Statistical outlier is drawn as solid.
 Outlier per Ohio method.
 Normality test used:
 Shapiro Wilk@alpha = 0.01
 Calculated = 0.962
 Critical = 0.881
 The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Cadmium Analysis Run 7/22/2024 4:07 PM View: 2024SSN - BG Outliers
 Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-14,MW-17

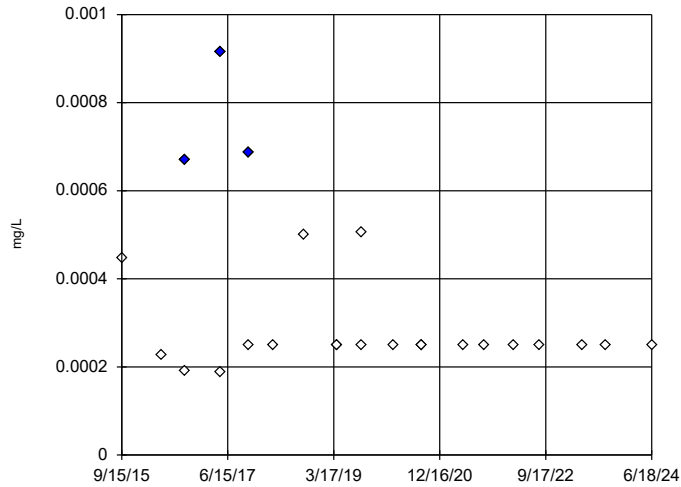


n = 24
 No statistical outliers.
 Normality test used:
 Shapiro Wilk@alpha = 0.01
 Calculated = 0.962
 Critical = 0.881
 The distribution was found to be normally distributed.

Constituent: Chromium Analysis Run 7/22/2024 4:07 PM View: 2024SSN - BG Outliers
 Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-14,MW-17

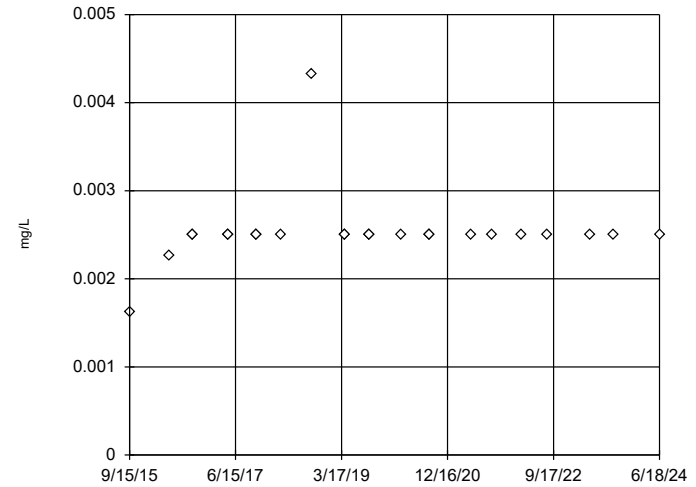


n = 24
 Outliers are drawn as solid.
 Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.
 High cutoff = 0.000646, low cutoff = -0.000047, based on IQR multiplier of 3.

Constituent: Cobalt Analysis Run 7/22/2024 4:07 PM View: 2024SSN - BG Outliers
 Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-14,MW-17

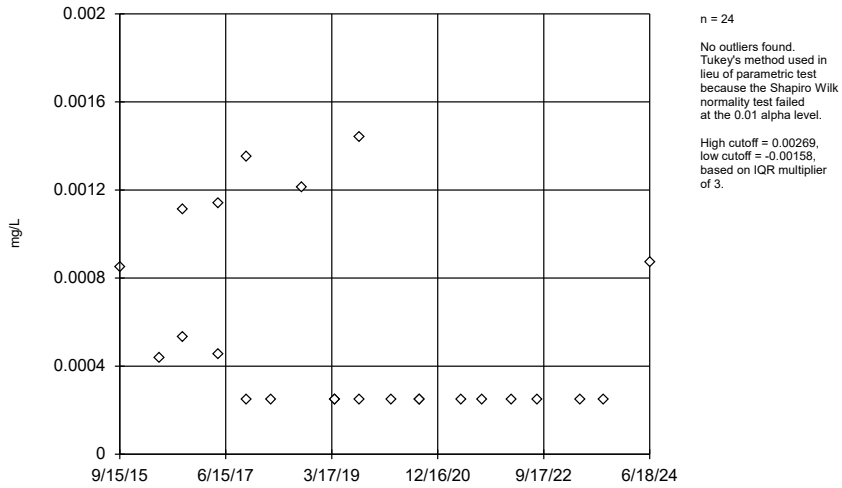


n = 24
 No statistical outliers.

Constituent: Copper Analysis Run 7/22/2024 4:07 PM View: 2024SSN - BG Outliers
 Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

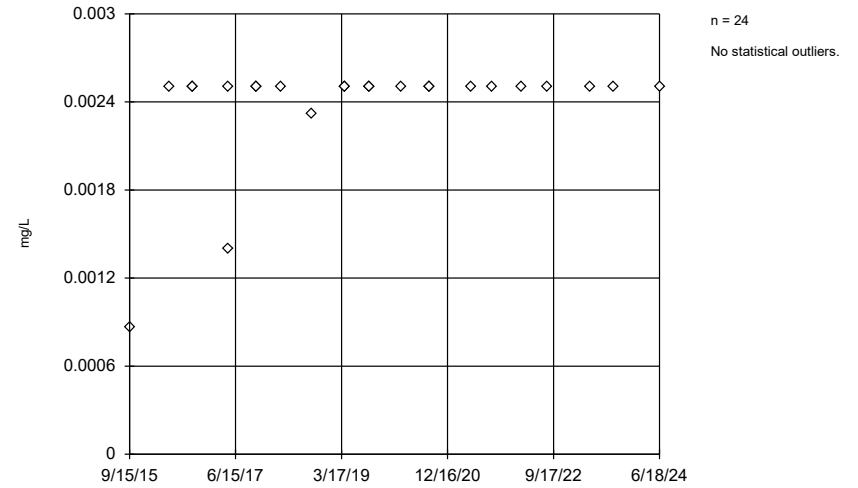
MW-14,MW-17



Constituent: Lead Analysis Run 7/22/2024 4:07 PM View: 2024SSN - BG Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

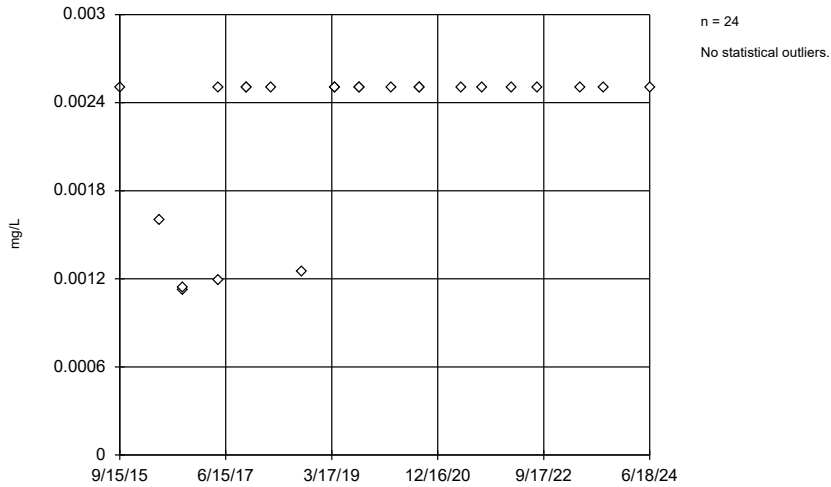
MW-14,MW-17



Constituent: Nickel Analysis Run 7/22/2024 4:07 PM View: 2024SSN - BG Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

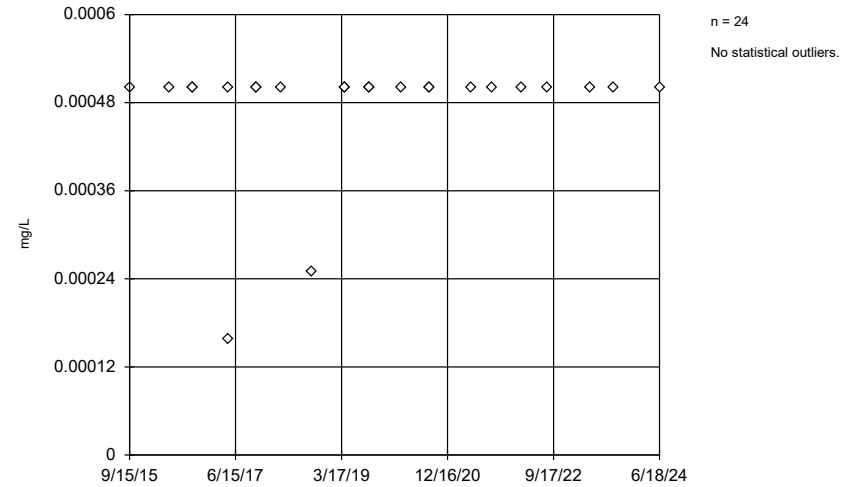
MW-14,MW-17



Constituent: Selenium Analysis Run 7/22/2024 4:07 PM View: 2024SSN - BG Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

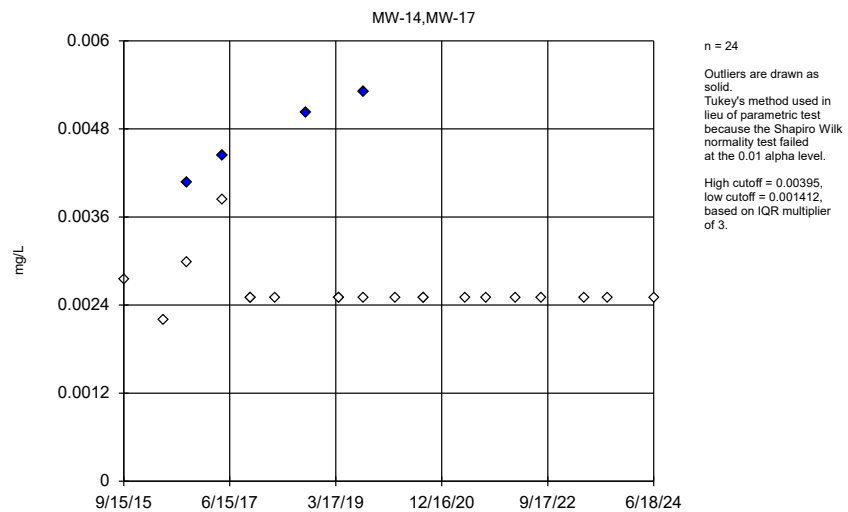
Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-14,MW-17



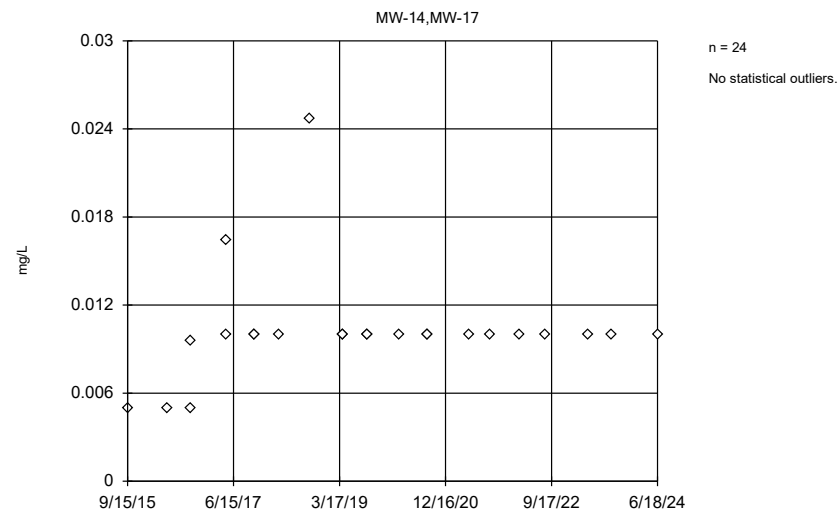
Constituent: Silver Analysis Run 7/22/2024 4:07 PM View: 2024SSN - BG Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background



Constituent: Vanadium Analysis Run 7/22/2024 4:07 PM View: 2024SSN - BG Outliers
 Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background



Constituent: Zinc Analysis Run 7/22/2024 4:07 PM View: 2024SSN - BG Outliers
 Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Outlier Analysis

Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master Printed 7/22/2024, 4:15 PM

<u>Constituent</u>	<u>Well</u>	<u>Outlier</u>	<u>Value(s)</u>	<u>Date(s)</u>	<u>Method</u>	<u>Alpha</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Normality Test</u>
Antimony (mg/L)	MW-14,MW-17	Yes	0.002695	n/a w/combined bg	OH	NaN	24	0.0007827	0.0004993	n/a
Arsenic (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.001026	0.0001868	n/a
Barium (mg/L)	MW-14,MW-17	Yes	0.158	n/a w/combined bg	Rosner/OH	0.01	24	0.2578	0.03186	ShapiroWilk
Beryllium (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.0004558	0.0001215	n/a
Cadmium (mg/L)	MW-14,MW-17	Yes	0.000506	n/a w/combined bg	OH	NaN	24	0.0001303	0.0001173	n/a
Chromium (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.0023	0.000433	n/a
Cobalt (mg/L)	MW-14,MW-17	Yes	0.000671,0.000915,0.000687	n/a w/combined bg	NP (nrm)/OH	NaN	24	0.0003368	0.0001871	ShapiroWilk
Copper (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.002529	0.0004234	n/a
Lead (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	NP (nrm)/OH	NaN	24	0.0005372	0.000417	ShapiroWilk
Nickel (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.002378	0.0003942	n/a
Selenium (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.002242	0.0005204	n/a
Silver (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.0004753	0.00008466	n/a
Vanadium (mg/L)	MW-14,MW-17	Yes	0.00503,0.00531,0.00407,0.00443	n/a w/combined bg	NP (nrm)/OH	NaN	24	0.002942	0.000884	ShapiroWilk
Zinc (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	24	0.01024	0.003793	n/a

Prediction Limit Table and Graphs

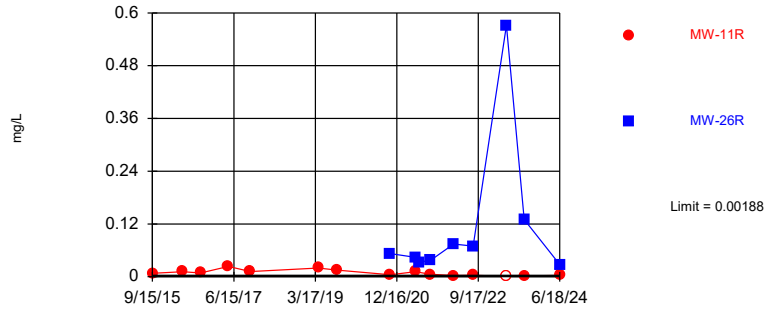
Prediction Limit

Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master Printed 7/22/2024, 4:32 PM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MW-11R	0.00188	n/a	6/18/2024	0.00315	Yes	24	MW-17,MW-14	n/a	n/a	87.5	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2
Arsenic (mg/L)	MW-26R	0.00188	n/a	6/18/2024	0.0276	Yes	24	MW-17,MW-14	n/a	n/a	87.5	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2
Barium (mg/L)	MW-10R	0.3344	n/a	6/18/2024	0.534	Yes	24	MW-14,MW-17	0.2578	0.03186	0	None	No	0.0003762	Param Inter 1 of 2
Barium (mg/L)	MW-11R	0.3344	n/a	6/18/2024	0.642	Yes	24	MW-14,MW-17	0.2578	0.03186	0	None	No	0.0003762	Param Inter 1 of 2
Barium (mg/L)	MW-26R	0.3344	n/a	6/18/2024	0.762	Yes	24	MW-14,MW-17	0.2578	0.03186	0	None	No	0.0003762	Param Inter 1 of 2
Barium (mg/L)	MW-27R	0.3344	n/a	6/18/2024	0.722	Yes	24	MW-14,MW-17	0.2578	0.03186	0	None	No	0.0003762	Param Inter 1 of 2
Barium (mg/L)	MW-29	0.3344	n/a	6/18/2024	0.33	No	24	MW-14,MW-17	0.2578	0.03186	0	None	No	0.0003762	Param Inter 1 of 2
Barium (mg/L)	MW-7	0.3344	n/a	6/18/2024	0.223	No	24	MW-14,MW-17	0.2578	0.03186	0	None	No	0.0003762	Param Inter 1 of 2
Barium (mg/L)	MW-8R	0.3344	n/a	6/18/2024	0.446	Yes	24	MW-14,MW-17	0.2578	0.03186	0	None	No	0.0003762	Param Inter 1 of 2
Cadmium (mg/L)	MW-8R	0.000506	n/a	6/18/2024	0.000261	No	24	MW-17,MW-14	n/a	n/a	75	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2
Cobalt (mg/L)	MW-11R	0.000915	n/a	6/18/2024	0.00238	Yes	24	MW-14,MW-17	n/a	n/a	66.67	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2
Cobalt (mg/L)	MW-26R	0.000915	n/a	6/18/2024	0.00506	Yes	24	MW-14,MW-17	n/a	n/a	66.67	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2
Cobalt (mg/L)	MW-27R	0.000915	n/a	6/18/2024	0.00959	Yes	24	MW-14,MW-17	n/a	n/a	66.67	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2
Cobalt (mg/L)	MW-8R	0.000915	n/a	6/18/2024	0.000829	No	24	MW-14,MW-17	n/a	n/a	66.67	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2
Copper (mg/L)	MW-8R	0.00432	n/a	6/18/2024	0.00626	Yes	24	MW-17,MW-14	n/a	n/a	87.5	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-10R	0.00144	n/a	6/18/2024	0.000676	No	24	MW-14,MW-17	n/a	n/a	58.33	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-7	0.00144	n/a	6/18/2024	0.0007	No	24	MW-14,MW-17	n/a	n/a	58.33	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-8R	0.00144	n/a	6/18/2024	0.00121	No	24	MW-14,MW-17	n/a	n/a	58.33	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2
Nickel (mg/L)	MW-11R	0.0025	n/a	6/18/2024	0.00986	Yes	24	MW-17,MW-14	n/a	n/a	87.5	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2
Nickel (mg/L)	MW-26R	0.0025	n/a	6/18/2024	0.0153	Yes	24	MW-17,MW-14	n/a	n/a	87.5	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2
Nickel (mg/L)	MW-27R	0.0025	n/a	6/18/2024	0.01765	Yes	24	MW-17,MW-14	n/a	n/a	87.5	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2
Nickel (mg/L)	MW-8R	0.0025	n/a	6/18/2024	0.0128	Yes	24	MW-17,MW-14	n/a	n/a	87.5	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2
Vanadium (mg/L)	MW-8R	0.00531	n/a	6/18/2024	0.00538	Yes	24	MW-17,MW-14	n/a	n/a	66.67	n/a	n/a	0.002808	NP Inter (NDs) 1 of 2

Exceeds Limit: MW-11R, MW-26R

Prediction Limit
Interwell Non-parametric

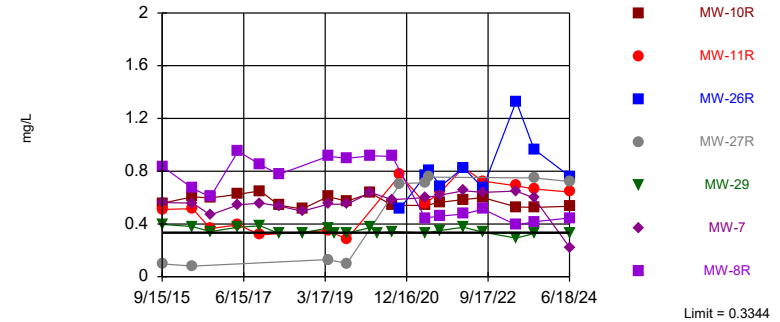


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 87.5% NDs. Annual per-constituent alpha = 0.0547. Individual comparison alpha = 0.002808 (1 of 2). Comparing 2 points to limit. Assumes 8 future values.

Constituent: Arsenic Analysis Run 7/22/2024 4:31 PM View: 2024SSN - DM and AM Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Exceeds Limit: MW-10R, MW-11R, MW-26R, MW-27R, MW-8R

Prediction Limit
Interwell Parametric

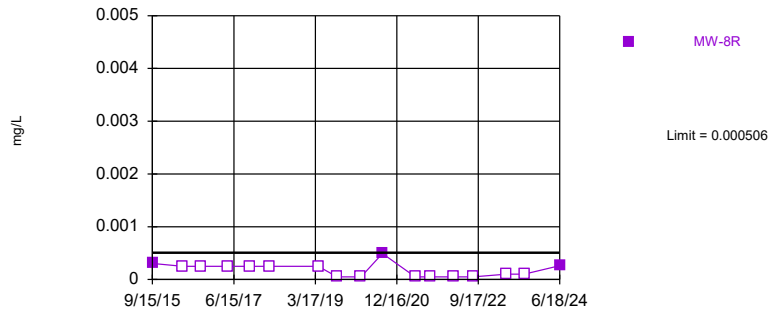


Background Data Summary: Mean=0.2578, Std. Dev.=0.03186, n=24. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8945, critical = 0.884. Kappa = 2.404 (c=14, w=10, 1 of 2, event alpha = 0.05132). Report alpha = 0.003756. Individual comparison alpha = 0.0003762. Comparing 7 points to limit. Assumes 3 future values.

Constituent: Barium Analysis Run 7/22/2024 4:31 PM View: 2024SSN - DM and AM Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Within Limit

Prediction Limit
Interwell Non-parametric

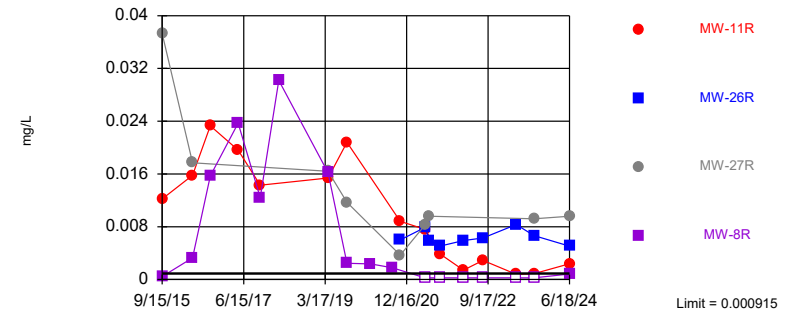


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 75% NDs. Annual per-constituent alpha = 0.0547. Individual comparison alpha = 0.002808 (1 of 2). Assumes 9 future values.

Constituent: Cadmium Analysis Run 7/22/2024 4:31 PM View: 2024SSN - DM and AM Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Exceeds Limit: MW-11R, MW-26R, MW-27R

Prediction Limit
Interwell Non-parametric

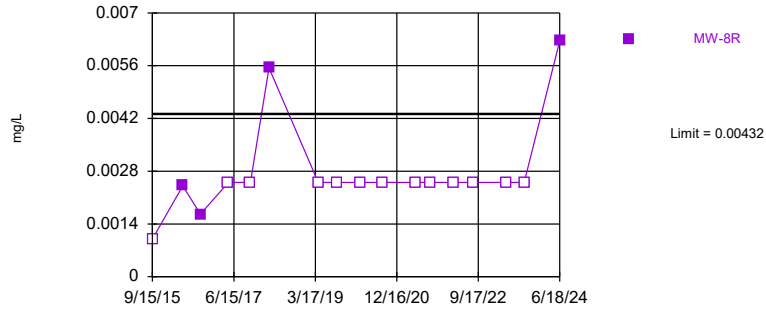


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 66.67% NDs. Annual per-constituent alpha = 0.0547. Individual comparison alpha = 0.002808 (1 of 2). Comparing 4 points to limit. Assumes 6 future values.

Constituent: Cobalt Analysis Run 7/22/2024 4:31 PM View: 2024SSN - DM and AM Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Exceeds Limit: MW-8R

Prediction Limit
Interwell Non-parametric

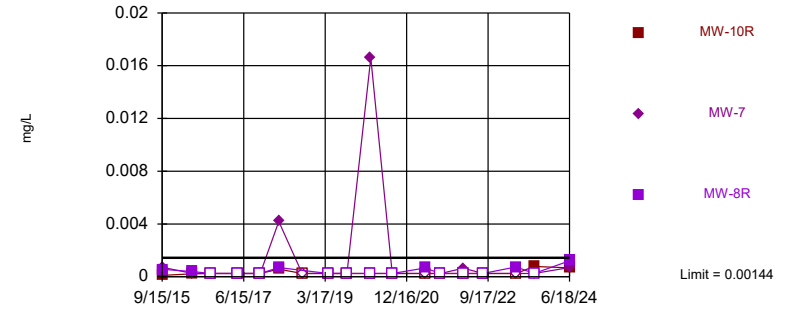


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 87.5% NDs. Annual per-constituent alpha = 0.0547. Individual comparison alpha = 0.002808 (1 of 2). Assumes 9 future values.

Constituent: Copper Analysis Run 7/22/2024 4:31 PM View: 2024SSN - DM and AM Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Within Limit

Prediction Limit
Interwell Non-parametric

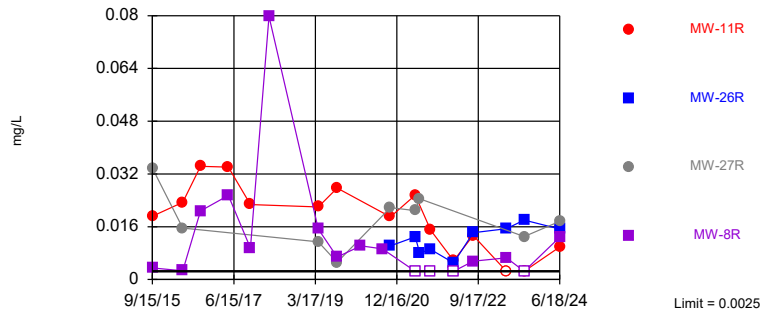


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 58.33% NDs. Annual per-constituent alpha = 0.0547. Individual comparison alpha = 0.002808 (1 of 2). Comparing 3 points to limit. Assumes 7 future values.

Constituent: Lead Analysis Run 7/22/2024 4:31 PM View: 2024SSN - DM and AM Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Exceeds Limit: MW-11R, MW-26R, MW-27R, MW-8R

Prediction Limit
Interwell Non-parametric

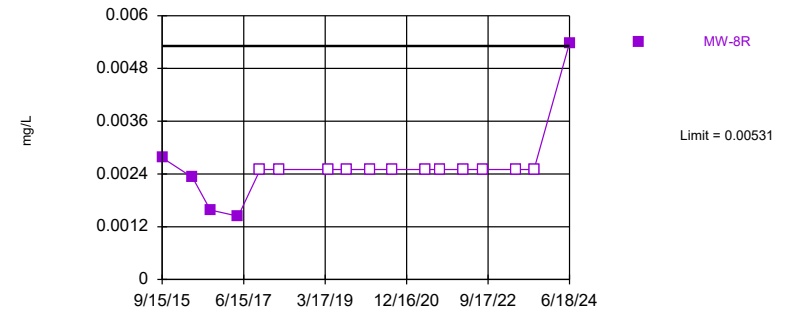


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 87.5% NDs. Annual per-constituent alpha = 0.0547. Individual comparison alpha = 0.002808 (1 of 2). Comparing 4 points to limit. Assumes 6 future values.

Constituent: Nickel Analysis Run 7/22/2024 4:31 PM View: 2024SSN - DM and AM Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Exceeds Limit: MW-8R

Prediction Limit
Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 24 background values. 66.67% NDs. Annual per-constituent alpha = 0.0547. Individual comparison alpha = 0.002808 (1 of 2). Assumes 9 future values.

Constituent: Vanadium Analysis Run 7/22/2024 4:31 PM View: 2024SSN - DM and AM Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Mann-Kendall Trend Table and Graphs

Trend Test

Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN Printed 7/23/2024, 11:06 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
1,1-Dichloroethane (ug/L)	MW-10R	0.1811	16	21	No	8	0	0.01	NP
1,1-Dichloroethane (ug/L)	MW-26R	-0.6436	-24	-21	Yes	8	12.5	0.01	NP
1,1-Dichloroethane (ug/L)	MW-27R	0.619	23	21	Yes	8	25	0.01	NP
1,2-Dichloropropane (ug/L)	MW-27R	0	3	21	No	8	87.5	0.01	NP
1,4-Dichlorobenzene (ug/L)	MW-11R	0.2944	21	21	No	8	37.5	0.01	NP
Acetone (ug/L)	MW-27R	0	-1	-21	No	8	75	0.01	NP
Antimony (mg/L)	MW-7	0	5	21	No	8	87.5	0.01	NP
Antimony (mg/L)	MW-27R	0.00006484	11	21	No	8	87.5	0.01	NP
Arsenic (mg/L)	MW-8R	0	-7	-21	No	8	87.5	0.01	NP
Arsenic (mg/L)	MW-11R	-0.001215	-14	-21	No	8	12.5	0.01	NP
Arsenic (mg/L)	MW-25	0	-5	-21	No	8	87.5	0.01	NP
Arsenic (mg/L)	MW-26R	0.03331	6	21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-27R	-0.001585	-11	-21	No	8	25	0.01	NP
Barium (mg/L)	MW-7	0.001492	0	21	No	8	0	0.01	NP
Barium (mg/L)	MW-8R	-0.02468	-9	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-10R	-0.003407	-6	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-11R	-0.03185	-6	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-25	0.08692	14	21	No	8	0	0.01	NP
Barium (mg/L)	MW-26R	0.03934	4	21	No	8	0	0.01	NP
Barium (mg/L)	MW-27R	0.1025	20	21	No	8	0	0.01	NP
Barium (mg/L)	MW-28	-0.05882	-17	-21	No	8	0	0.01	NP
Benzene (ug/L)	MW-7	0	9	21	No	8	75	0.01	NP
Benzene (ug/L)	MW-8R	0	-7	-21	No	8	87.5	0.01	NP
Benzene (ug/L)	MW-11R	-0.358	-7	-21	No	8	25	0.01	NP
Benzene (ug/L)	MW-26R	-0.136	-9	-21	No	8	25	0.01	NP
Benzene (ug/L)	MW-28	-0.1525	-11	-21	No	8	37.5	0.01	NP
beta-BHC (ug/L)	MW-28	0.002654	11	21	No	8	87.5	0.01	NP
Cadmium (mg/L)	MW-7	0.000006555	6	21	No	8	75	0.01	NP
Cadmium (mg/L)	MW-8R	0.00001066	7	21	No	8	75	0.01	NP
Cadmium (mg/L)	MW-10R	0.000006555	9	21	No	8	87.5	0.01	NP
Cadmium (mg/L)	MW-11R	0	5	21	No	8	87.5	0.01	NP
Cadmium (mg/L)	MW-26R	0.0000173	8	21	No	8	62.5	0.01	NP
Cadmium (mg/L)	MW-27R	-0.000009245	-5	-21	No	8	87.5	0.01	NP
Cadmium (mg/L)	MW-28	0.00005769	13	21	No	8	25	0.01	NP
Carbon disulfide (ug/L)	MW-27R	0	4	21	No	8	62.5	0.01	NP
Chlorobenzene (ug/L)	MW-27R	0.4731	20	21	No	8	37.5	0.01	NP
Chloroethane (ug/L)	MW-8R	0	-7	-21	No	8	87.5	0.01	NP
Chloroethane (ug/L)	MW-11R	0	-5	-21	No	8	87.5	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-7	0.05085	4	21	No	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-8R	1.098	10	21	No	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-10R	1.547	18	21	No	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-11R	0.2652	17	21	No	8	12.5	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-26R	-9.833	-16	-21	No	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-27R	7.549	25	21	Yes	8	25	0.01	NP
Cobalt (mg/L)	MW-7	0	-1	-21	No	8	87.5	0.01	NP
Cobalt (mg/L)	MW-8R	0	-1	-21	No	8	75	0.01	NP
Cobalt (mg/L)	MW-11R	-0.001844	-18	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-26R	-0.00003094	-2	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-27R	-0.001079	-10	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-28	-0.0002915	-4	-21	No	8	0	0.01	NP

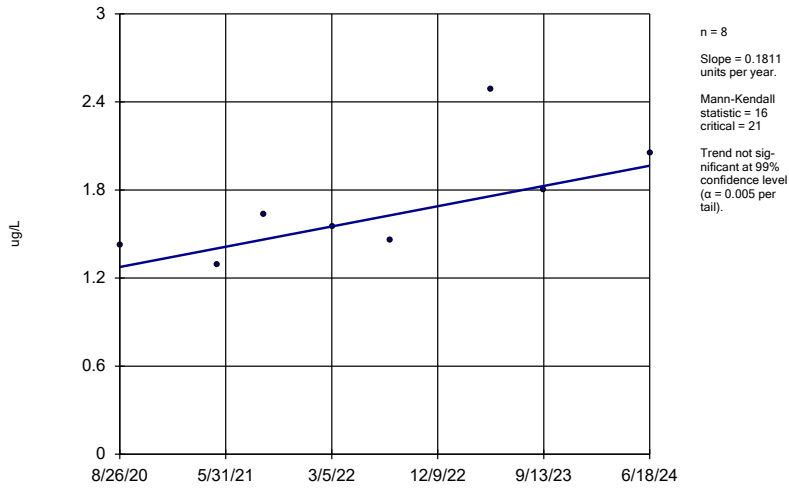
Trend Test

Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN Printed 7/23/2024, 11:06 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
Copper (mg/L)	MW-8R	0	7	21	No	8	87.5	0.01	NP
Copper (mg/L)	MW-11R	0	1	21	No	8	87.5	0.01	NP
Copper (mg/L)	MW-25	0	5	21	No	8	87.5	0.01	NP
Copper (mg/L)	MW-26R	0	-7	-21	No	8	87.5	0.01	NP
Lead (mg/L)	MW-7	0	7	21	No	8	75	0.01	NP
Lead (mg/L)	MW-8R	0	8	21	No	8	62.5	0.01	NP
Lead (mg/L)	MW-10R	0	11	21	No	8	75	0.01	NP
Lead (mg/L)	MW-11R	0	-13	-21	No	8	75	0.01	NP
Lead (mg/L)	MW-25	0	-7	-21	No	8	87.5	0.01	NP
Lead (mg/L)	MW-26R	0	0	21	No	8	62.5	0.01	NP
Lead (mg/L)	MW-27R	0.0001341	5	21	No	8	25	0.01	NP
Mercury (mg/L)	MW-8R	0.00005867	4	8	No	4	25	0.01	NP
Nickel (mg/L)	MW-8R	0.0004615	6	21	No	8	50	0.01	NP
Nickel (mg/L)	MW-11R	-0.004891	-17	-21	No	8	25	0.01	NP
Nickel (mg/L)	MW-26R	0.002311	14	21	No	8	0	0.01	NP
Nickel (mg/L)	MW-27R	0.001131	6	21	No	8	0	0.01	NP
Nickel (mg/L)	MW-28	-0.001365	-2	-21	No	8	0	0.01	NP
Thallium (mg/L)	MW-7	0	-3	-21	No	8	87.5	0.01	NP
Thallium (mg/L)	MW-26R	0	3	21	No	8	87.5	0.01	NP
Trichloroethene (ug/L)	MW-27R	0.7074	23	21	Yes	8	37.5	0.01	NP
Vanadium (mg/L)	MW-8R	0	7	21	No	8	87.5	0.01	NP
Vanadium (mg/L)	MW-11R	0	-13	-21	No	8	75	0.01	NP
Vanadium (mg/L)	MW-25	0	-5	-21	No	8	87.5	0.01	NP
Vanadium (mg/L)	MW-26R	0	9	21	No	8	75	0.01	NP
Vanadium (mg/L)	MW-27R	0	11	21	No	8	75	0.01	NP
Vinyl chloride (ug/L)	MW-11R	-0.03054	-3	-21	No	8	37.5	0.01	NP
Zinc (mg/L)	MW-26R	0	2	21	No	8	62.5	0.01	NP

Sen's Slope Estimator

MW-10R

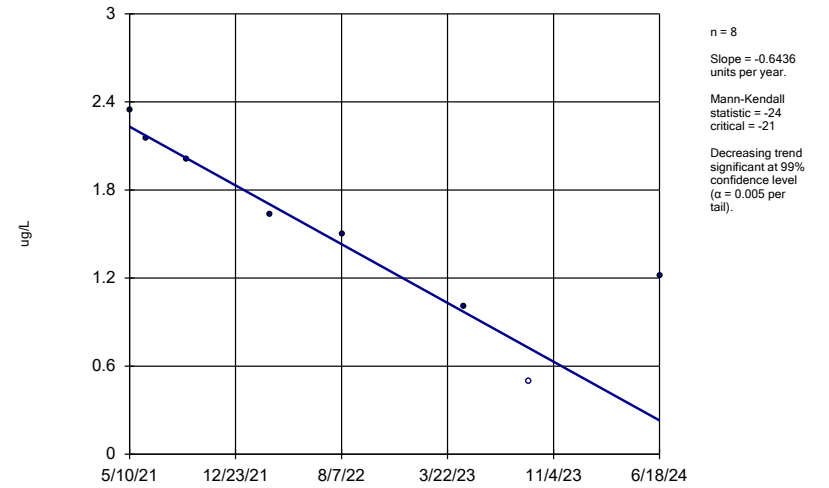


Constituent: 1,1-Dichloroethane Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Hollow symbols indicate censored values.

Sen's Slope Estimator

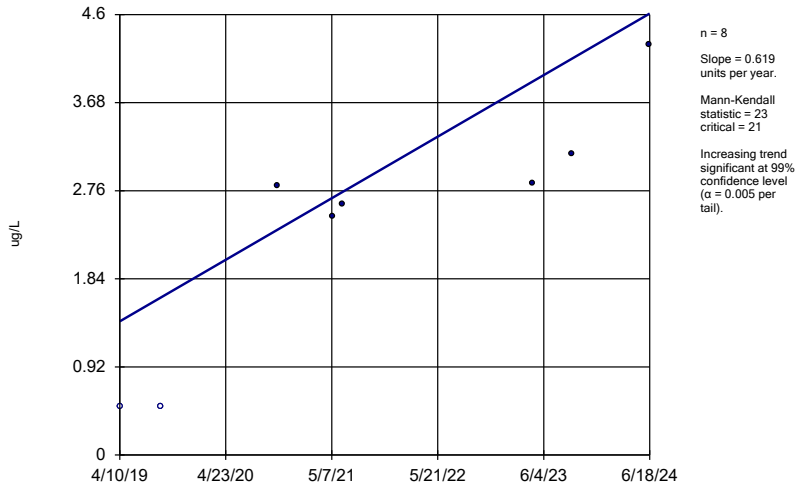
MW-26R



Constituent: 1,1-Dichloroethane Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

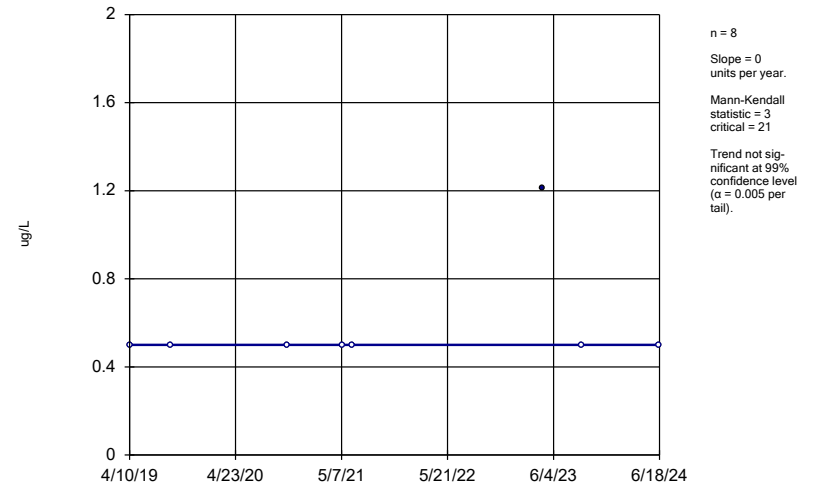
MW-27R



Constituent: 1,1-Dichloroethane Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

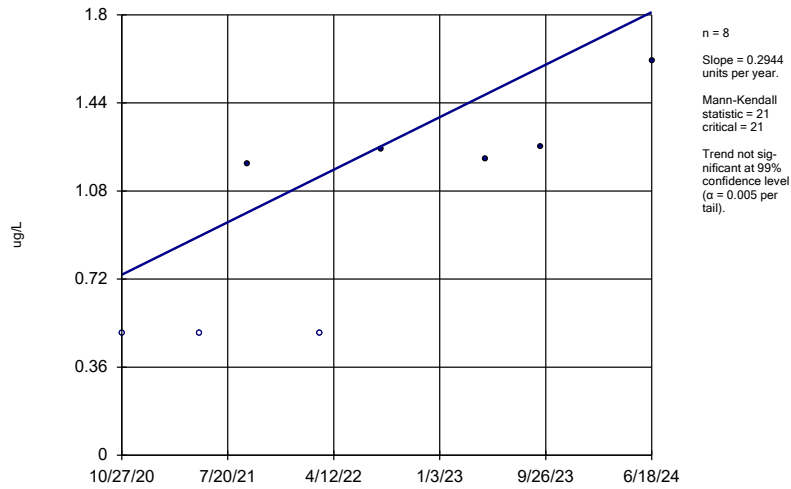
MW-27R



Constituent: 1,2-Dichloropropane Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

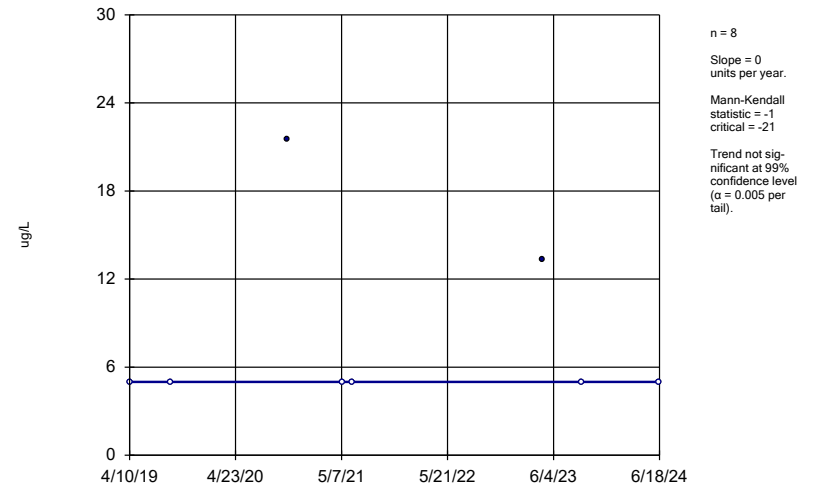
MW-11R



Constituent: 1,4-Dichlorobenzene Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

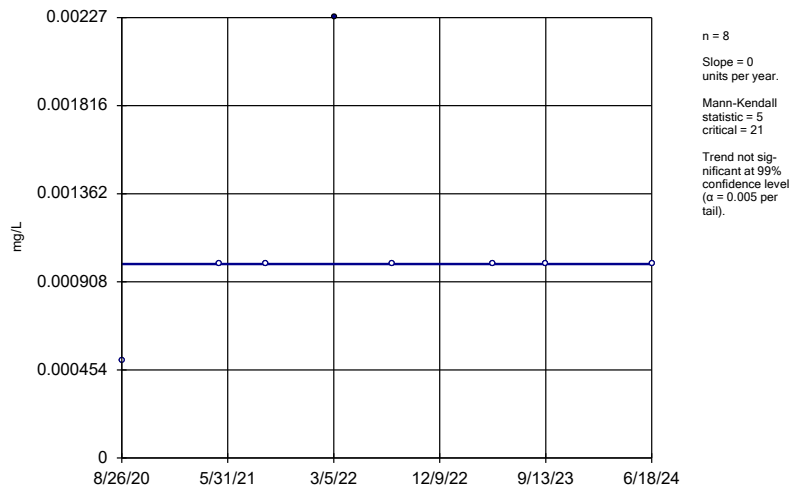
MW-27R



Constituent: Acetone Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

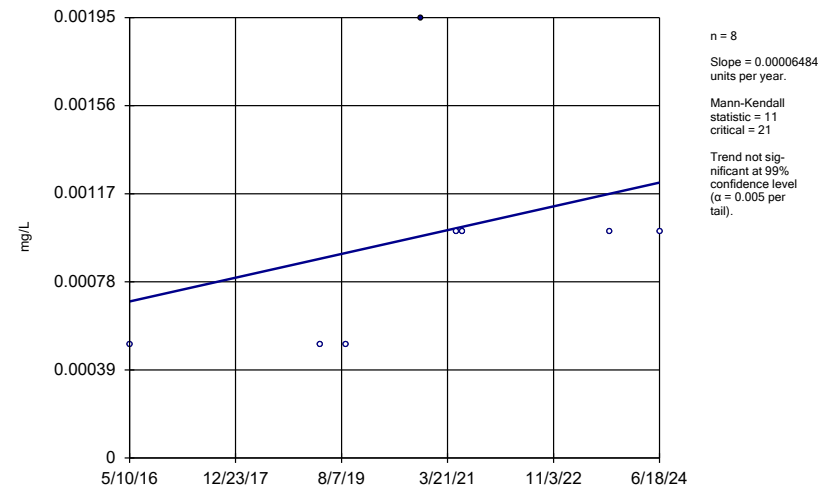
MW-7



Constituent: Antimony Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

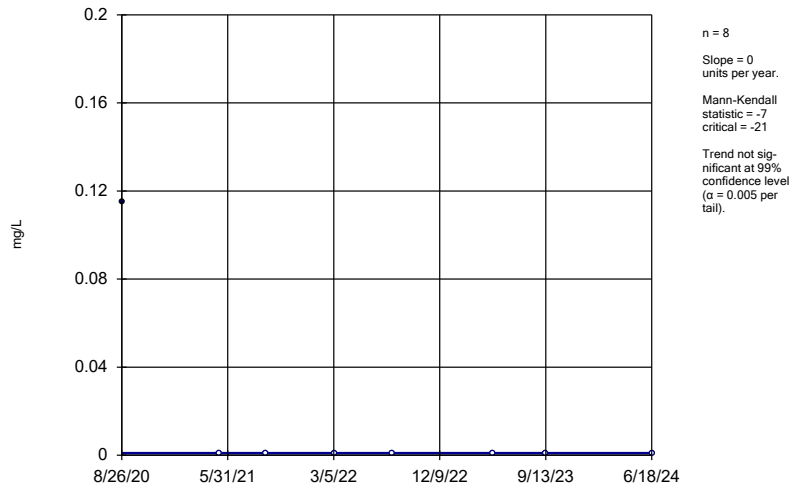
MW-27R



Constituent: Antimony Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

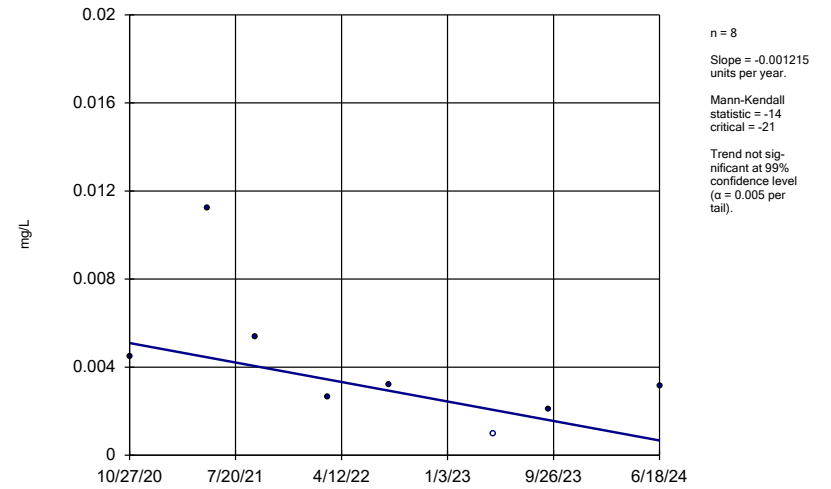
MW-8R



Constituent: Arsenic Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

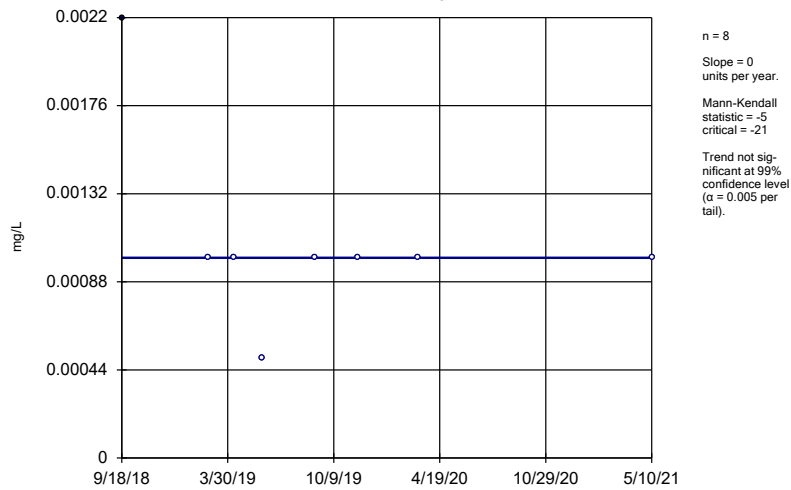
MW-11R



Constituent: Arsenic Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

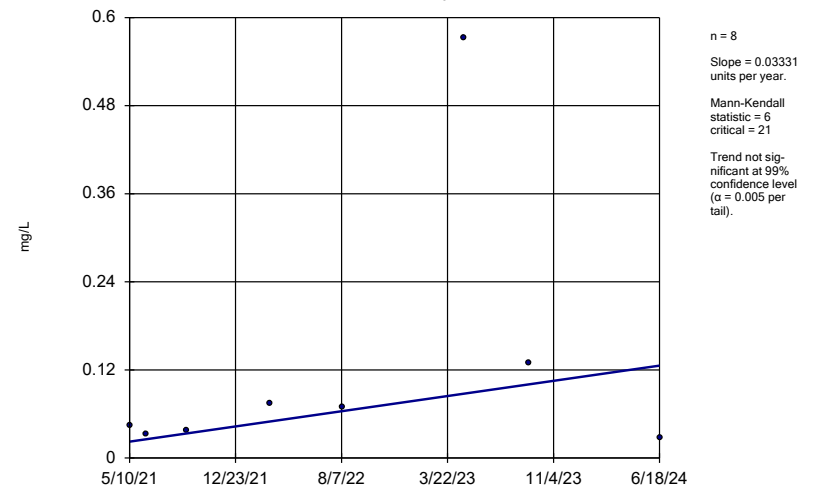
MW-25



Constituent: Arsenic Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

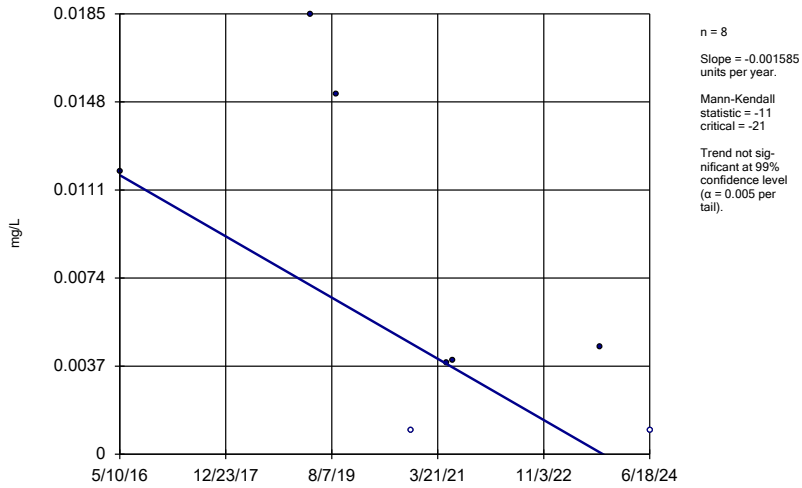
MW-26R



Constituent: Arsenic Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

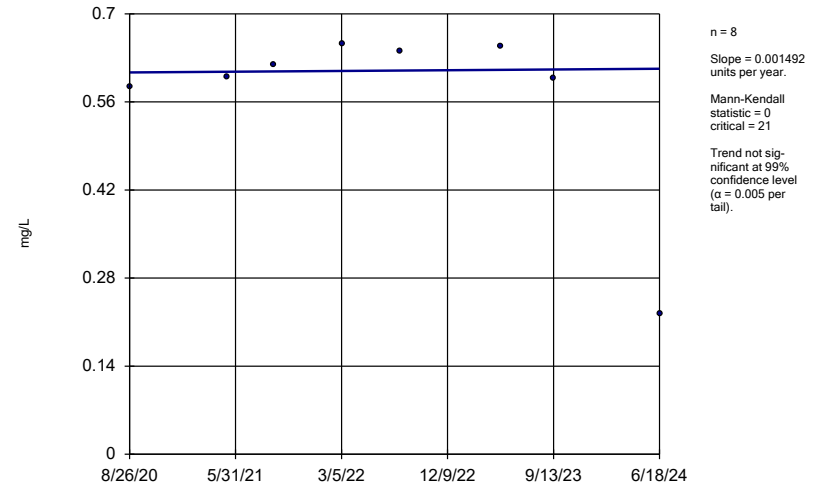
MW-27R



Constituent: Arsenic Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

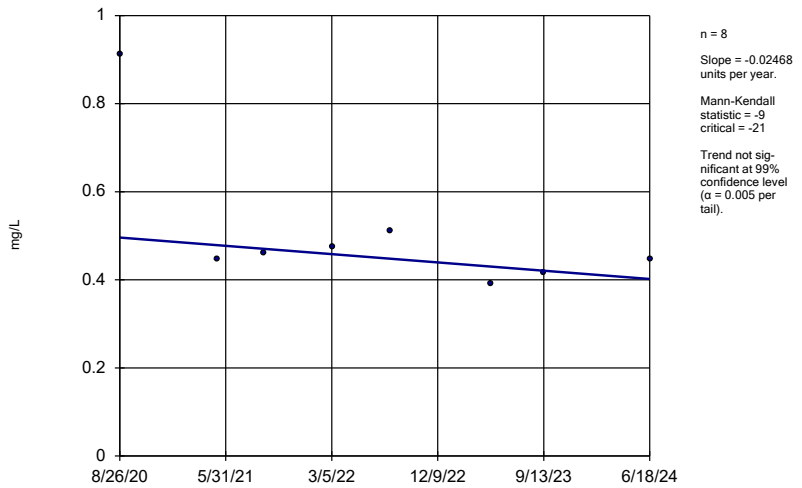
MW-7



Constituent: Barium Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

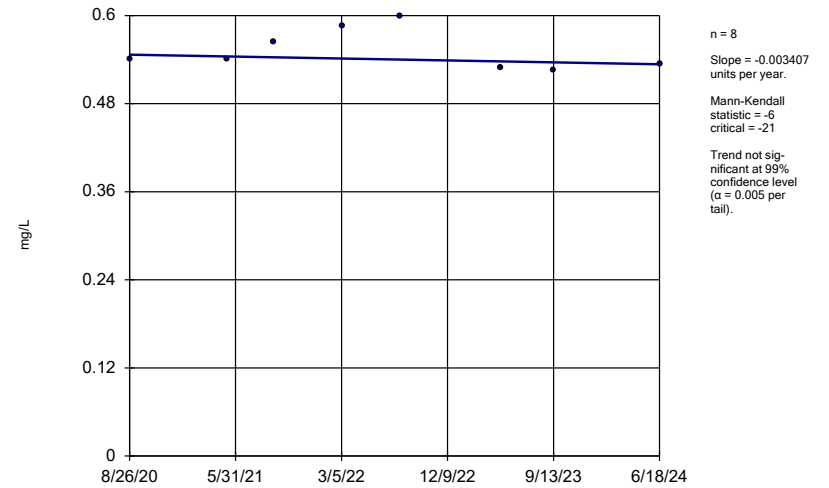
MW-8R



Constituent: Barium Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

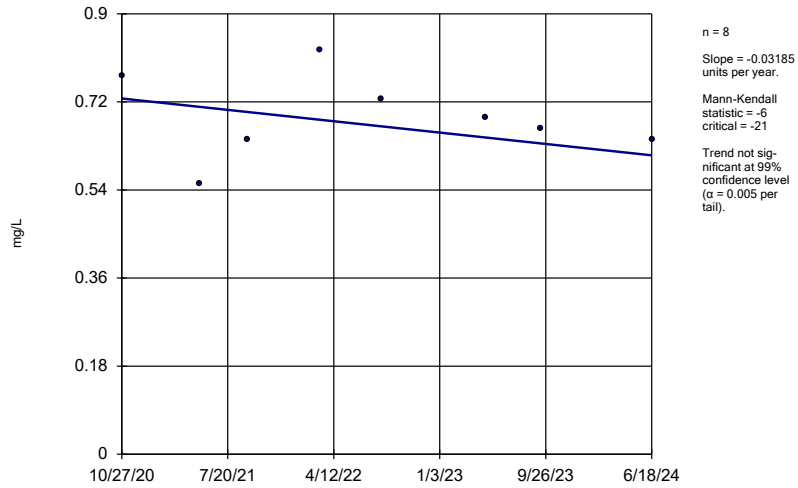
MW-10R



Constituent: Barium Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

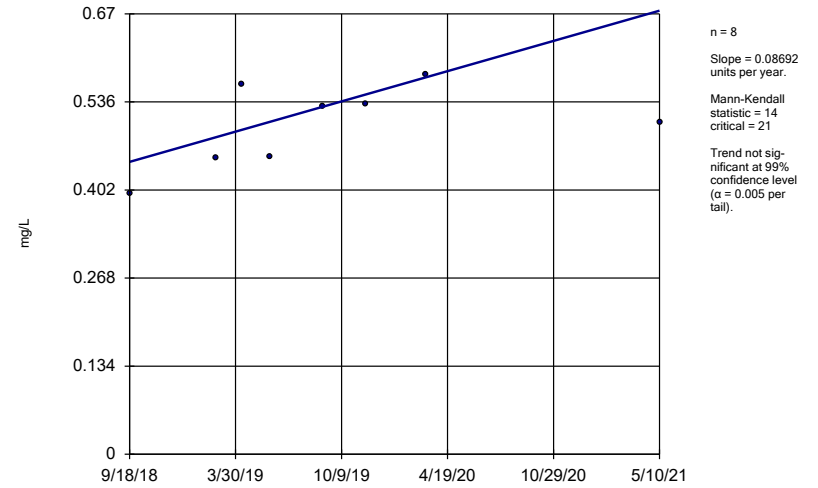
MW-11R



Constituent: Barium Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

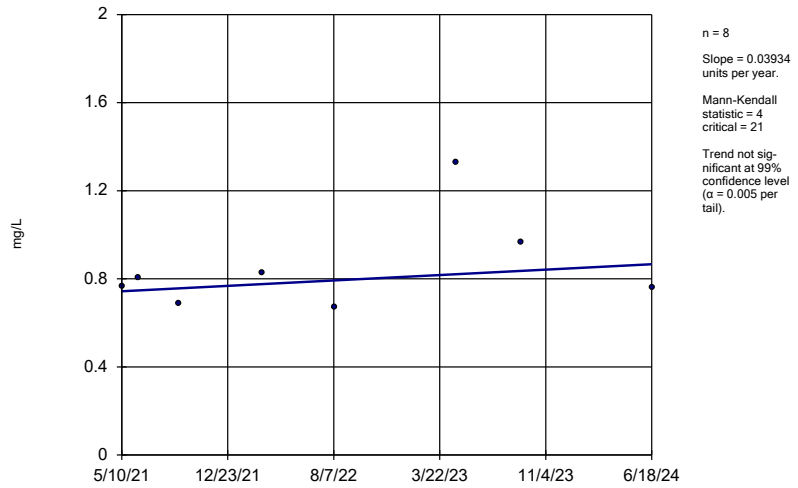
MW-25



Constituent: Barium Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

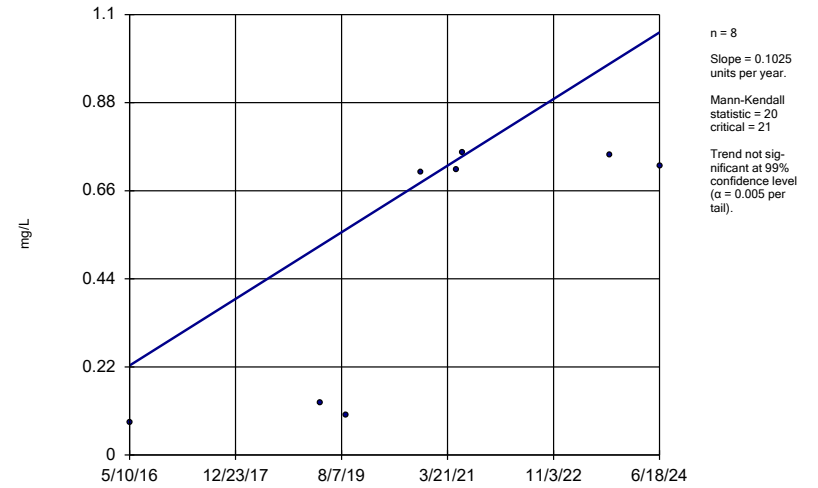
MW-26R



Constituent: Barium Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

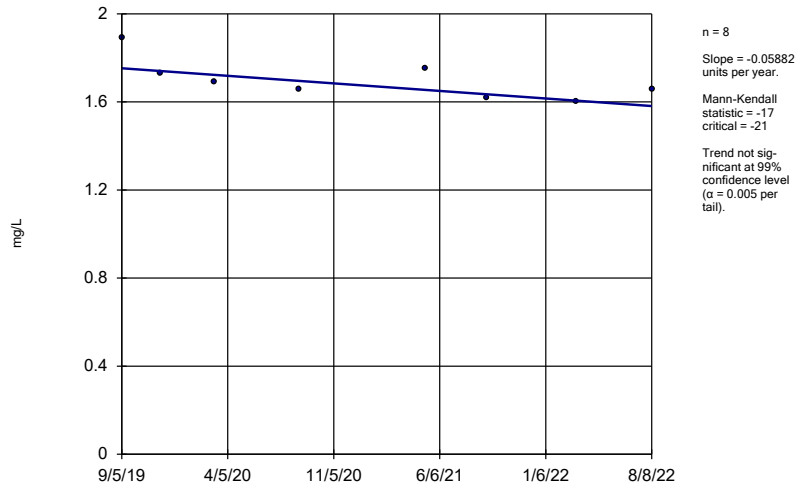
MW-27R



Constituent: Barium Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

MW-28

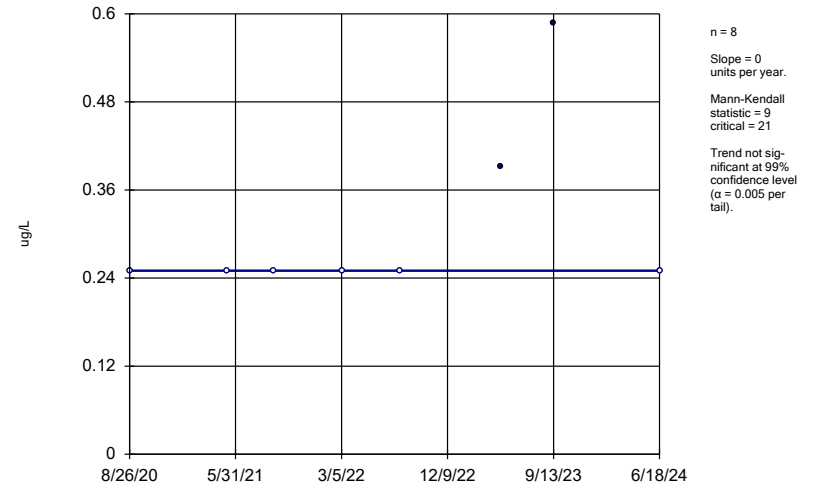


Constituent: Barium Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-7

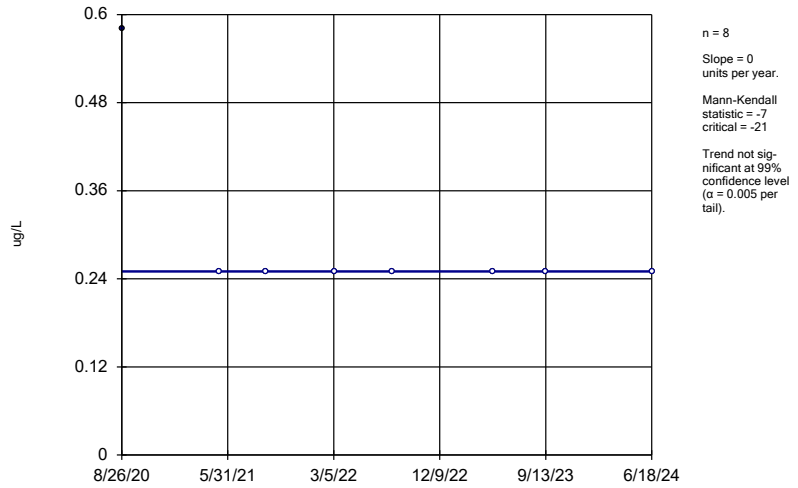


Constituent: Benzene Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-8R

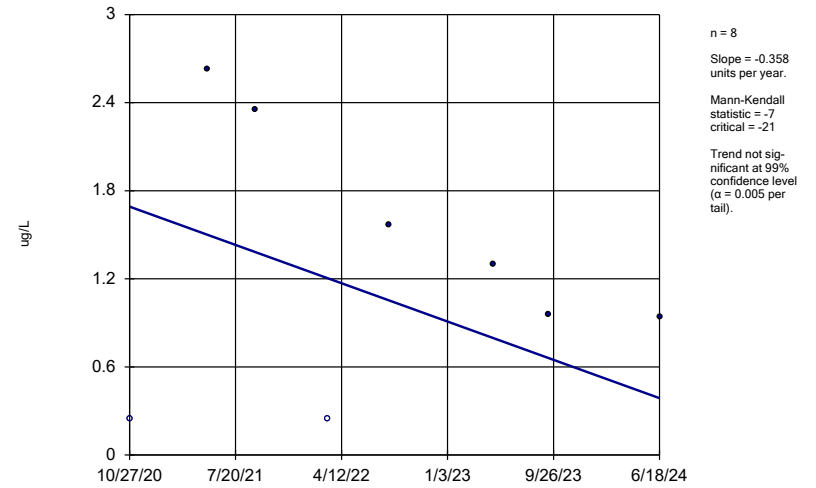


Constituent: Benzene Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Hollow symbols indicate censored values.

Sen's Slope Estimator

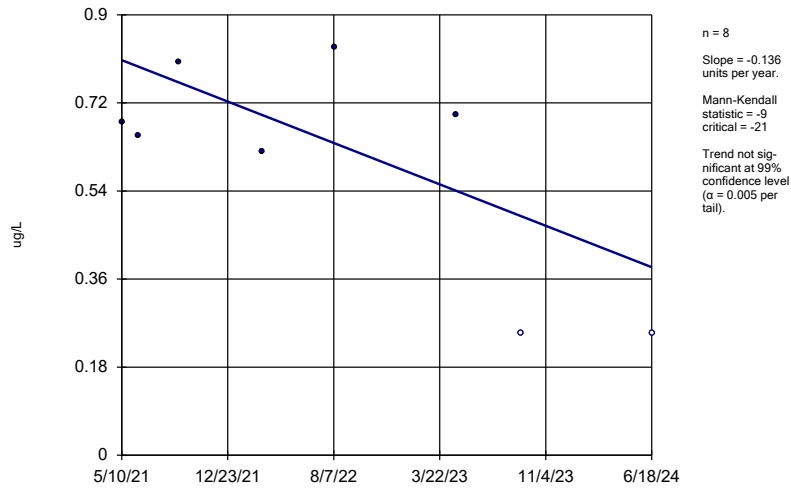
MW-11R



Constituent: Benzene Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

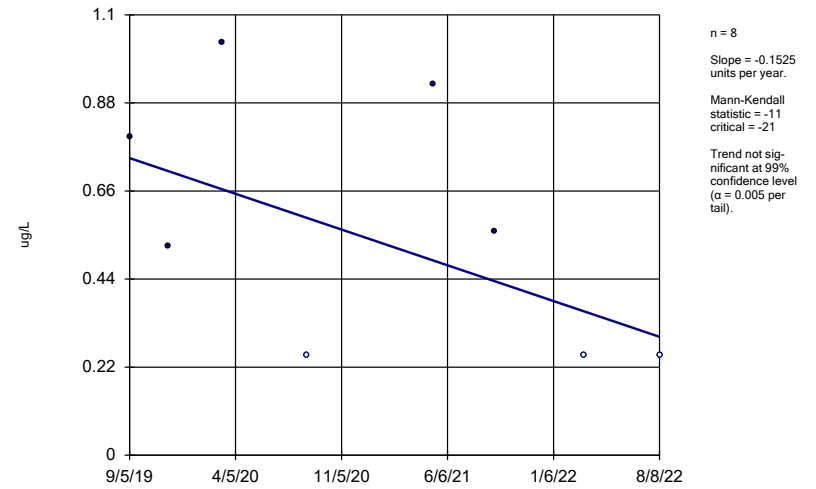
MW-26R



Constituent: Benzene Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

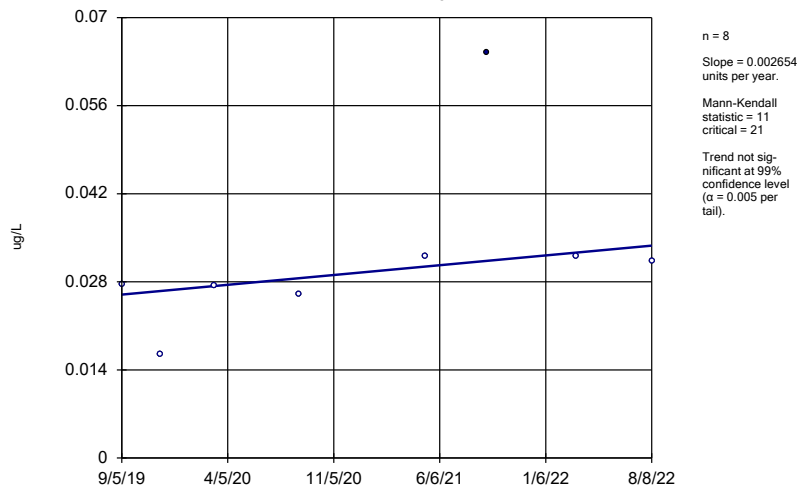
MW-28



Constituent: Benzene Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

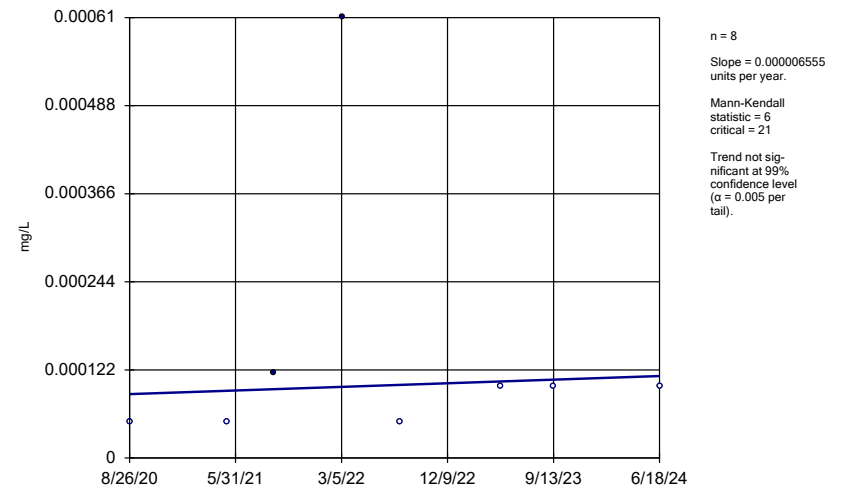
MW-28



Constituent: beta-BHC Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

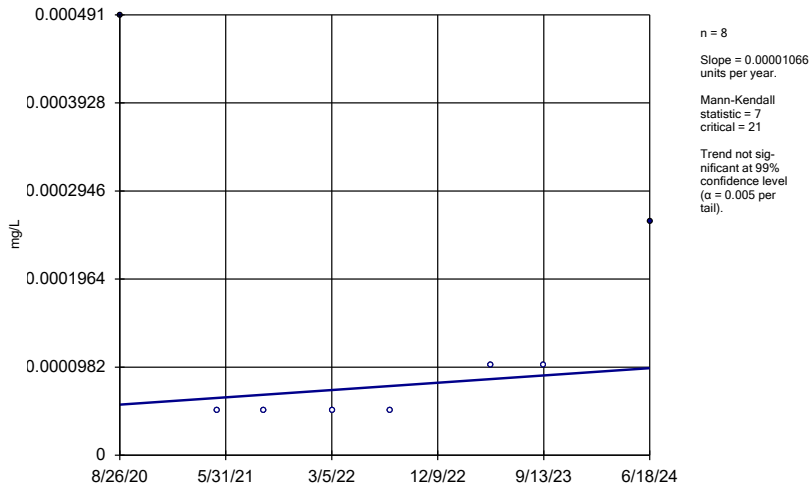
MW-7



Constituent: Cadmium Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

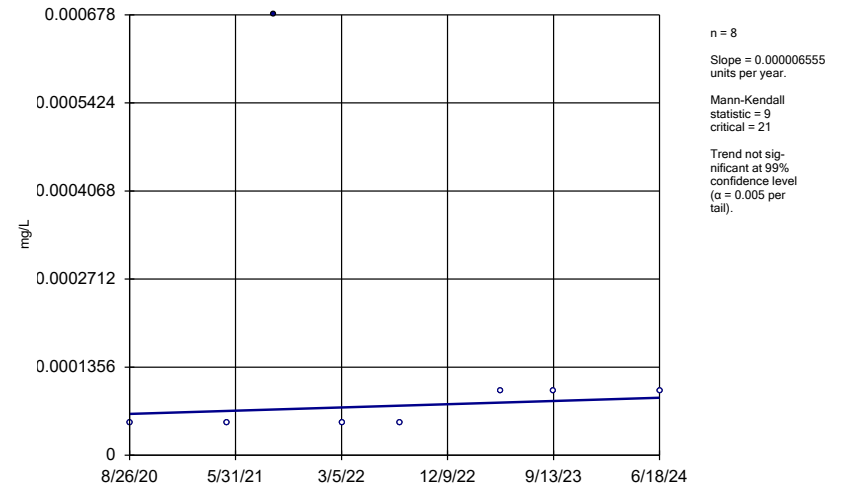
MW-8R



Constituent: Cadmium Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

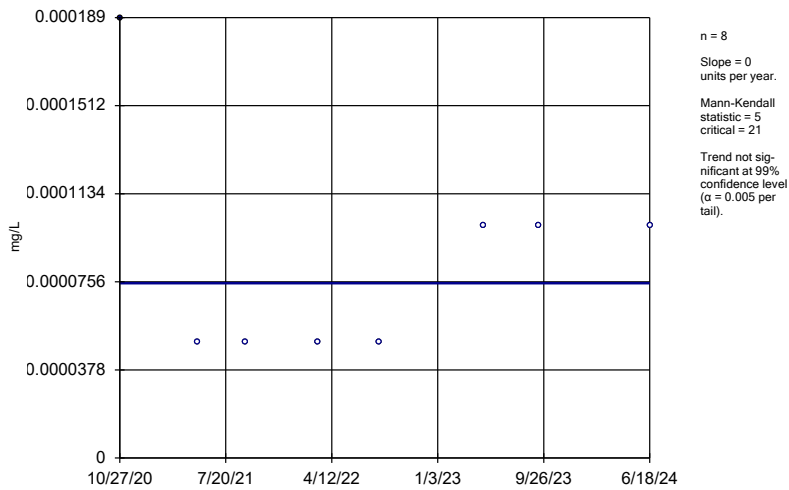
MW-10R



Constituent: Cadmium Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

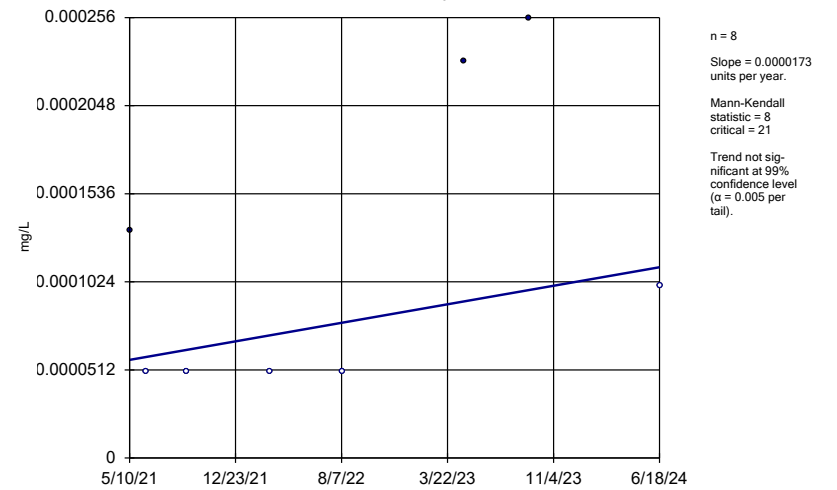
MW-11R



Constituent: Cadmium Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

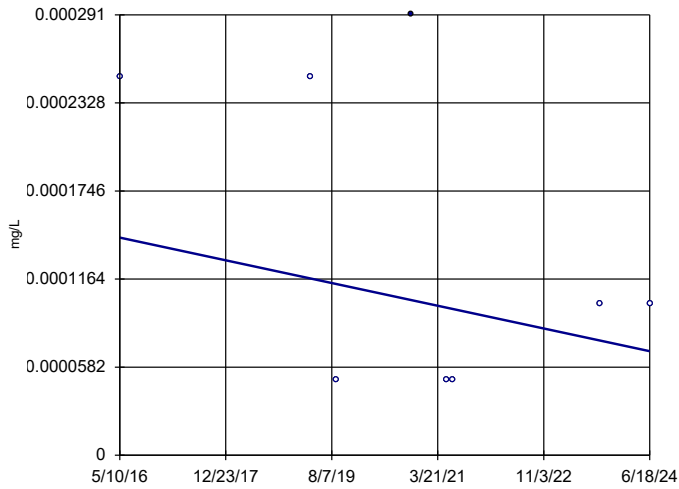
MW-26R



Constituent: Cadmium Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

MW-27R

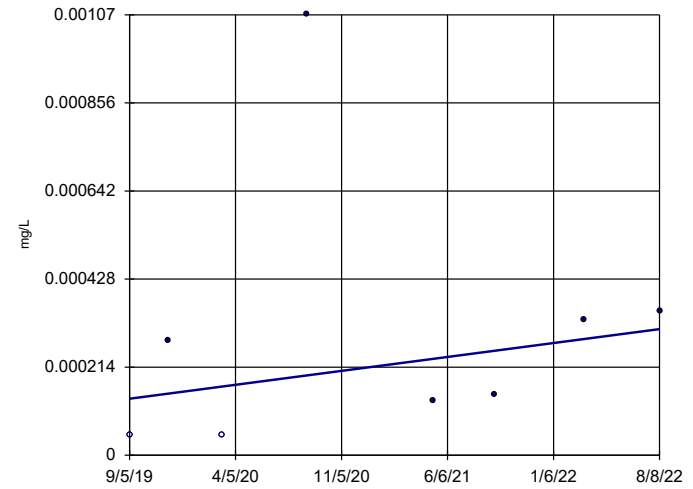


n = 8
Slope = -0.00009245
units per year.
Mann-Kendall
statistic = -5
critical = -21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Cadmium Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

MW-28

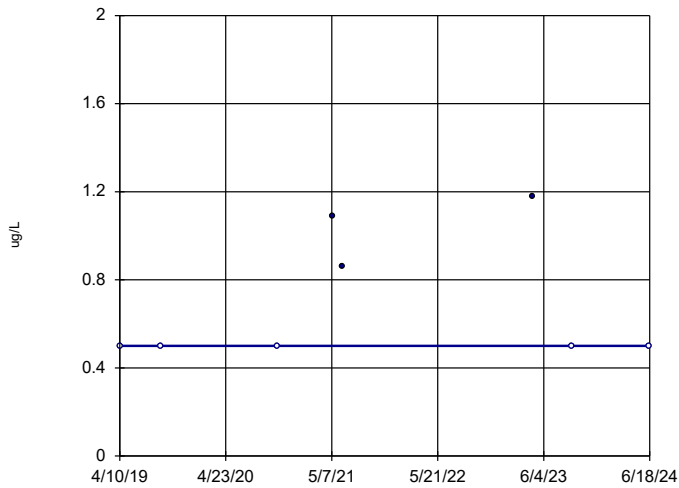


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Slope = 0.00005769
units per year.
Mann-Kendall
statistic = 13
critical = 21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Cadmium Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

MW-27R

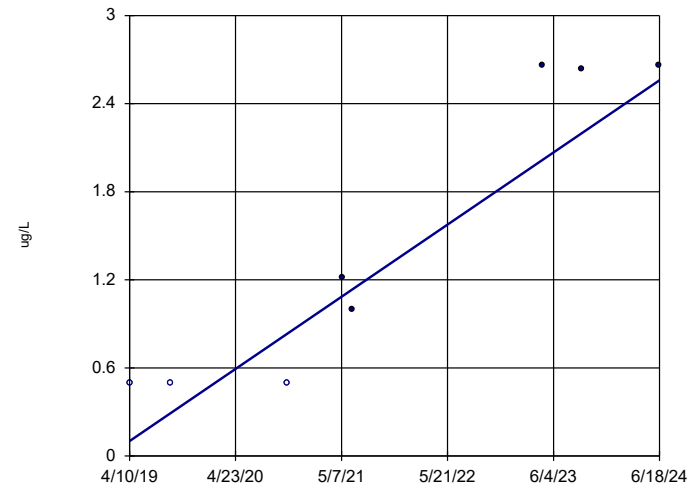


n = 8
Slope = 0
units per year.
Mann-Kendall
statistic = 4
critical = 21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Carbon disulfide Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

MW-27R

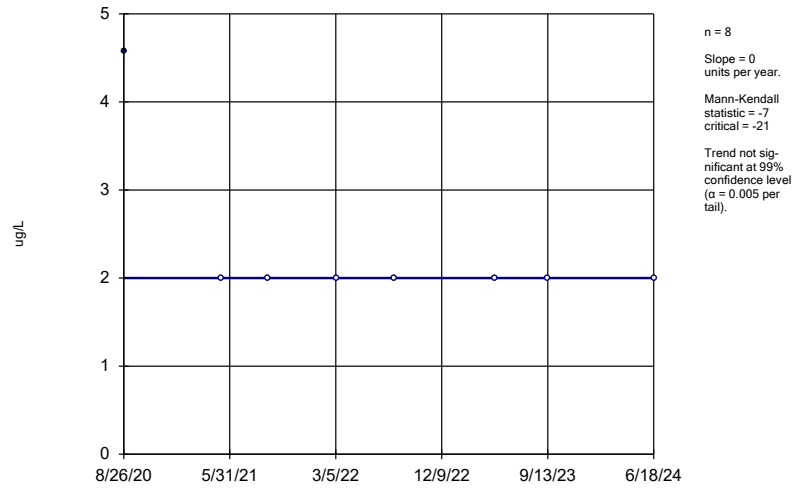


n = 8
Slope = 0.4731
units per year.
Mann-Kendall
statistic = 20
critical = 21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Chlorobenzene Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

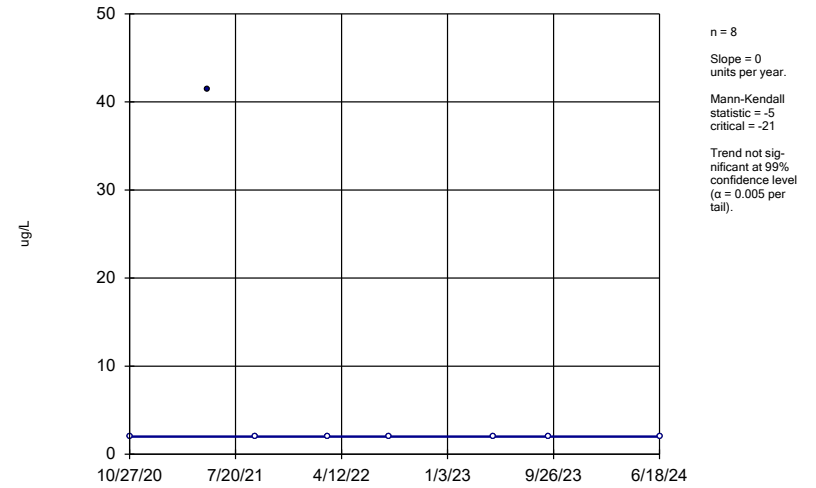
MW-8R



Constituent: Chloroethane Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

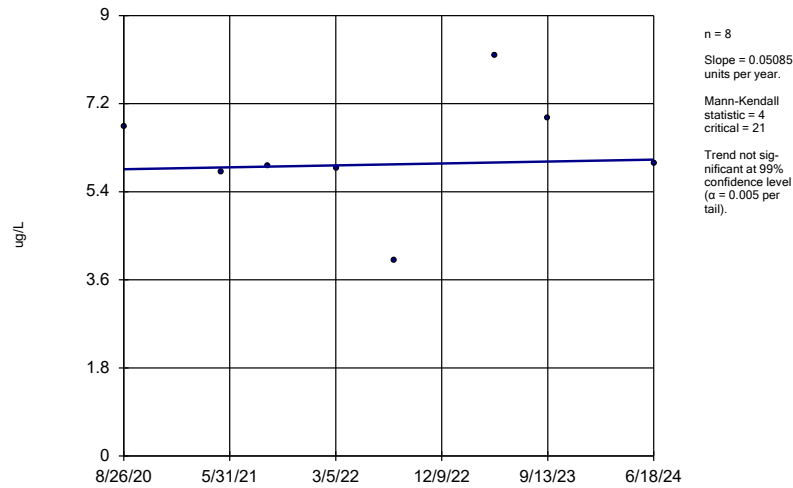
MW-11R



Constituent: Chloroethane Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

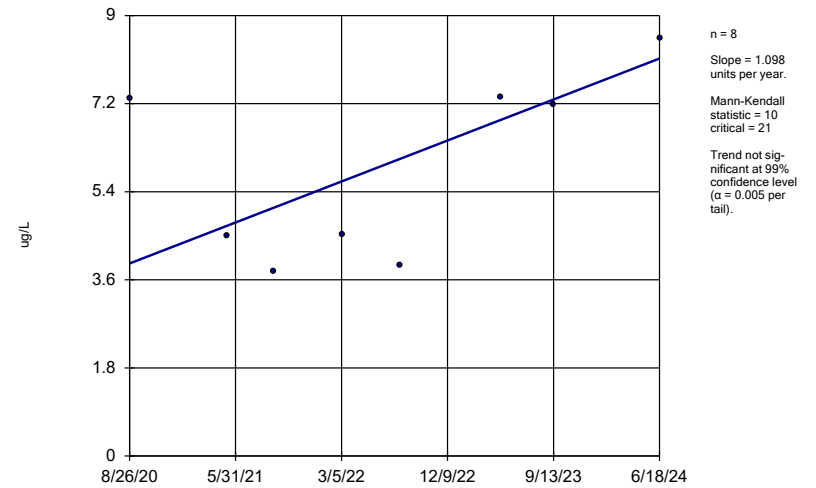
MW-7



Constituent: cis-1,2-Dichloroethene Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

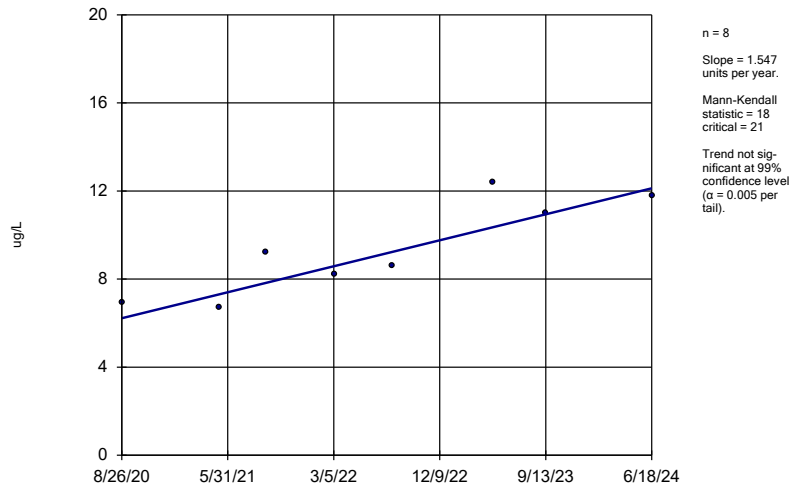
MW-8R



Constituent: cis-1,2-Dichloroethene Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

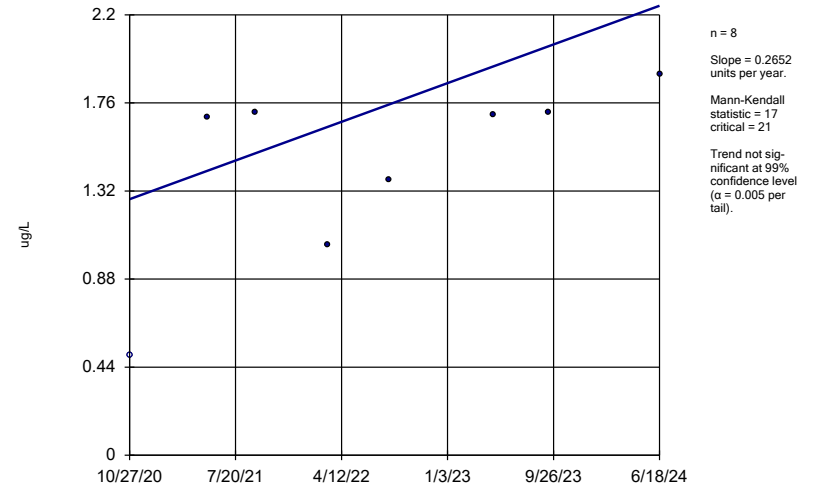
MW-10R



Constituent: cis-1,2-Dichloroethene Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

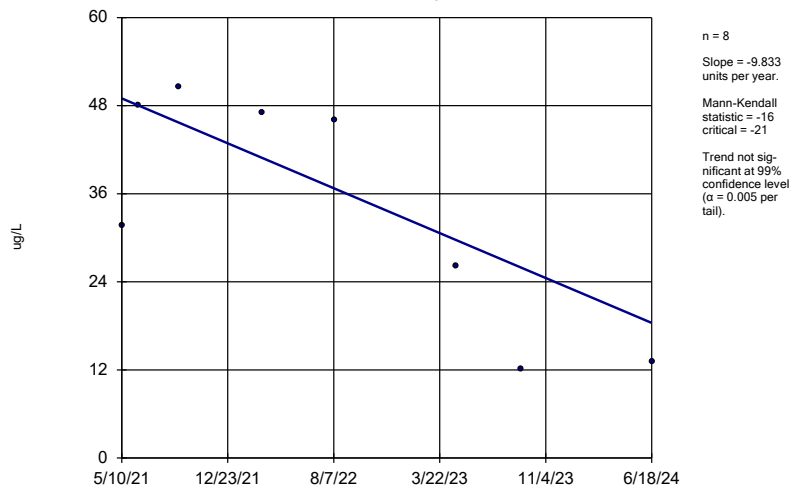
MW-11R



Constituent: cis-1,2-Dichloroethene Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

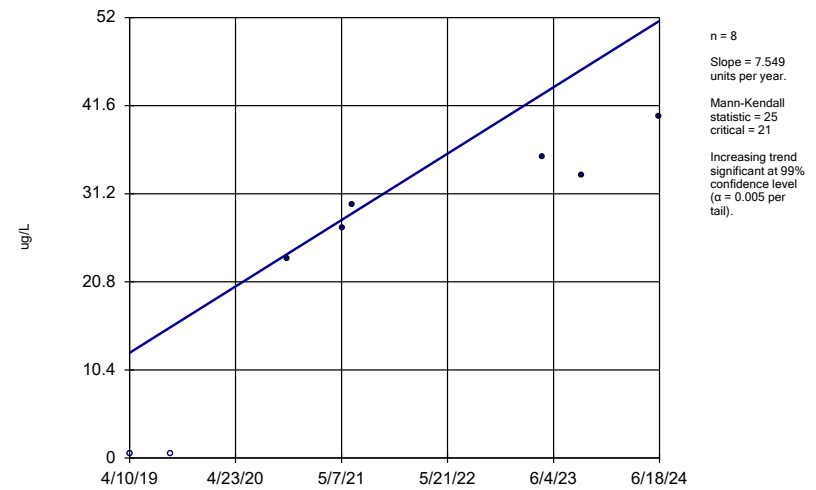
MW-26R



Constituent: cis-1,2-Dichloroethene Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

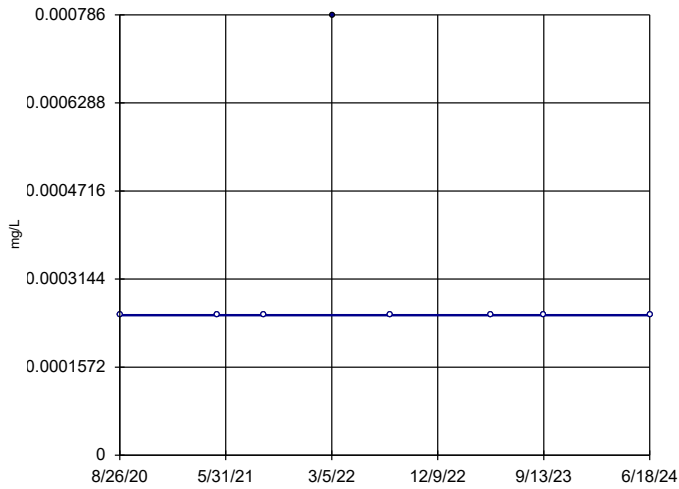
MW-27R



Constituent: cis-1,2-Dichloroethene Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

MW-7

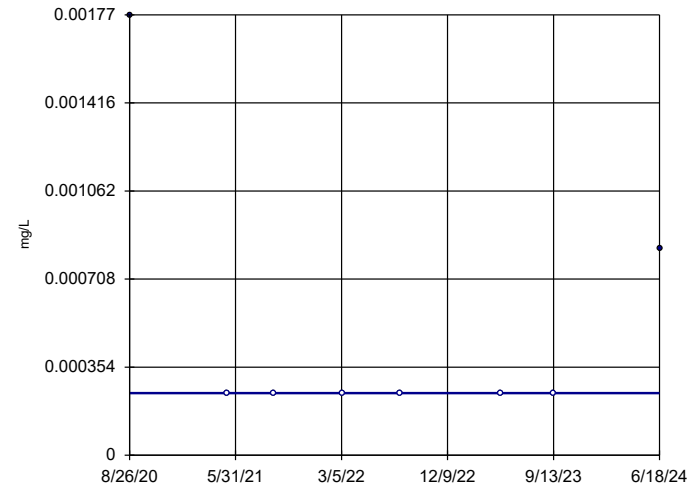


n = 8
Slope = 0
units per year.
Mann-Kendall
statistic = -1
critical = -21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Cobalt Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

MW-8R

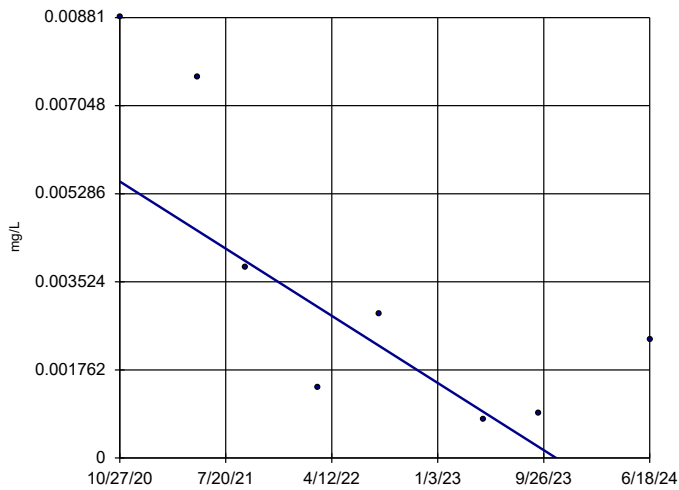


n = 8
Slope = 0
units per year.
Mann-Kendall
statistic = -1
critical = -21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Cobalt Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

MW-11R

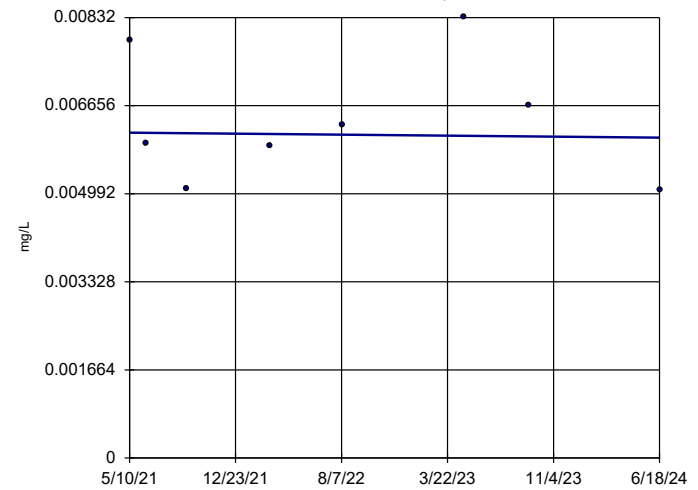


n = 8
Slope = -0.001844
units per year.
Mann-Kendall
statistic = -18
critical = -21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Cobalt Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

MW-26R

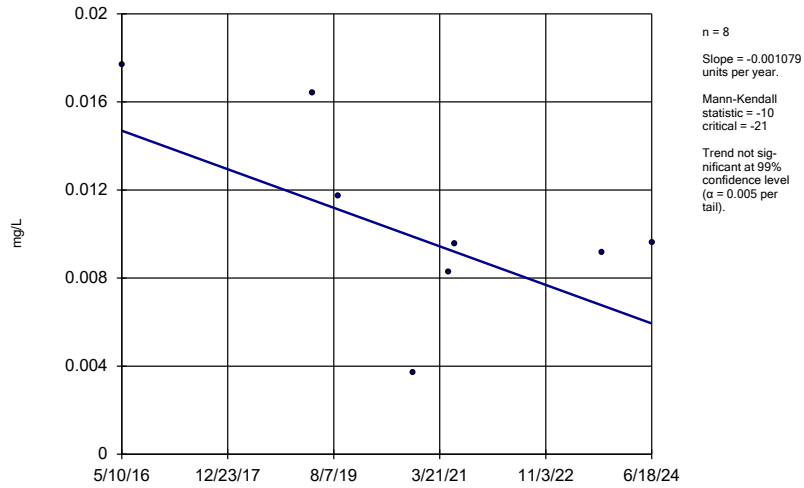


n = 8
Slope = -0.0003094
units per year.
Mann-Kendall
statistic = -2
critical = -21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Cobalt Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

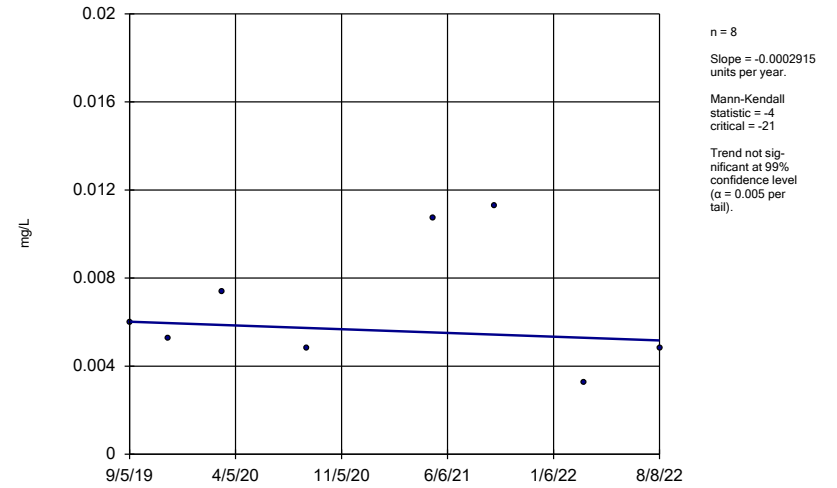
MW-27R



Constituent: Cobalt Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

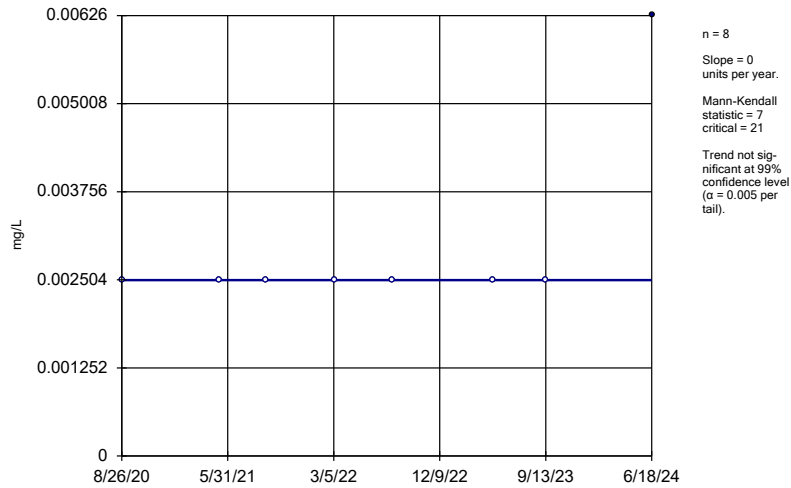
MW-28



Constituent: Cobalt Analysis Run 7/23/2024 11:02 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

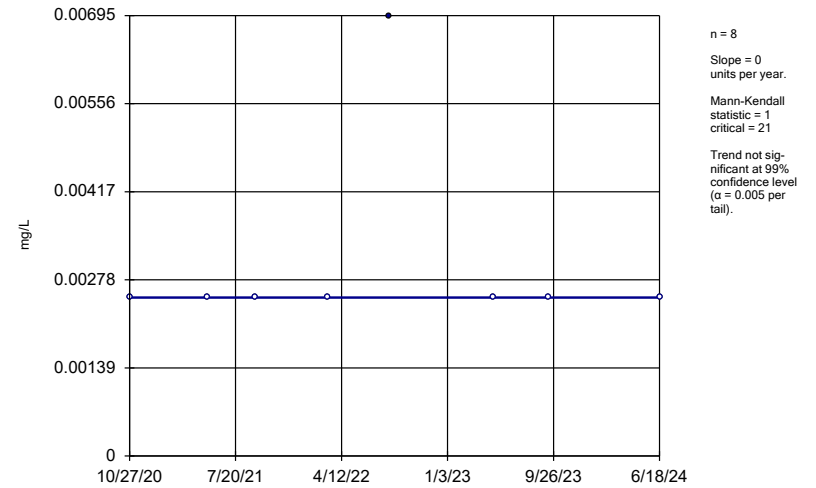
MW-8R



Constituent: Copper Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

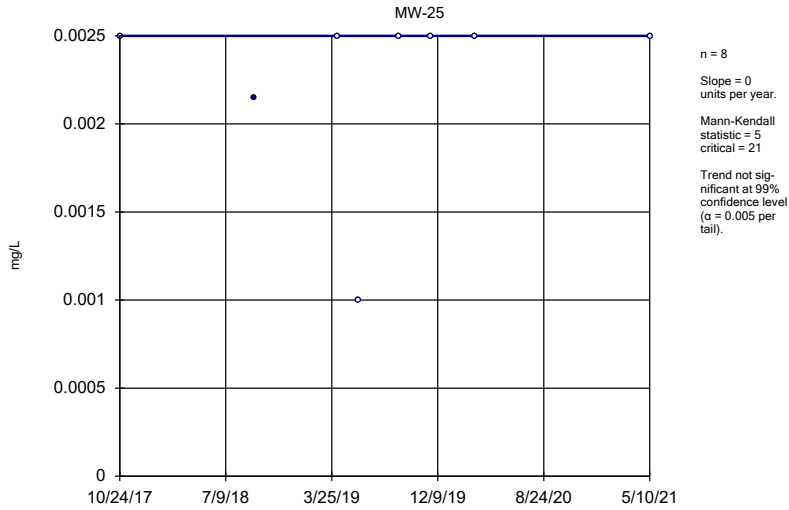
Sen's Slope Estimator

MW-11R



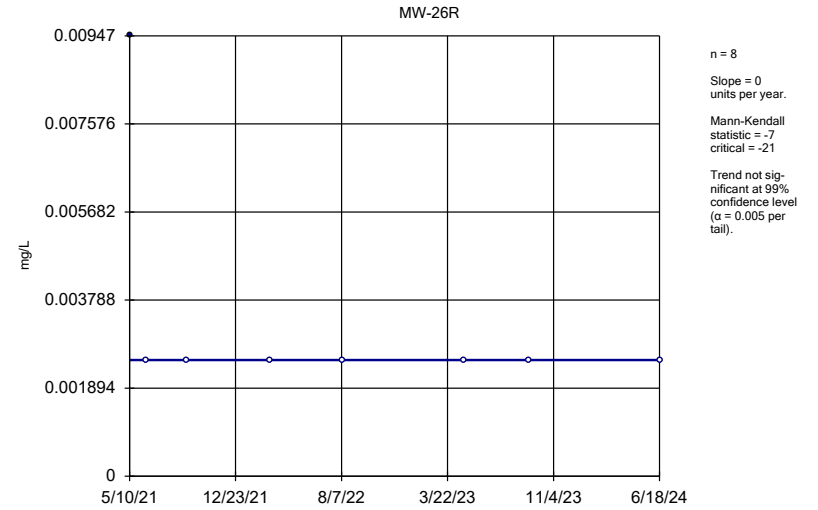
Constituent: Copper Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator



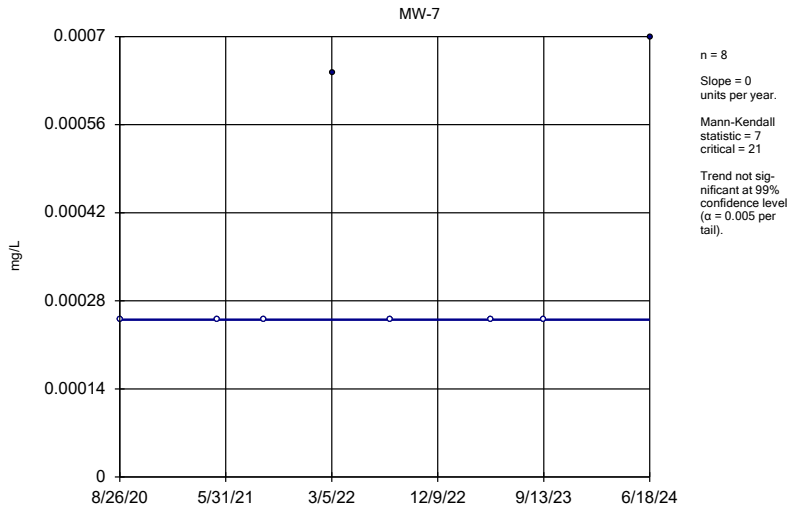
Constituent: Copper Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator



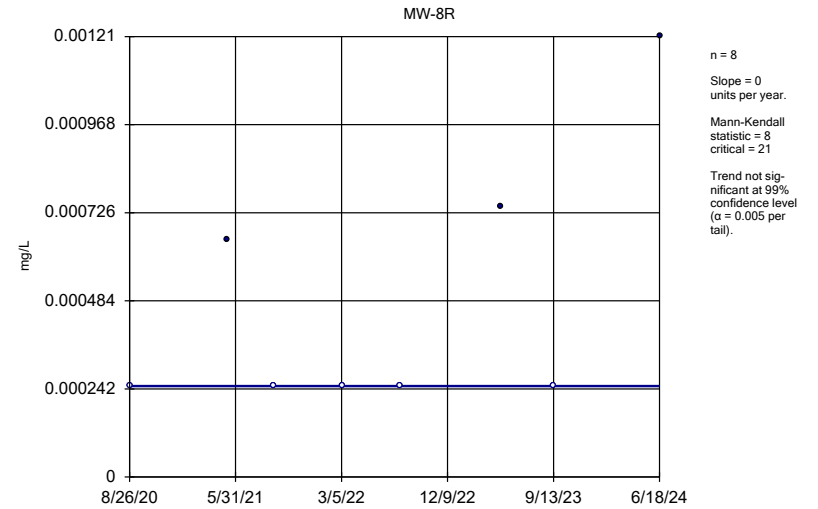
Constituent: Copper Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator



Constituent: Lead Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

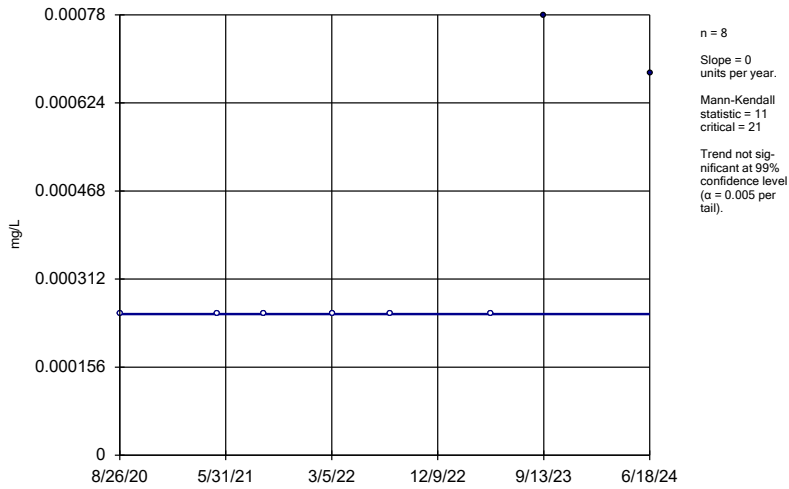
Sen's Slope Estimator



Constituent: Lead Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

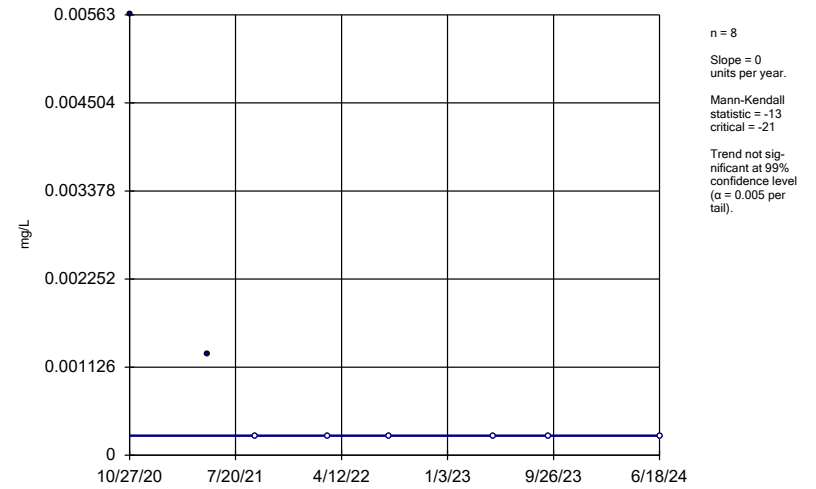
MW-10R



Constituent: Lead Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

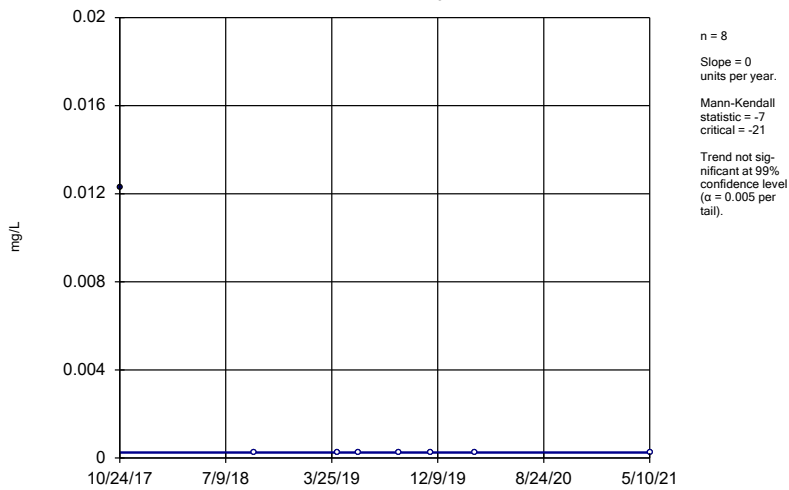
MW-11R



Constituent: Lead Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

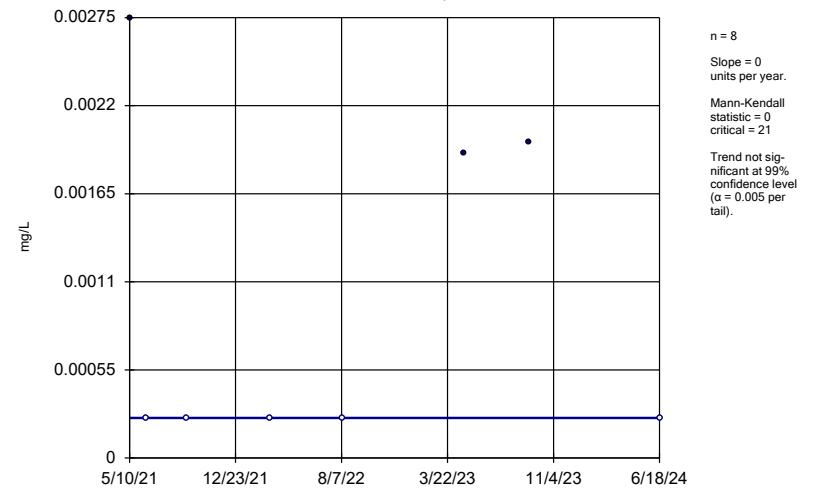
MW-25



Constituent: Lead Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

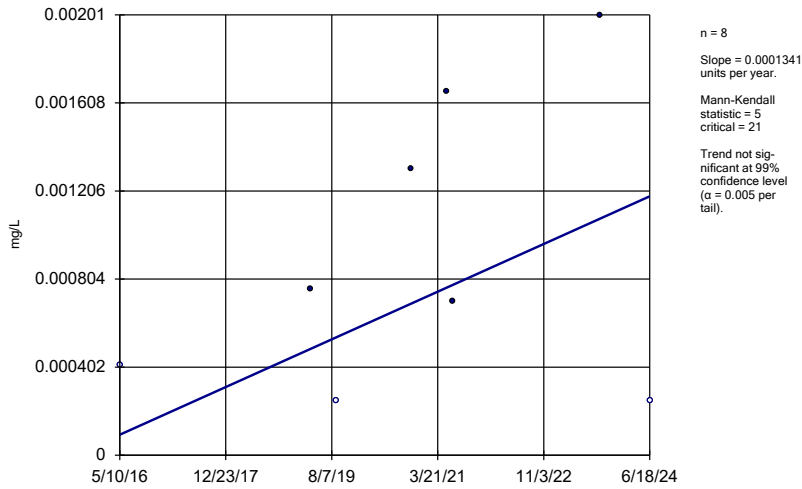
MW-26R



Constituent: Lead Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

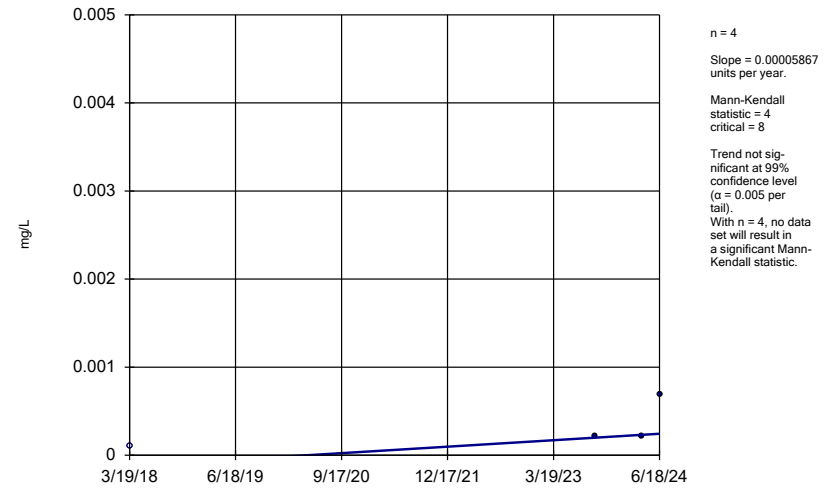
MW-27R



Constituent: Lead Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

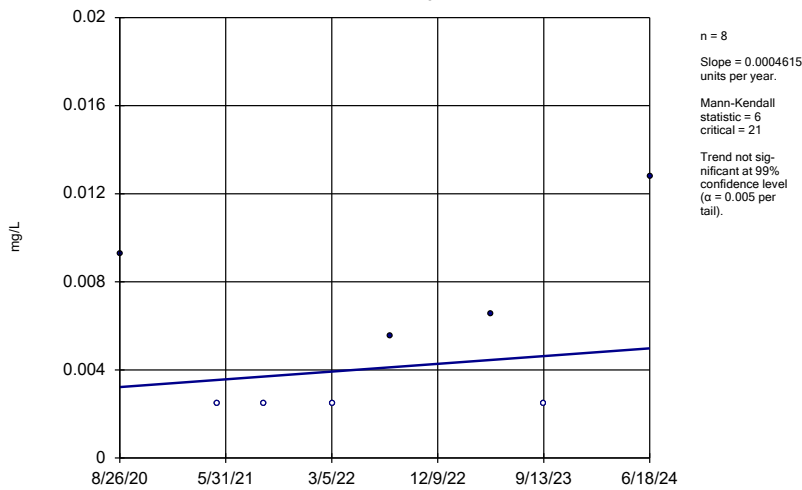
MW-8R



Constituent: Mercury Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

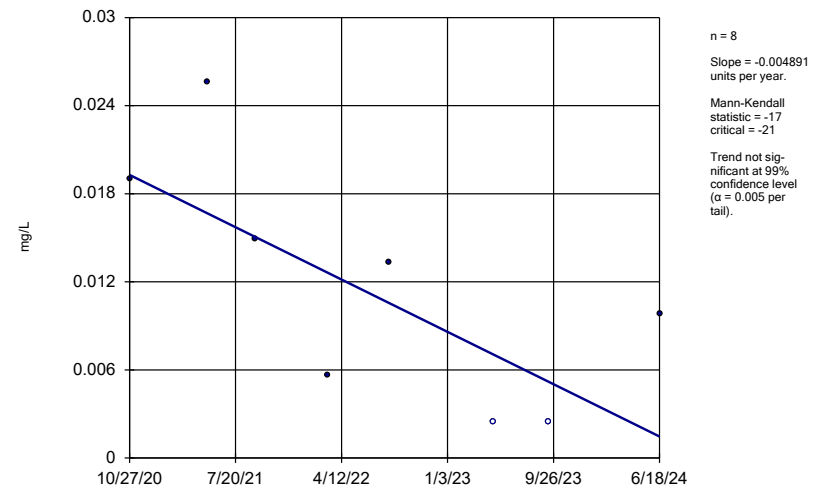
MW-8R



Constituent: Nickel Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

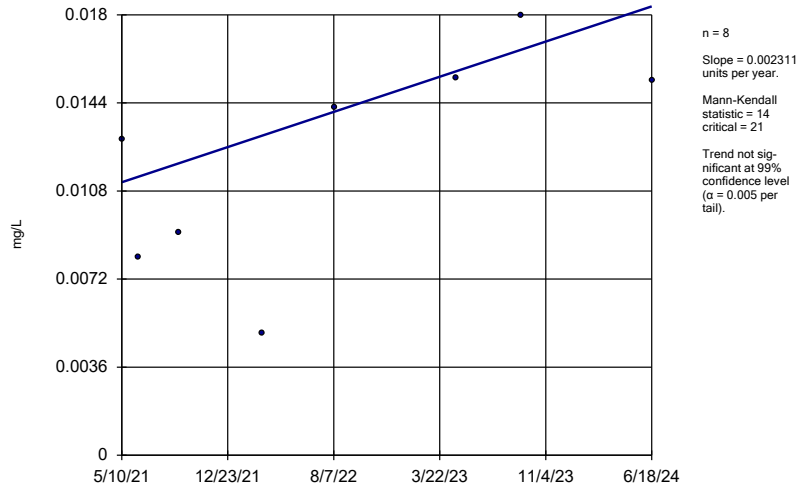
MW-11R



Constituent: Nickel Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

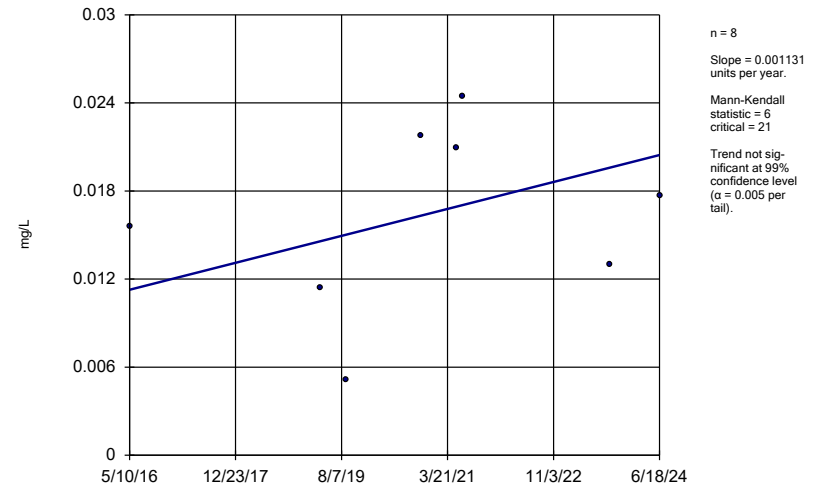
MW-26R



Constituent: Nickel Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

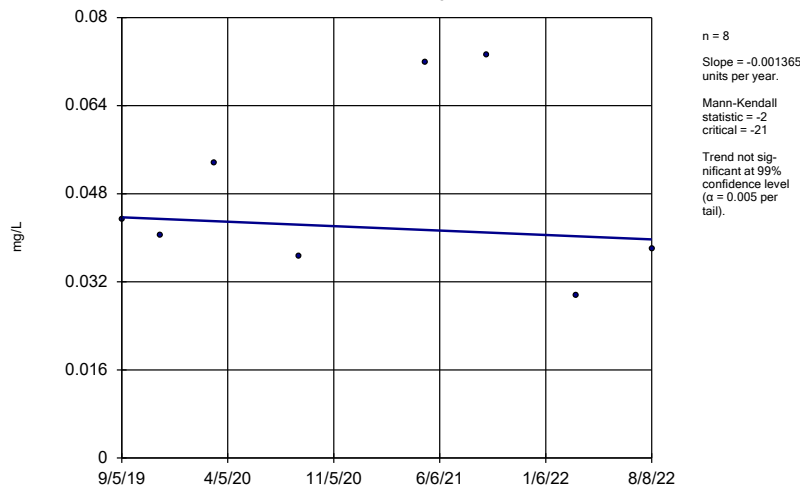
MW-27R



Constituent: Nickel Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

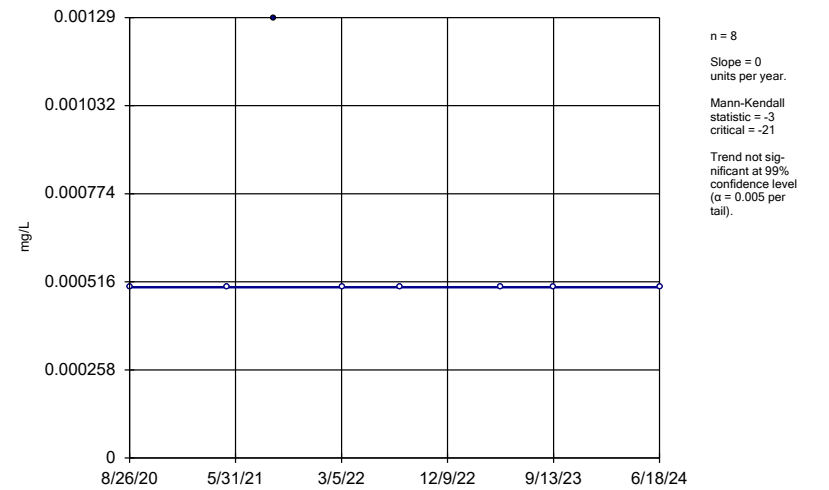
MW-28



Constituent: Nickel Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

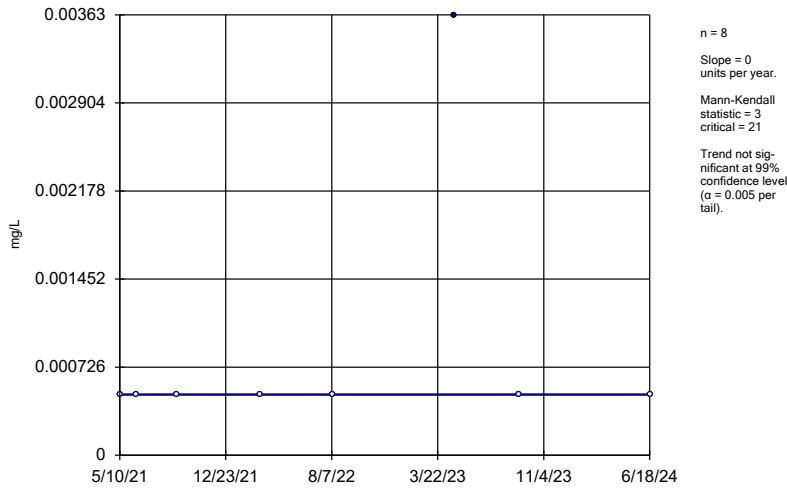
MW-7



Constituent: Thallium Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

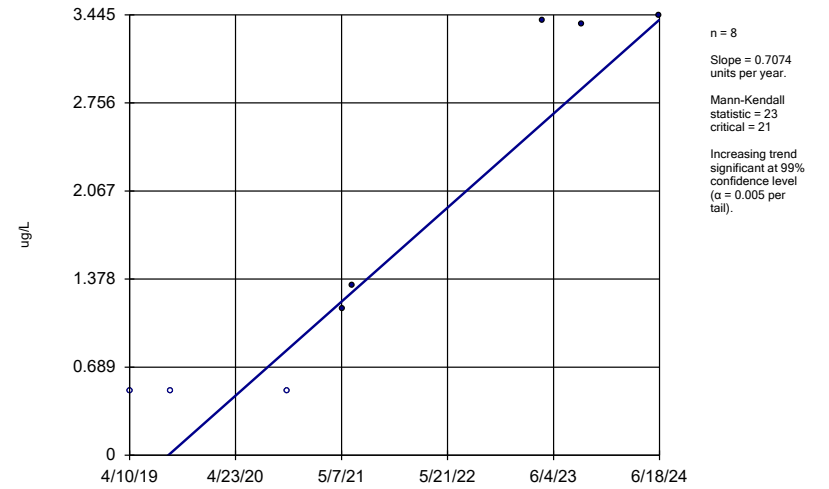
MW-26R



Constituent: Thallium Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

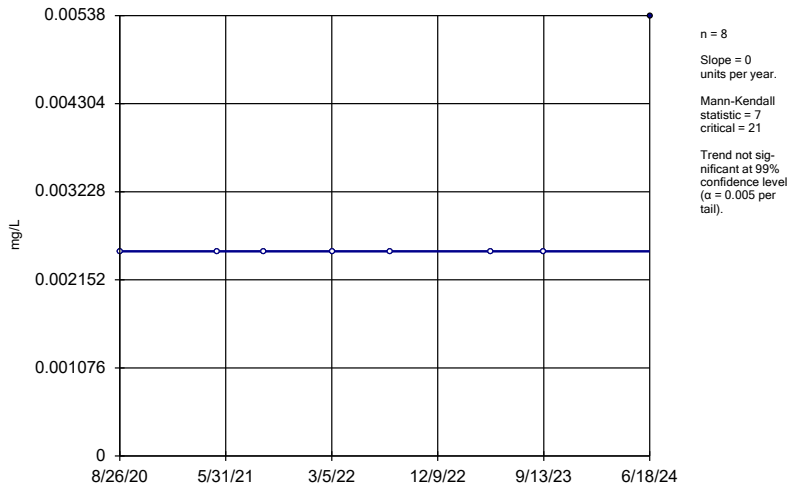
MW-27R



Constituent: Trichloroethene Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

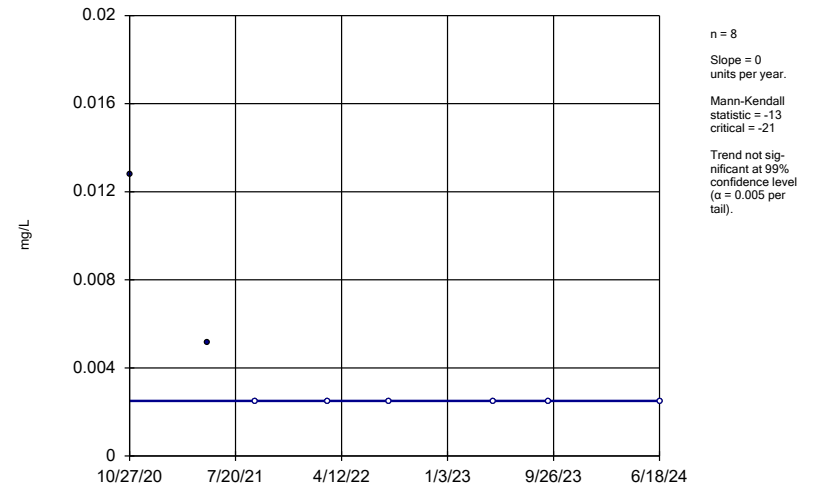
MW-8R



Constituent: Vanadium Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

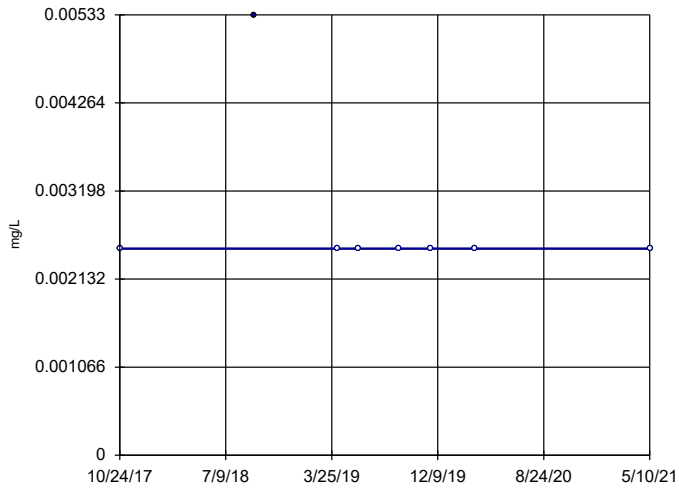
MW-11R



Constituent: Vanadium Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

MW-25

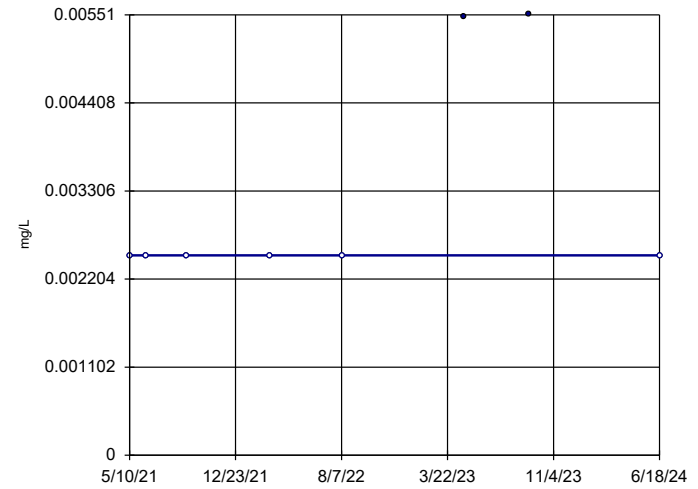


n = 8
Slope = 0
units per year.
Mann-Kendall
statistic = -5
critical = -21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Vanadium Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

MW-26R

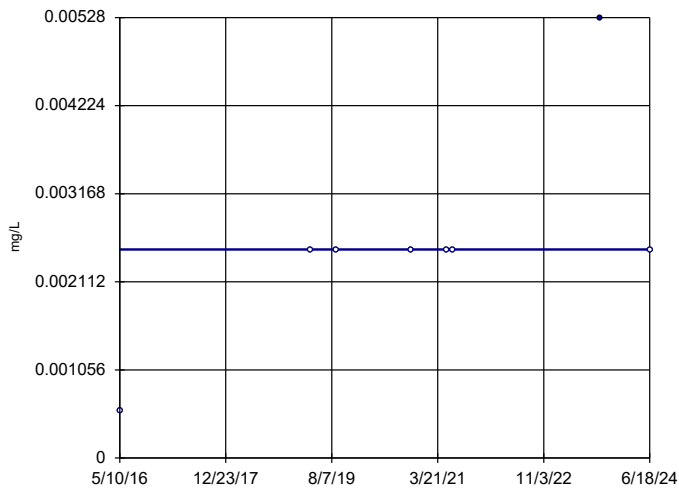


n = 8
Slope = 0
units per year.
Mann-Kendall
statistic = 9
critical = 21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Vanadium Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

MW-27R

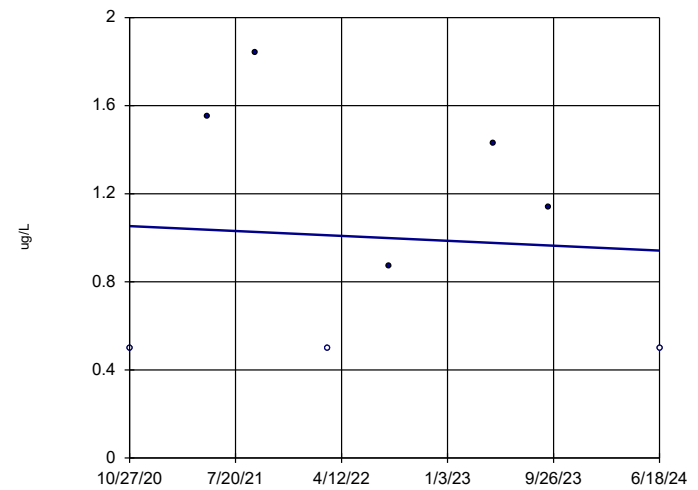


n = 8
Slope = 0
units per year.
Mann-Kendall
statistic = 11
critical = 21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Vanadium Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

MW-11R

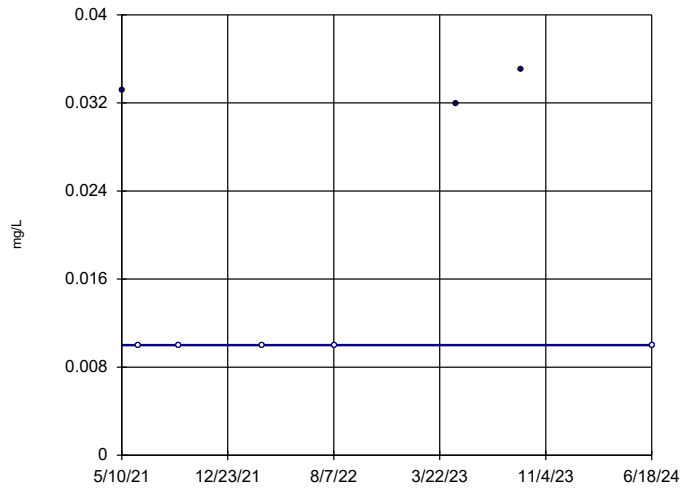


n = 8
Slope = -0.03054
units per year.
Mann-Kendall
statistic = -3
critical = -21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Vinyl chloride Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope Estimator

MW-26R



n = 8
Slope = 0
units per year.
Mann-Kendall
statistic = 2
critical = 21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Zinc Analysis Run 7/23/2024 11:03 AM View: 2024SSN - Mann Kendall
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Confidence Interval Table and Graphs

Confidence Interval

Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN Printed 7/23/2024, 11:42 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
1,1-Dichloroethane (ug/L)	MW-10R	2.129	1.295	140	No	8	0	No	0.01	Param.
1,2-Dichloropropane (ug/L)	MW-27R	1.21	0.5	5	No	8	87.5	No	0.004	NP (NDs)
1,4-Dichlorobenzene (ug/L)	MW-11R	1.61	0.5	75	No	8	37.5	No	0.004	NP (normality)
Acetone (ug/L)	MW-27R	21.5	5	6300	No	8	75	No	0.004	NP (normality)
Antimony (mg/L)	MW-7	0.00227	0.0005	0.006	No	8	87.5	No	0.004	NP (NDs)
Antimony (mg/L)	MW-27R	0.00195	0.0005	0.006	No	8	87.5	No	0.004	NP (NDs)
Arsenic (mg/L)	MW-8R	0.115	0.001	0.01	No	8	87.5	No	0.004	NP (NDs)
Arsenic (mg/L)	MW-11R	0.0112	0.001	0.01	No	8	12.5	No	0.004	NP (normality)
Arsenic (mg/L)	MW-25	0.0022	0.0005	0.01	No	8	87.5	No	0.004	NP (NDs)
Arsenic (mg/L)	MW-26R	0.572	0.0276	0.01	Yes	8	0	No	0.004	NP (normality)
Arsenic (mg/L)	MW-27R	0.01503	0	0.01	No	8	25	No	0.01	Param.
Barium (mg/L)	MW-7	0.652	0.223	2	No	8	0	No	0.004	NP (normality)
Barium (mg/L)	MW-8R	0.913	0.392	2	No	8	0	No	0.004	NP (normality)
Barium (mg/L)	MW-10R	0.5813	0.5234	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-11R	0.7799	0.5993	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-25	0.5668	0.4342	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-26R	1.33	0.674	2	No	8	0	No	0.004	NP (normality)
Barium (mg/L)	MW-27R	0.7545	0.0799	2	No	8	0	No	0.004	NP (normality)
Barium (mg/L)	MW-28	1.797	1.603	2	No	8	0	No	0.01	Param.
Benzene (ug/L)	MW-7	0.587	0.25	5	No	8	75	No	0.004	NP (normality)
Benzene (ug/L)	MW-8R	0.581	0.25	5	No	8	87.5	No	0.004	NP (NDs)
Benzene (ug/L)	MW-11R	2.253	0.1396	5	No	8	25	No	0.01	Param.
Benzene (ug/L)	MW-26R	0.834	0.25	5	No	8	25	No	0.004	NP (normality)
Benzene (ug/L)	MW-28	0.9163	0.2492	5	No	8	37.5	No	0.01	Param.
beta-BHC (ug/L)	MW-28	0.0644	0.0165	0.042	No	8	87.5	No	0.004	NP (NDs)
Cadmium (mg/L)	MW-7	0.00061	0.00005	0.005	No	8	75	No	0.004	NP (normality)
Cadmium (mg/L)	MW-8R	0.000491	0.00005	0.005	No	8	75	No	0.004	NP (normality)
Cadmium (mg/L)	MW-10R	0.000678	0.00005	0.005	No	8	87.5	No	0.004	NP (NDs)
Cadmium (mg/L)	MW-11R	0.000189	0.00005	0.005	No	8	87.5	No	0.004	NP (NDs)
Cadmium (mg/L)	MW-26R	0.000256	0.00005	0.005	No	8	62.5	No	0.004	NP (normality)
Cadmium (mg/L)	MW-27R	0.000291	0.00005	0.005	No	8	87.5	No	0.004	NP (NDs)
Cadmium (mg/L)	MW-28	0.00107	0.00005	0.005	No	8	25	No	0.004	NP (normality)
Carbon disulfide (ug/L)	MW-27R	1.18	0.5	700	No	8	62.5	No	0.004	NP (normality)
Chlorobenzene (ug/L)	MW-27R	2.66	0.5	100	No	8	37.5	No	0.004	NP (normality)
Chloroethane (ug/L)	MW-8R	4.57	2	2800	No	8	87.5	No	0.004	NP (NDs)
Chloroethane (ug/L)	MW-11R	41.5	2	2800	No	8	87.5	No	0.004	NP (NDs)
cis-1,2-Dichloroethene (ug/L)	MW-7	7.432	4.916	70	No	8	0	No	0.01	Param.
cis-1,2-Dichloroethene (ug/L)	MW-8R	8.54	3.77	70	No	8	0	No	0.004	NP (normality)
cis-1,2-Dichloroethene (ug/L)	MW-10R	11.65	7.073	70	No	8	0	No	0.01	Param.
cis-1,2-Dichloroethene (ug/L)	MW-11R	1.9	0.5	70	No	8	12.5	No	0.004	NP (normality)
cis-1,2-Dichloroethene (ug/L)	MW-26R	51.18	17.52	70	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-7	0.000786	0.00025	0.0021	No	8	87.5	No	0.004	NP (NDs)
Cobalt (mg/L)	MW-8R	0.00177	0.00025	0.0021	No	8	75	No	0.004	NP (normality)
Cobalt (mg/L)	MW-11R	0.00881	0.000775	0.0021	No	8	0	No	0.004	NP (normality)
Cobalt (mg/L)	MW-26R	0.007658	0.005127	0.0021	Yes	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-27R	0.01554	0.005984	0.0021	Yes	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-28	0.009771	0.003614	0.0021	Yes	8	0	No	0.01	Param.
Copper (mg/L)	MW-8R	0.00626	0.0025	1.3	No	8	87.5	No	0.004	NP (NDs)
Copper (mg/L)	MW-11R	0.00695	0.0025	1.3	No	8	87.5	No	0.004	NP (NDs)
Copper (mg/L)	MW-25	0.0025	0.001	1.3	No	8	87.5	No	0.004	NP (NDs)

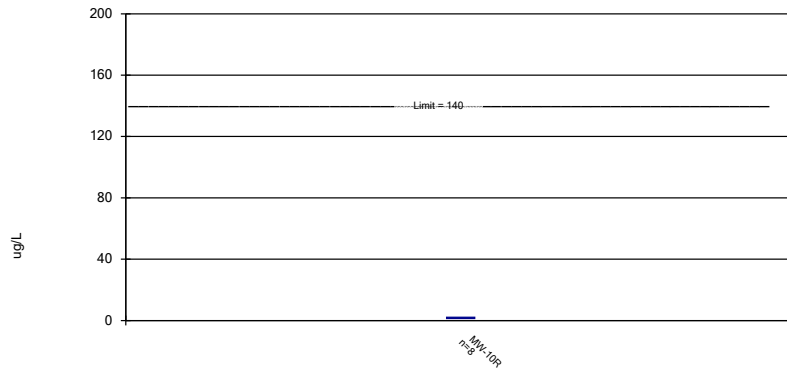
Confidence Interval

Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN Printed 7/23/2024, 11:42 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Copper (mg/L)	MW-26R	0.00947	0.0025	1.3	No	8	87.5	No	0.004	NP (NDs)
Lead (mg/L)	MW-7	0.0007	0.00025	0.015	No	8	75	No	0.004	NP (normality)
Lead (mg/L)	MW-8R	0.00121	0.00025	0.015	No	8	62.5	No	0.004	NP (normality)
Lead (mg/L)	MW-10R	0.00078	0.00025	0.015	No	8	75	No	0.004	NP (normality)
Lead (mg/L)	MW-11R	0.00563	0.00025	0.015	No	8	75	No	0.004	NP (normality)
Lead (mg/L)	MW-25	0.0123	0.00025	0.015	No	8	87.5	No	0.004	NP (NDs)
Lead (mg/L)	MW-26R	0.00275	0.00025	0.015	No	8	62.5	No	0.004	NP (normality)
Lead (mg/L)	MW-27R	0.001657	0.00006111	0.015	No	8	25	No	0.01	Param.
Mercury (mg/L)	MW-8R	0.0009727	0	0.002	No	4	25	No	0.01	Param.
Nickel (mg/L)	MW-8R	0.0128	0.0025	0.1	No	8	50	No	0.004	NP (normality)
Nickel (mg/L)	MW-11R	0.02073	0.00105	0.1	No	8	25	No	0.01	Param.
Nickel (mg/L)	MW-26R	0.01693	0.007574	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-27R	0.02294	0.00956	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-28	0.06567	0.03095	0.1	No	8	0	No	0.01	Param.
Thallium (mg/L)	MW-7	0.00129	0.0005	0.002	No	8	87.5	No	0.004	NP (NDs)
Thallium (mg/L)	MW-26R	0.00363	0.0005	0.002	No	8	87.5	No	0.004	NP (NDs)
Vanadium (mg/L)	MW-8R	0.00538	0.0025	0.035	No	8	87.5	No	0.004	NP (NDs)
Vanadium (mg/L)	MW-11R	0.0128	0.0025	0.035	No	8	75	No	0.004	NP (normality)
Vanadium (mg/L)	MW-25	0.00533	0.0025	0.035	No	8	87.5	No	0.004	NP (NDs)
Vanadium (mg/L)	MW-26R	0.00551	0.0025	0.035	No	8	75	No	0.004	NP (normality)
Vanadium (mg/L)	MW-27R	0.00528	0.000571	0.035	No	8	75	No	0.004	NP (normality)
Vinyl chloride (ug/L)	MW-11R	1.613	0.5754	2	No	8	37.5	No	0.01	Param.
Zinc (mg/L)	MW-26R	0.035	0.01	2	No	8	62.5	No	0.004	NP (normality)

Parametric Confidence Interval

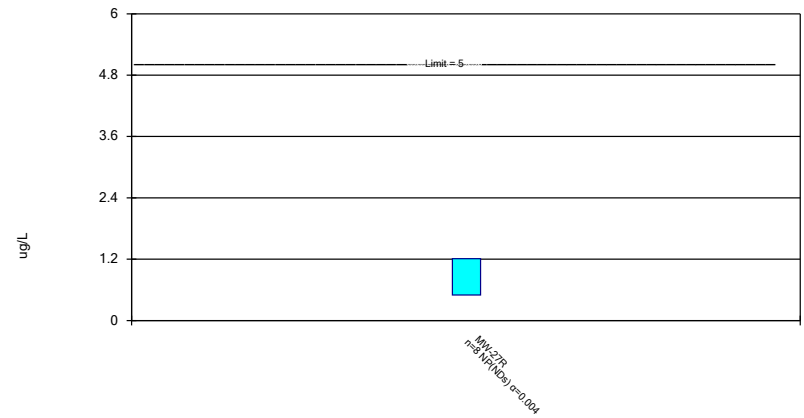
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: 1,1-Dichloroethane Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Non-Parametric Confidence Interval

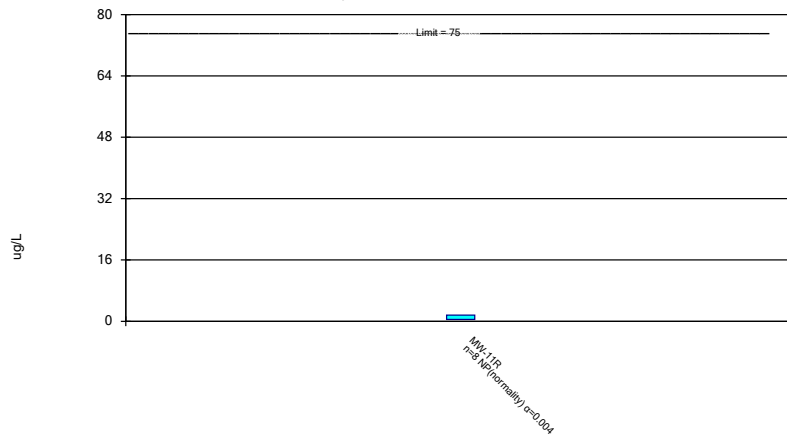
Compliance Limit is not exceeded.



Constituent: 1,2-Dichloropropane Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Non-Parametric Confidence Interval

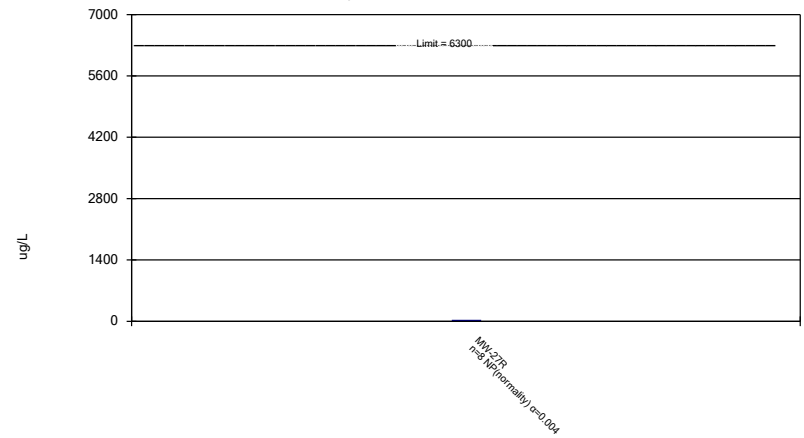
Compliance Limit is not exceeded.



Constituent: 1,4-Dichlorobenzene Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Non-Parametric Confidence Interval

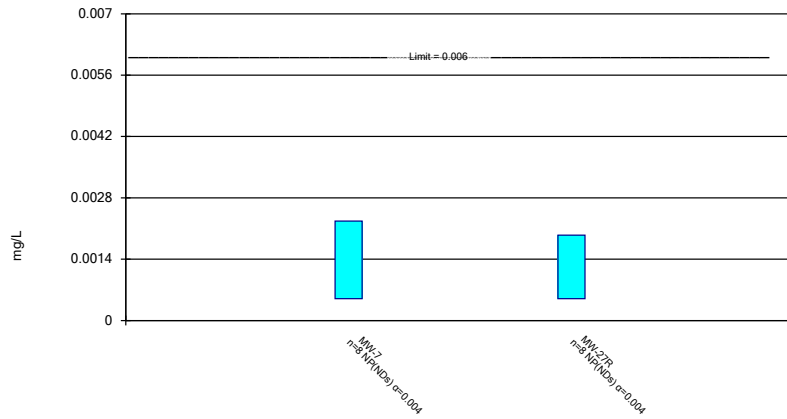
Compliance Limit is not exceeded.



Constituent: Acetone Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Non-Parametric Confidence Interval

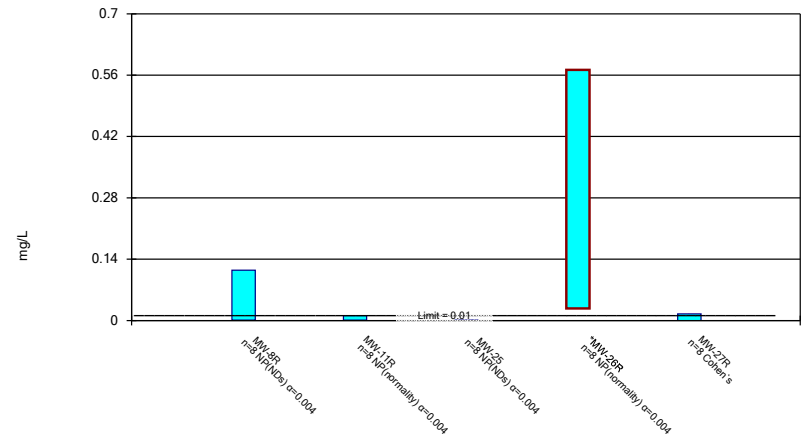
Compliance Limit is not exceeded.



Constituent: Antimony Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Parametric and Non-Parametric (NP) Confidence Interval

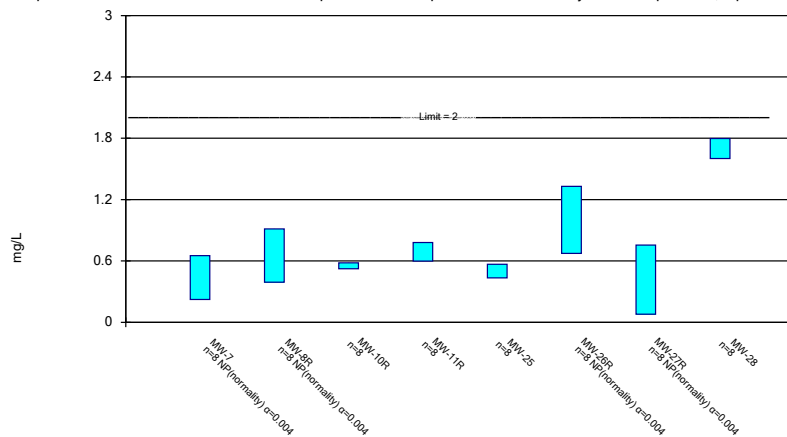
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Parametric and Non-Parametric (NP) Confidence Interval

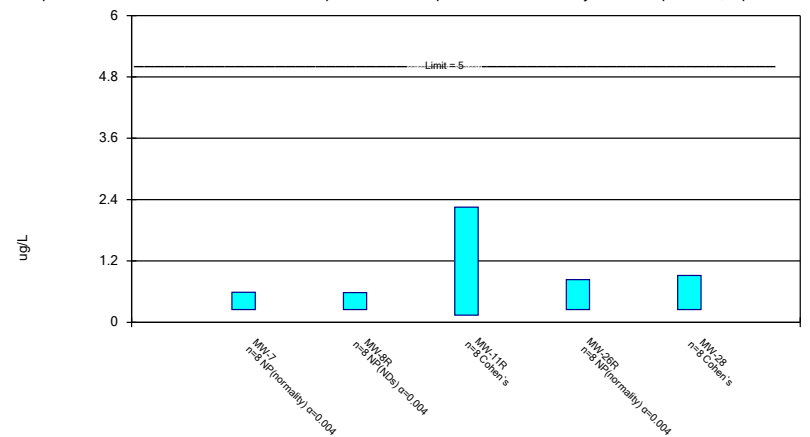
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Parametric and Non-Parametric (NP) Confidence Interval

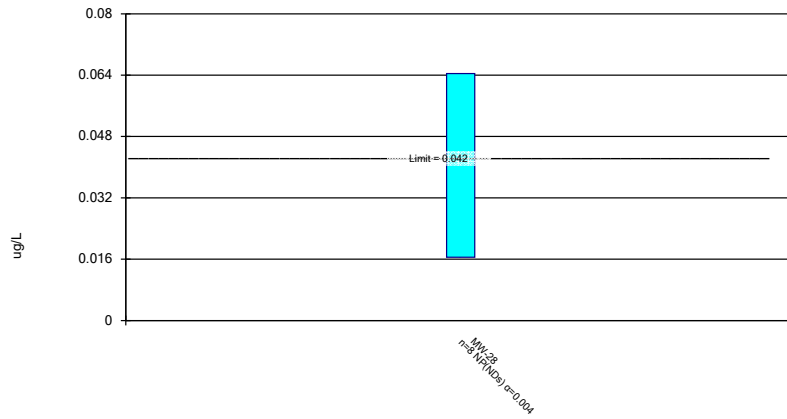
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Benzene Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Non-Parametric Confidence Interval

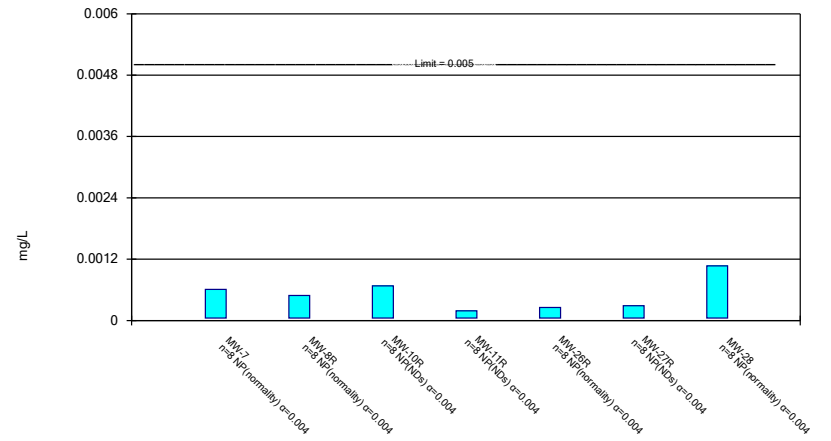
Compliance Limit is not exceeded.



Constituent: beta-BHC Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Non-Parametric Confidence Interval

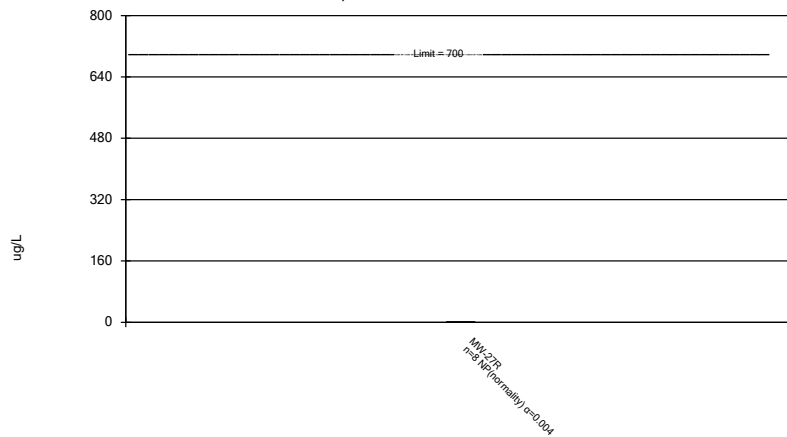
Compliance Limit is not exceeded.



Constituent: Cadmium Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Non-Parametric Confidence Interval

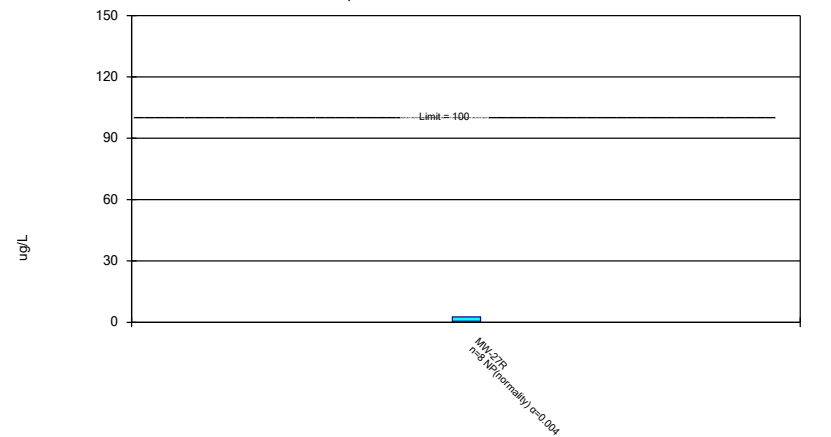
Compliance Limit is not exceeded.



Constituent: Carbon disulfide Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Non-Parametric Confidence Interval

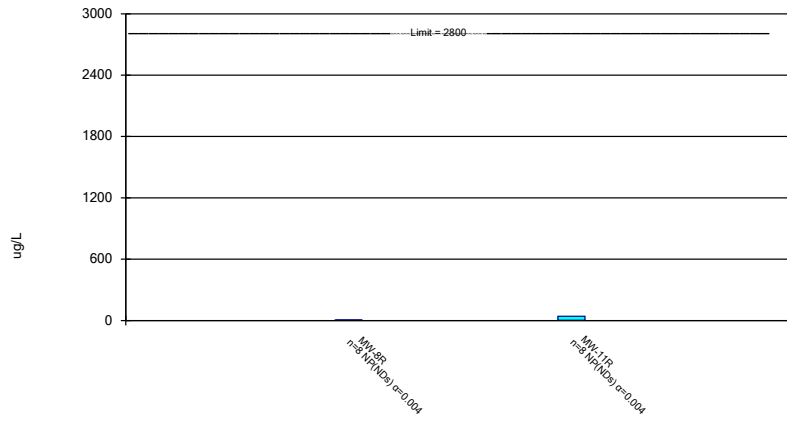
Compliance Limit is not exceeded.



Constituent: Chlorobenzene Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Non-Parametric Confidence Interval

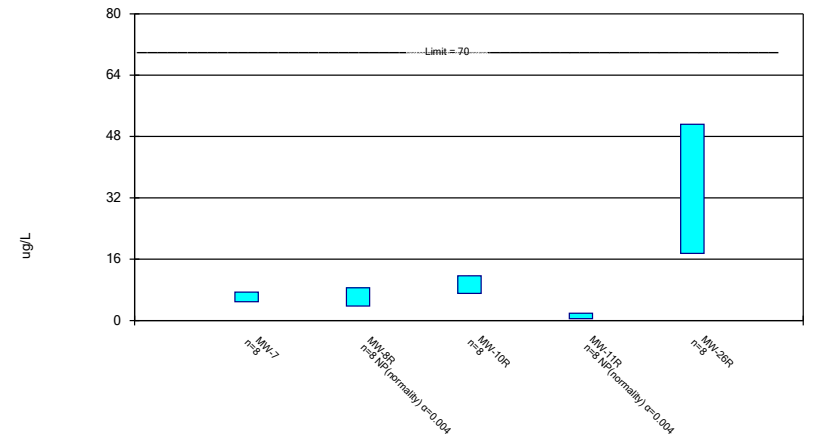
Compliance Limit is not exceeded.



Constituent: Chloroethane Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Parametric and Non-Parametric (NP) Confidence Interval

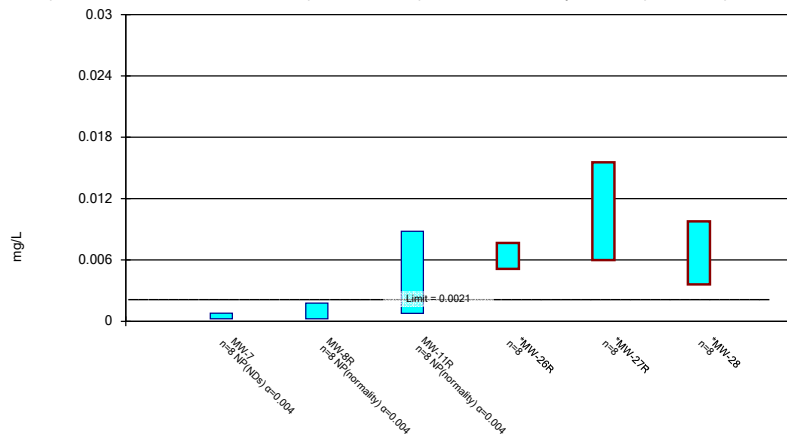
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: cis-1,2-Dichloroethene Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Parametric and Non-Parametric (NP) Confidence Interval

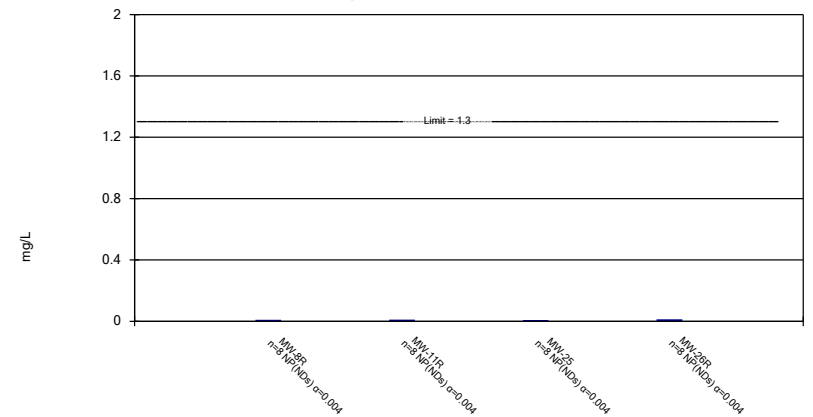
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Non-Parametric Confidence Interval

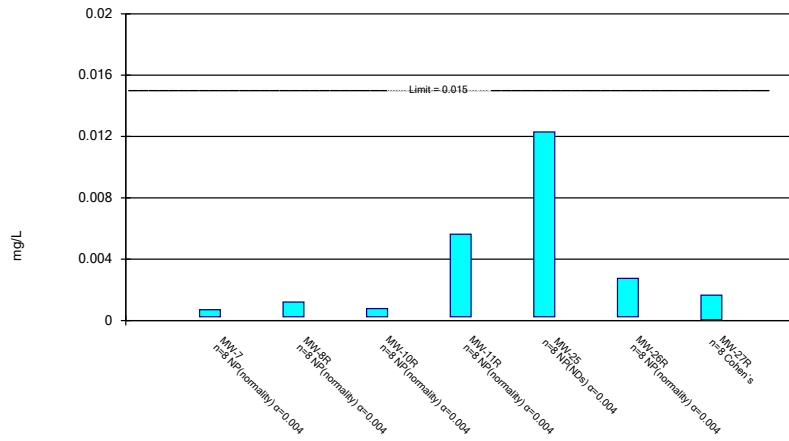
Compliance Limit is not exceeded.



Constituent: Copper Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
 Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Parametric and Non-Parametric (NP) Confidence Interval

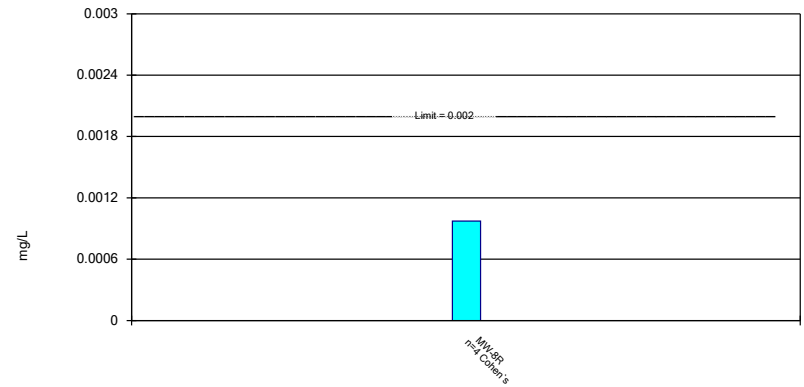
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Lead Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Parametric Confidence Interval

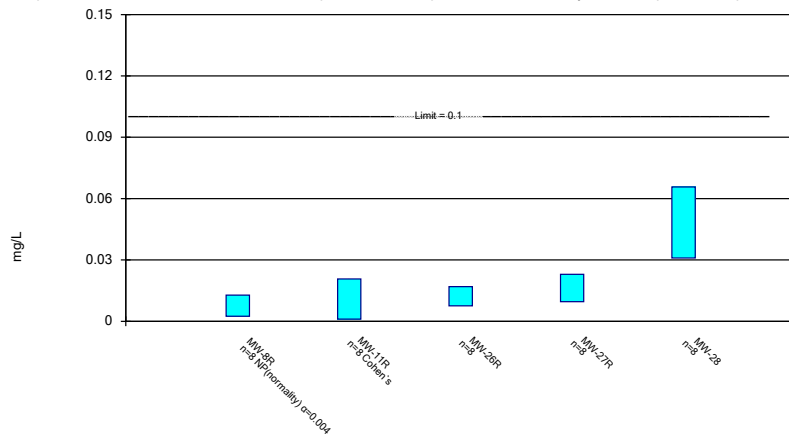
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Mercury Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Parametric and Non-Parametric (NP) Confidence Interval

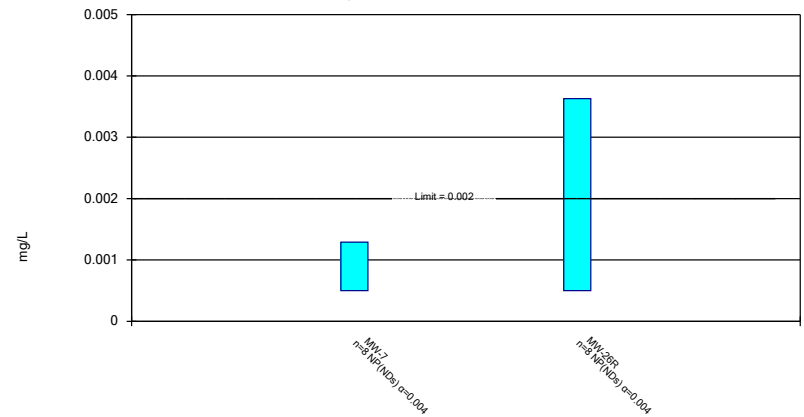
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Nickel Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Non-Parametric Confidence Interval

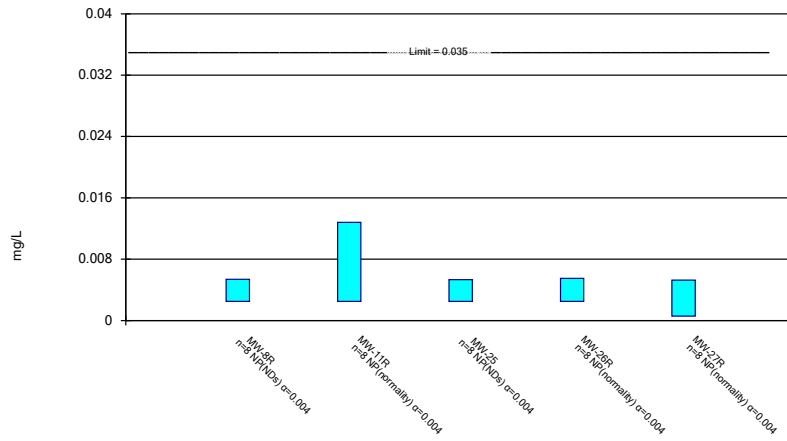
Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Non-Parametric Confidence Interval

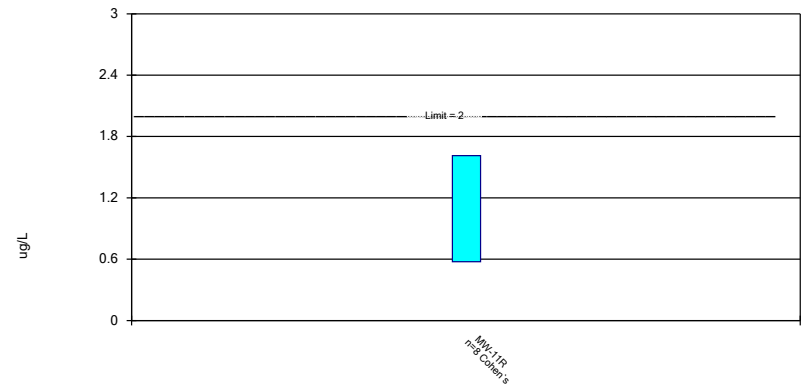
Compliance Limit is not exceeded.



Constituent: Vanadium Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Parametric Confidence Interval

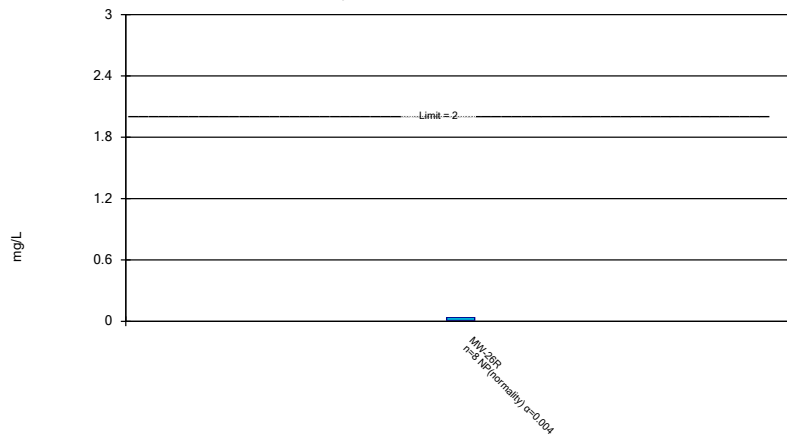
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Vinyl chloride Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Zinc Analysis Run 7/23/2024 11:41 AM View: 2024SSN - Confidence Interval
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Thiel Sen Trend Table and Graphs

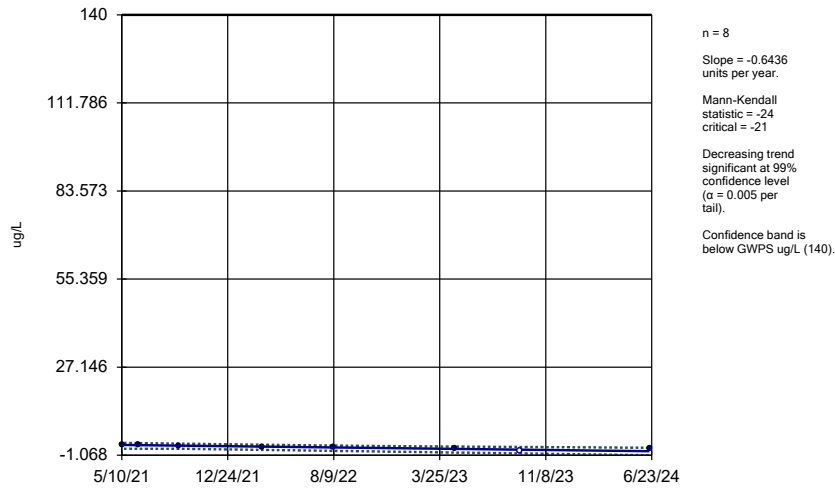
Theil Sen/Trend Test

Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN Printed 7/23/2024, 11:54 AM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
1,1-Dichloroethane (ug/L)	MW-26R	-0.6436	-24	-21	Yes	8	12.5	0.01	NP
1,1-Dichloroethane (ug/L)	MW-27R	0.619	23	21	Yes	8	25	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-27R	7.549	25	21	Yes	8	25	0.01	NP
Trichloroethene (ug/L)	MW-27R	0.7074	23	21	Yes	8	37.5	0.01	NP

Sen's Slope and 99% Confidence Band

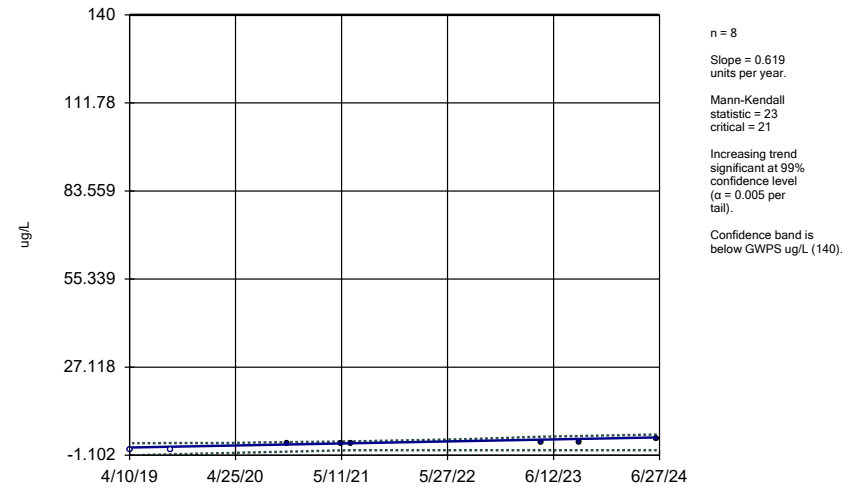
MW-26R



Constituent: 1,1-Dichloroethane Analysis Run 7/23/2024 11:53 AM View: 2024SSN - Theil Sen
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope and 99% Confidence Band

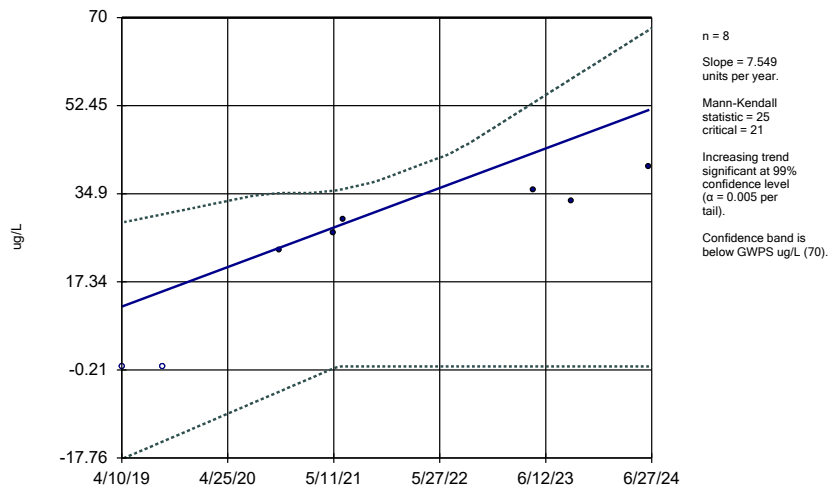
MW-27R



Constituent: 1,1-Dichloroethane Analysis Run 7/23/2024 11:53 AM View: 2024SSN - Theil Sen
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope and 99% Confidence Band

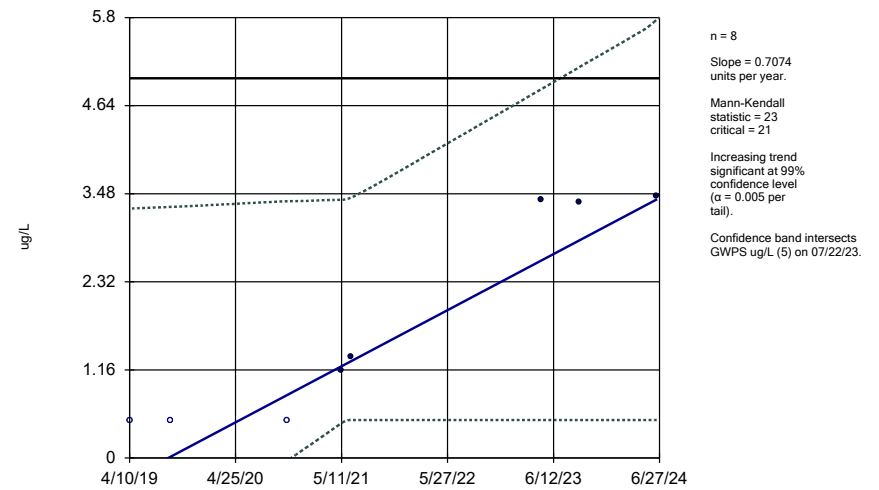
MW-27R



Constituent: cis-1,2-Dichloroethene Analysis Run 7/23/2024 11:53 AM View: 2024SSN - Theil Sen
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Sen's Slope and 99% Confidence Band

MW-27R



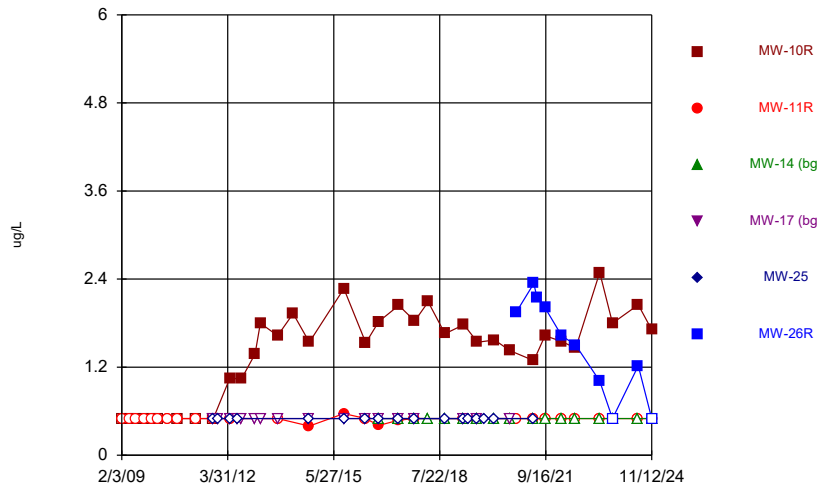
Constituent: Trichloroethene Analysis Run 7/23/2024 11:53 AM View: 2024SSN - Theil Sen
Loess Hills SLF Client: SCS Engineers Data: Loess Hills-AM 2024SSN

Attachment B

2nd 2024 Semi-Annual Statistical Output

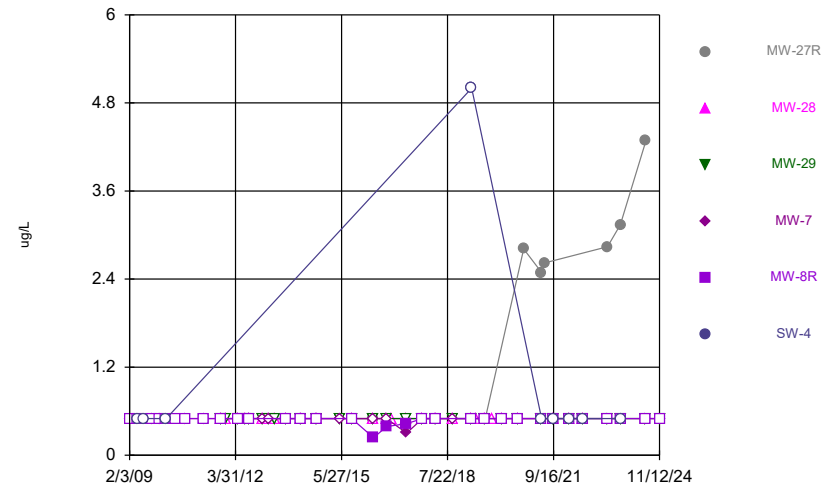
Time Series Graphs

Time Series



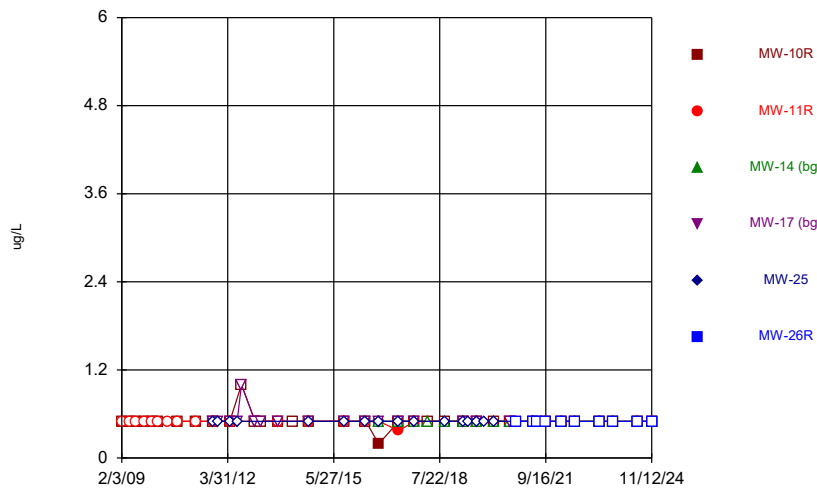
Constituent: 1,1-Dichloroethane Analysis Run 12/10/2024 1:58 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



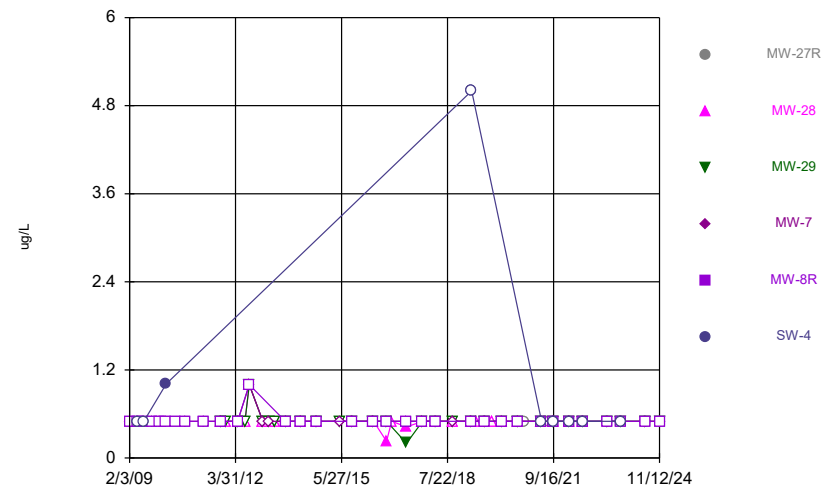
Constituent: 1,1-Dichloroethane Analysis Run 12/10/2024 1:58 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



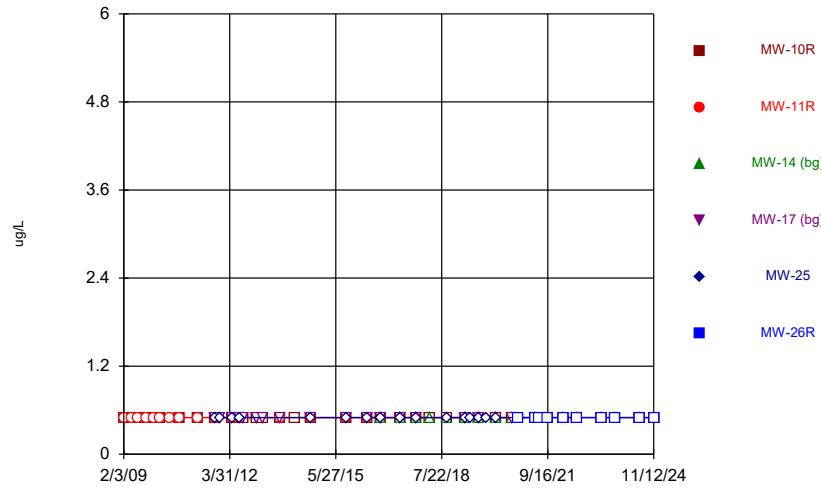
Constituent: 1,2-Dichloroethane Analysis Run 12/10/2024 1:58 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



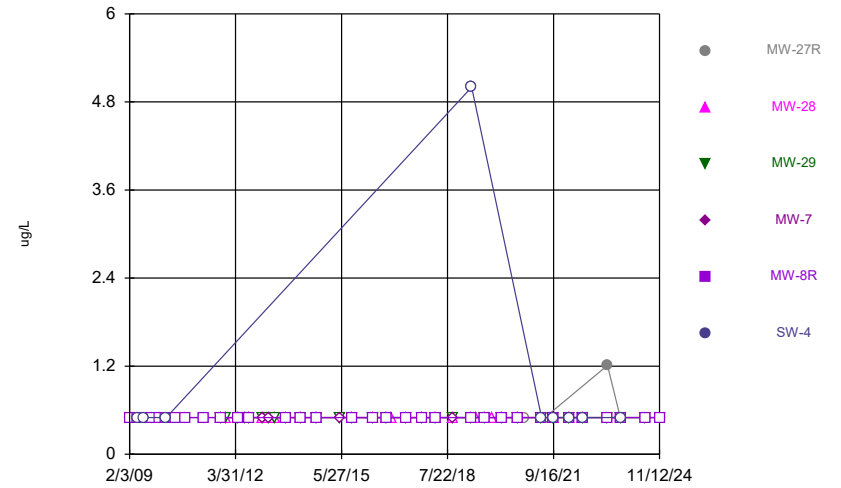
Constituent: 1,2-Dichloroethane Analysis Run 12/10/2024 1:58 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



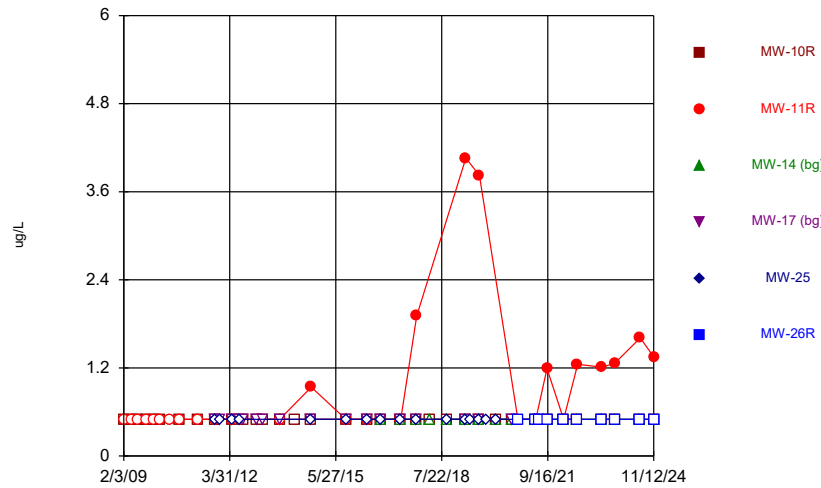
Constituent: 1,2-Dichloropropane Analysis Run 12/10/2024 1:58 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



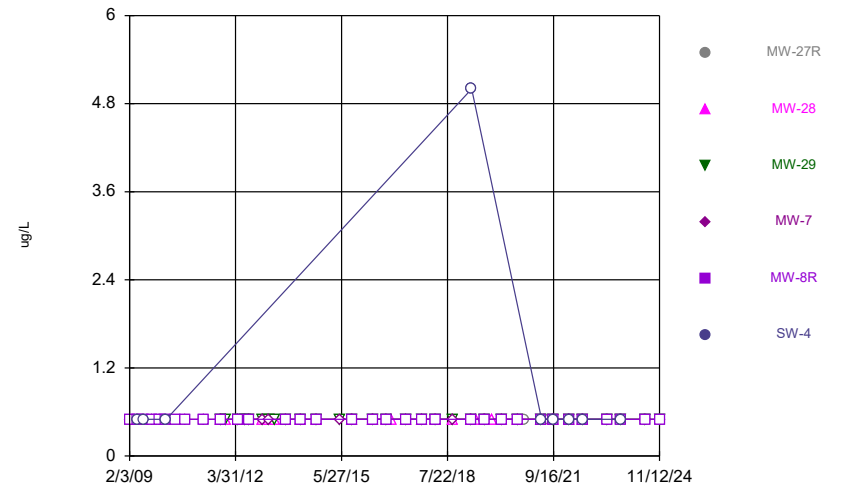
Constituent: 1,2-Dichloropropane Analysis Run 12/10/2024 1:58 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



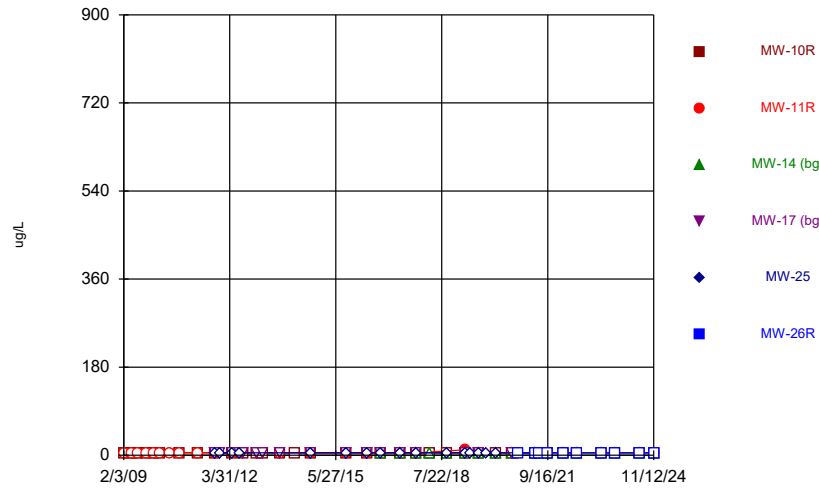
Constituent: 1,4-Dichlorobenzene Analysis Run 12/10/2024 1:58 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



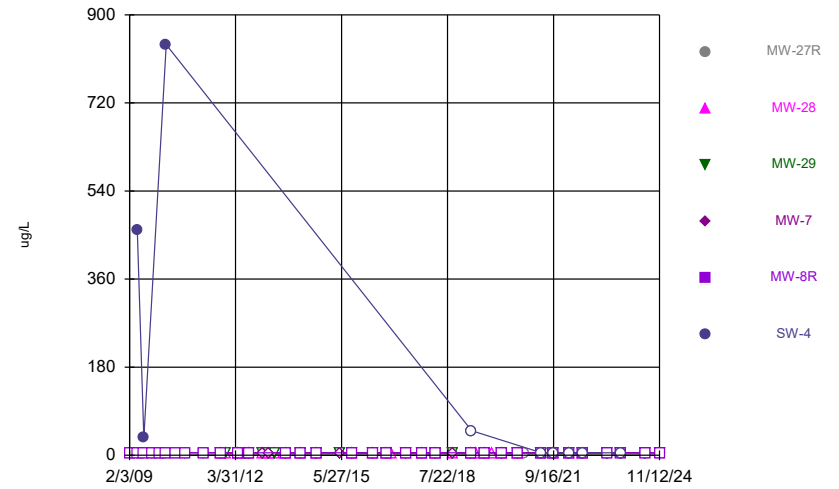
Constituent: 1,4-Dichlorobenzene Analysis Run 12/10/2024 1:58 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



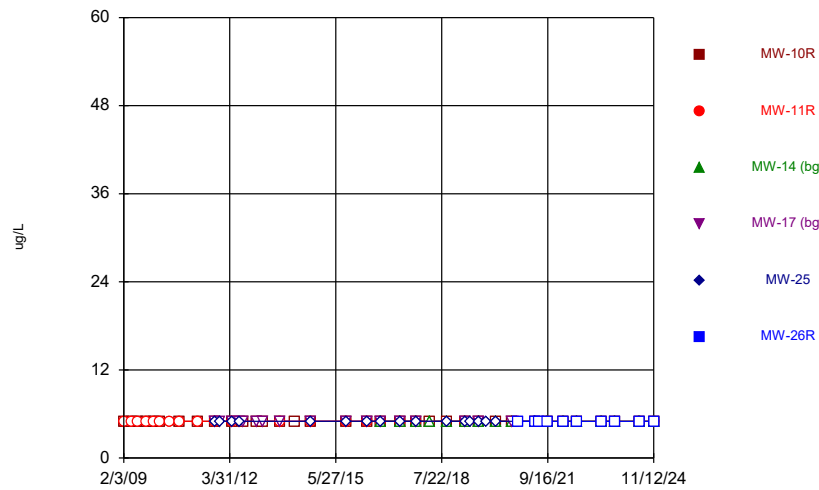
Constituent: 2-Butanone Analysis Run 12/10/2024 1:59 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



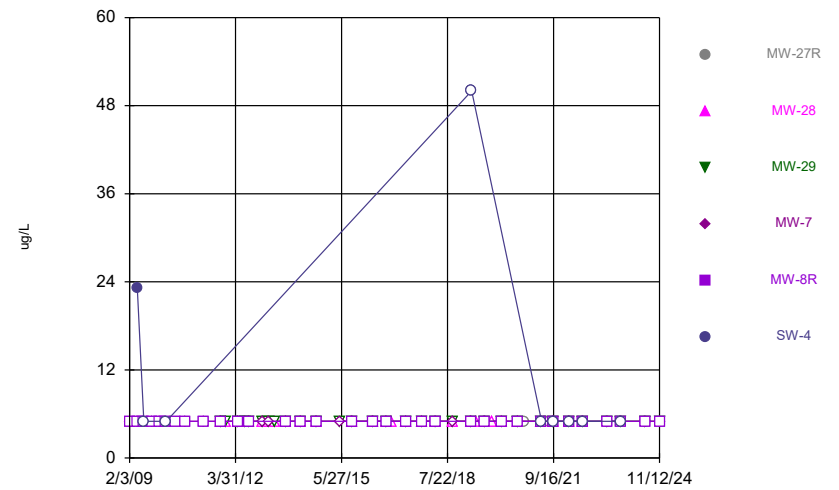
Constituent: 2-Butanone Analysis Run 12/10/2024 1:59 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



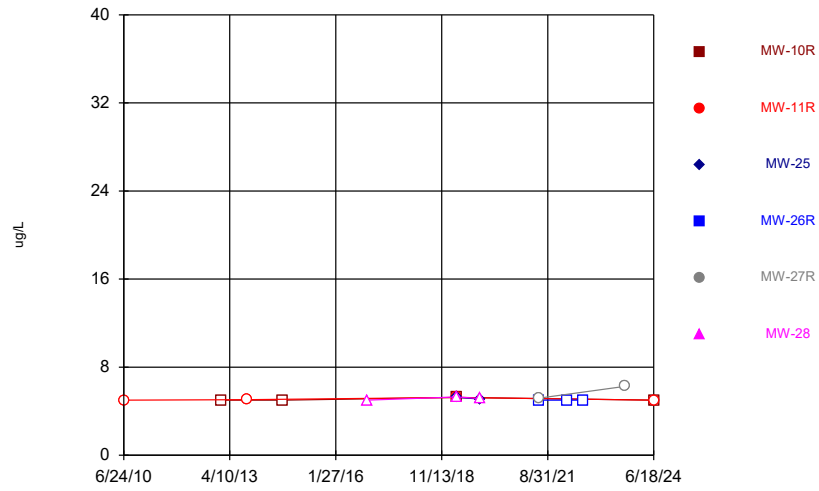
Constituent: 2-Hexanone Analysis Run 12/10/2024 1:59 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



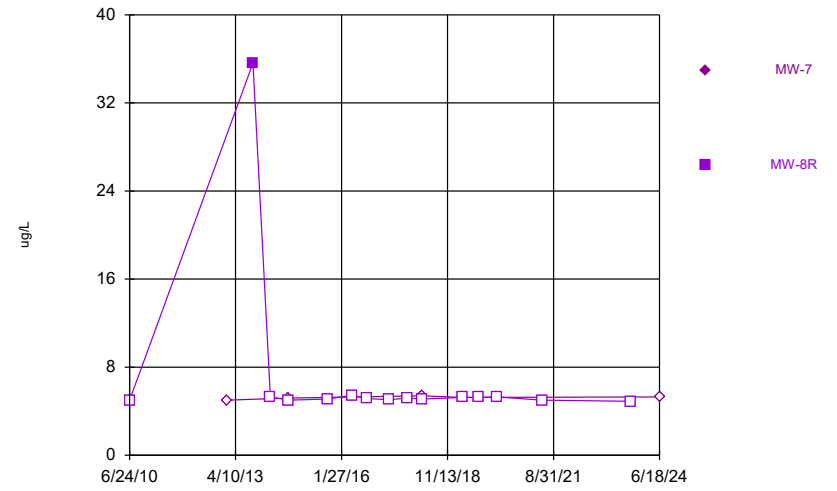
Constituent: 2-Hexanone Analysis Run 12/10/2024 1:59 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



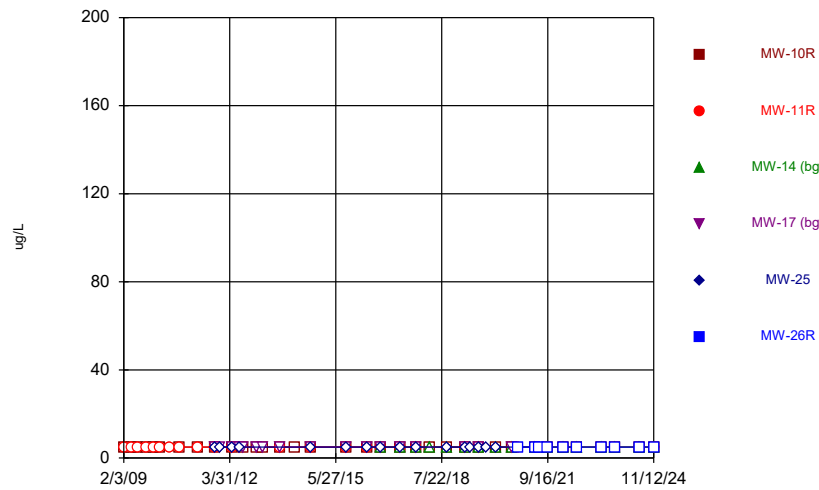
Constituent: 3/4-Methylphenol Analysis Run 12/10/2024 1:59 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



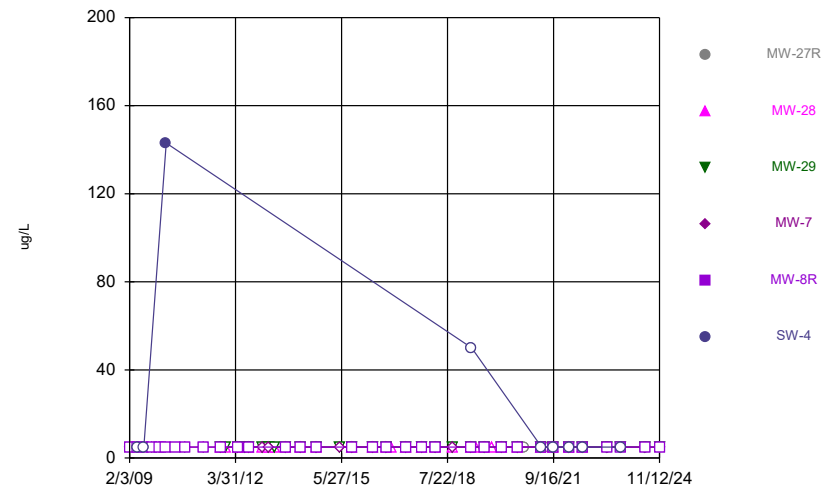
Constituent: 3/4-Methylphenol Analysis Run 12/10/2024 1:59 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



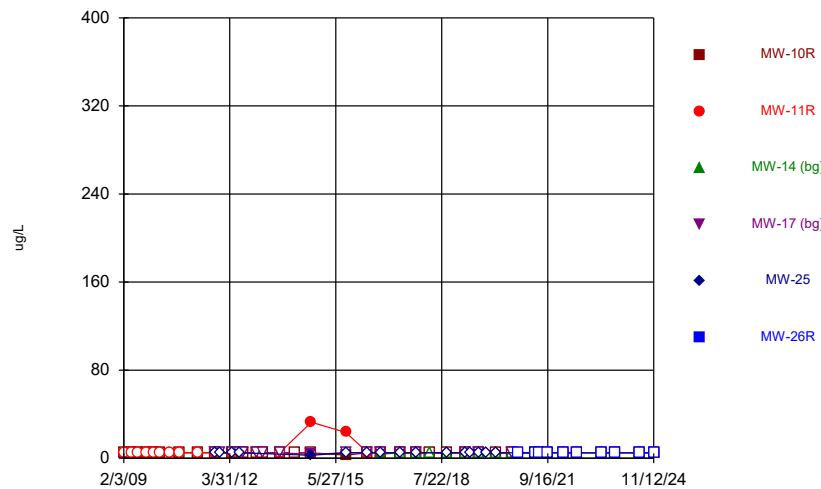
Constituent: 4-Methyl-2-pentanone Analysis Run 12/10/2024 1:59 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



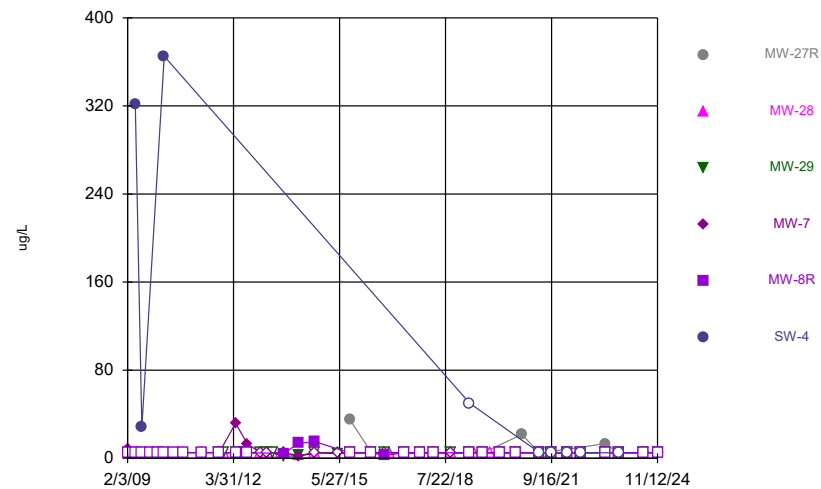
Constituent: 4-Methyl-2-pentanone Analysis Run 12/10/2024 1:59 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



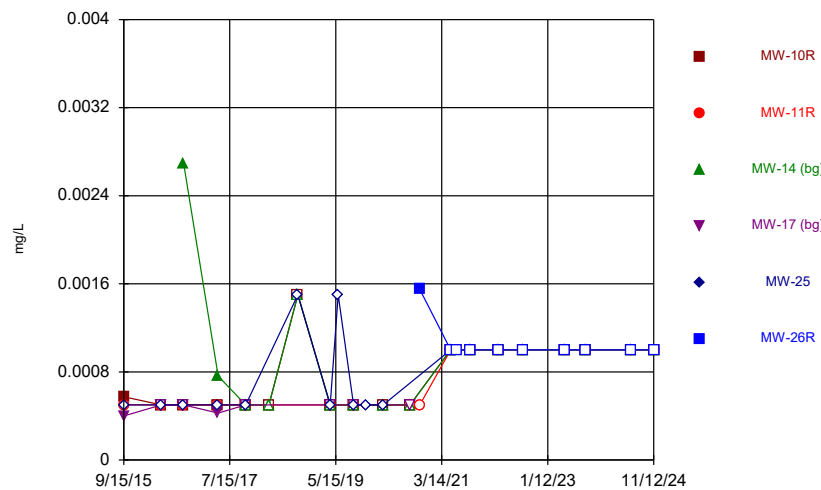
Constituent: Acetone Analysis Run 12/10/2024 1:59 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



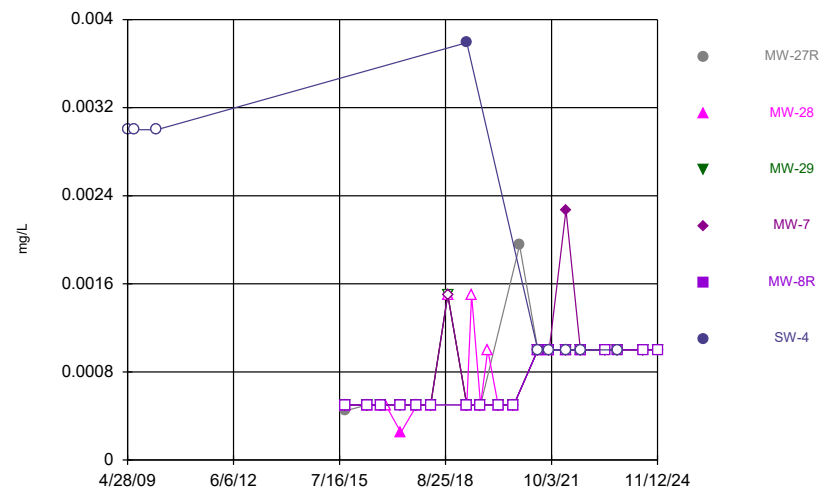
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Time Series



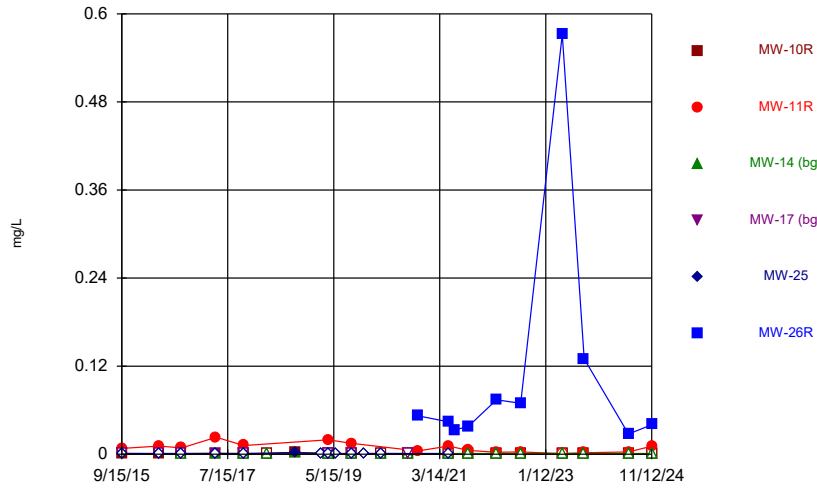
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Time Series



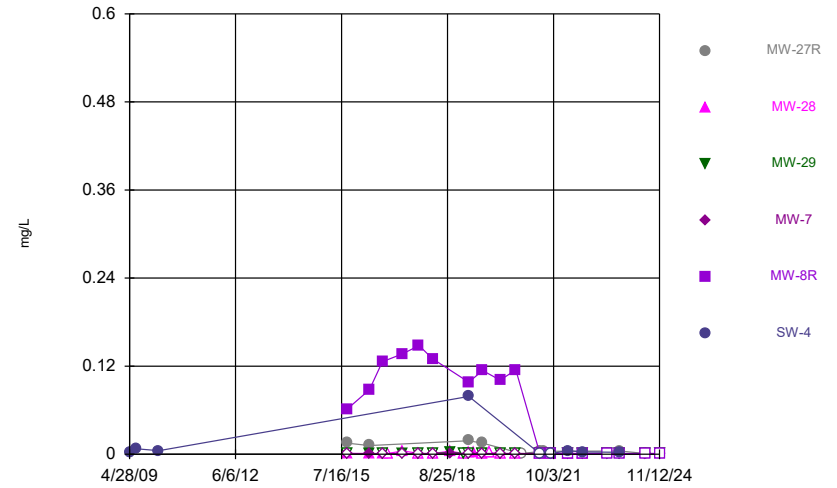
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Time Series



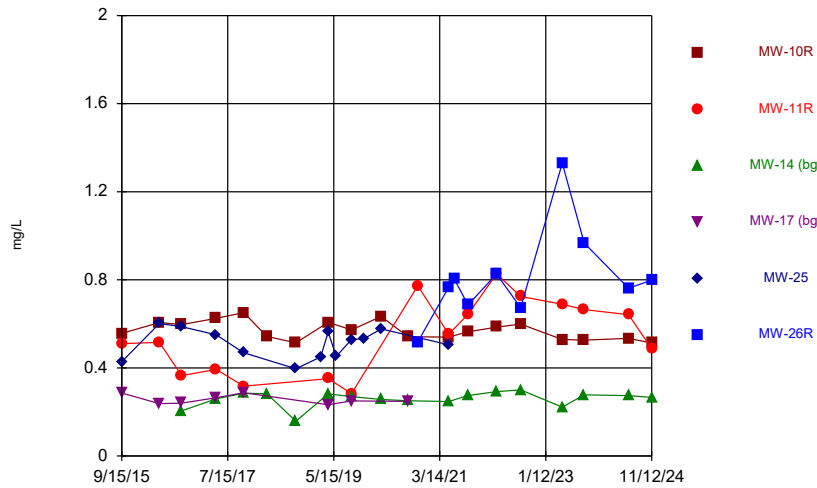
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Time Series



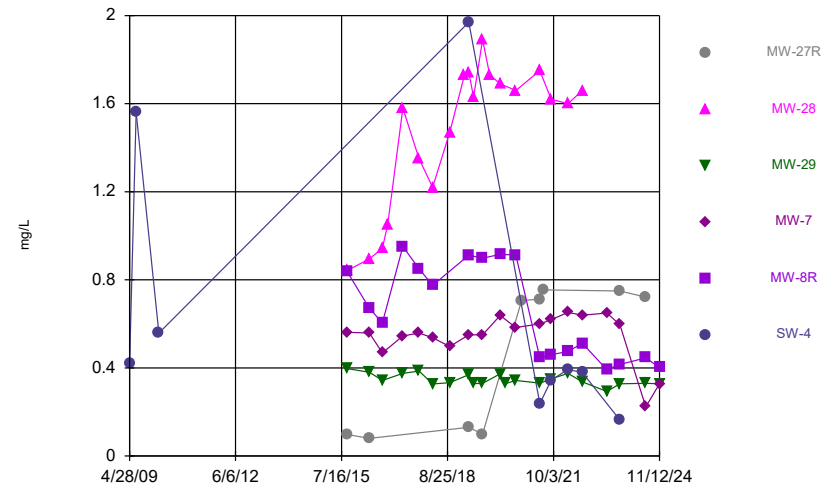
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Time Series



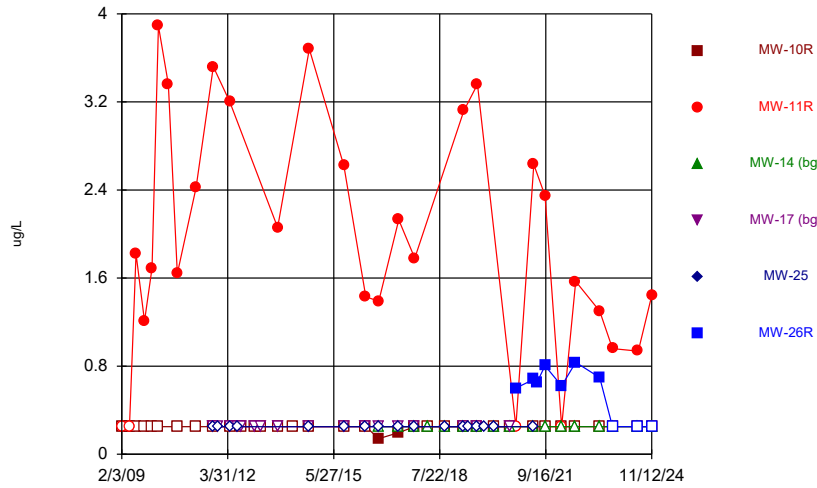
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Time Series



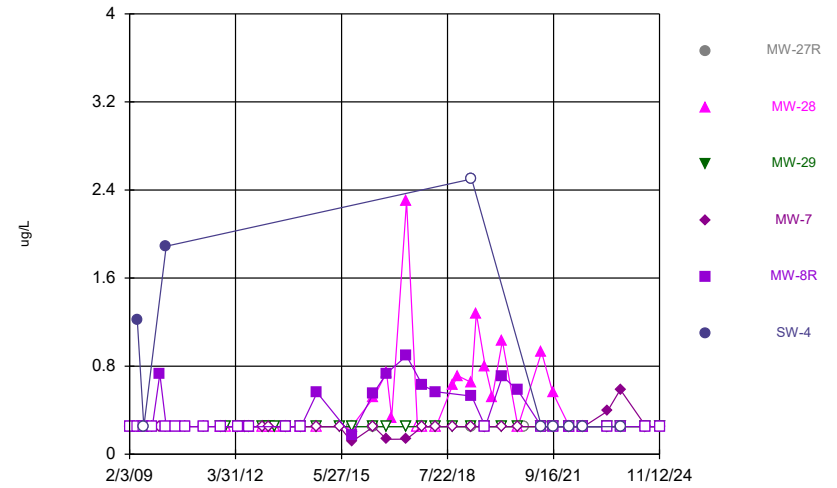
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Time Series



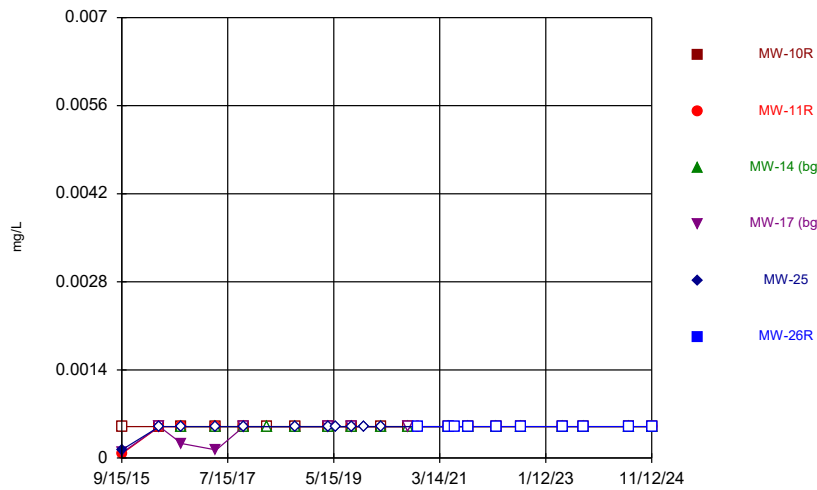
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Time Series



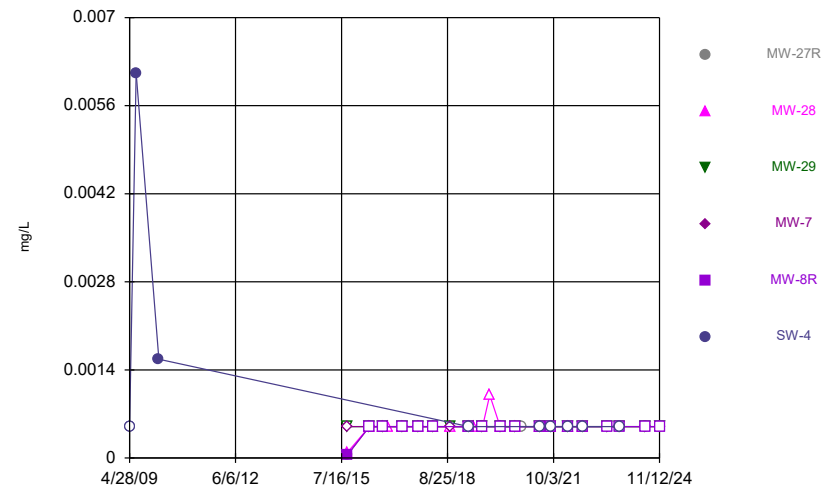
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Time Series



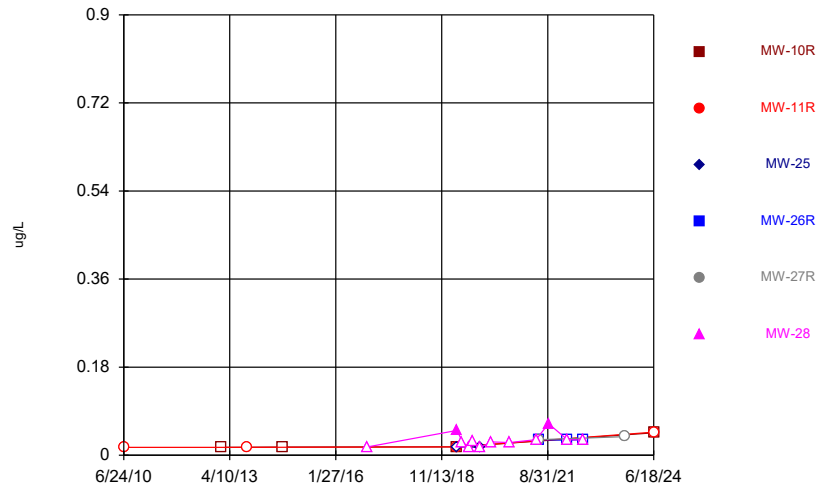
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Time Series



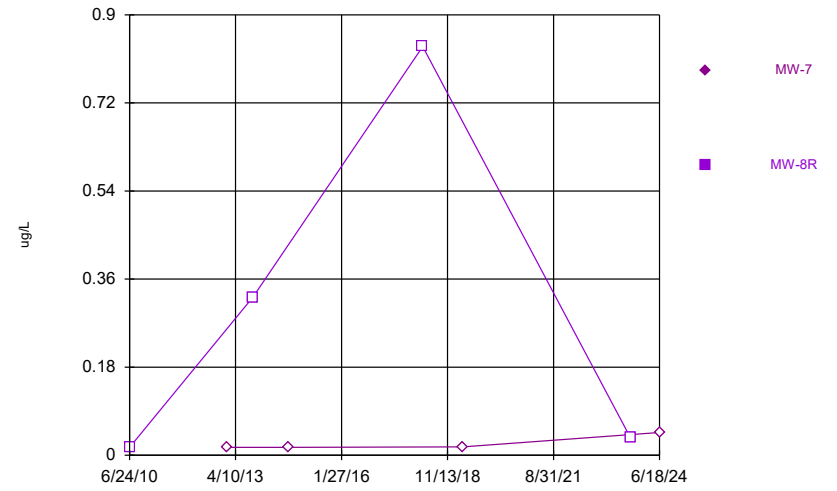
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Time Series



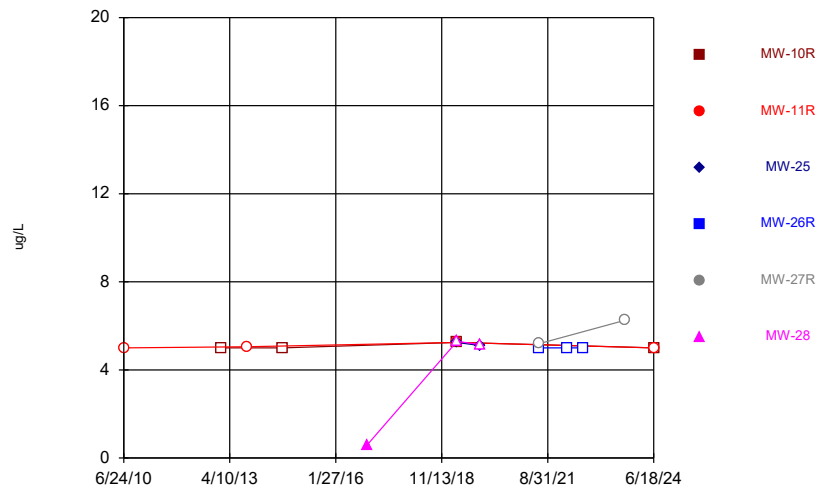
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



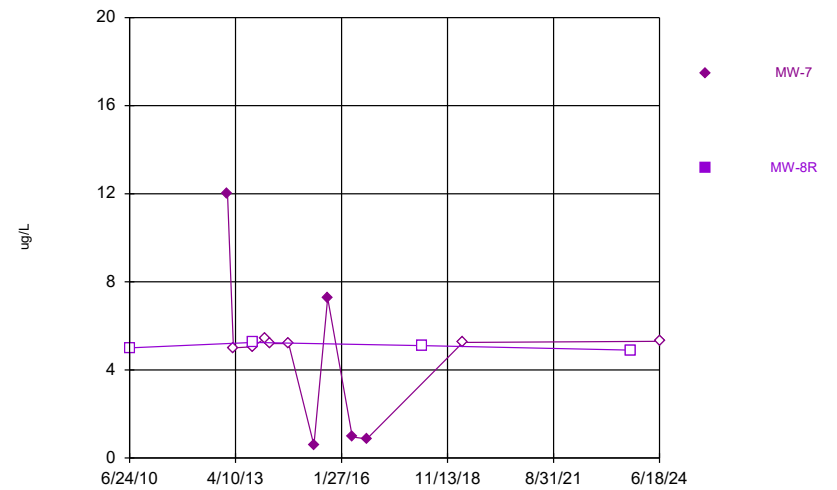
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Time Series



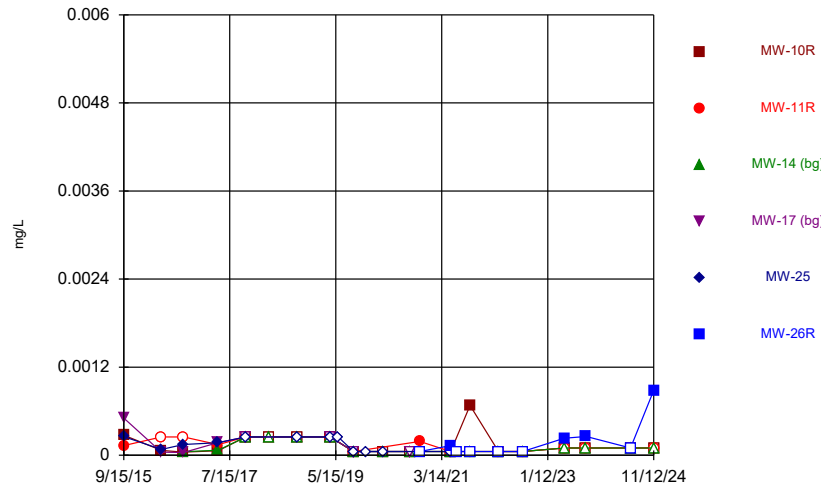
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



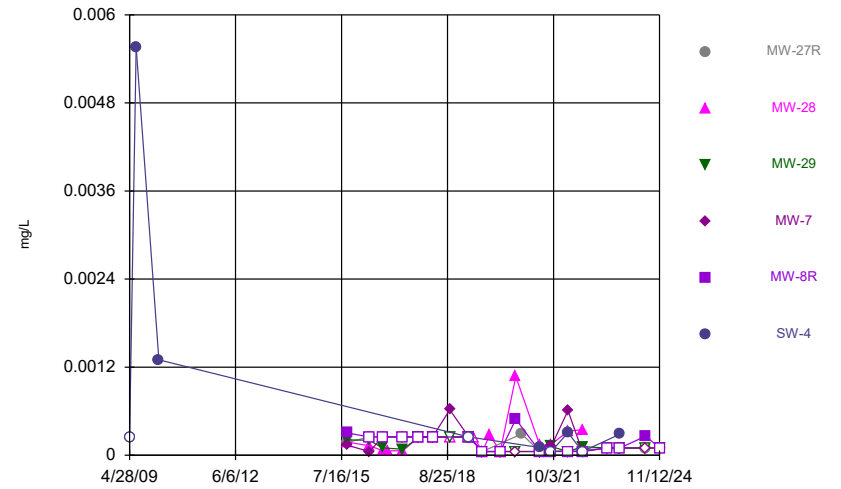
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



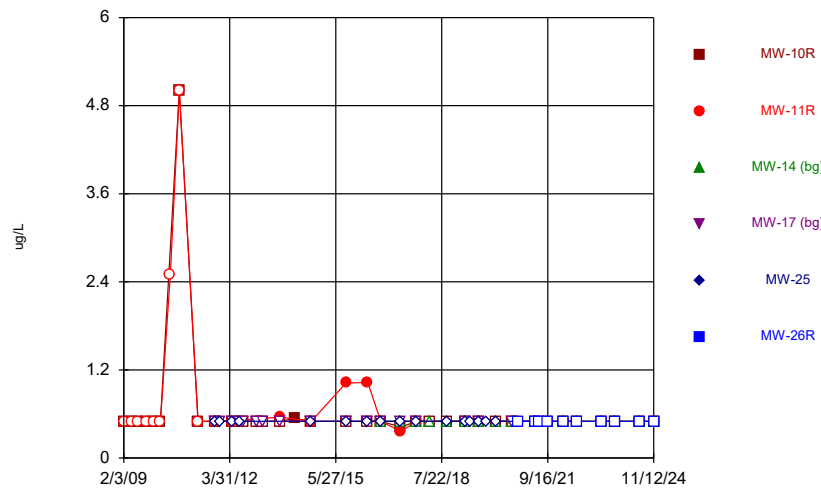
Constituent: Cadmium Analysis Run 12/10/2024 1:59 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



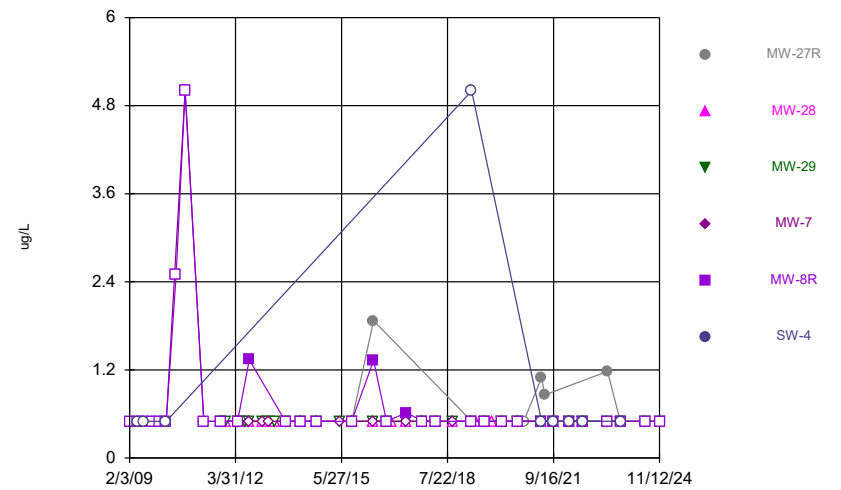
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



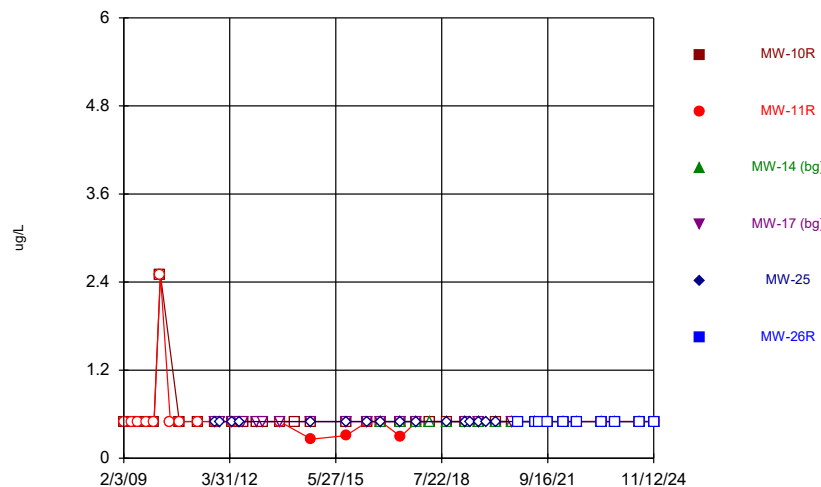
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Time Series



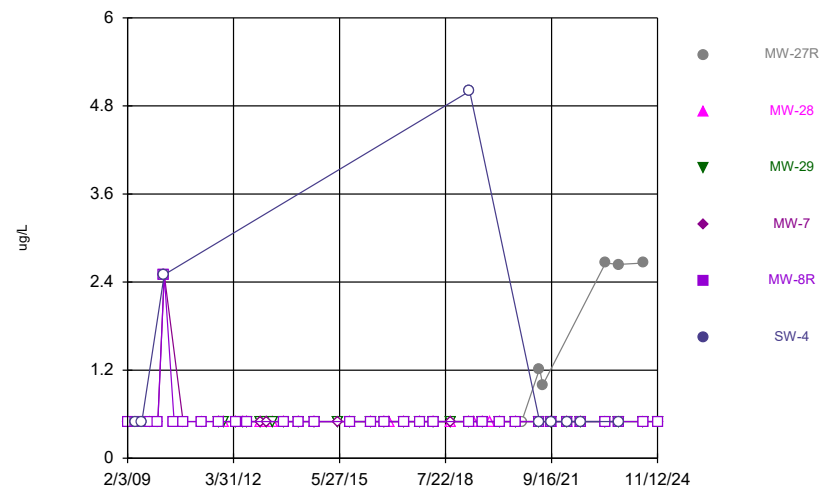
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Time Series



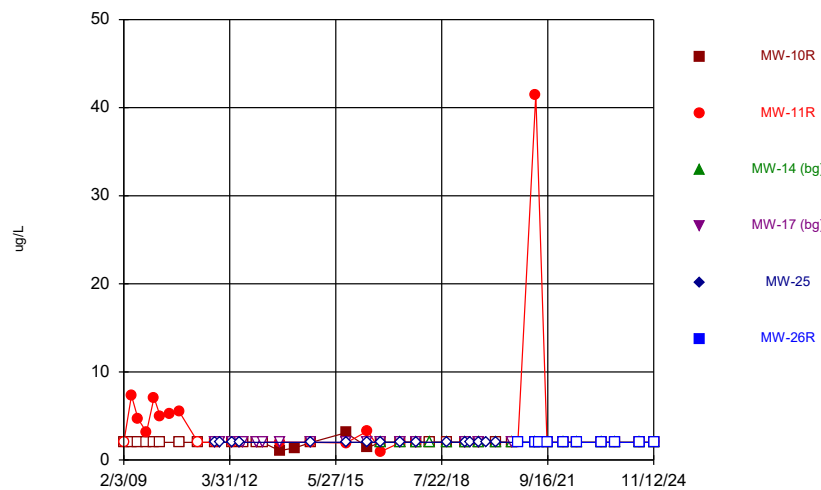
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Time Series



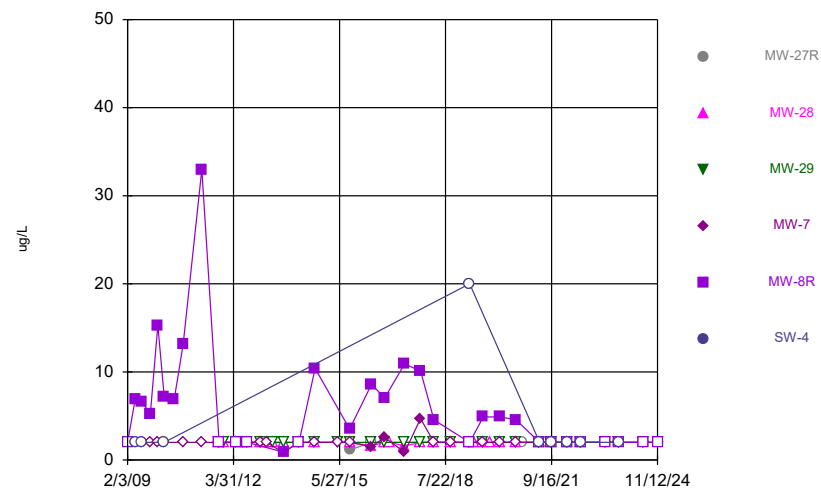
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Time Series



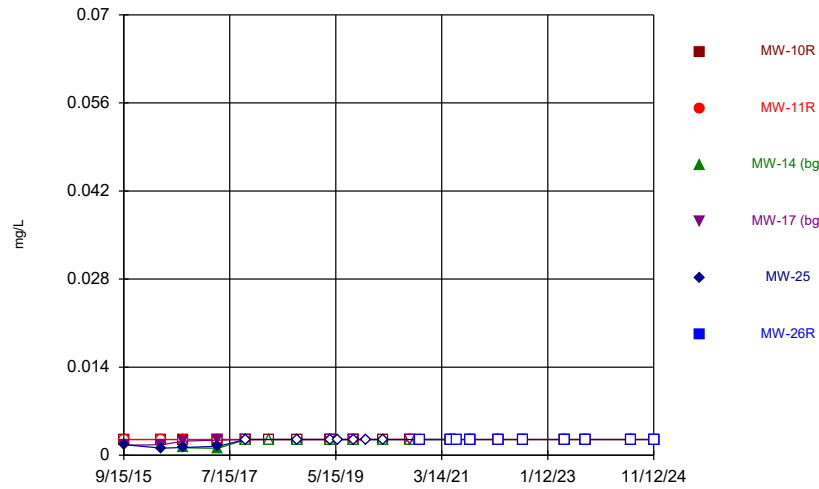
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Time Series



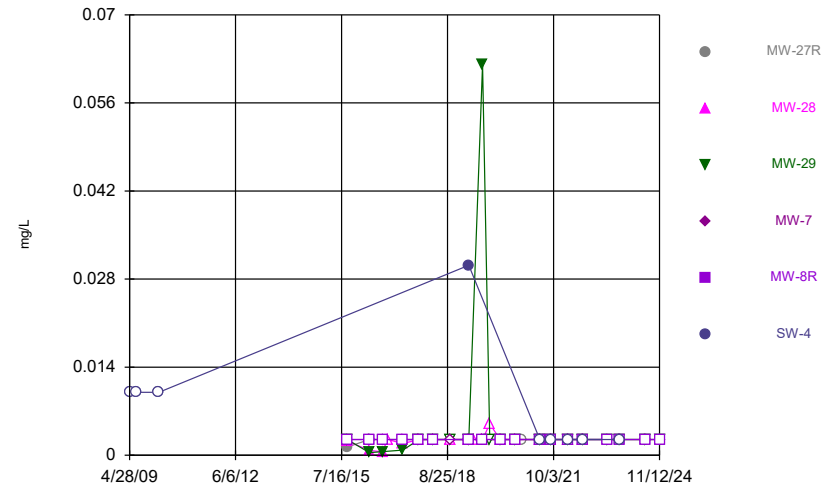
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Time Series



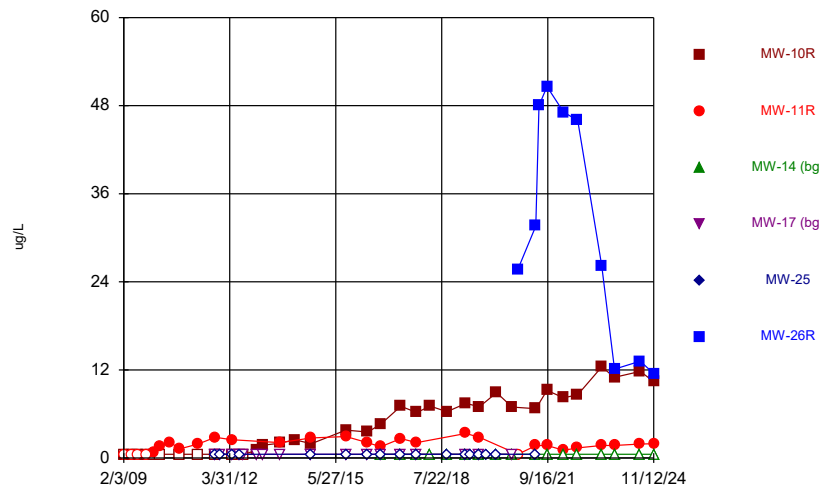
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



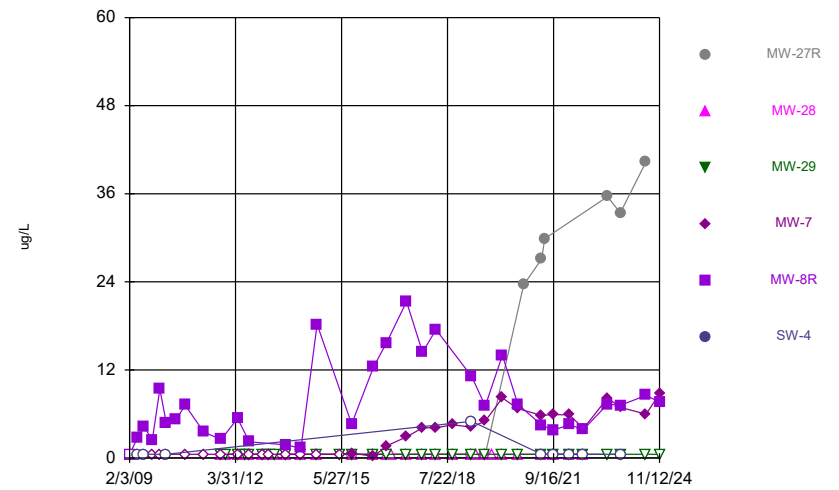
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Time Series



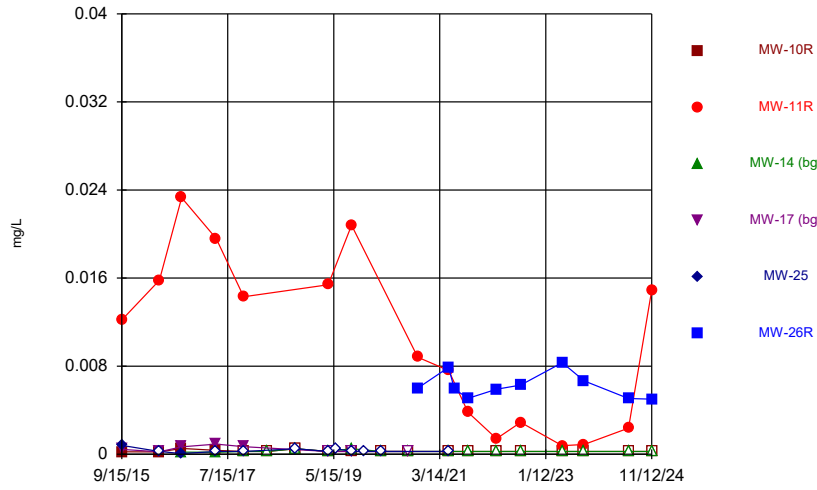
Constituent: cis-1,2-Dichloroethene Analysis Run 12/10/2024 1:59 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



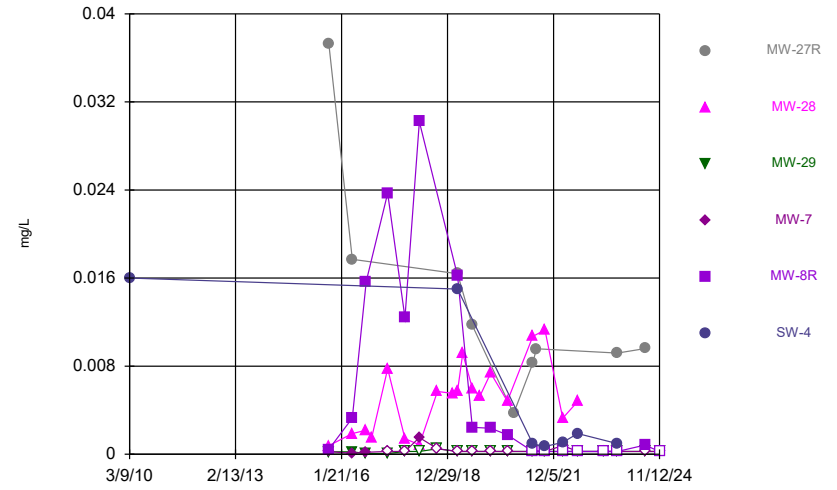
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



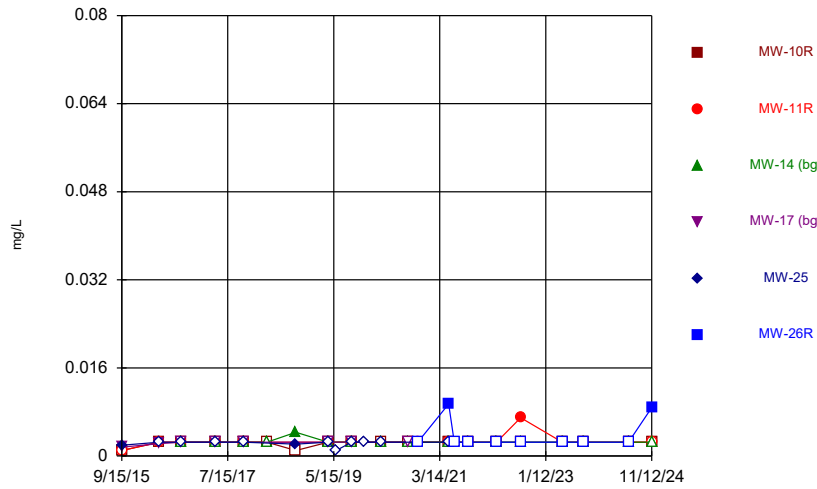
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



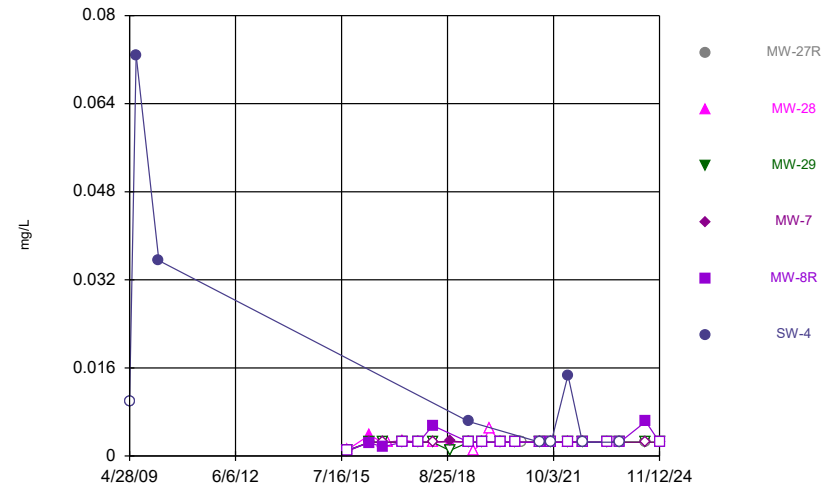
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Time Series



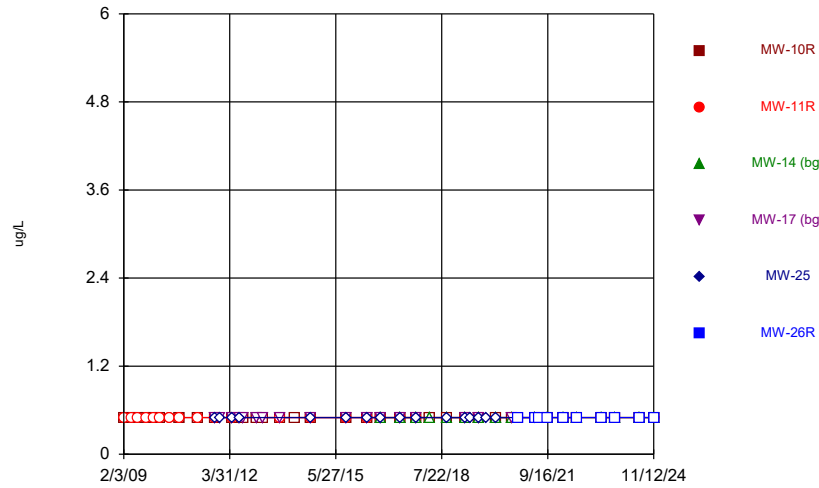
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



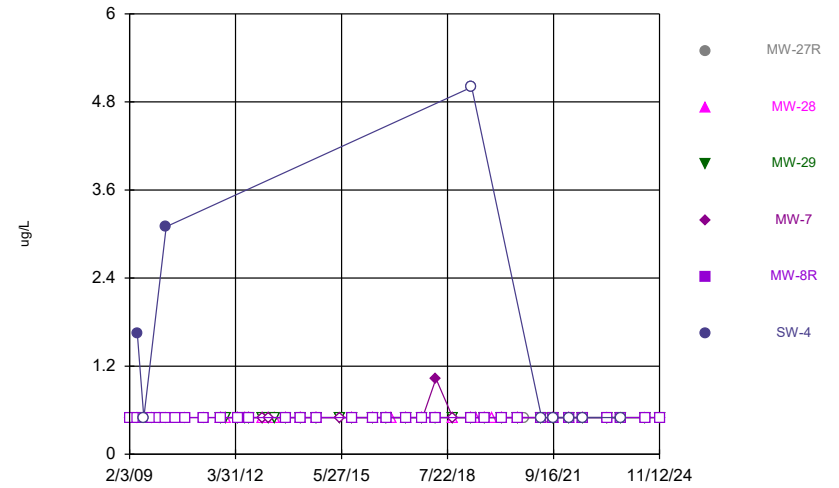
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



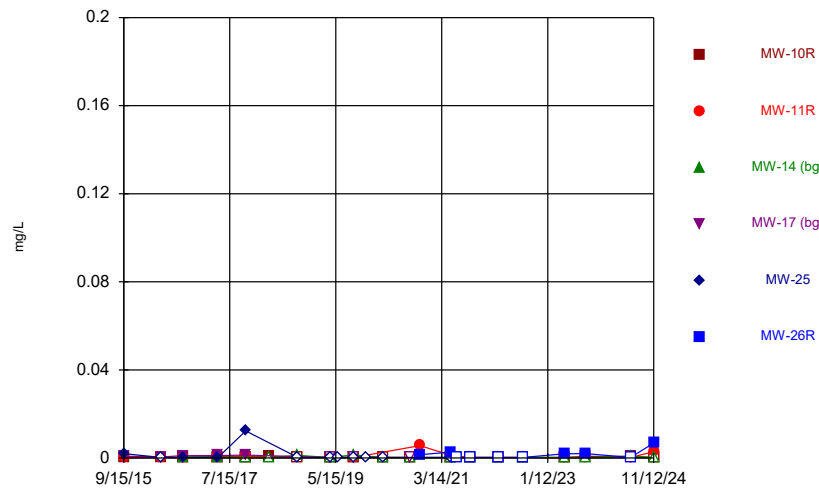
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



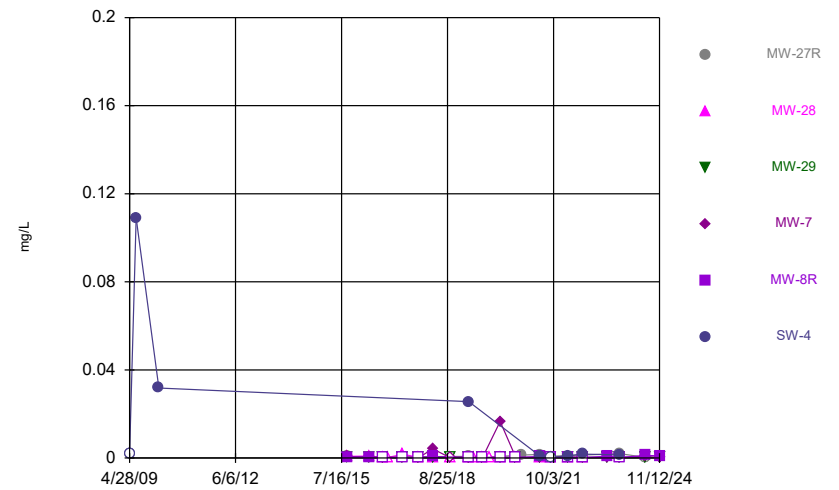
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Time Series



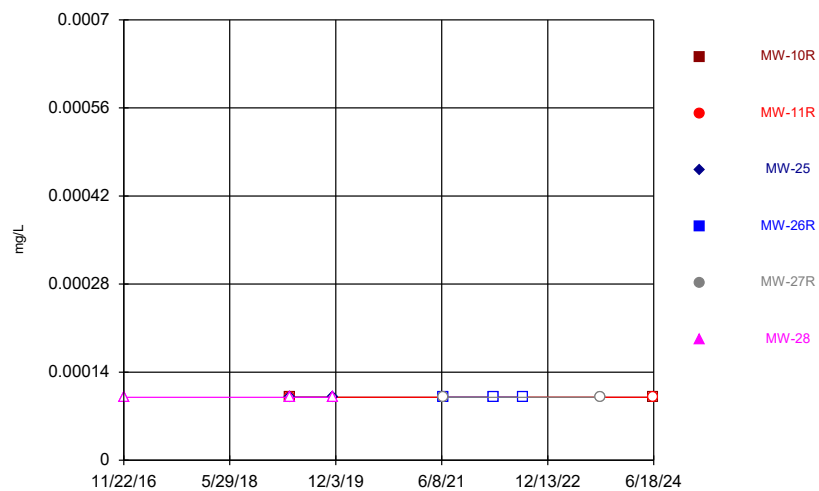
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Time Series



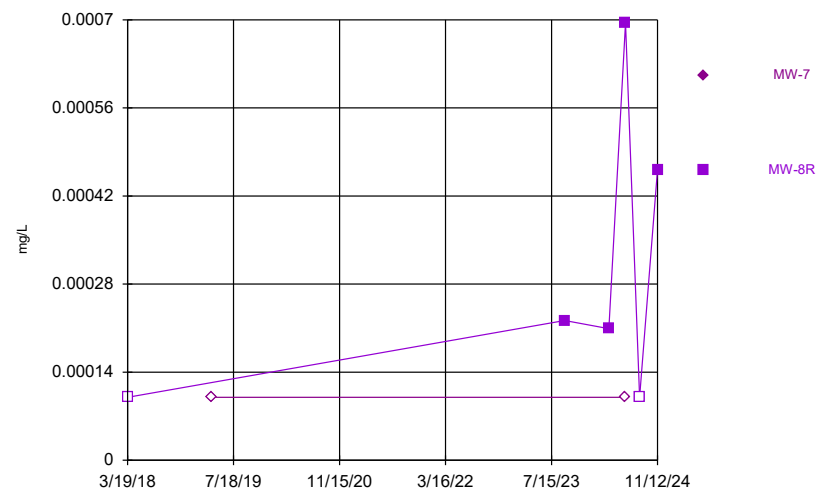
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Time Series



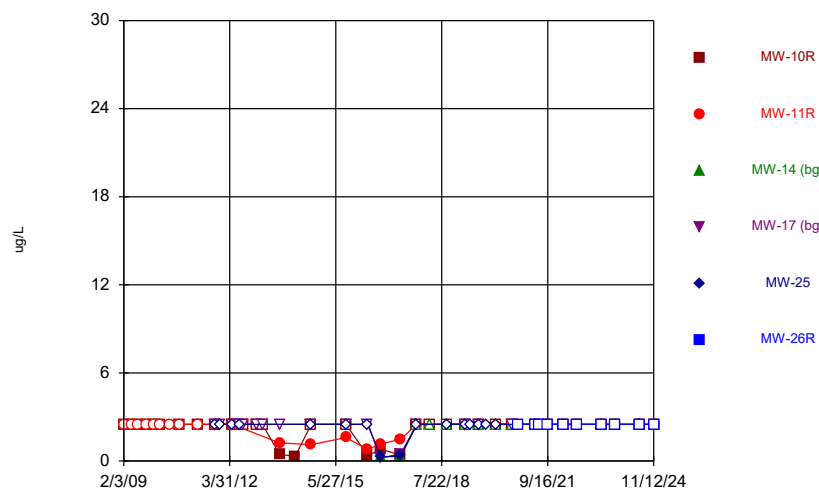
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



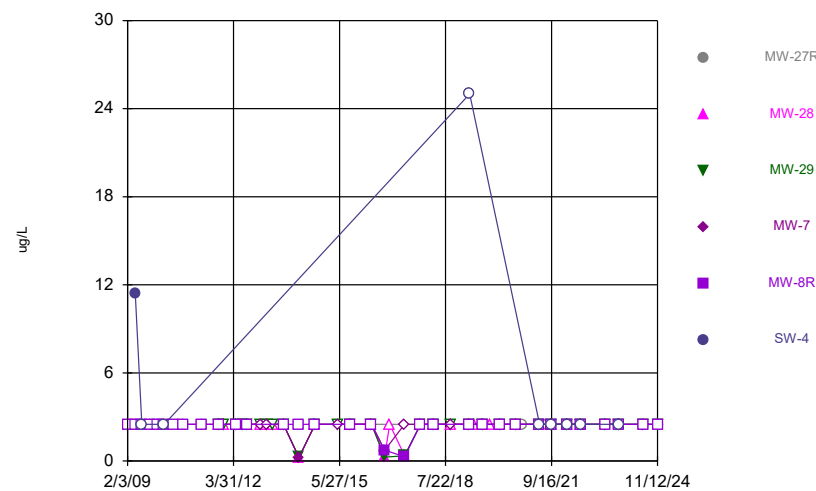
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Time Series



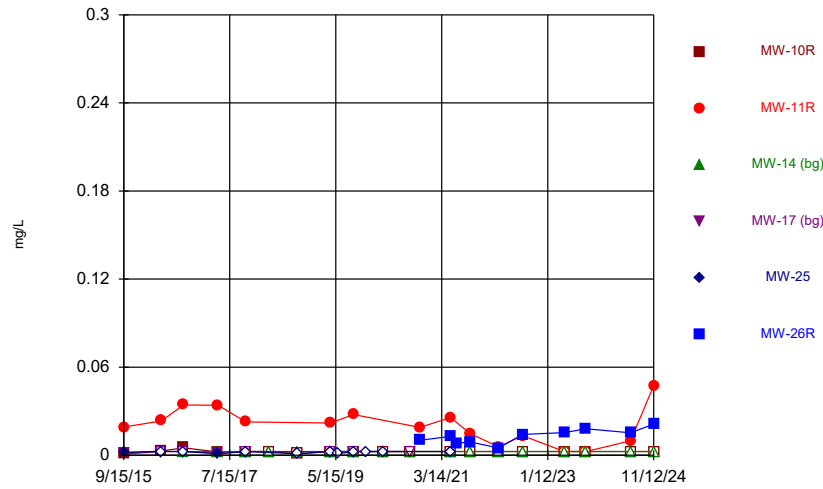
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



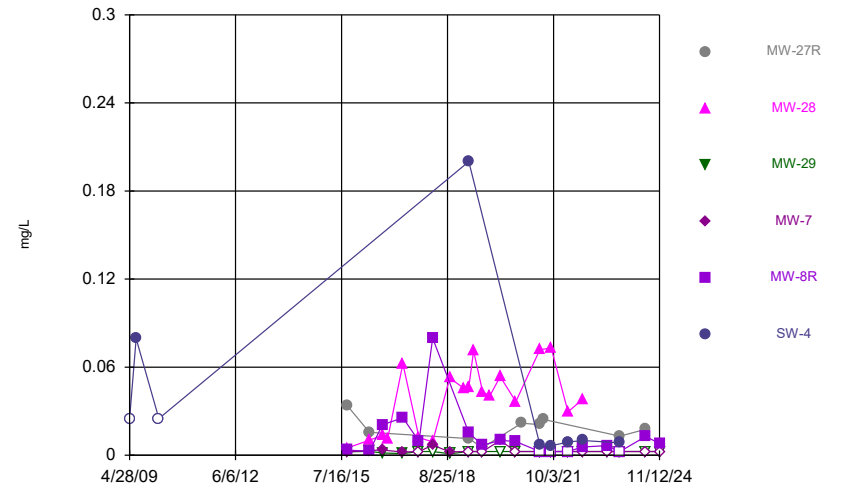
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



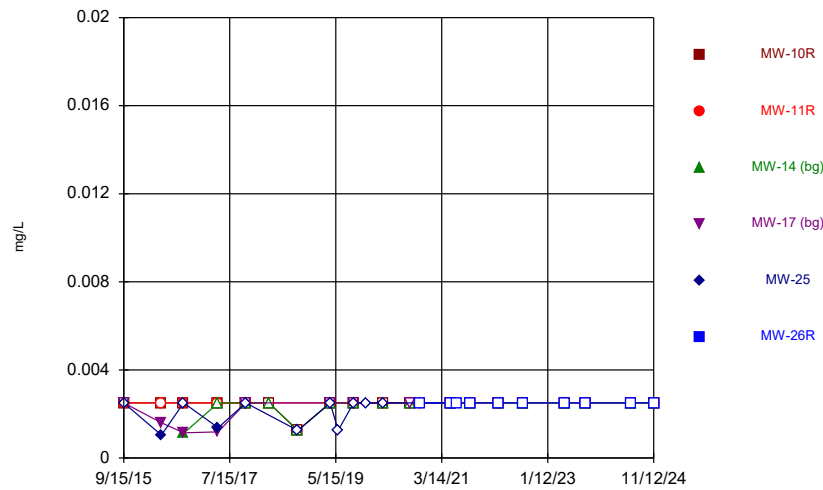
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



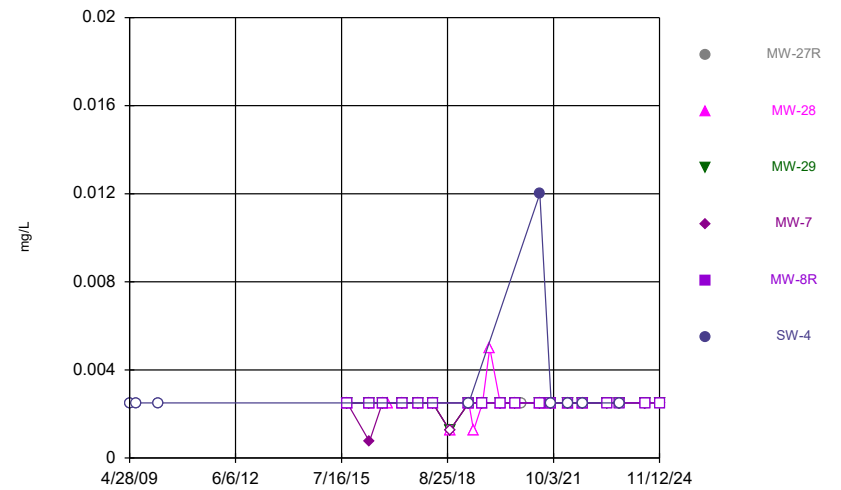
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



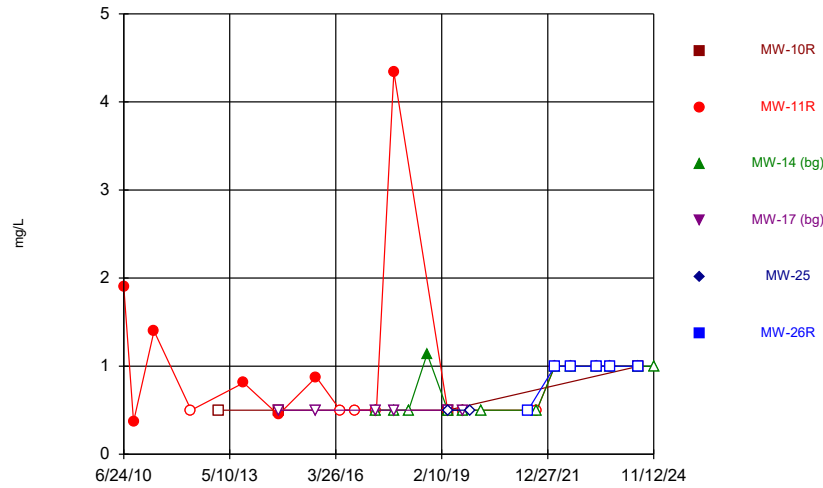
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



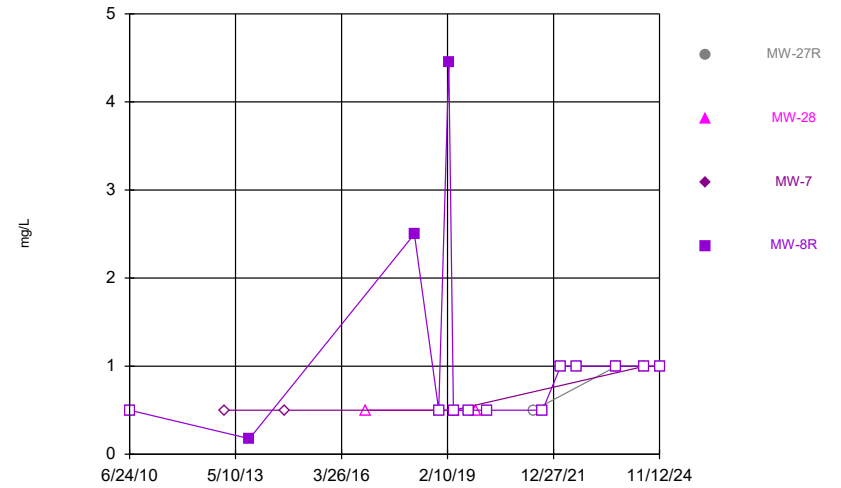
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



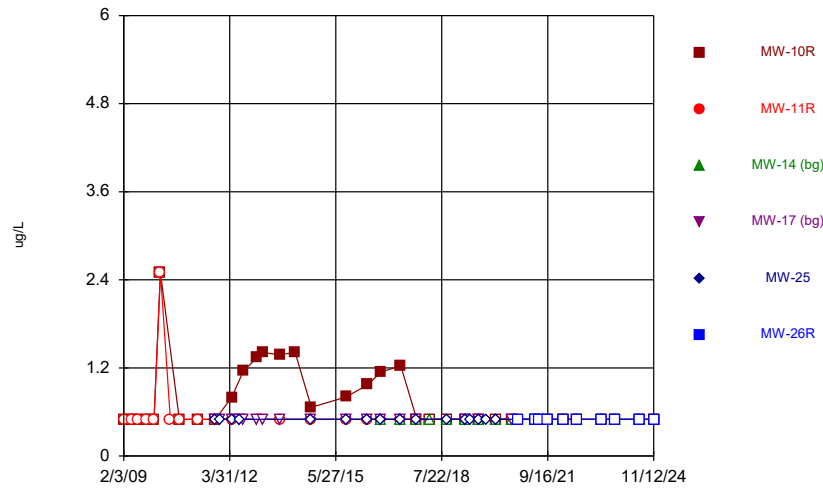
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



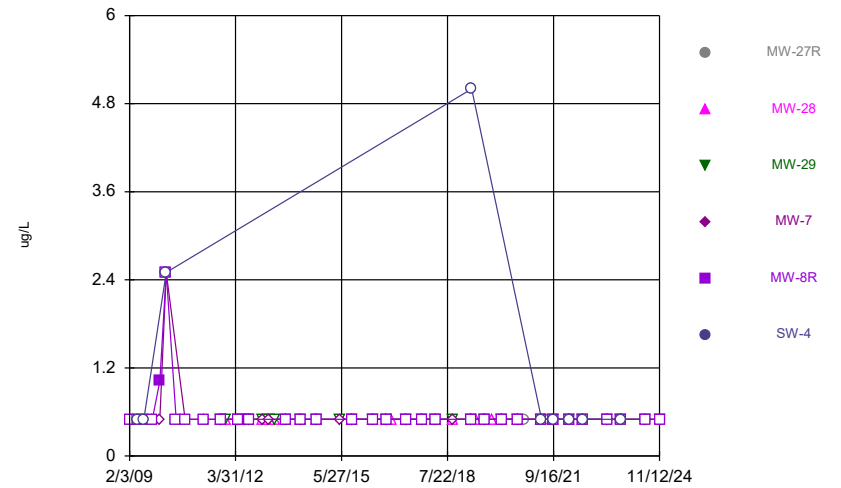
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Time Series



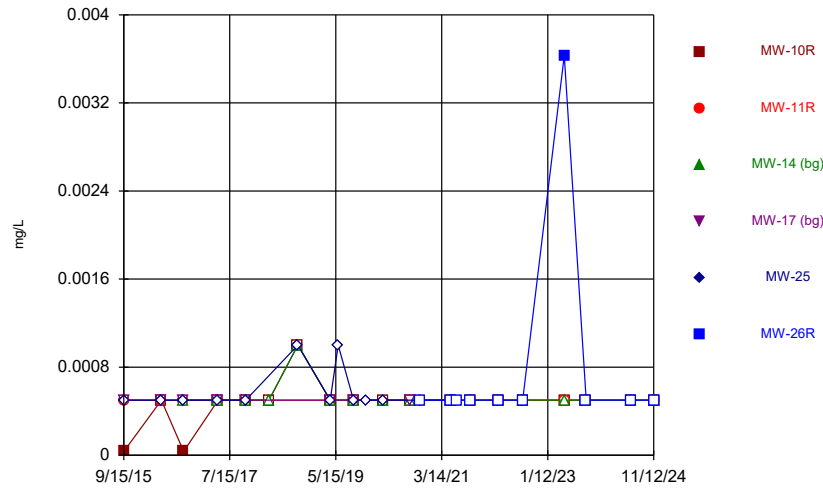
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



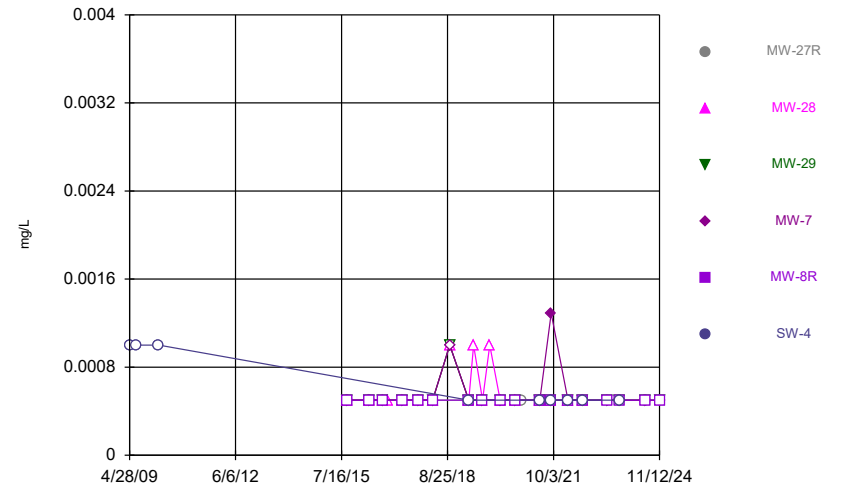
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



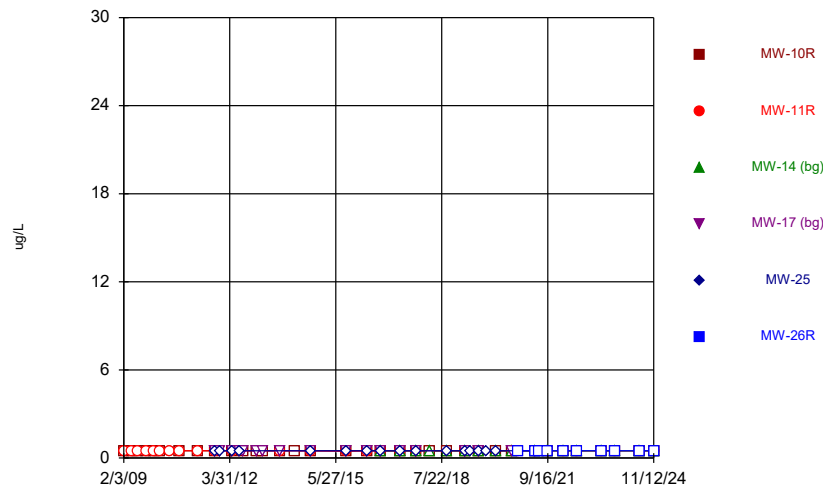
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Time Series



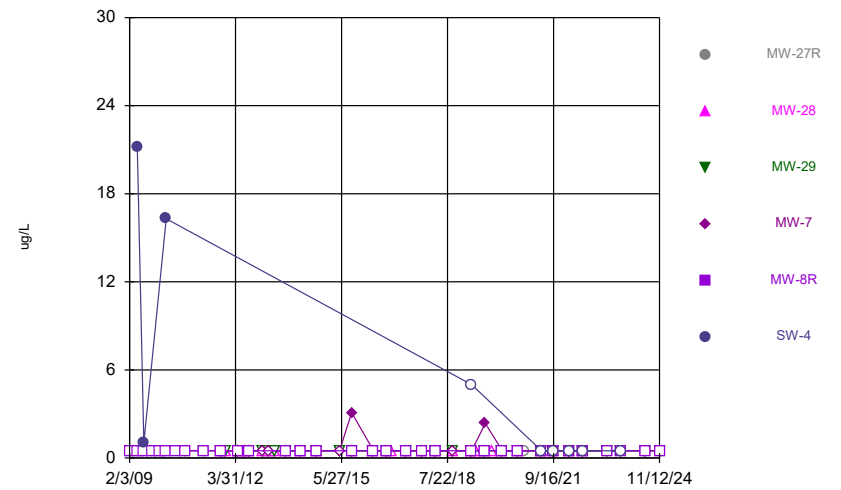
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



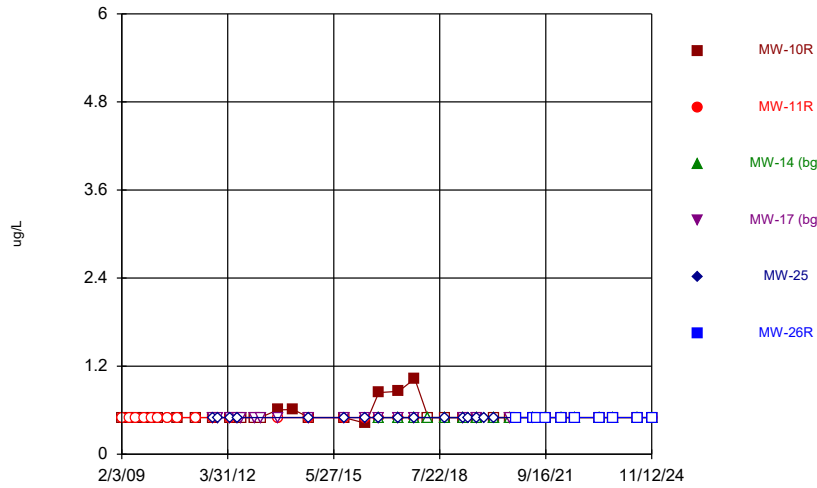
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Time Series



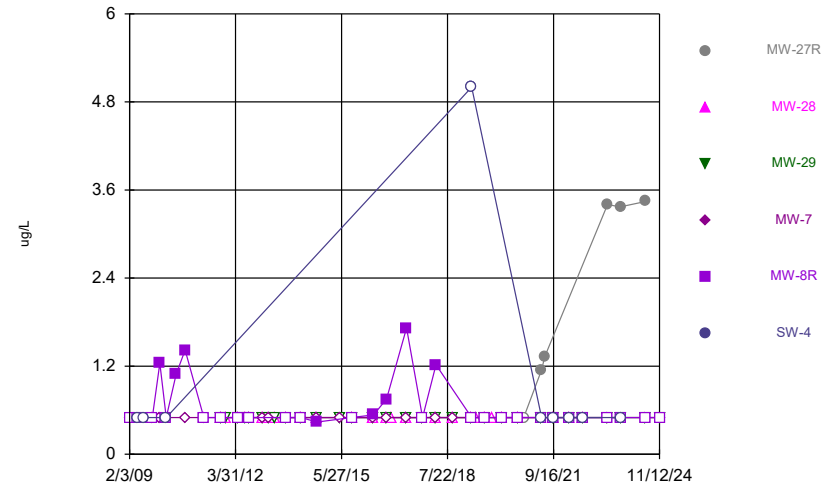
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Time Series



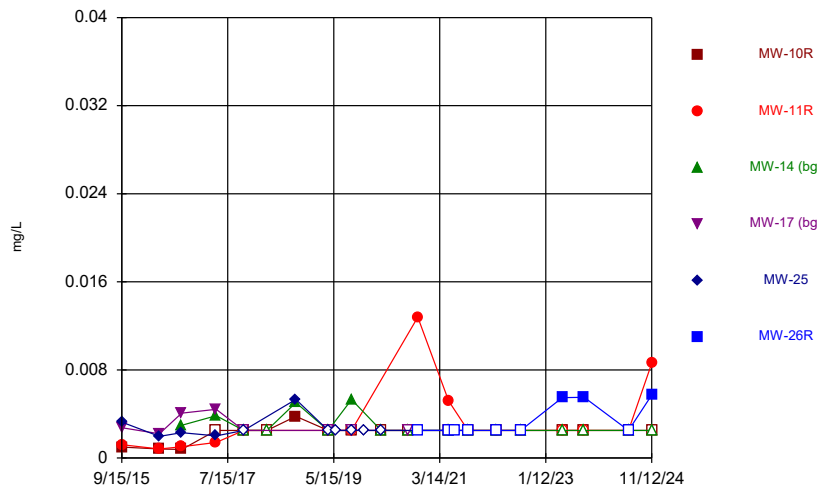
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



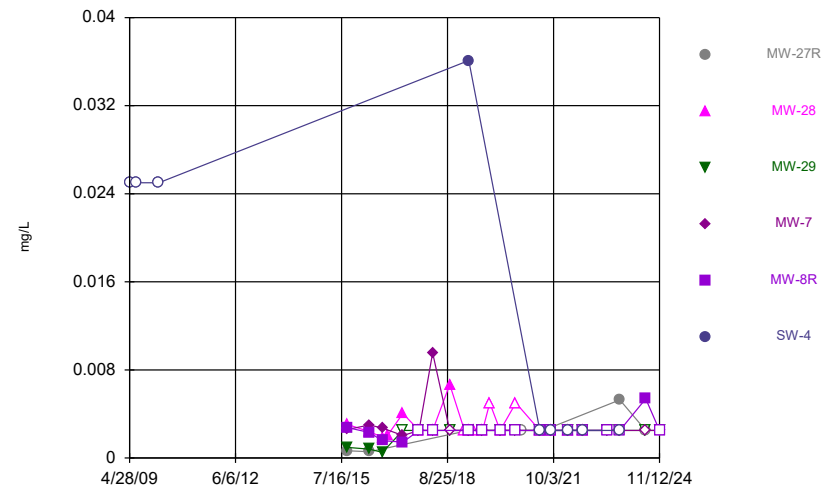
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



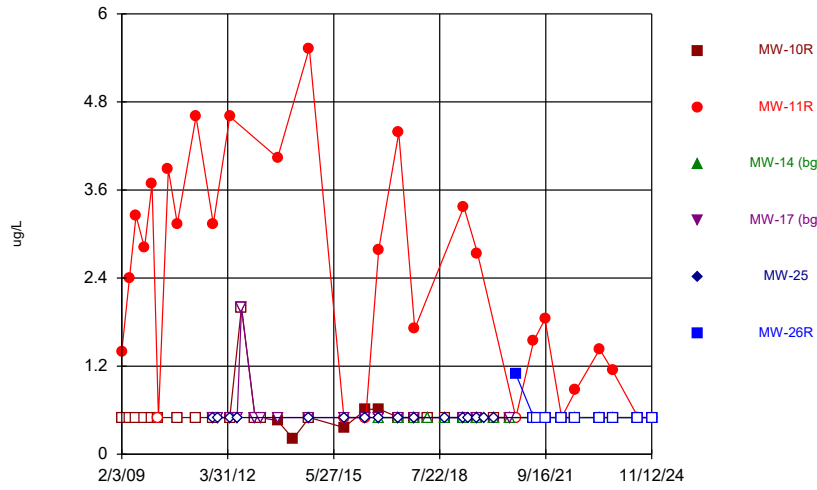
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



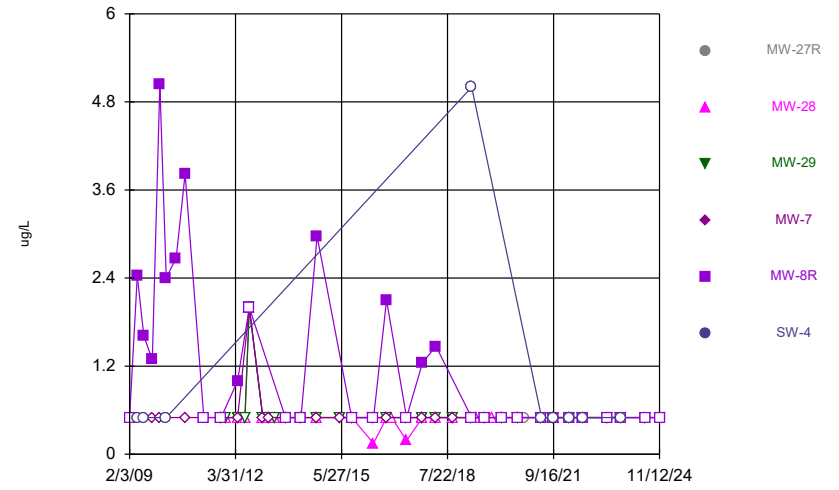
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Time Series



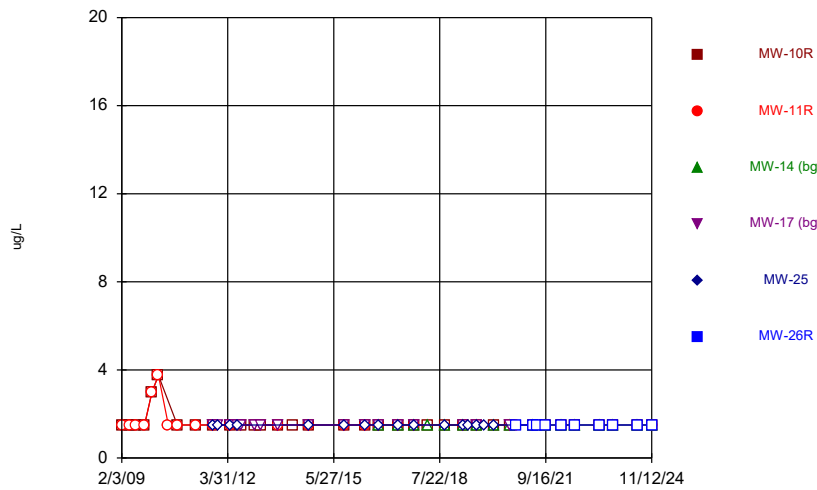
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Time Series



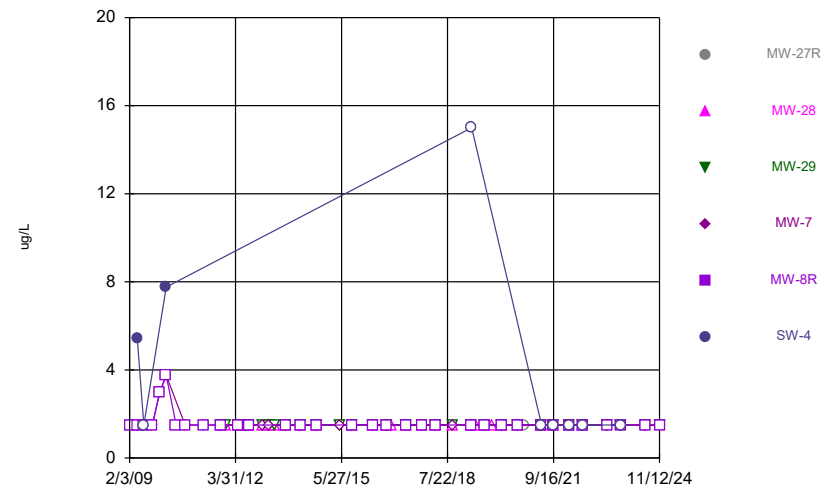
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Time Series



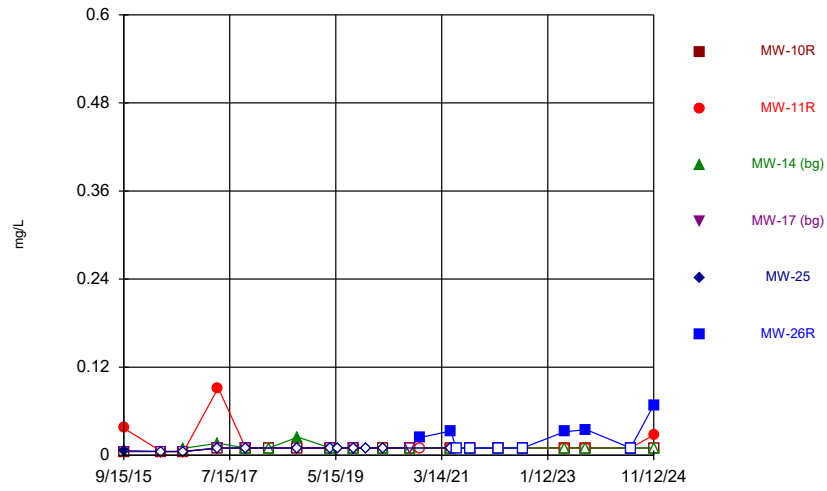
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Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



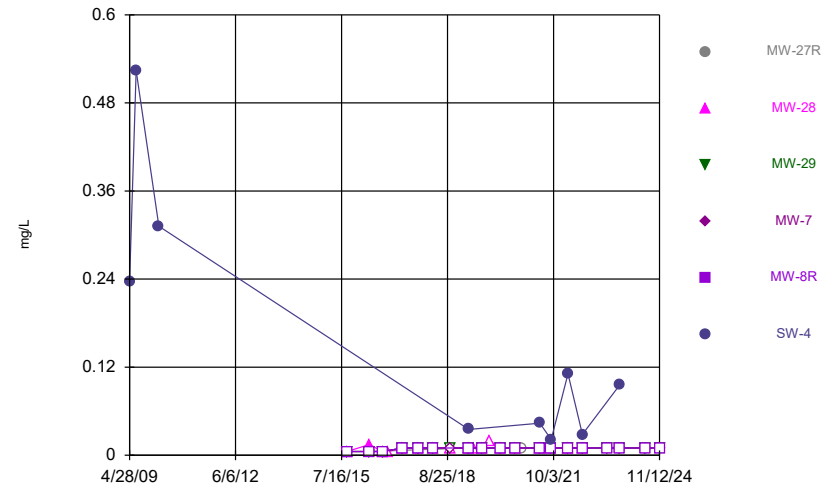
Constituent: Xylenes, total Analysis Run 12/10/2024 2:00 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



Constituent: Zinc Analysis Run 12/10/2024 2:00 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Time Series



Constituent: Zinc Analysis Run 12/10/2024 2:00 PM View: 2024 AWQR Timeseries
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Outliers Table and Graphs

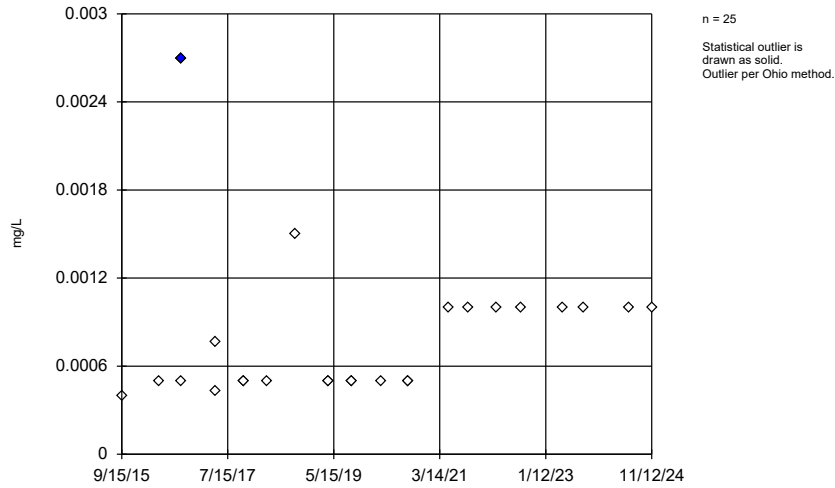
Outlier Analysis

Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master Printed 12/10/2024, 2:14 PM

<u>Constituent</u>	<u>Well</u>	<u>Outlier</u>	<u>Value(s)</u>	<u>Date(s)</u>	<u>Method</u>	<u>Alpha</u>	<u>N</u>	<u>Mean</u>	<u>Normality Test</u>
Antimony (mg/L)	MW-14,MW-17	Yes	0.002695	n/a w/combined bg	OH	NaN	25	0.0007914	n/a
Arsenic (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	25	0.001025	n/a
Barium (mg/L)	MW-14,MW-17	Yes	0.158	n/a w/combined bg	Rosner/OH	0.01	25	0.2581	ShapiroWilk
Beryllium (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	25	0.0004576	n/a
Cadmium (mg/L)	MW-14,MW-17	Yes	0.000506	n/a w/combined bg	OH	NaN	25	0.0001291	n/a
Chromium (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	25	0.002308	n/a
Cobalt (mg/L)	MW-14,MW-17	Yes	0.000671,0.000915...	n/a w/combined bg	NP (nrm)/OH	NaN	25	0.0003333	ShapiroWilk
Copper (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	25	0.002528	n/a
Lead (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	NP (nrm)/OH	NaN	25	0.0005257	ShapiroWilk
Nickel (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	25	0.002383	n/a
Selenium (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	25	0.002252	n/a
Silver (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	25	0.0004763	n/a
Vanadium (mg/L)	MW-14,MW-17	Yes	0.00503,0.00531,0...	n/a w/combined bg	NP (nrm)/OH	NaN	25	0.002924	ShapiroWilk
Zinc (mg/L)	MW-14,MW-17	No	n/a	n/a w/combined bg	OH	NaN	25	0.01023	n/a

Ohio EPA 0715 Outlier Algorithm, Pooled Background

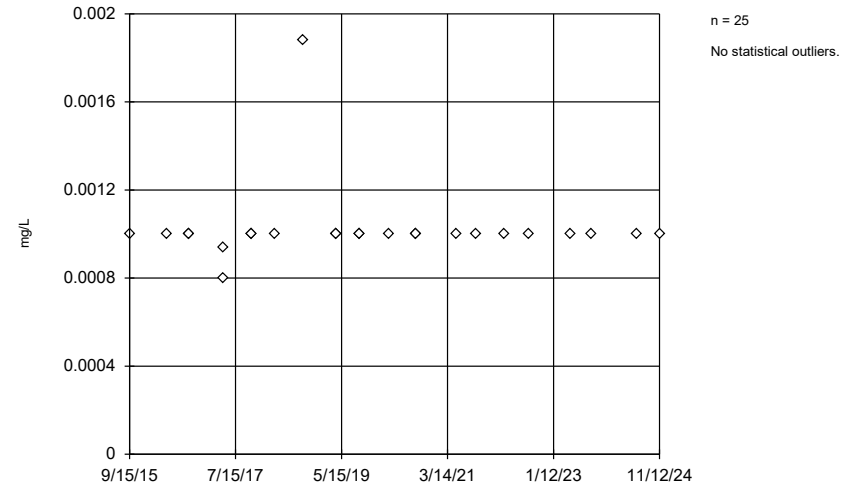
MW-14,MW-17



Constituent: Antimony Analysis Run 12/10/2024 2:12 PM View: 2024 AWQR Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

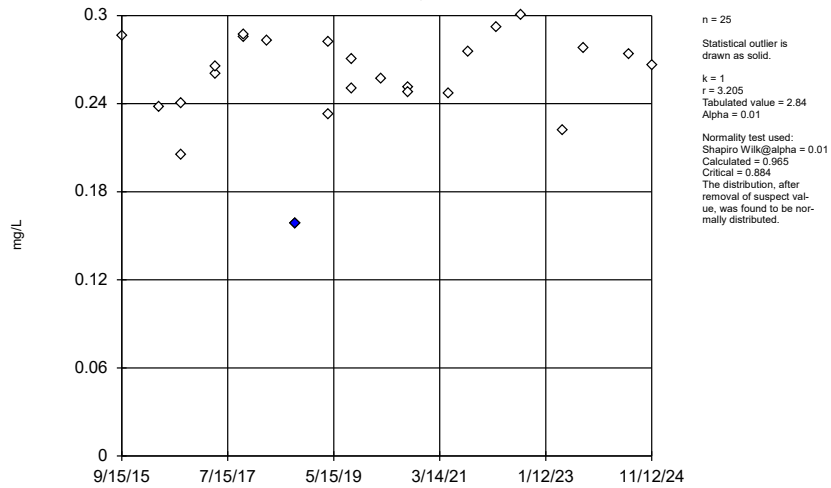
MW-14,MW-17



Constituent: Arsenic Analysis Run 12/10/2024 2:12 PM View: 2024 AWQR Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Rosner's Outlier Test / Ohio EPA 0715 Outlier Algorithm, Pooled Background

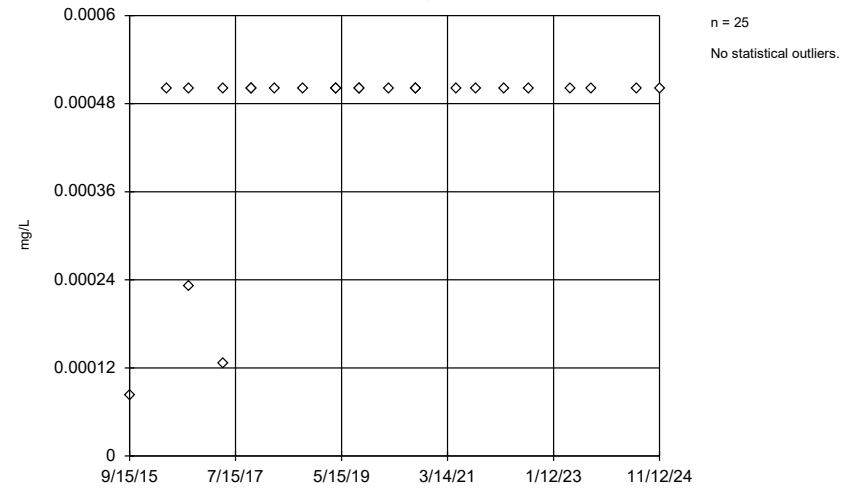
MW-14,MW-17



Constituent: Barium Analysis Run 12/10/2024 2:12 PM View: 2024 AWQR Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

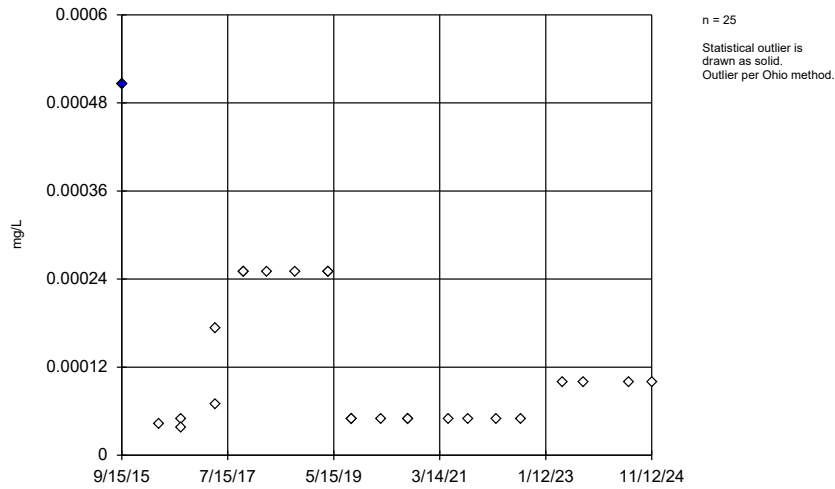
MW-14,MW-17



Constituent: Beryllium Analysis Run 12/10/2024 2:12 PM View: 2024 AWQR Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

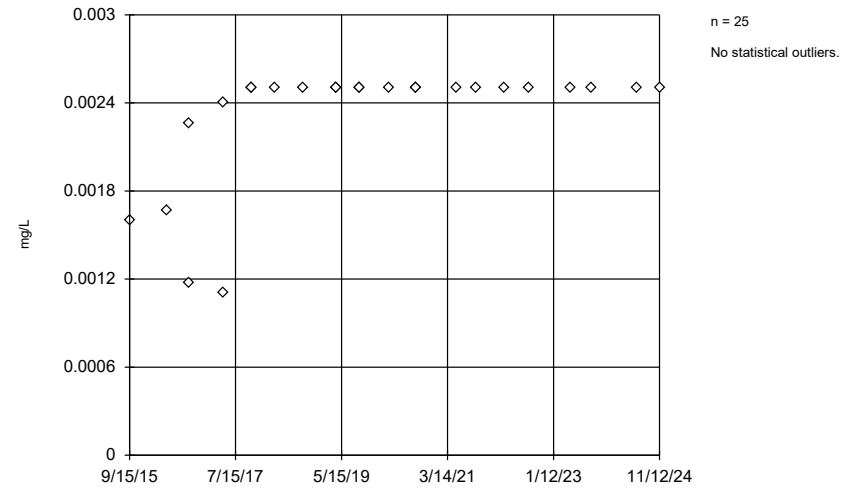
MW-14,MW-17



Constituent: Cadmium Analysis Run 12/10/2024 2:12 PM View: 2024 AWQR Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

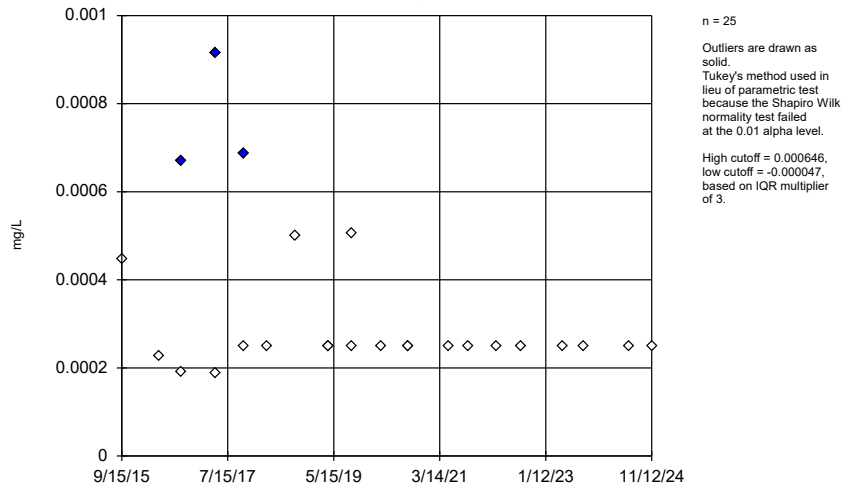
MW-14,MW-17



Constituent: Chromium Analysis Run 12/10/2024 2:12 PM View: 2024 AWQR Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

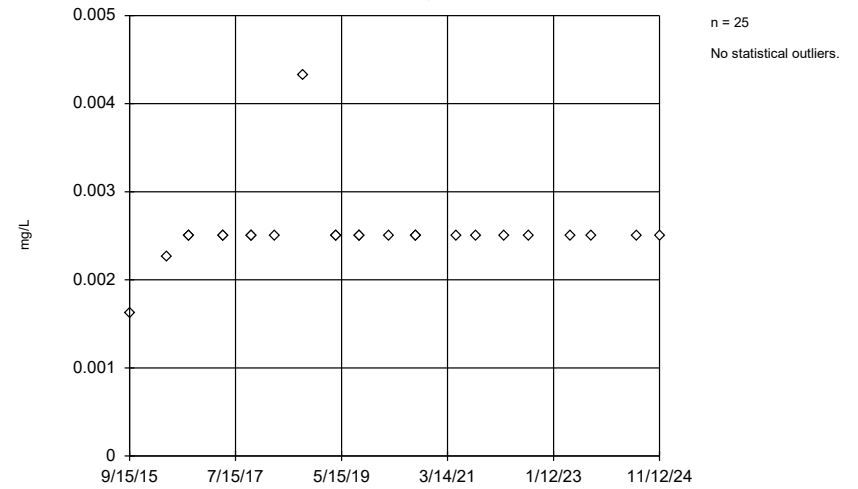
MW-14,MW-17



Constituent: Cobalt Analysis Run 12/10/2024 2:12 PM View: 2024 AWQR Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

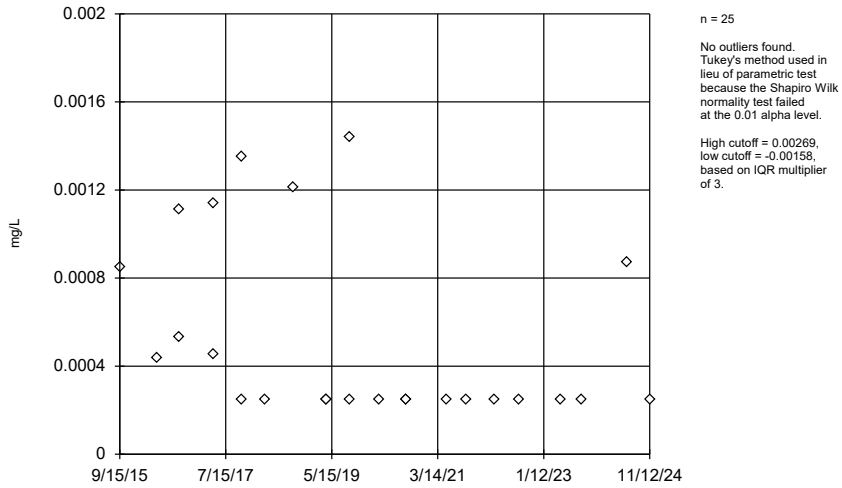
MW-14,MW-17



Constituent: Copper Analysis Run 12/10/2024 2:12 PM View: 2024 AWQR Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

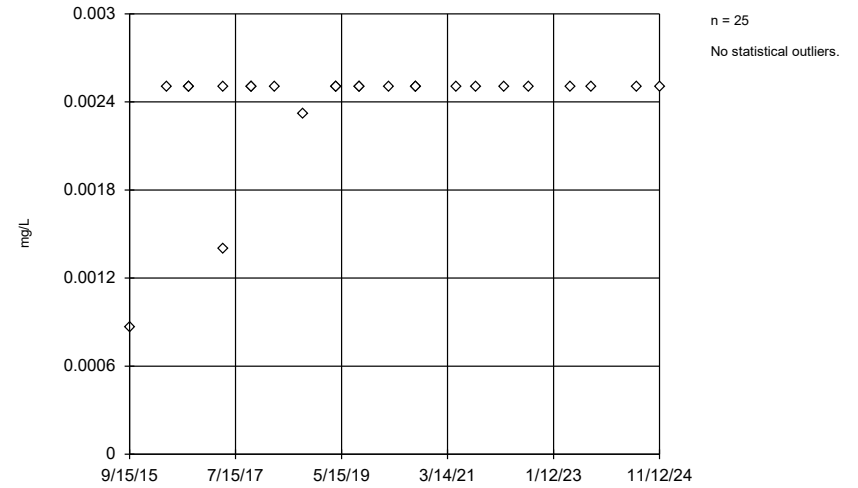
MW-14,MW-17



Constituent: Lead Analysis Run 12/10/2024 2:12 PM View: 2024 AWQR Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

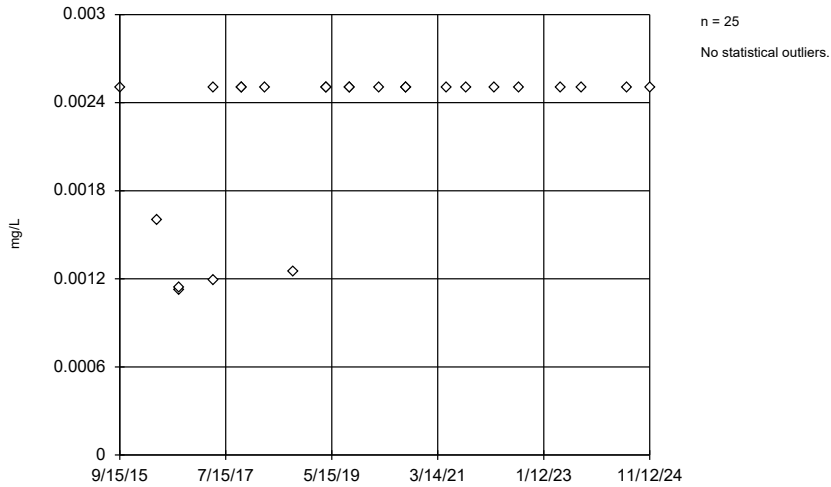
MW-14,MW-17



Constituent: Nickel Analysis Run 12/10/2024 2:12 PM View: 2024 AWQR Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

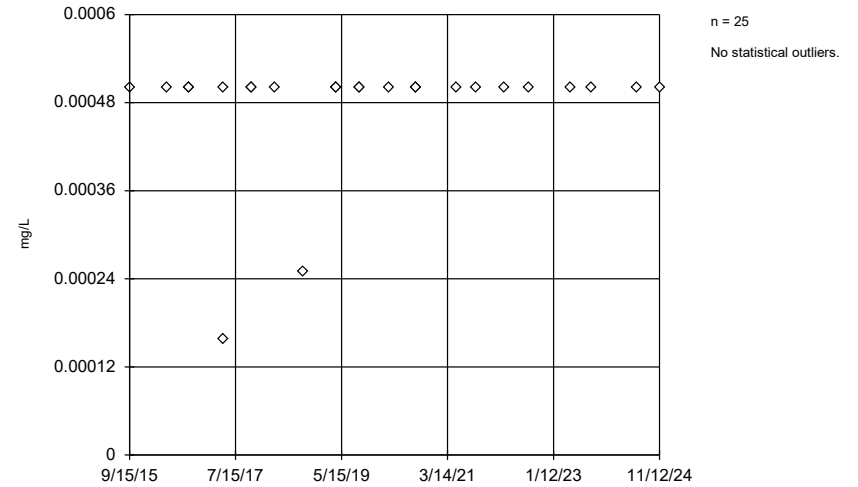
MW-14,MW-17



Constituent: Selenium Analysis Run 12/10/2024 2:12 PM View: 2024 AWQR Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

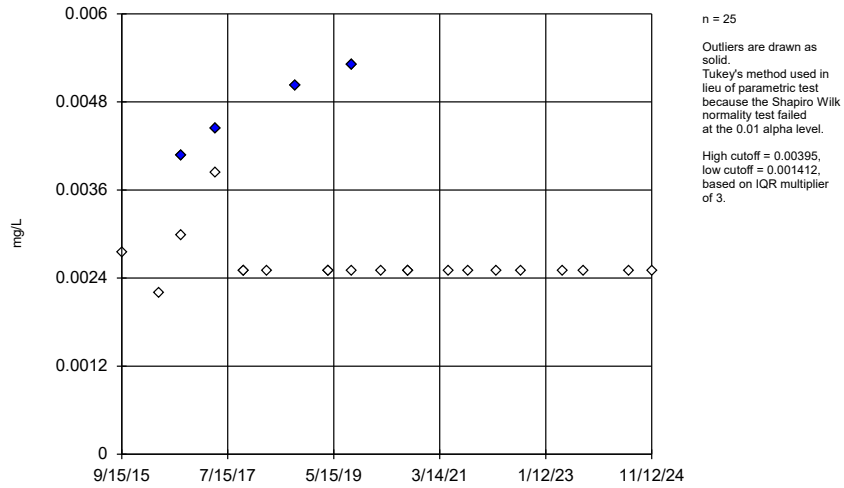
MW-14,MW-17



Constituent: Silver Analysis Run 12/10/2024 2:13 PM View: 2024 AWQR Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

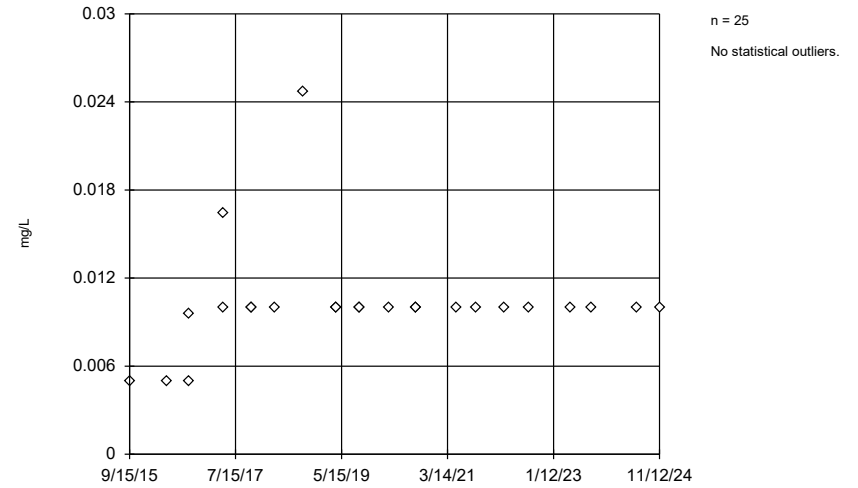
MW-14,MW-17



Constituent: Vanadium Analysis Run 12/10/2024 2:13 PM View: 2024 AWQR Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-14,MW-17



Constituent: Zinc Analysis Run 12/10/2024 2:13 PM View: 2024 AWQR Outliers
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Prediction Limit Table and Graphs

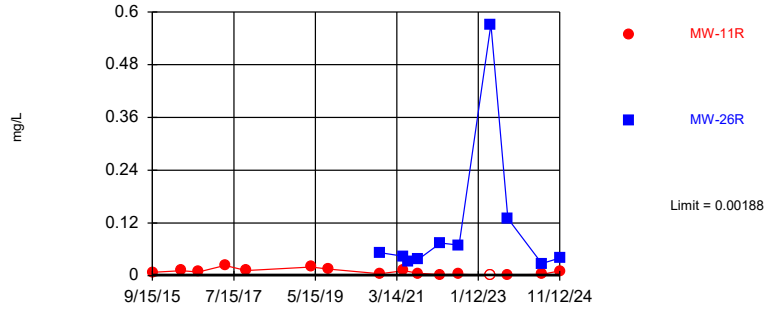
Prediction Limit

Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master Printed 12/10/2024, 2:40 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Arsenic (mg/L)	MW-11R	0.00188	n/a	11/12/2024	0.011	Yes	25	88	n/a	0.002575	NP Inter (NDs) 1 of 2
Arsenic (mg/L)	MW-26R	0.00188	n/a	11/12/2024	0.0403	Yes	25	88	n/a	0.002575	NP Inter (NDs) 1 of 2
Barium (mg/L)	MW-10R	0.3326	n/a	11/12/2024	0.513	Yes	25	0	No	0.0003762	Param Inter 1 of 2
Barium (mg/L)	MW-11R	0.3326	n/a	11/12/2024	0.487	Yes	25	0	No	0.0003762	Param Inter 1 of 2
Barium (mg/L)	MW-26R	0.3326	n/a	11/12/2024	0.799	Yes	25	0	No	0.0003762	Param Inter 1 of 2
Barium (mg/L)	MW-29	0.3326	n/a	11/12/2024	0.328	No	25	0	No	0.0003762	Param Inter 1 of 2
Barium (mg/L)	MW-7	0.3326	n/a	11/12/2024	0.328	No	25	0	No	0.0003762	Param Inter 1 of 2
Barium (mg/L)	MW-8R	0.3326	n/a	11/12/2024	0.402	Yes	25	0	No	0.0003762	Param Inter 1 of 2
Cadmium (mg/L)	MW-26R	0.000506	n/a	11/12/2024	0.000884	Yes	25	76	n/a	0.002575	NP Inter (NDs) 1 of 2
Cobalt (mg/L)	MW-11R	0.000915	n/a	11/12/2024	0.0149	Yes	25	68	n/a	0.002575	NP Inter (NDs) 1 of 2
Cobalt (mg/L)	MW-26R	0.000915	n/a	11/12/2024	0.005	Yes	25	68	n/a	0.002575	NP Inter (NDs) 1 of 2
Copper (mg/L)	MW-26R	0.00432	n/a	11/12/2024	0.0088	Yes	25	88	n/a	0.002575	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-11R	0.00144	n/a	11/12/2024	0.00287	Yes	25	60	n/a	0.002575	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-26R	0.00144	n/a	11/12/2024	0.00675	Yes	25	60	n/a	0.002575	NP Inter (NDs) 1 of 2
Lead (mg/L)	MW-8R	0.00144	n/a	11/12/2024	0.000953	No	25	60	n/a	0.002575	NP Inter (NDs) 1 of 2
Nickel (mg/L)	MW-11R	0.0025	n/a	11/12/2024	0.0475	Yes	25	88	n/a	0.002575	NP Inter (NDs) 1 of 2
Nickel (mg/L)	MW-26R	0.0025	n/a	11/12/2024	0.0212	Yes	25	88	n/a	0.002575	NP Inter (NDs) 1 of 2
Nickel (mg/L)	MW-8R	0.0025	n/a	11/12/2024	0.00805	Yes	25	88	n/a	0.002575	NP Inter (NDs) 1 of 2
Vanadium (mg/L)	MW-11R	0.00531	n/a	11/12/2024	0.0086	Yes	25	68	n/a	0.002575	NP Inter (NDs) 1 of 2
Vanadium (mg/L)	MW-26R	0.00531	n/a	11/12/2024	0.00571	Yes	25	68	n/a	0.002575	NP Inter (NDs) 1 of 2
Zinc (mg/L)	MW-11R	0.0247	n/a	11/12/2024	0.0276	Yes	25	88	n/a	0.002575	NP Inter (NDs) 1 of 2
Zinc (mg/L)	MW-26R	0.0247	n/a	11/12/2024	0.0683	Yes	25	88	n/a	0.002575	NP Inter (NDs) 1 of 2

Exceeds Limit: MW-11R, MW-26R

Prediction Limit
Interwell Non-parametric

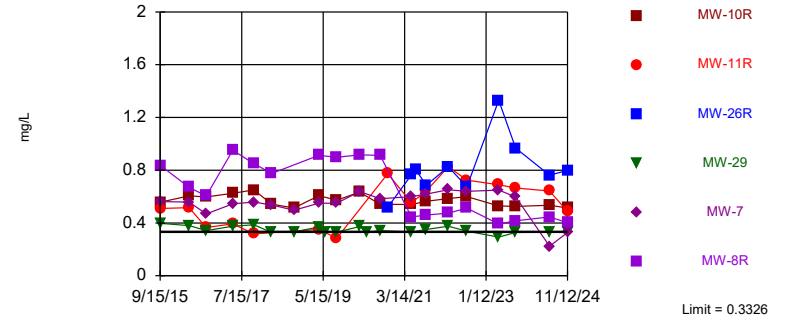


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 88% NDs. Annual per-constituent alpha = 0.05025. Individual comparison alpha = 0.002575 (1 of 2). Comparing 2 points to limit. Assumes 8 future values.

Constituent: Arsenic Analysis Run 12/10/2024 2:39 PM View: 2024 AWQR Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Exceeds Limit: MW-10R, MW-11R, MW-26R, MW-8R

Prediction Limit
Interwell Parametric

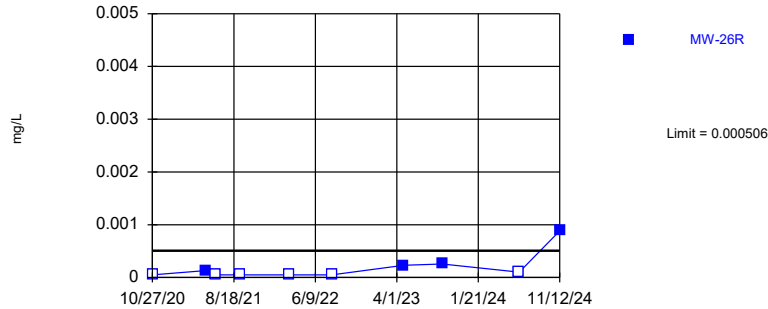


Background Data Summary: Mean=0.2581, Std. Dev.=0.03124, n=25. Normality test: Shapiro Wilk @alpha = 0.01, calculated = 0.8925, critical = 0.888. Kappa = 2.385 (c=14, w=10, 1 of 2, event alpha = 0.05132). Report alpha = 0.003756. Individual comparison alpha = 0.0003762. Comparing 6 points to limit. Assumes 4 future values.

Constituent: Barium Analysis Run 12/10/2024 2:39 PM View: 2024 AWQR Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Exceeds Limit: MW-26R

Prediction Limit
Interwell Non-parametric

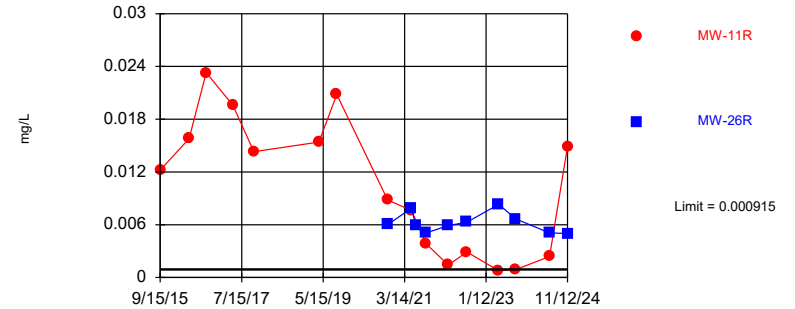


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 76% NDs. Annual per-constituent alpha = 0.05025. Individual comparison alpha = 0.002575 (1 of 2). Assumes 9 future values.

Constituent: Cadmium Analysis Run 12/10/2024 2:39 PM View: 2024 AWQR Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Exceeds Limit: MW-11R, MW-26R

Prediction Limit
Interwell Non-parametric

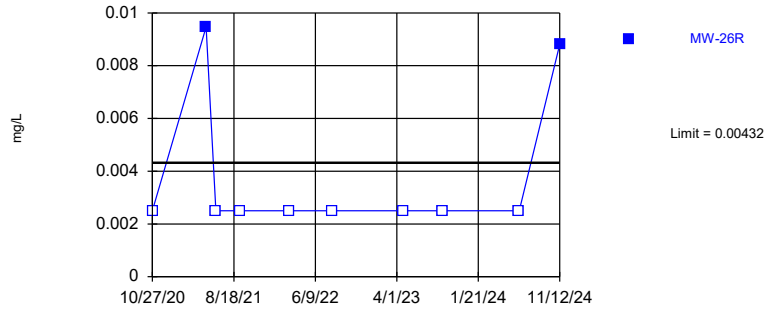


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 68% NDs. Annual per-constituent alpha = 0.05025. Individual comparison alpha = 0.002575 (1 of 2). Comparing 2 points to limit. Assumes 8 future values.

Constituent: Cobalt Analysis Run 12/10/2024 2:39 PM View: 2024 AWQR Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Exceeds Limit: MW-26R

Prediction Limit Interwell Non-parametric

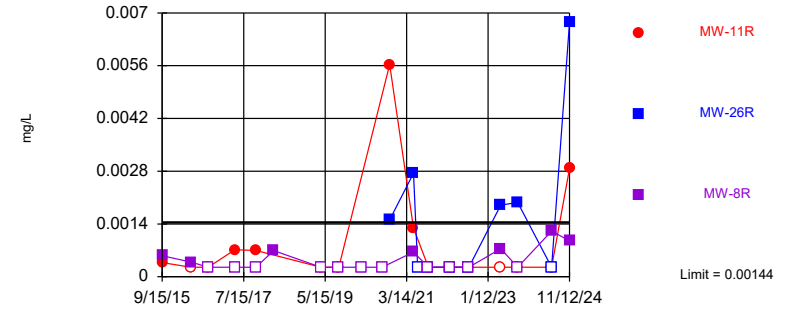


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 88% NDs. Annual per-constituent alpha = 0.05025. Individual comparison alpha = 0.002575 (1 of 2). Assumes 9 future values.

Constituent: Copper Analysis Run 12/10/2024 2:39 PM View: 2024 AWQR Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Exceeds Limit: MW-11R, MW-26R

Prediction Limit Interwell Non-parametric

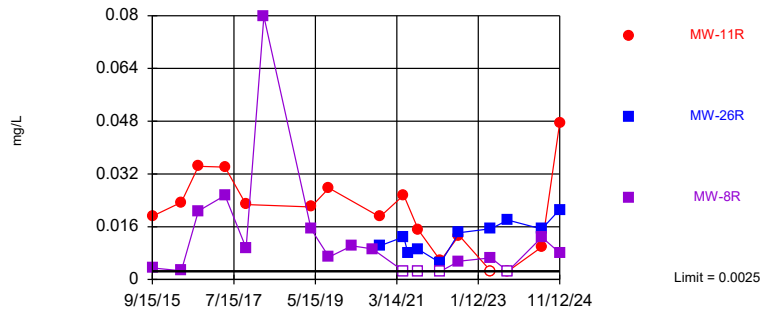


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 60% NDs. Annual per-constituent alpha = 0.05025. Individual comparison alpha = 0.002575 (1 of 2). Comparing 3 points to limit. Assumes 7 future values.

Constituent: Lead Analysis Run 12/10/2024 2:39 PM View: 2024 AWQR Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Exceeds Limit: MW-11R, MW-26R, MW-8R

Prediction Limit Interwell Non-parametric

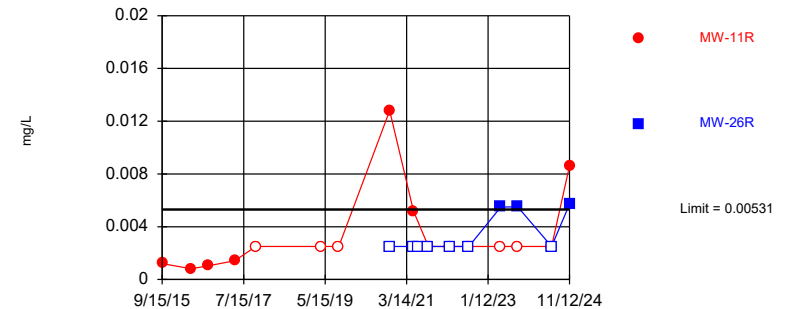


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 88% NDs. Annual per-constituent alpha = 0.05025. Individual comparison alpha = 0.002575 (1 of 2). Comparing 3 points to limit. Assumes 7 future values.

Constituent: Nickel Analysis Run 12/10/2024 2:39 PM View: 2024 AWQR Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Exceeds Limit: MW-11R, MW-26R

Prediction Limit Interwell Non-parametric

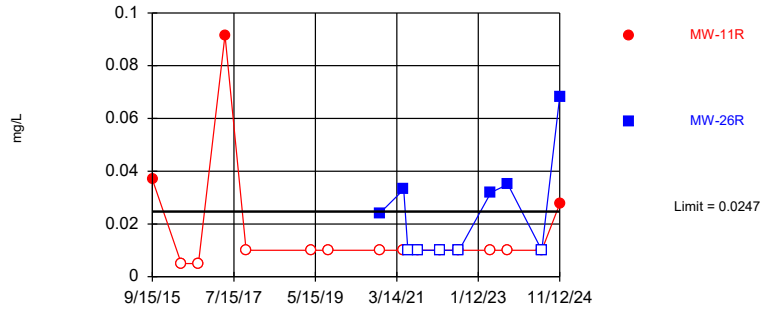


Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 68% NDs. Annual per-constituent alpha = 0.05025. Individual comparison alpha = 0.002575 (1 of 2). Comparing 2 points to limit. Assumes 8 future values.

Constituent: Vanadium Analysis Run 12/10/2024 2:39 PM View: 2024 AWQR Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Exceeds Limit: MW-11R, MW-26R

Prediction Limit Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 25 background values. 88% NDs. Annual per-constituent alpha = 0.05025. Individual comparison alpha = 0.002575 (1 of 2). Comparing 2 points to limit. Assumes 8 future values.

Constituent: Zinc Analysis Run 12/10/2024 2:39 PM View: 2024 AWQR Prediction Limit
Loess Hills SLF Client: SCS Engineers Data: IWLHS Sanitas Master

Mann-Kendall Trend Table and Graphs

Trend Test

Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM Printed 12/11/2024, 1:29 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
1,1-Dichloroethane (ug/L)	MW-10R	0.1439	12	21	No	8	0	0.01	NP
1,1-Dichloroethane (ug/L)	MW-26R	-0.5522	-23	-21	Yes	8	25	0.01	NP
1,1-Dichloroethane (ug/L)	MW-27R	0.619	23	21	Yes	8	25	0.01	NP
1,2-Dichloropropane (ug/L)	MW-27R	0	3	21	No	8	87.5	0.01	NP
1,4-Dichlorobenzene (ug/L)	MW-11R	0.1723	21	21	No	8	25	0.01	NP
Acetone (ug/L)	MW-27R	0	-1	-21	No	8	75	0.01	NP
Antimony (mg/L)	MW-7	0	-3	-21	No	8	87.5	0.01	NP
Antimony (mg/L)	MW-27R	0.00006484	11	21	No	8	87.5	0.01	NP
Arsenic (mg/L)	MW-11R	-0.000588	-6	-21	No	8	12.5	0.01	NP
Arsenic (mg/L)	MW-25	0	-5	-21	No	8	87.5	0.01	NP
Arsenic (mg/L)	MW-26R	0.01006	4	21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-27R	-0.001585	-11	-21	No	8	25	0.01	NP
Barium (mg/L)	MW-7	-0.03769	-10	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-8R	-0.01262	-7	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-10R	-0.01057	-12	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-11R	-0.0428	-8	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-25	0.08692	14	21	No	8	0	0.01	NP
Barium (mg/L)	MW-26R	0.02941	2	21	No	8	0	0.01	NP
Barium (mg/L)	MW-27R	0.1025	20	21	No	8	0	0.01	NP
Barium (mg/L)	MW-28	-0.05882	-17	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-29	-0.004469	-11	-21	No	8	0	0.01	NP
Benzene (ug/L)	MW-7	0	5	21	No	8	75	0.01	NP
Benzene (ug/L)	MW-11R	-0.358	-12	-21	No	8	12.5	0.01	NP
Benzene (ug/L)	MW-26R	-0.1504	-13	-21	No	8	37.5	0.01	NP
Benzene (ug/L)	MW-28	-0.1525	-11	-21	No	8	37.5	0.01	NP
beta-BHC (ug/L)	MW-28	0.002654	11	21	No	8	87.5	0.01	NP
Cadmium (mg/L)	MW-7	0	1	21	No	8	75	0.01	NP
Cadmium (mg/L)	MW-8R	0.00002169	17	21	No	8	87.5	0.01	NP
Cadmium (mg/L)	MW-10R	0	7	21	No	8	87.5	0.01	NP
Cadmium (mg/L)	MW-26R	0.00009423	18	21	No	8	62.5	0.01	NP
Cadmium (mg/L)	MW-27R	-0.000009245	-5	-21	No	8	87.5	0.01	NP
Cadmium (mg/L)	MW-28	0.00005769	13	21	No	8	25	0.01	NP
Cadmium (mg/L)	MW-29	0	1	21	No	8	75	0.01	NP
Carbon disulfide (ug/L)	MW-27R	0	4	21	No	8	62.5	0.01	NP
Chlorobenzene (ug/L)	MW-27R	0.4731	20	21	No	8	37.5	0.01	NP
Chloroethane (ug/L)	MW-11R	0	-7	-21	No	8	87.5	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-7	0.4782	14	21	No	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-8R	1.254	18	21	No	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-10R	1.046	14	21	No	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-11R	0.09983	17	21	No	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-26R	-11.99	-24	-21	Yes	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-27R	7.549	25	21	Yes	8	25	0.01	NP
Cobalt (mg/L)	MW-7	0	-3	-21	No	8	87.5	0.01	NP
Cobalt (mg/L)	MW-8R	0	5	21	No	8	87.5	0.01	NP
Cobalt (mg/L)	MW-11R	-0.0004293	-4	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-26R	-0.00003993	-4	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-27R	-0.001079	-10	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-28	-0.0002915	-4	-21	No	8	0	0.01	NP
Copper (mg/L)	MW-8R	0	5	21	No	8	87.5	0.01	NP
Copper (mg/L)	MW-11R	0	-1	-21	No	8	87.5	0.01	NP

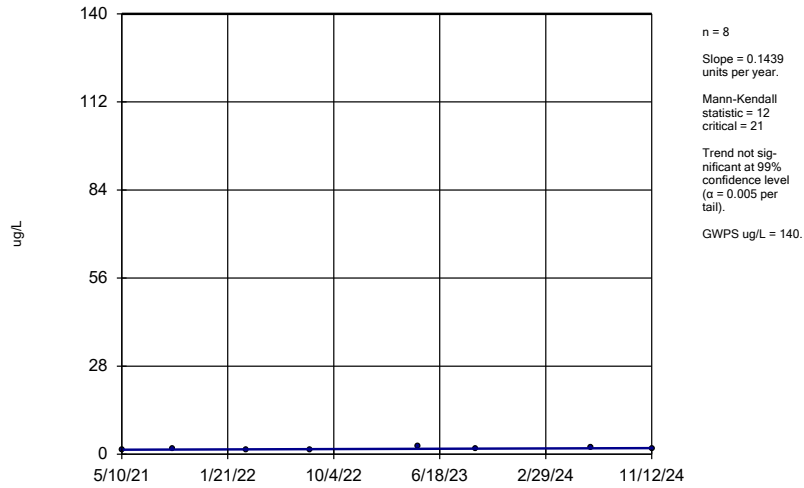
Trend Test

Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM Printed 12/11/2024, 1:29 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
Copper (mg/L)	MW-25	0	5	21	No	8	87.5	0.01	NP
Copper (mg/L)	MW-26R	0	7	21	No	8	87.5	0.01	NP
Lead (mg/L)	MW-7	0	3	21	No	8	75	0.01	NP
Lead (mg/L)	MW-8R	0.0001102	10	21	No	8	50	0.01	NP
Lead (mg/L)	MW-10R	0	7	21	No	8	75	0.01	NP
Lead (mg/L)	MW-11R	0	1	21	No	8	75	0.01	NP
Lead (mg/L)	MW-25	0	-7	-21	No	8	87.5	0.01	NP
Lead (mg/L)	MW-26R	0.00081	14	21	No	8	62.5	0.01	NP
Lead (mg/L)	MW-27R	0.0001341	5	21	No	8	25	0.01	NP
Mercury (mg/L)	MW-8R	0.00002222	4	14	No	6	33.33	0.01	NP
Nickel (mg/L)	MW-8R	0.001907	16	21	No	8	50	0.01	NP
Nickel (mg/L)	MW-11R	-0.001845	-5	-21	No	8	25	0.01	NP
Nickel (mg/L)	MW-26R	0.003848	20	21	No	8	0	0.01	NP
Nickel (mg/L)	MW-27R	0.001131	6	21	No	8	0	0.01	NP
Nickel (mg/L)	MW-28	-0.001365	-2	-21	No	8	0	0.01	NP
Thallium (mg/L)	MW-7	0	-5	-21	No	8	87.5	0.01	NP
Thallium (mg/L)	MW-26R	0	1	21	No	8	87.5	0.01	NP
Trichloroethene (ug/L)	MW-27R	0.7074	23	21	Yes	8	37.5	0.01	NP
Vanadium (mg/L)	MW-8R	0	5	21	No	8	87.5	0.01	NP
Vanadium (mg/L)	MW-11R	0	1	21	No	8	75	0.01	NP
Vanadium (mg/L)	MW-25	0	-5	-21	No	8	87.5	0.01	NP
Vanadium (mg/L)	MW-26R	0.0001567	14	21	No	8	62.5	0.01	NP
Vanadium (mg/L)	MW-27R	0	11	21	No	8	75	0.01	NP
Vinyl chloride (ug/L)	MW-11R	-0.2752	-13	-21	No	8	37.5	0.01	NP
Zinc (mg/L)	MW-11R	0	7	21	No	8	87.5	0.01	NP
Zinc (mg/L)	MW-26R	0.01142	14	21	No	8	62.5	0.01	NP

Sen's Slope Estimator

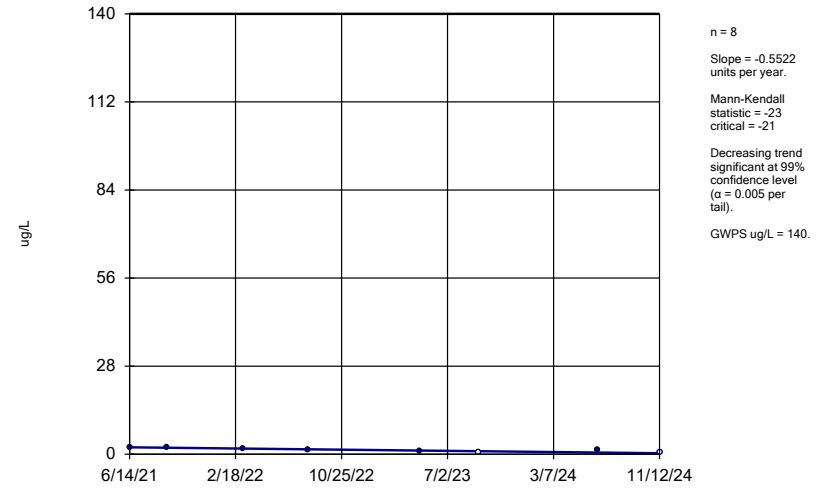
MW-10R



Constituent: 1,1-Dichloroethane Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

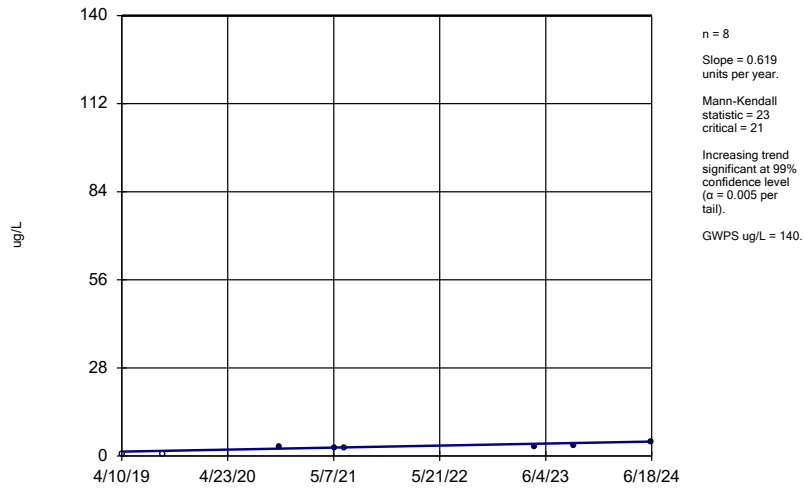
MW-26R



Constituent: 1,1-Dichloroethane Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

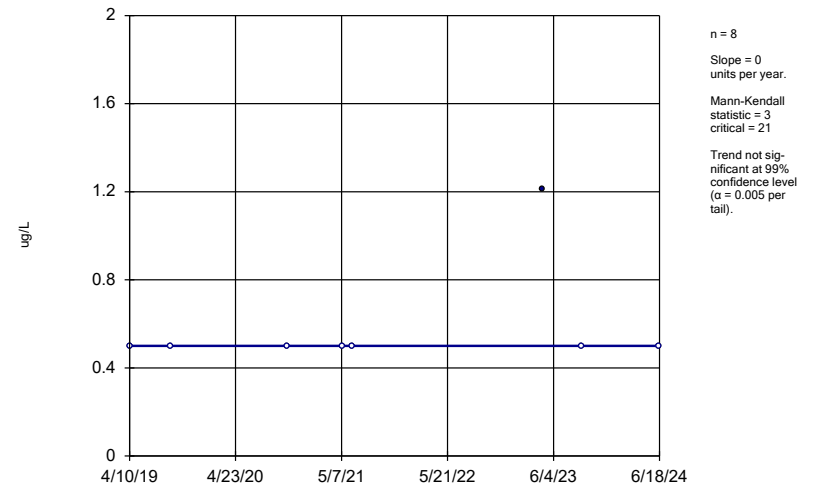
MW-27R



Constituent: 1,1-Dichloroethane Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

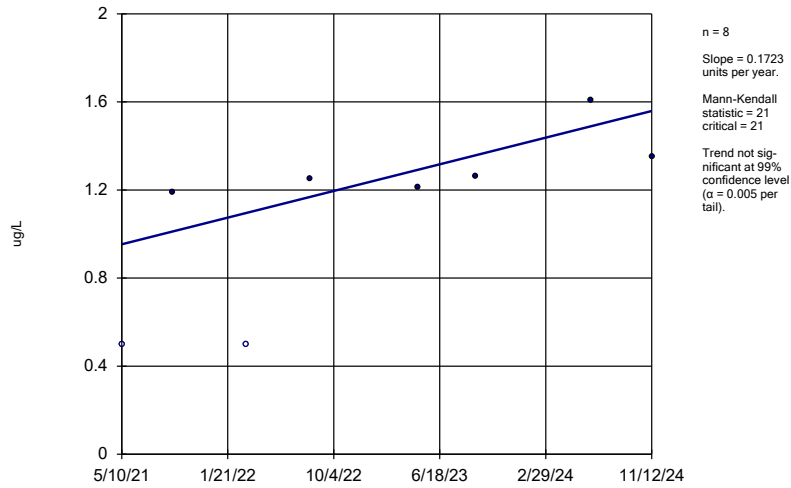
MW-27R



Constituent: 1,2-Dichloropropane Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

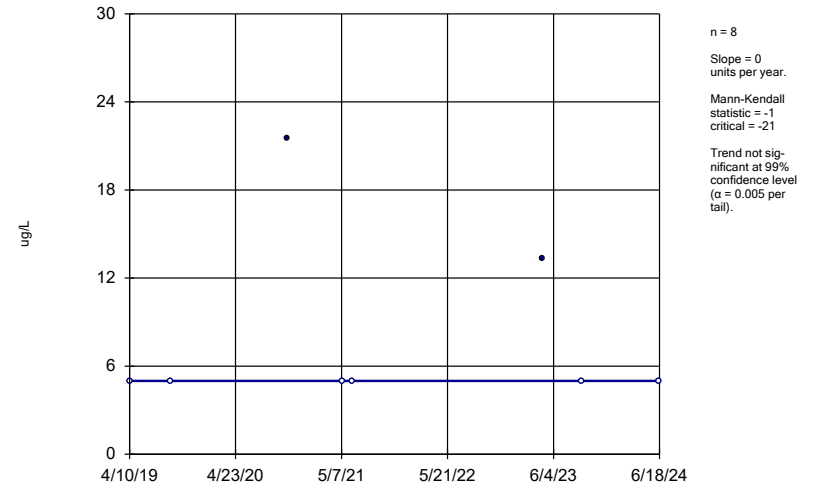
MW-11R



Constituent: 1,4-Dichlorobenzene Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

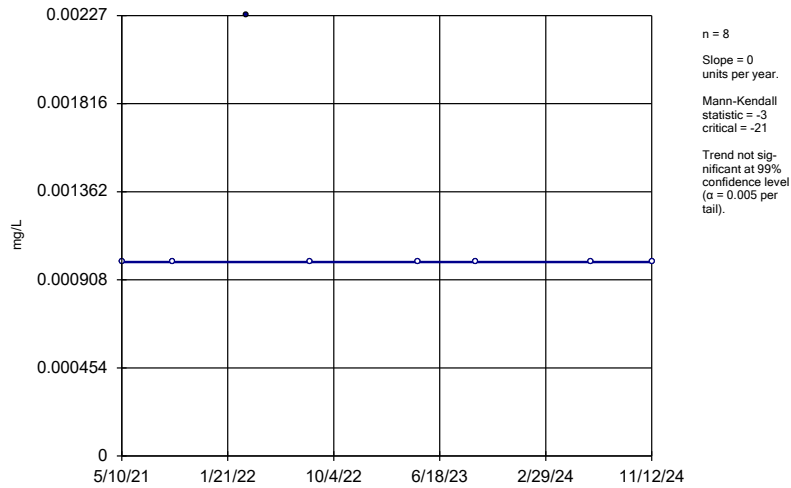
MW-27R



Constituent: Acetone Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

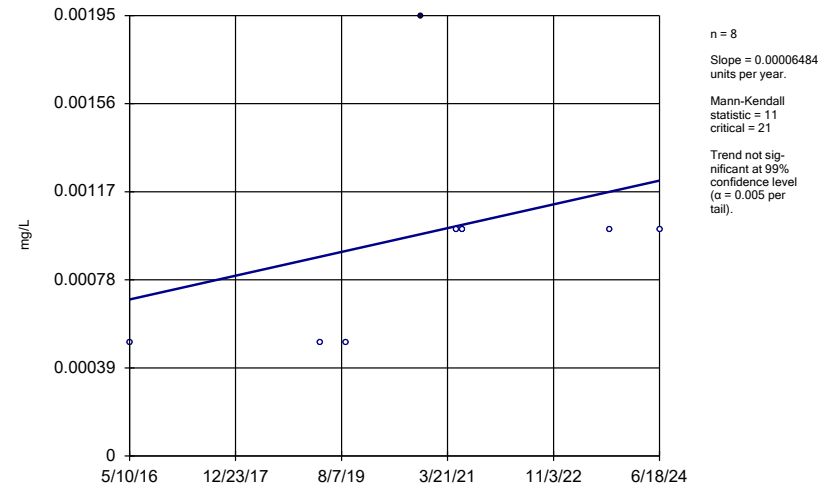
MW-7



Constituent: Antimony Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

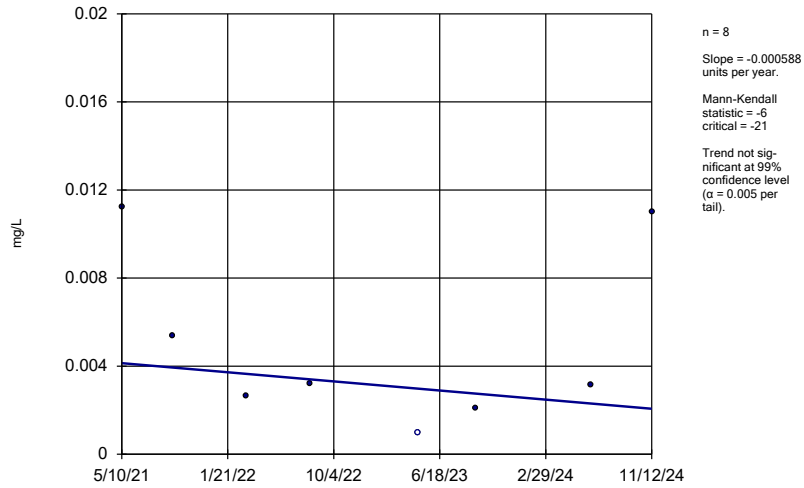
MW-27R



Constituent: Antimony Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

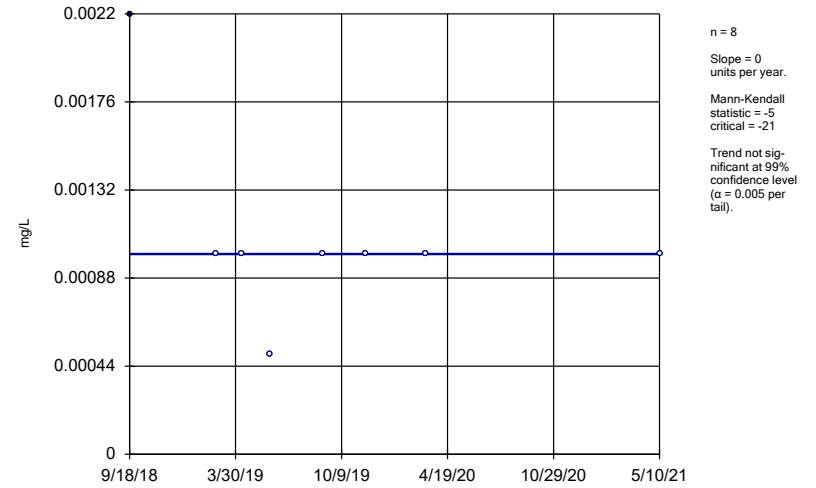
MW-11R



Constituent: Arsenic Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

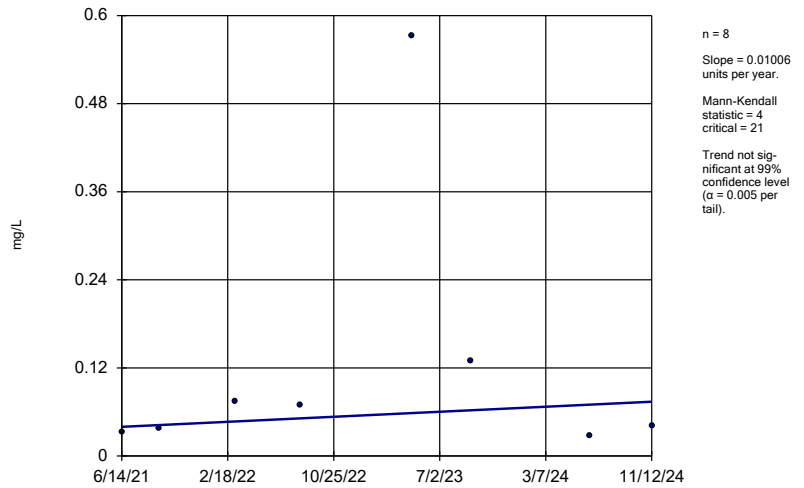
MW-25



Constituent: Arsenic Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

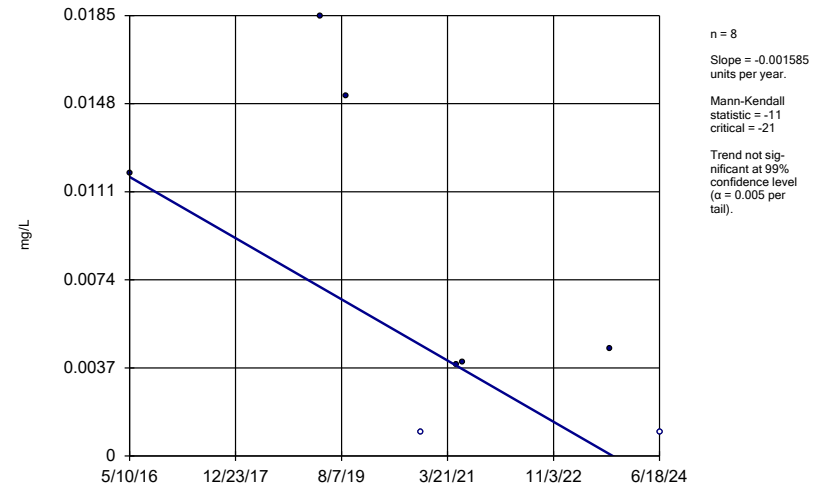
MW-26R



Constituent: Arsenic Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

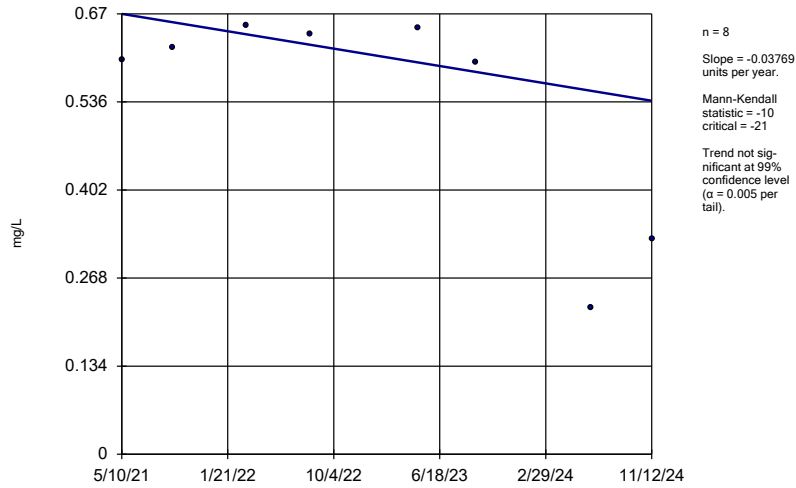
MW-27R



Constituent: Arsenic Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

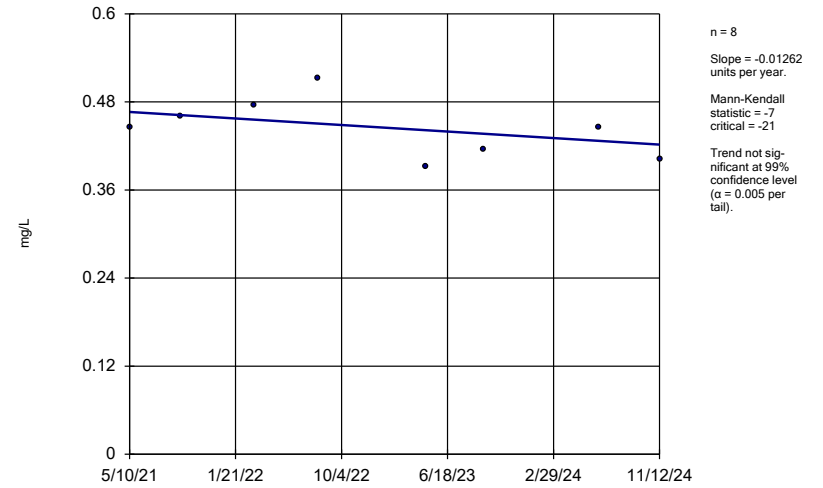
MW-7



Constituent: Barium Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

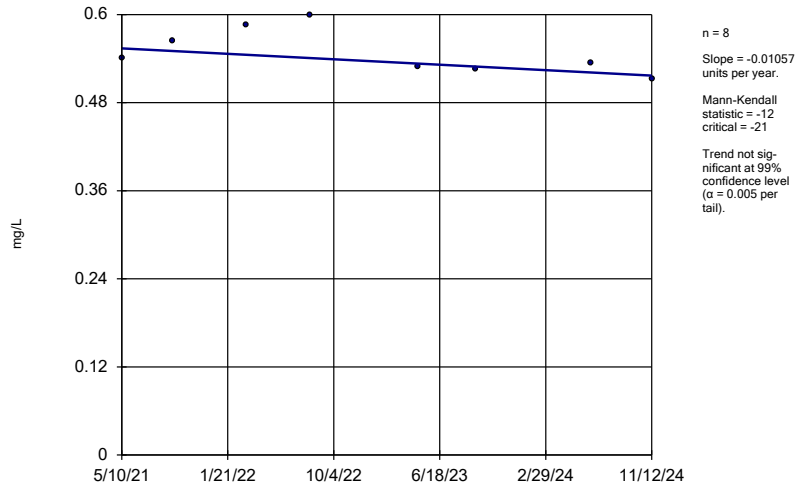
MW-8R



Constituent: Barium Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

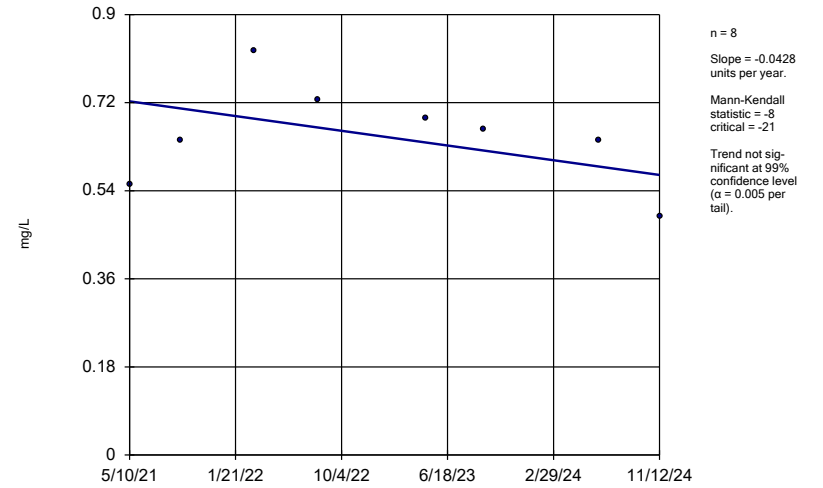
MW-10R



Constituent: Barium Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

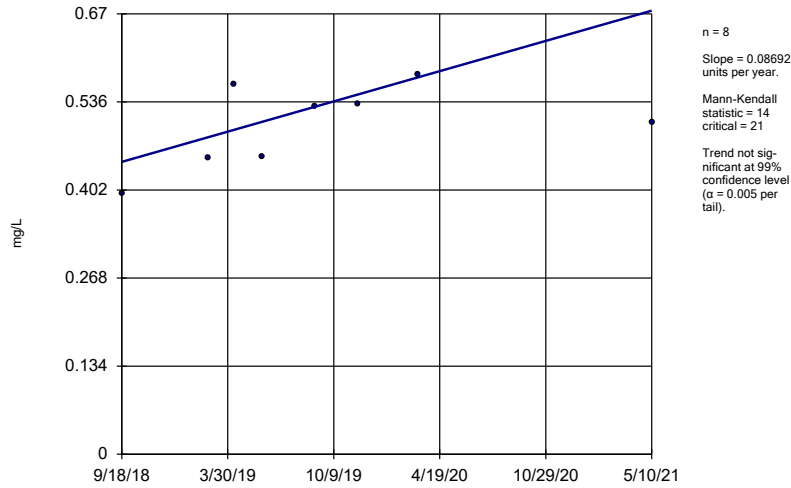
MW-11R



Constituent: Barium Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

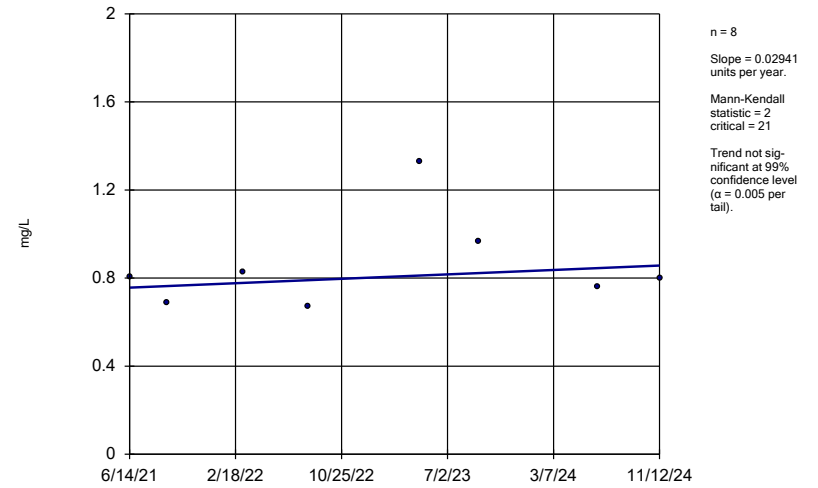
MW-25



Constituent: Barium Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

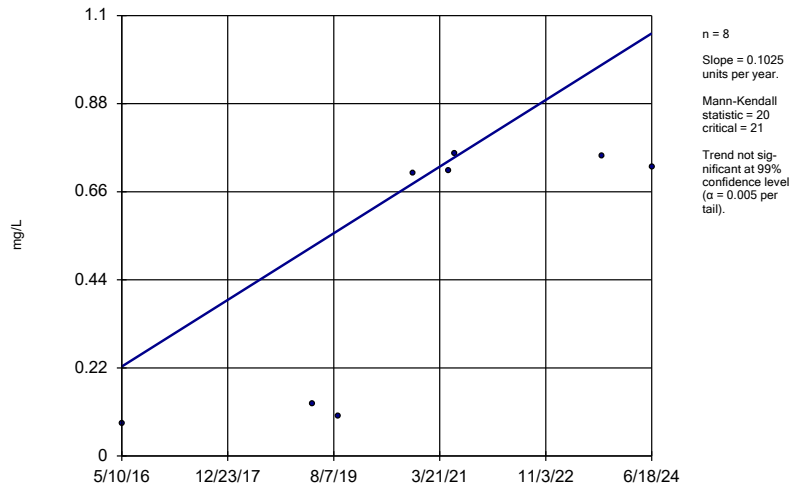
MW-26R



Constituent: Barium Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

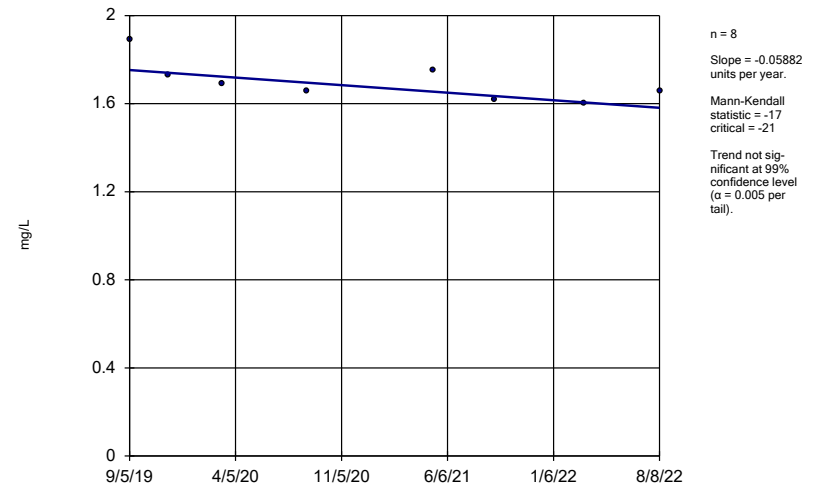
MW-27R



Constituent: Barium Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

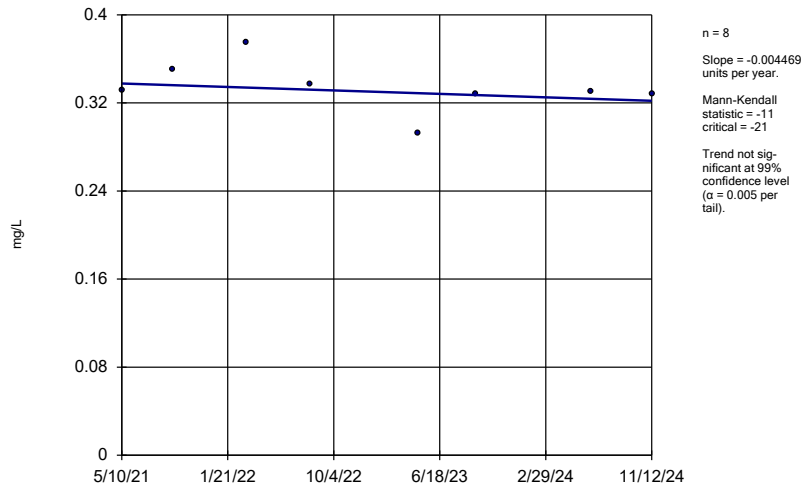
MW-28



Constituent: Barium Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

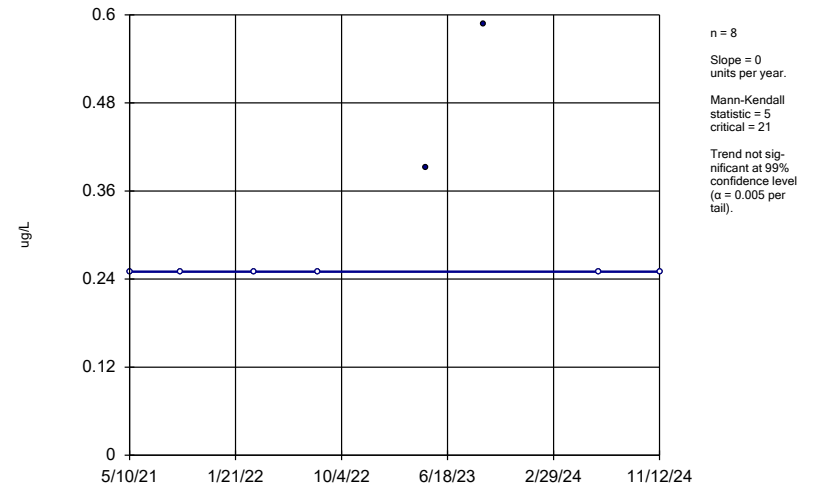
MW-29



Constituent: Barium Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

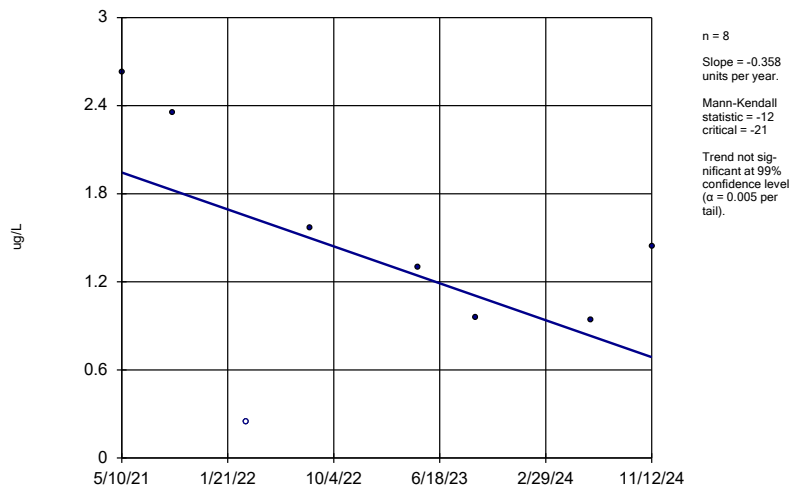
MW-7



Constituent: Benzene Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

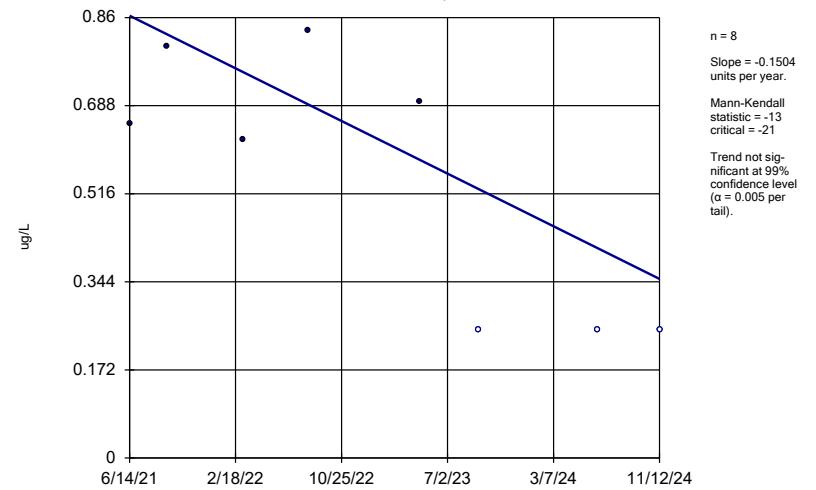
MW-11R



Constituent: Benzene Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

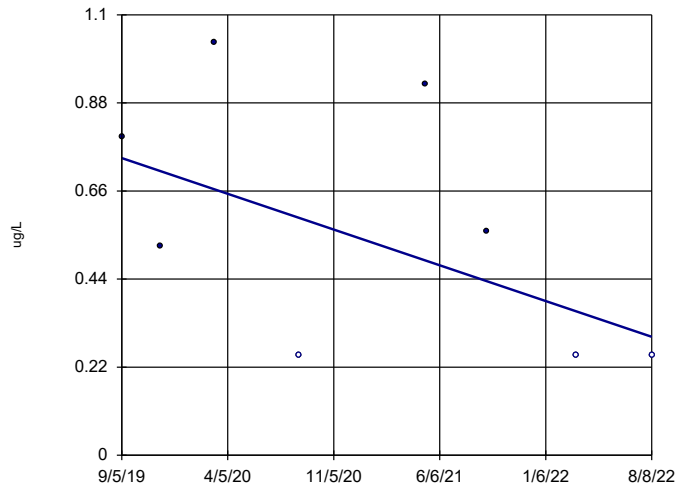
MW-26R



Constituent: Benzene Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-28

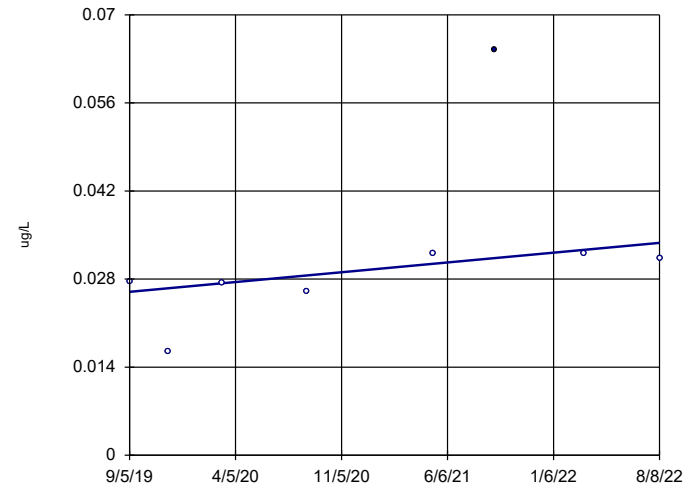


n = 8
Slope = -0.1525
units per year.
Mann-Kendall
statistic = -11
critical = -21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Benzene Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-28

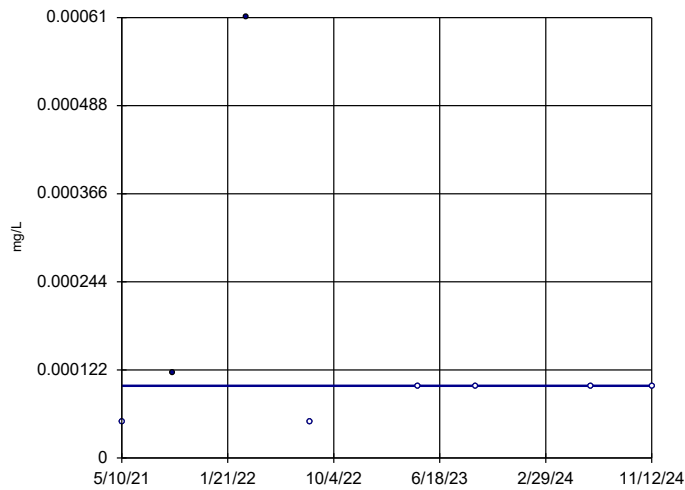


n = 8
Slope = 0.002654
units per year.
Mann-Kendall
statistic = 11
critical = 21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: beta-BHC Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-7

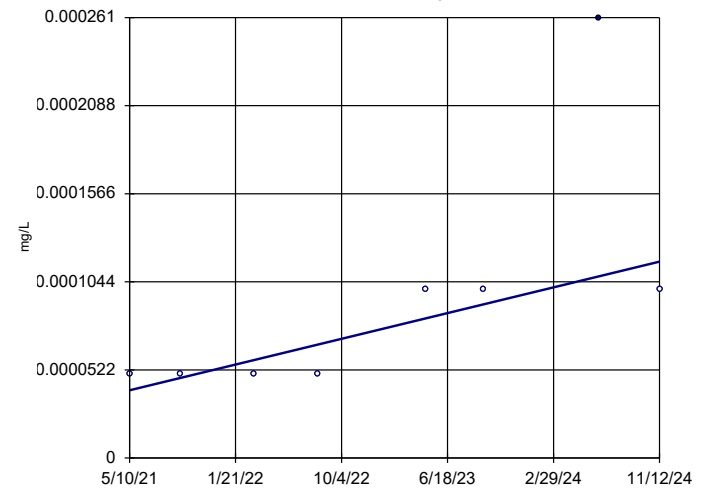


n = 8
Slope = 0
units per year.
Mann-Kendall
statistic = 1
critical = 21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Cadmium Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-8R

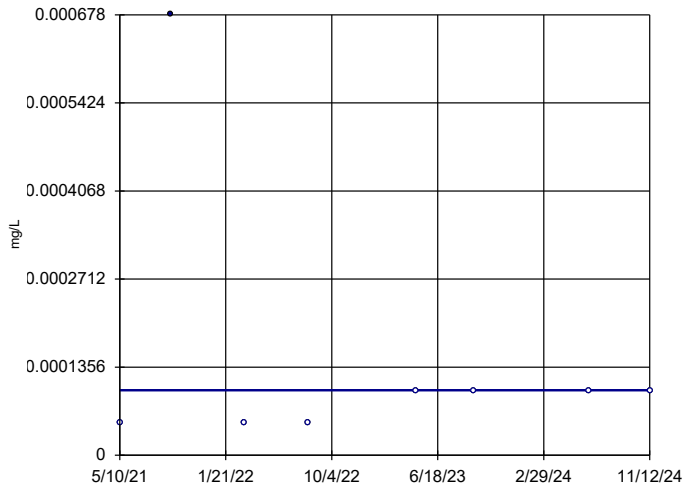


n = 8
Slope = 0.00002169
units per year.
Mann-Kendall
statistic = 17
critical = 21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Cadmium Analysis Run 12/11/2024 1:24 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-10R

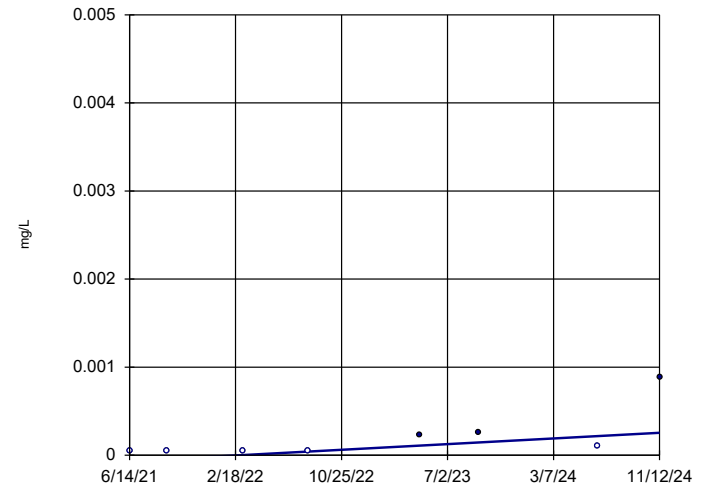


n = 8
Slope = 0
units per year.
Mann-Kendall
statistic = 7
critical = 21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Cadmium Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-26R

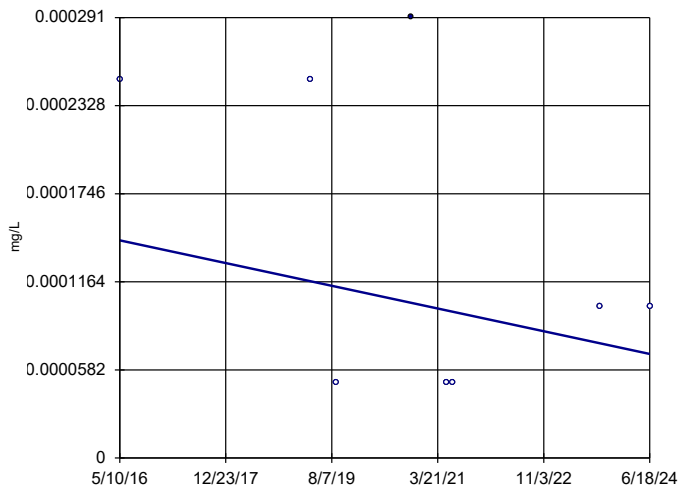


n = 8
Slope = 0.00009423
units per year.
Mann-Kendall
statistic = 18
critical = 21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Cadmium Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-27R

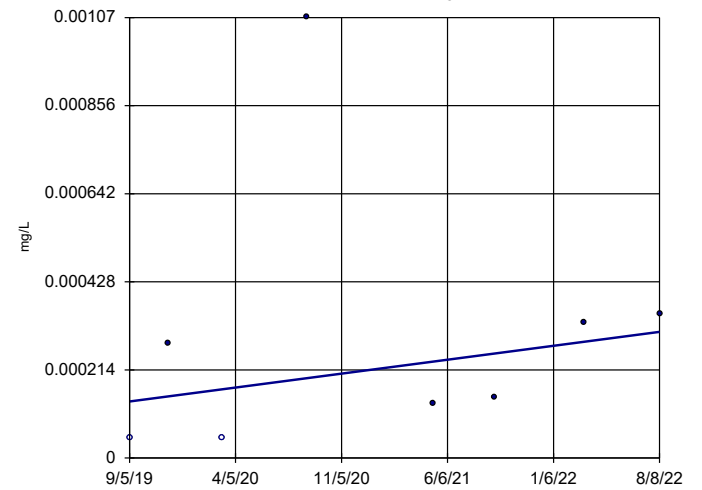


n = 8
Slope = -0.000009245
units per year.
Mann-Kendall
statistic = -5
critical = -21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Cadmium Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-28

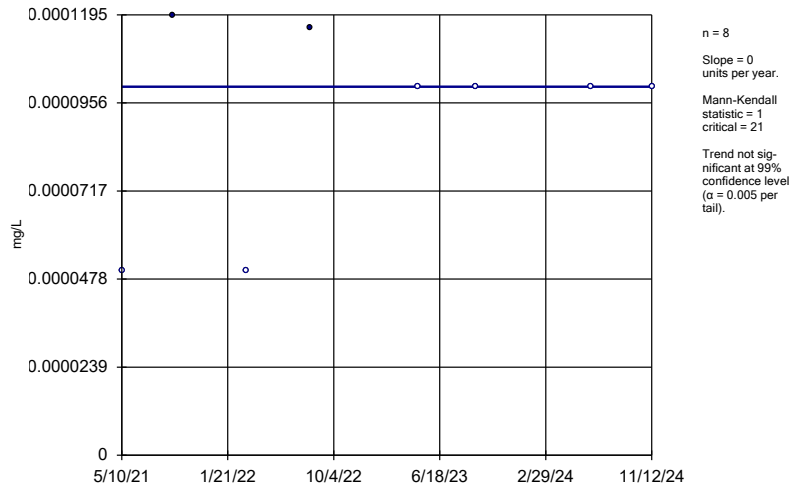


n = 8
Slope = 0.00005769
units per year.
Mann-Kendall
statistic = 13
critical = 21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Cadmium Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

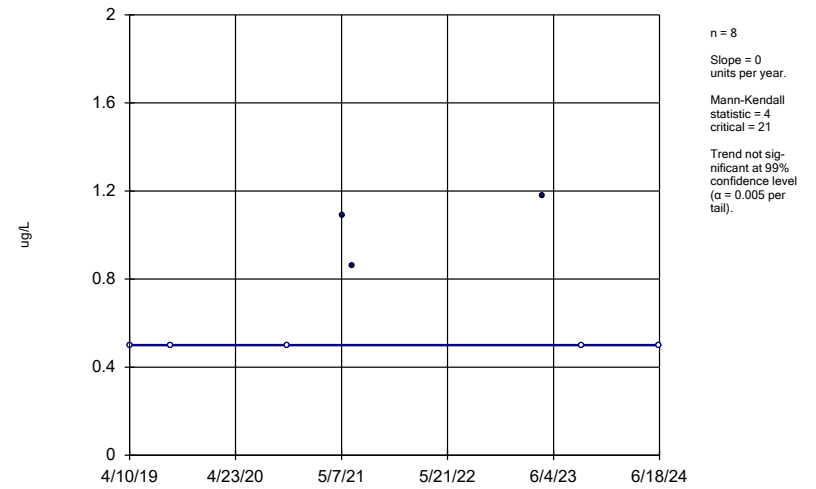
MW-29



Constituent: Cadmium Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

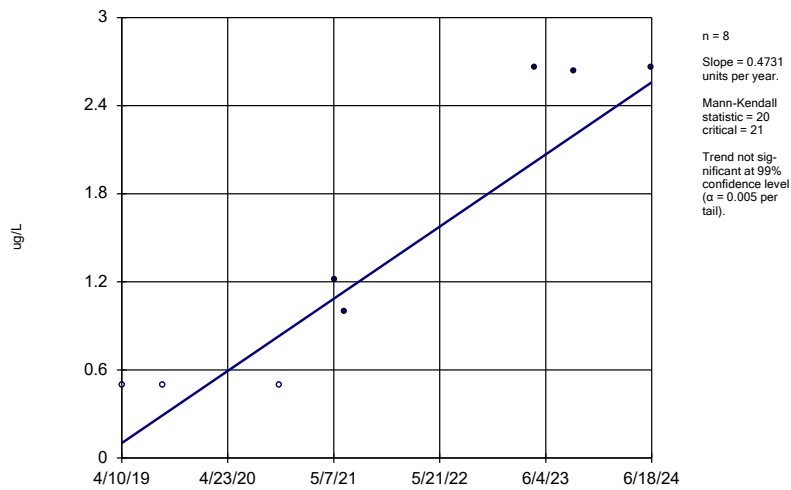
MW-27R



Constituent: Carbon disulfide Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

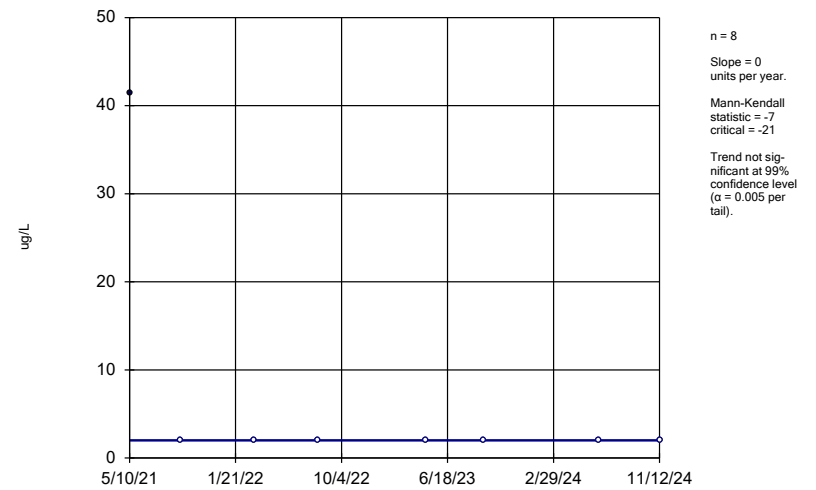
MW-27R



Constituent: Chlorobenzene Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

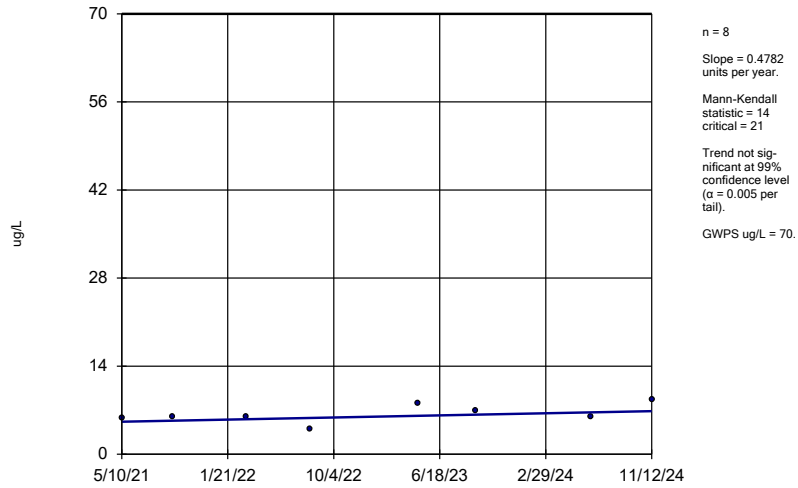
MW-11R



Constituent: Chloroethane Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

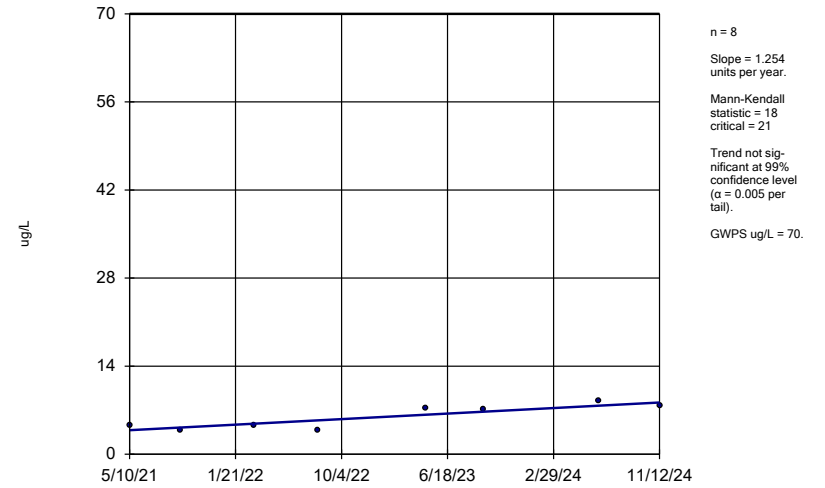
MW-7



Constituent: cis-1,2-Dichloroethene Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

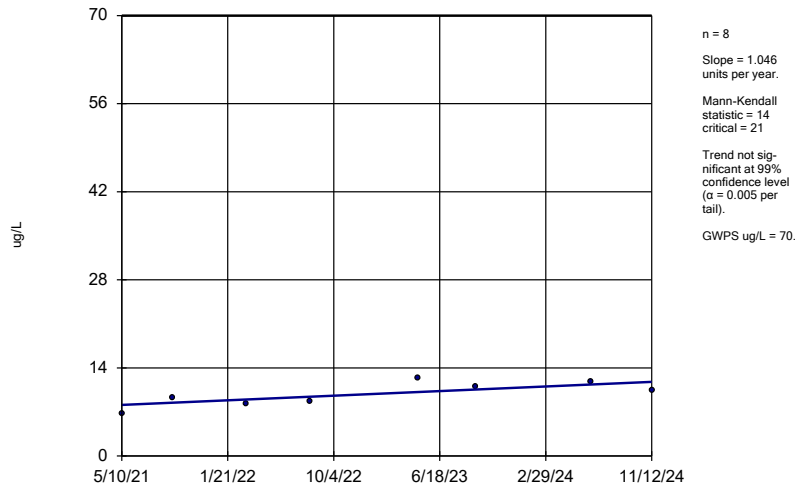
MW-8R



Constituent: cis-1,2-Dichloroethene Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

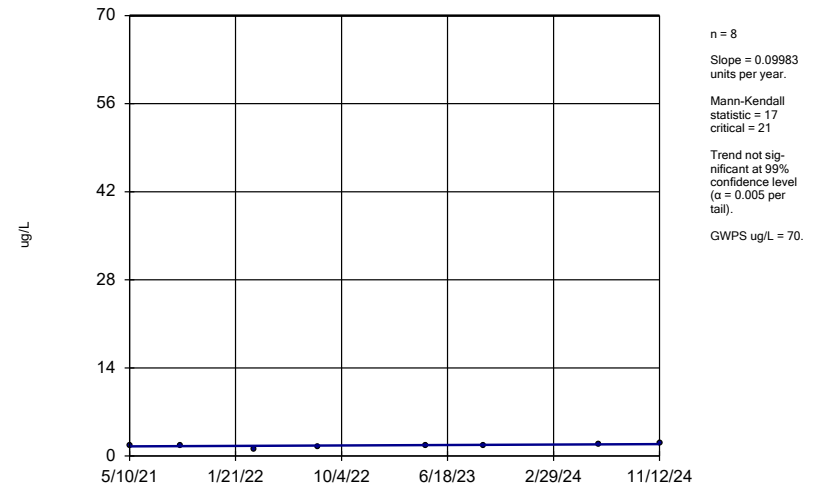
MW-10R



Constituent: cis-1,2-Dichloroethene Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

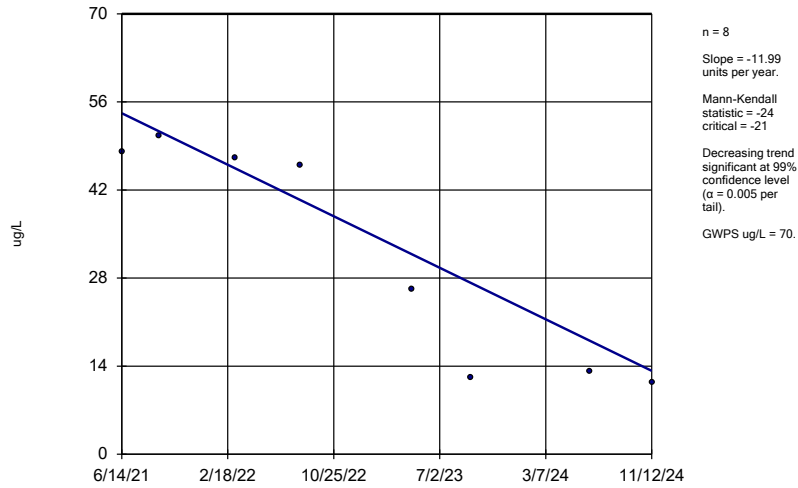
MW-11R



Constituent: cis-1,2-Dichloroethene Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

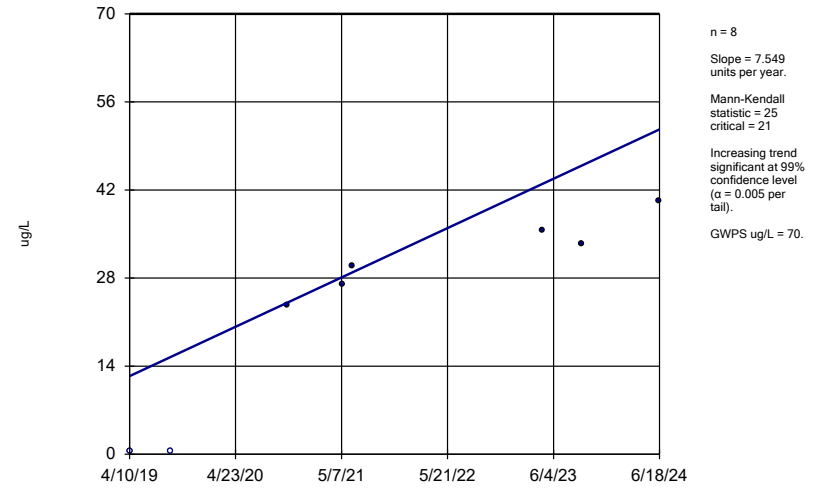
MW-26R



Constituent: cis-1,2-Dichloroethene Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

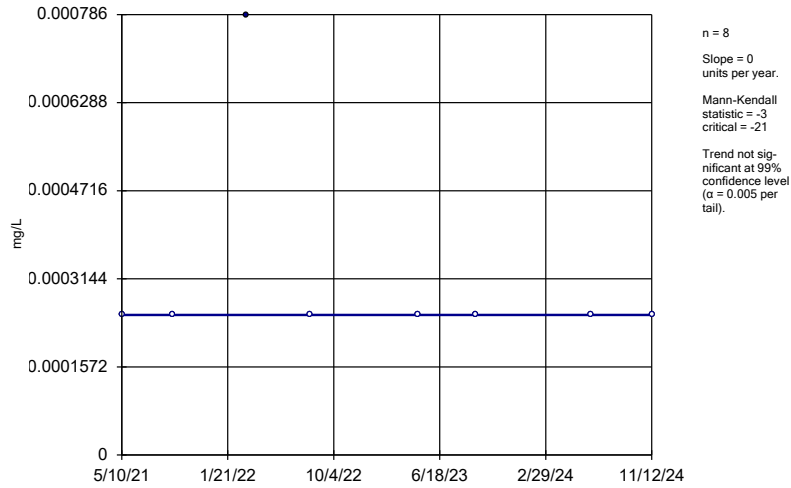
MW-27R



Constituent: cis-1,2-Dichloroethene Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

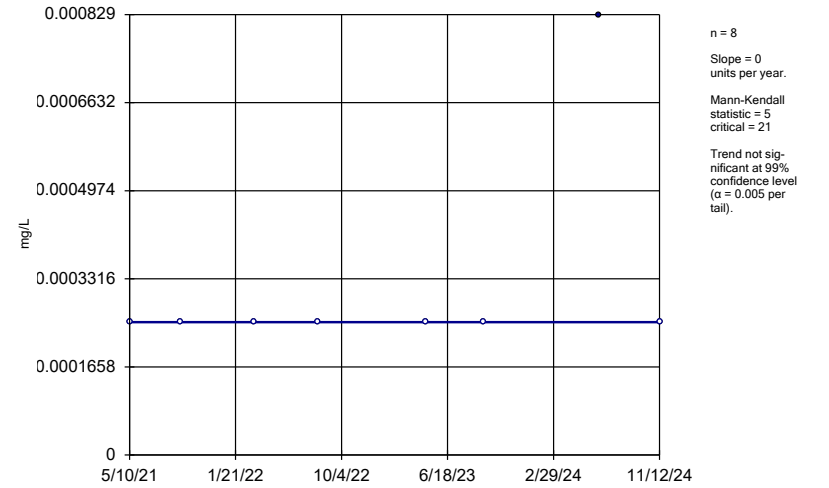
MW-7



Constituent: Cobalt Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

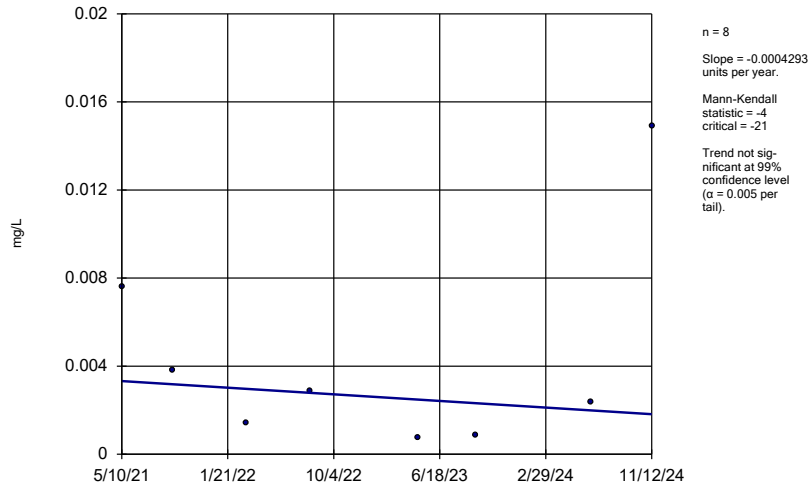
MW-8R



Constituent: Cobalt Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

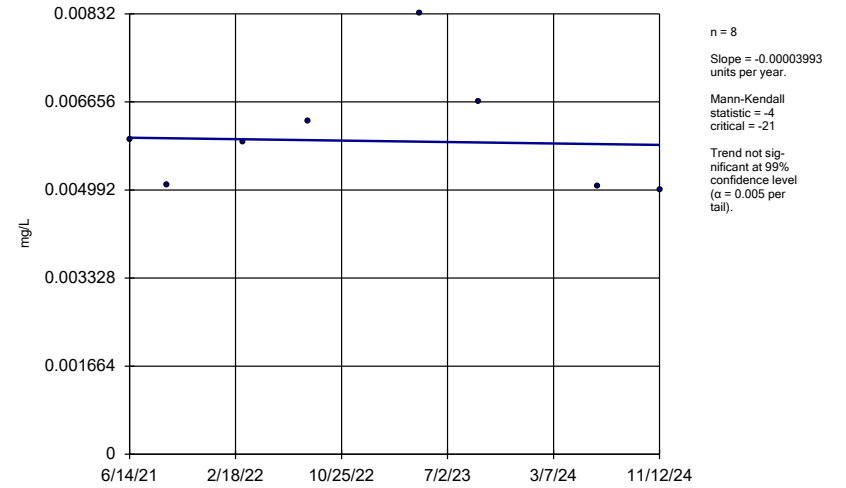
MW-11R



Constituent: Cobalt Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

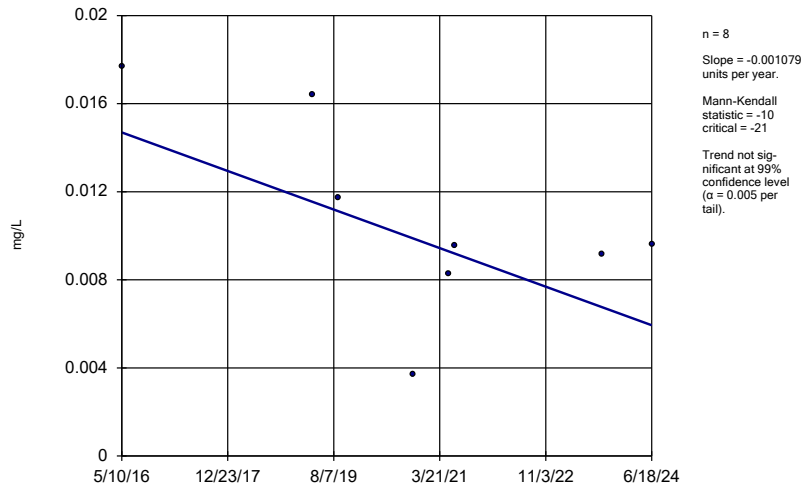
MW-26R



Constituent: Cobalt Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

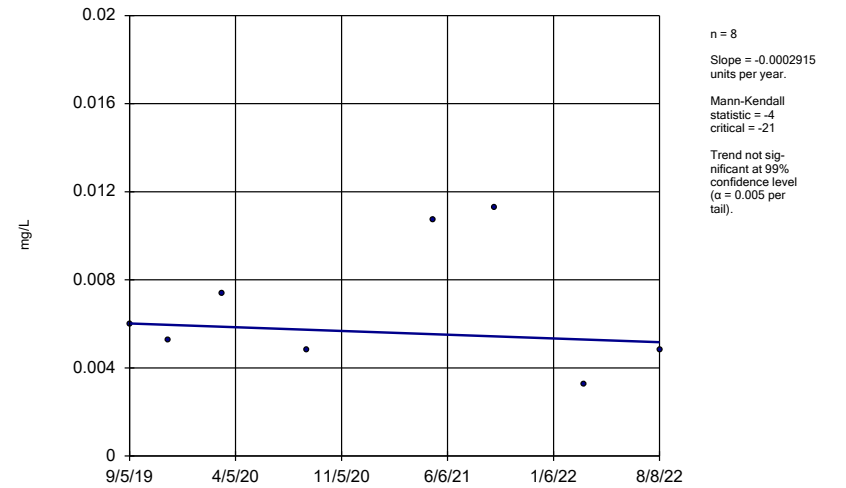
MW-27R



Constituent: Cobalt Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

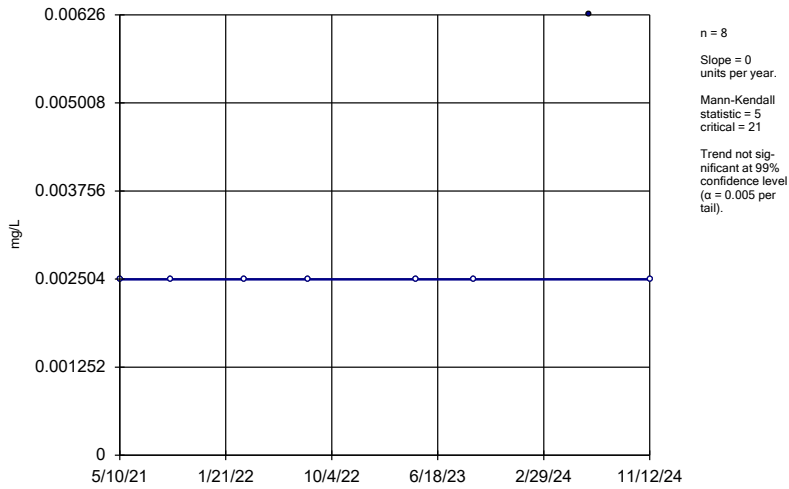
MW-28



Constituent: Cobalt Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

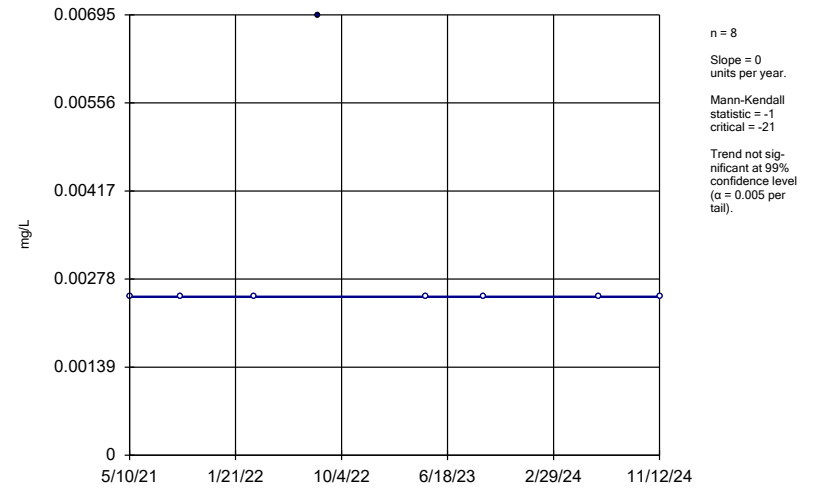
MW-8R



Constituent: Copper Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

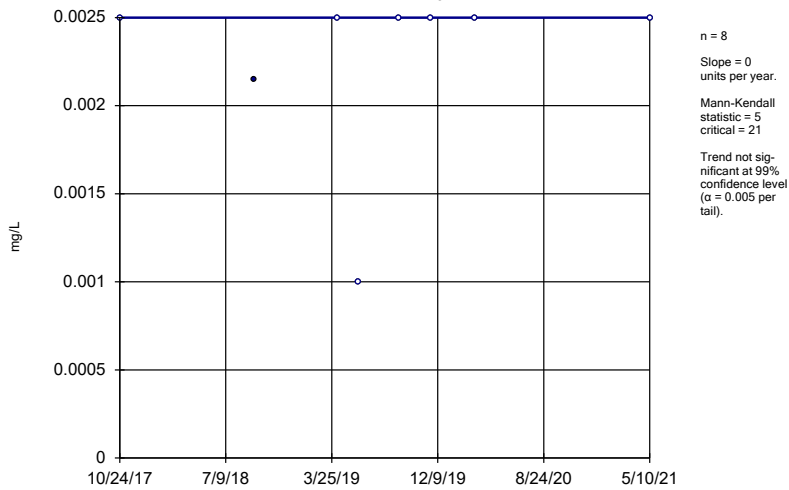
MW-11R



Constituent: Copper Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

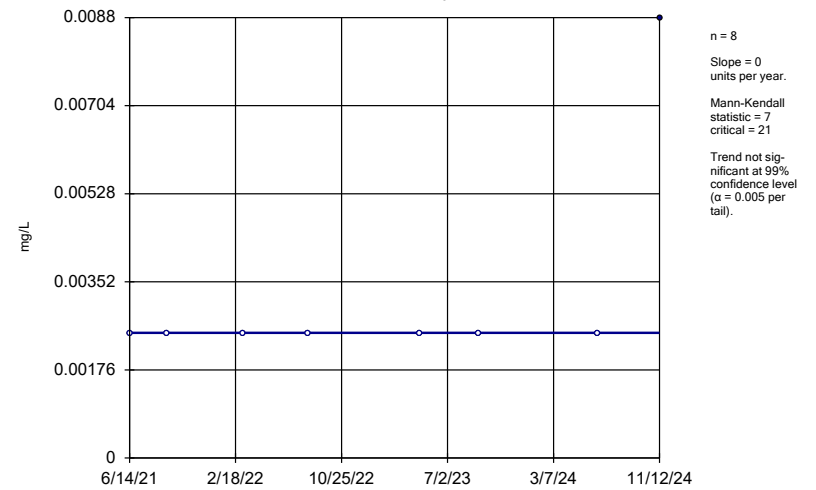
MW-25



Constituent: Copper Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

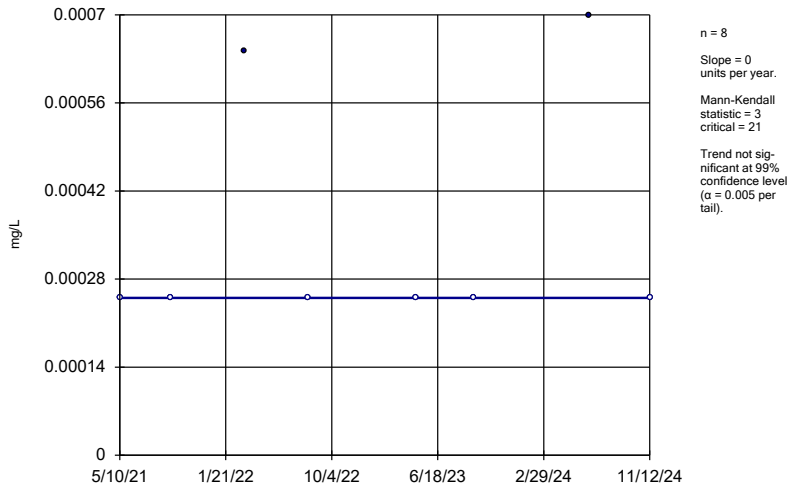
MW-26R



Constituent: Copper Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

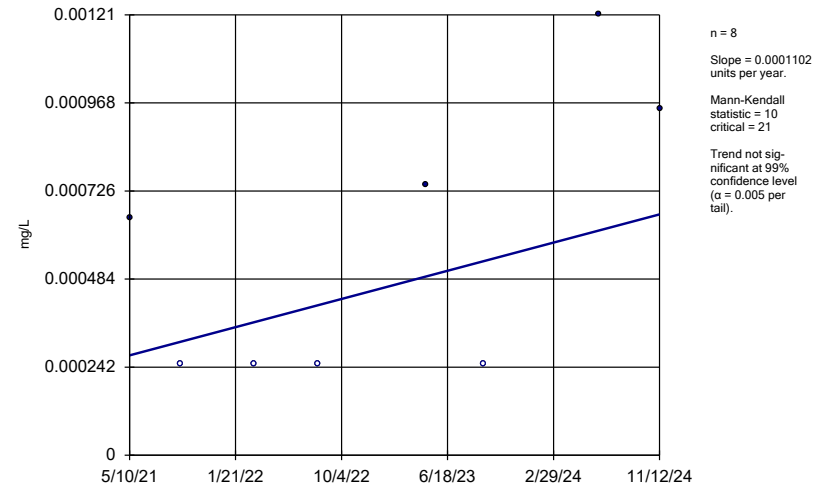
MW-7



Constituent: Lead Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

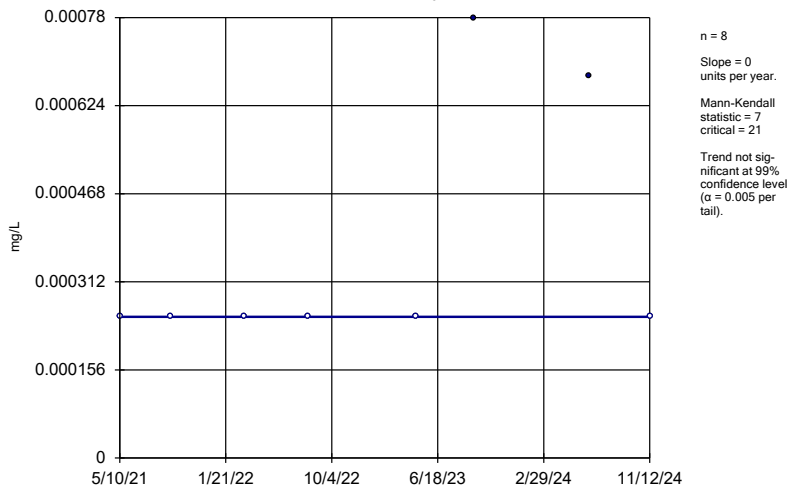
MW-8R



Constituent: Lead Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

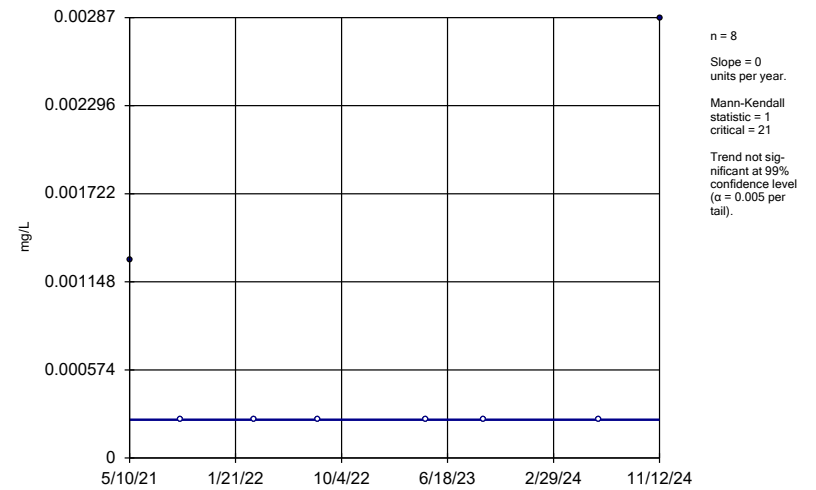
MW-10R



Constituent: Lead Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

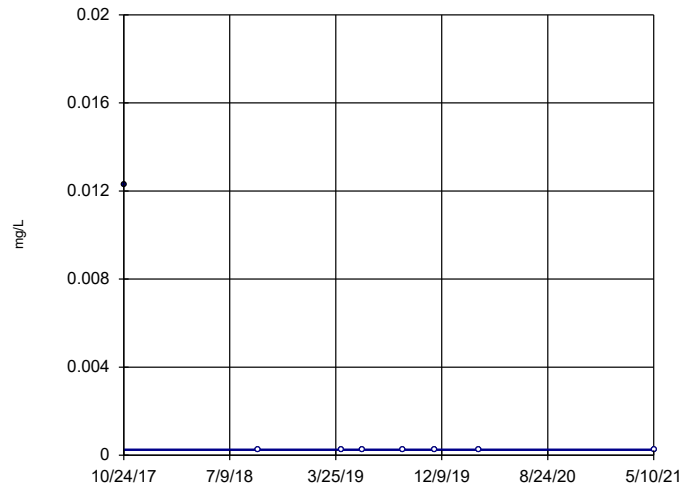
MW-11R



Constituent: Lead Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-25

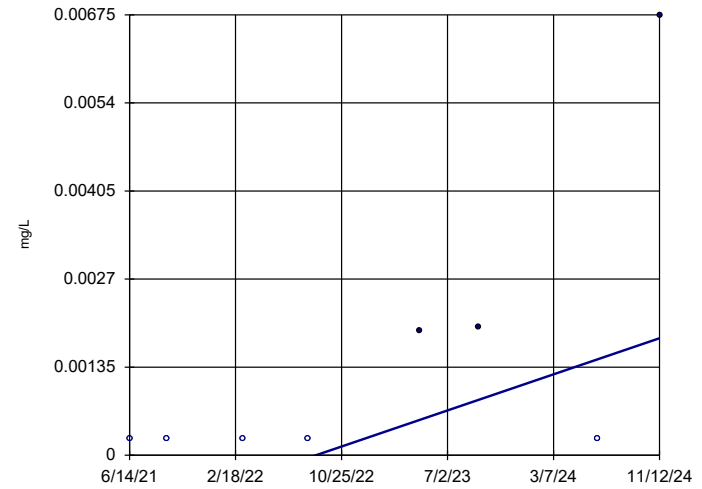


n = 8
Slope = 0
units per year.
Mann-Kendall
statistic = -7
critical = -21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Lead Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-26R

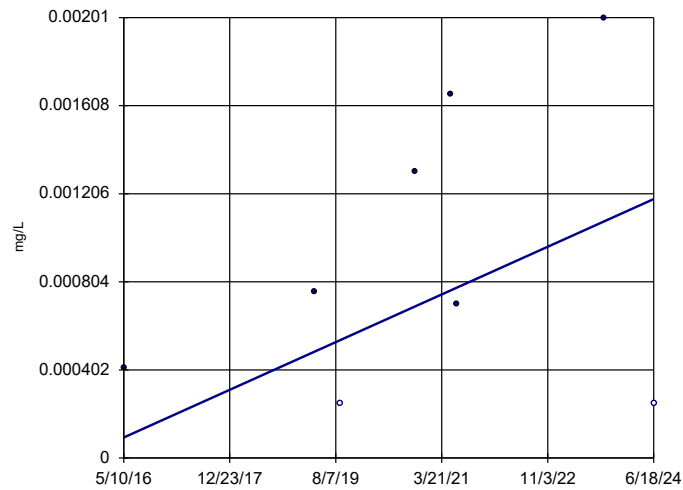


n = 8
Slope = 0.00081
units per year.
Mann-Kendall
statistic = 14
critical = 21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Lead Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-27R

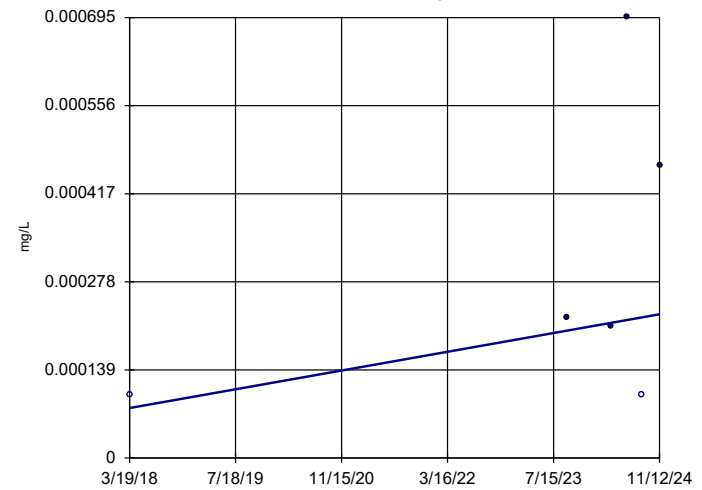


n = 8
Slope = 0.0001341
units per year.
Mann-Kendall
statistic = 5
critical = 21
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Lead Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-8R

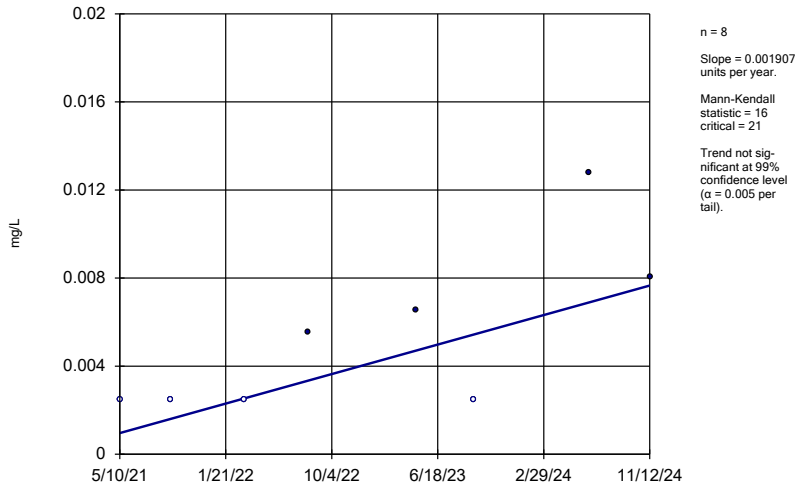


n = 6
Slope = 0.00002222
units per year.
Mann-Kendall
statistic = 4
critical = 14
Trend not sig-
nificant at 99%
confidence level
($\alpha = 0.005$ per
tail).

Constituent: Mercury Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

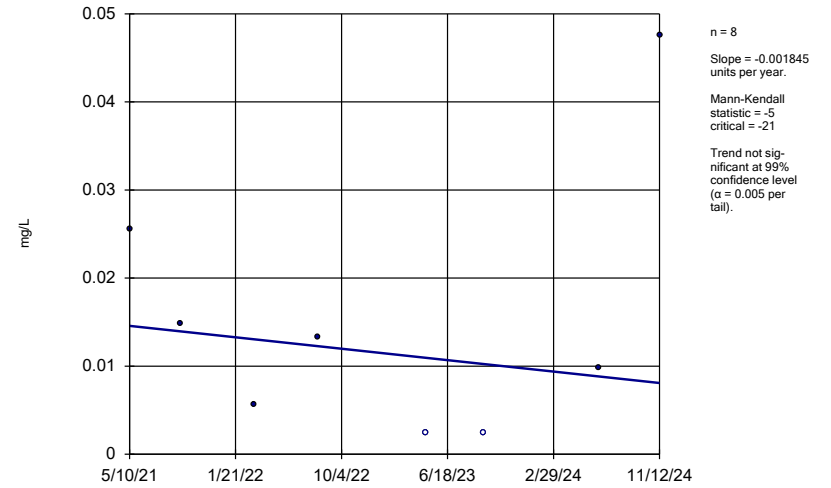
MW-8R



Constituent: Nickel Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

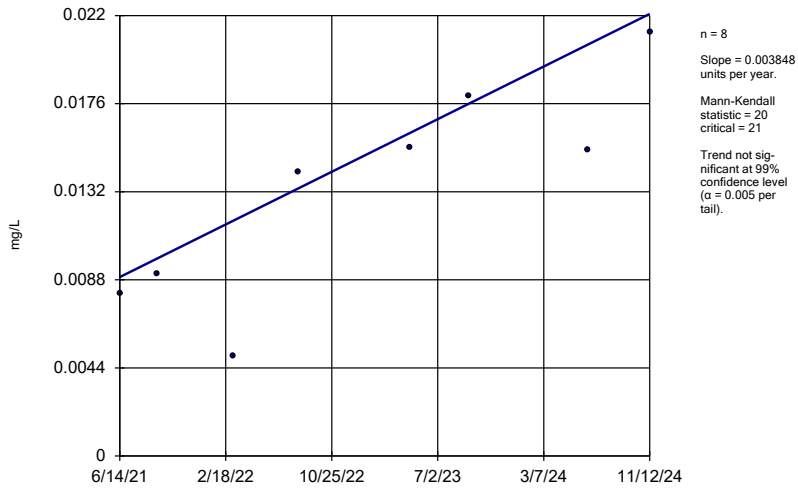
MW-11R



Constituent: Nickel Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

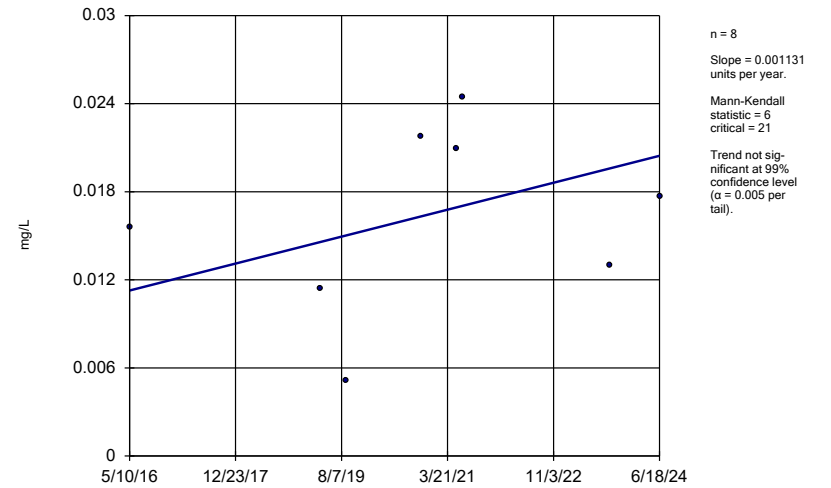
MW-26R



Constituent: Nickel Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

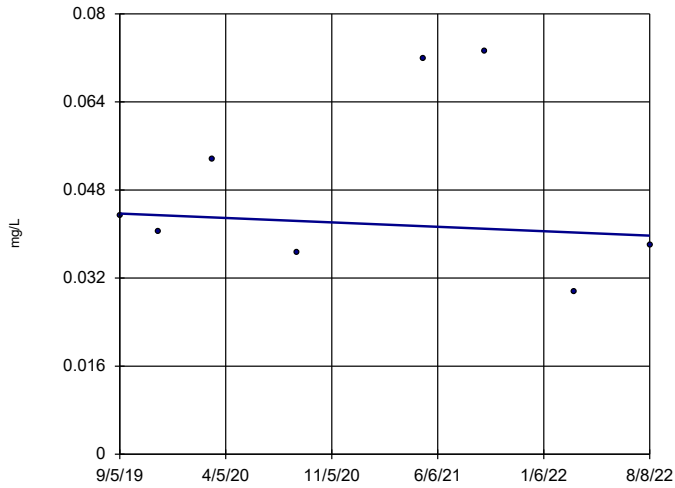
MW-27R



Constituent: Nickel Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-28

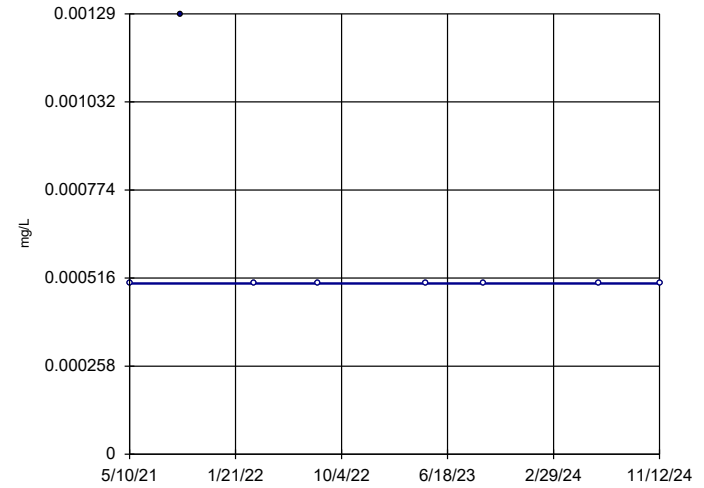


n = 8
 Slope = -0.001365 units per year.
 Mann-Kendall statistic = -2
 critical = -21
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-7

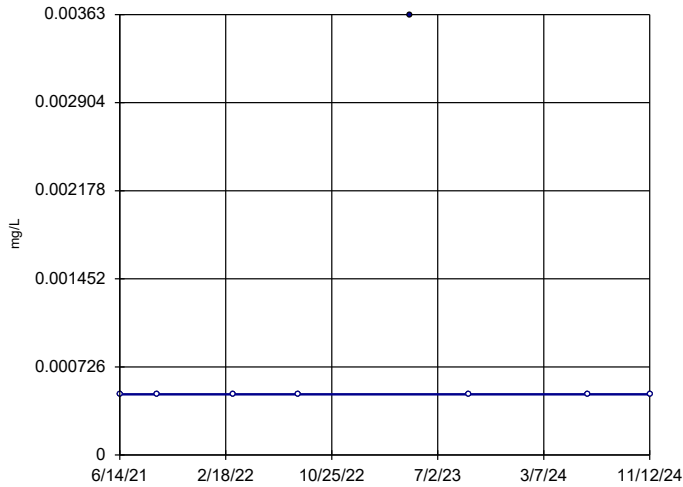


n = 8
 Slope = 0 units per year.
 Mann-Kendall statistic = -5
 critical = -21
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Thallium Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-26R

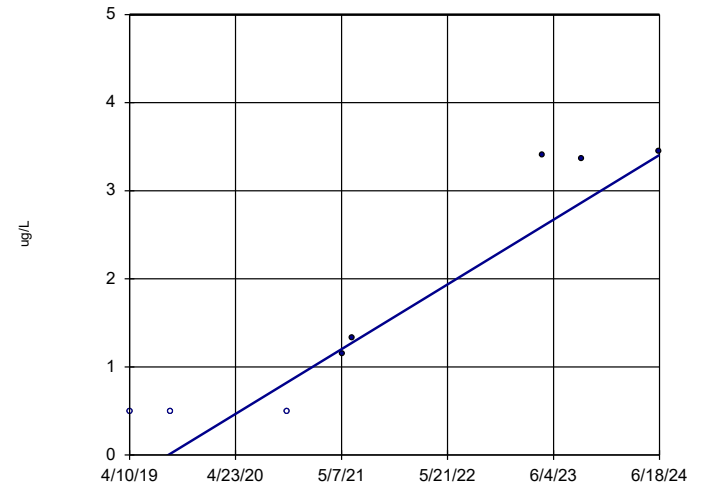


n = 8
 Slope = 0 units per year.
 Mann-Kendall statistic = 1
 critical = 21
 Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Thallium Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-27R

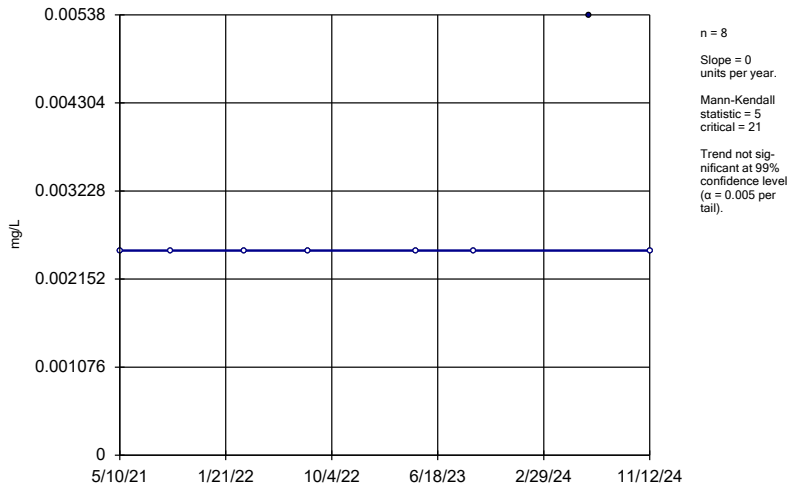


n = 8
 Slope = 0.7074 units per year.
 Mann-Kendall statistic = 23
 critical = 21
 Increasing trend significant at 99% confidence level (α = 0.005 per tail).
 GWPS ug/L = 5.

Constituent: Trichloroethene Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

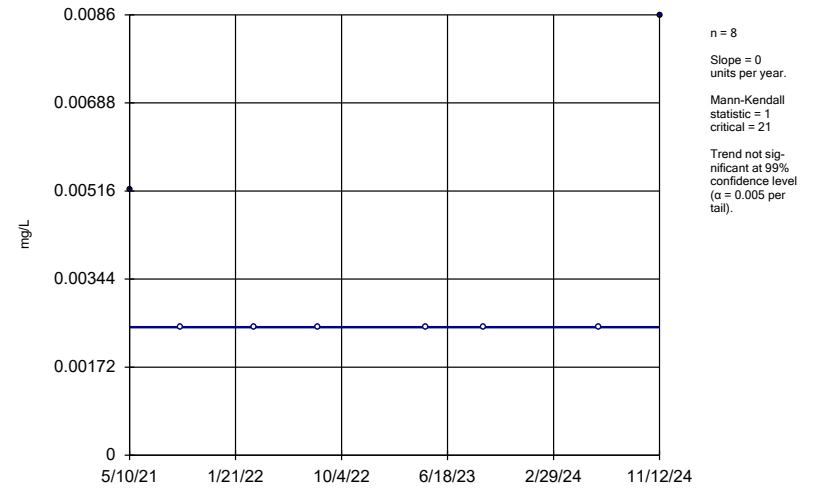
MW-8R



Constituent: Vanadium Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

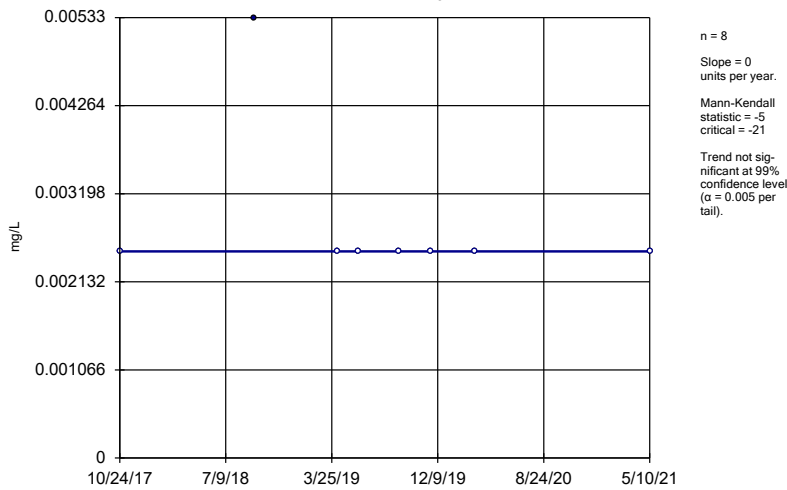
MW-11R



Constituent: Vanadium Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

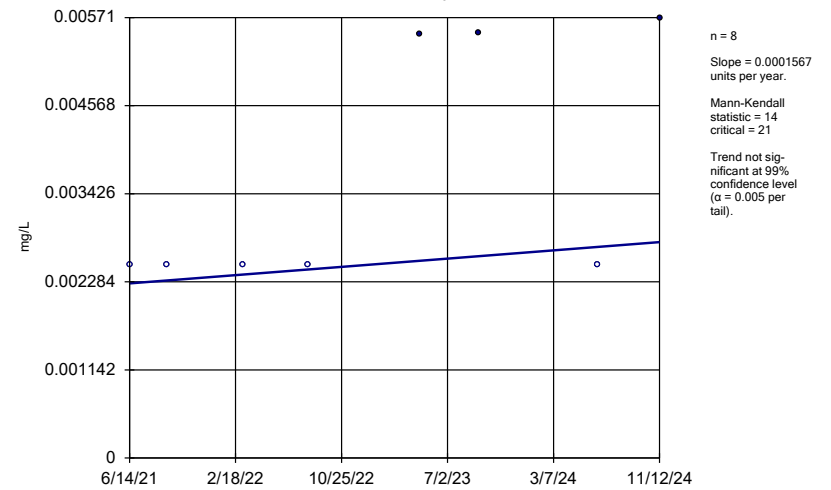
MW-25



Constituent: Vanadium Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

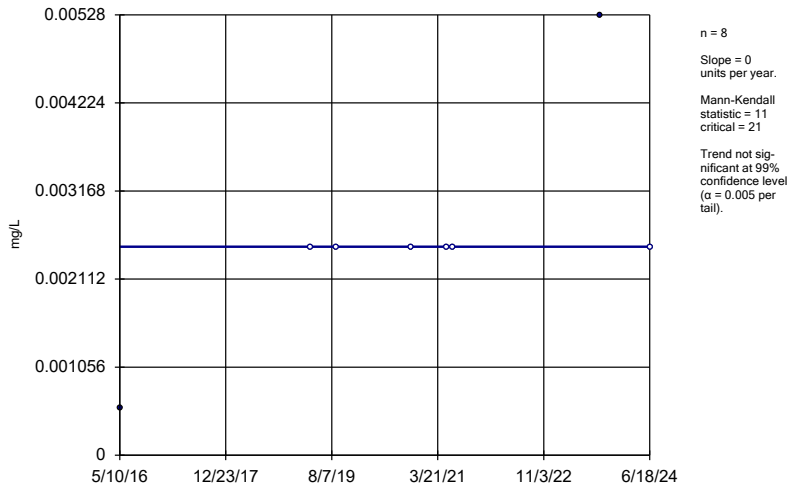
MW-26R



Constituent: Vanadium Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

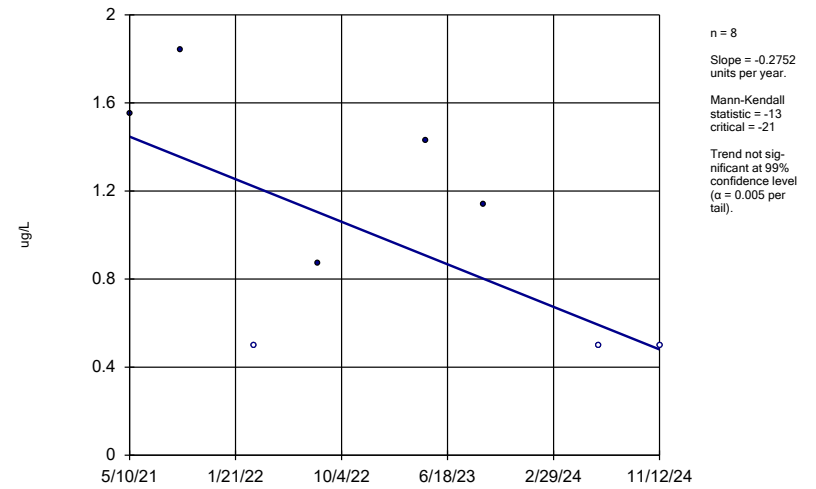
MW-27R



Constituent: Vanadium Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

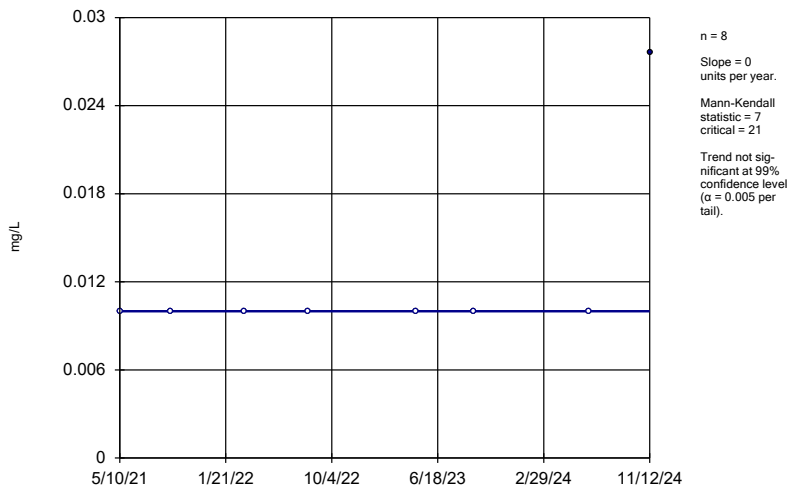
MW-11R



Constituent: Vinyl chloride Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

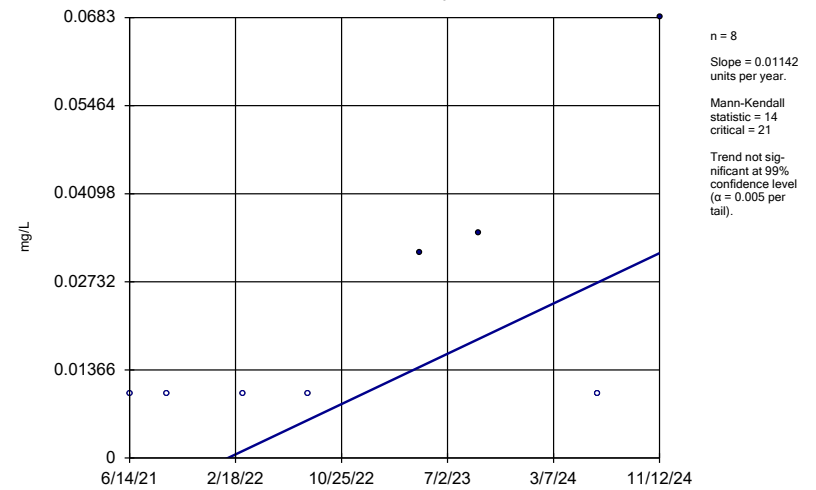
MW-11R



Constituent: Zinc Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope Estimator

MW-26R



Constituent: Zinc Analysis Run 12/11/2024 1:25 PM View: 2024 AWQR MK
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Confidence Interval Table and Graphs

Confidence Interval

Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM Printed 12/11/2024, 1:48 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
1,1-Dichloroethane (ug/L)	MW-10R	2.146	1.349	140	No	8	0	No	0.01	Param.
1,2-Dichloropropane (ug/L)	MW-27R	1.21	0.5	5	No	8	87.5	No	0.004	NP (NDs)
1,4-Dichlorobenzene (ug/L)	MW-11R	1.428	1.04	75	No	8	25	No	0.01	Param.
Acetone (ug/L)	MW-27R	21.5	5	6300	No	8	75	No	0.004	NP (NDs)
Antimony (mg/L)	MW-7	0.00227	0.001	0.006	No	8	87.5	No	0.004	NP (NDs)
Antimony (mg/L)	MW-27R	0.00195	0.0005	0.006	No	8	87.5	No	0.004	NP (NDs)
Arsenic (mg/L)	MW-11R	0.009186	0.0007316	0.01	No	8	12.5	No	0.01	Param.
Arsenic (mg/L)	MW-25	0.0022	0.0005	0.01	No	8	87.5	No	0.004	NP (NDs)
Arsenic (mg/L)	MW-26R	0.572	0.0276	0.01	Yes	8	0	No	0.004	NP (normality)
Arsenic (mg/L)	MW-27R	0.01414	0.001305	0.01	No	8	25	No	0.01	Param.
Barium (mg/L)	MW-7	0.652	0.223	2	No	8	0	No	0.004	NP (normality)
Barium (mg/L)	MW-8R	0.4858	0.4014	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-10R	0.5812	0.5163	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-11R	0.7633	0.5444	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-25	0.5668	0.4342	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-26R	1.081	0.6311	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-27R	0.7545	0.0799	2	No	8	0	No	0.004	NP (normality)
Barium (mg/L)	MW-28	1.797	1.603	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-29	0.3586	0.3096	2	No	8	0	No	0.01	Param.
Benzene (ug/L)	MW-7	0.587	0.25	5	No	8	75	No	0.004	NP (NDs)
Benzene (ug/L)	MW-11R	2.249	0.6106	5	No	8	12.5	No	0.01	Param.
Benzene (ug/L)	MW-26R	0.7719	0.5049	5	No	8	37.5	No	0.01	Param.
Benzene (ug/L)	MW-28	0.883	0.4505	5	No	8	37.5	No	0.01	Param.
beta-BHC (ug/L)	MW-28	0.0644	0.0165	0.042	No	8	87.5	No	0.004	NP (NDs)
Cadmium (mg/L)	MW-7	0.00061	0.00005	0.005	No	8	75	No	0.004	NP (NDs)
Cadmium (mg/L)	MW-8R	0.000261	0.00005	0.005	No	8	87.5	No	0.004	NP (NDs)
Cadmium (mg/L)	MW-10R	0.000678	0.00005	0.005	No	8	87.5	No	0.004	NP (NDs)
Cadmium (mg/L)	MW-26R	0.000884	0.00005	0.005	No	8	62.5	No	0.004	NP (NDs)
Cadmium (mg/L)	MW-27R	0.000291	0.00005	0.005	No	8	87.5	No	0.004	NP (NDs)
Cadmium (mg/L)	MW-28	0.00107	0.00005	0.005	No	8	25	No	0.004	NP (normality)
Cadmium (mg/L)	MW-29	0.0001195	0.00005	0.005	No	8	75	No	0.004	NP (NDs)
Carbon disulfide (ug/L)	MW-27R	1.18	0.5	700	No	8	62.5	No	0.004	NP (NDs)
Chlorobenzene (ug/L)	MW-27R	2.239	0.7184	100	No	8	37.5	No	0.01	Param.
Chloroethane (ug/L)	MW-11R	41.5	2	2800	No	8	87.5	No	0.004	NP (NDs)
cis-1,2-Dichloroethene (ug/L)	MW-7	8.007	4.843	70	No	8	0	No	0.01	Param.
cis-1,2-Dichloroethene (ug/L)	MW-8R	7.959	3.874	70	No	8	0	No	0.01	Param.
cis-1,2-Dichloroethene (ug/L)	MW-10R	11.85	7.739	70	No	8	0	No	0.01	Param.
cis-1,2-Dichloroethene (ug/L)	MW-11R	1.945	1.326	70	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-7	0.000786	0.00025	0.0021	No	8	87.5	No	0.004	NP (NDs)
Cobalt (mg/L)	MW-8R	0.000829	0.00025	0.0021	No	8	87.5	No	0.004	NP (NDs)
Cobalt (mg/L)	MW-11R	0.009427	0	0.0021	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-26R	0.007209	0.004854	0.0021	Yes	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-27R	0.01554	0.005984	0.0021	Yes	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-28	0.009771	0.003614	0.0021	Yes	8	0	No	0.01	Param.
Copper (mg/L)	MW-8R	0.00626	0.0025	1.3	No	8	87.5	No	0.004	NP (NDs)
Copper (mg/L)	MW-11R	0.00695	0.0025	1.3	No	8	87.5	No	0.004	NP (NDs)
Copper (mg/L)	MW-25	0.0025	0.001	1.3	No	8	87.5	No	0.004	NP (NDs)
Copper (mg/L)	MW-26R	0.0088	0.0025	1.3	No	8	87.5	No	0.004	NP (NDs)
Lead (mg/L)	MW-7	0.0007	0.00025	0.015	No	8	75	No	0.004	NP (NDs)
Lead (mg/L)	MW-8R	0.0009568	0.0004332	0.015	No	8	50	No	0.01	Param.

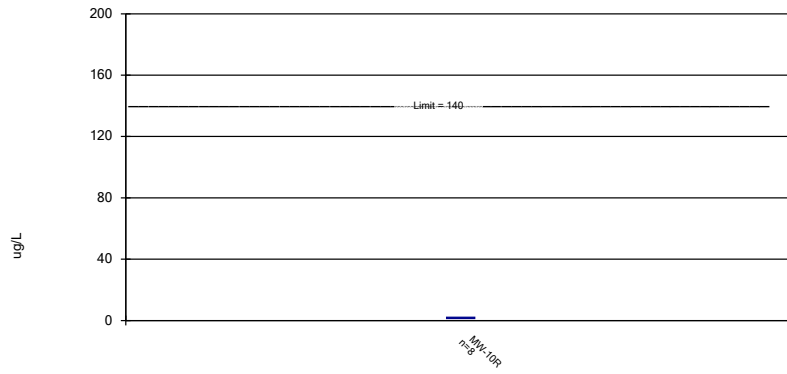
Confidence Interval

Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM Printed 12/11/2024, 1:48 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Lead (mg/L)	MW-10R	0.00078	0.00025	0.015	No	8	75	No	0.004	NP (NDs)
Lead (mg/L)	MW-11R	0.00287	0.00025	0.015	No	8	75	No	0.004	NP (NDs)
Lead (mg/L)	MW-25	0.0123	0.00025	0.015	No	8	87.5	No	0.004	NP (NDs)
Lead (mg/L)	MW-26R	0.00675	0.00025	0.015	No	8	62.5	No	0.004	NP (NDs)
Lead (mg/L)	MW-27R	0.001578	0.000339	0.015	No	8	25	No	0.01	Param.
Mercury (mg/L)	MW-8R	0.0005888	0.00007388	0.002	No	6	33.33	No	0.01	Param.
Nickel (mg/L)	MW-8R	0.009319	0.003921	0.1	No	8	50	No	0.01	Param.
Nickel (mg/L)	MW-11R	0.03027	0.001449	0.1	No	8	25	No	0.01	Param.
Nickel (mg/L)	MW-26R	0.01906	0.007519	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-27R	0.02294	0.00956	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-28	0.06567	0.03095	0.1	No	8	0	No	0.01	Param.
Thallium (mg/L)	MW-7	0.00129	0.0005	0.002	No	8	87.5	No	0.004	NP (NDs)
Thallium (mg/L)	MW-26R	0.00363	0.0005	0.002	No	8	87.5	No	0.004	NP (NDs)
Vanadium (mg/L)	MW-8R	0.00538	0.0025	0.035	No	8	87.5	No	0.004	NP (NDs)
Vanadium (mg/L)	MW-11R	0.0086	0.0025	0.035	No	8	75	No	0.004	NP (NDs)
Vanadium (mg/L)	MW-25	0.00533	0.0025	0.035	No	8	87.5	No	0.004	NP (NDs)
Vanadium (mg/L)	MW-26R	0.00571	0.0025	0.035	No	8	62.5	No	0.004	NP (NDs)
Vanadium (mg/L)	MW-27R	0.00528	0.000571	0.035	No	8	75	No	0.004	NP (NDs)
Vinyl chloride (ug/L)	MW-11R	1.559	0.8013	2	No	8	37.5	No	0.01	Param.
Zinc (mg/L)	MW-11R	0.0276	0.01	2	No	8	87.5	No	0.004	NP (NDs)
Zinc (mg/L)	MW-26R	0.0683	0.01	2	No	8	62.5	No	0.004	NP (NDs)

Parametric Confidence Interval

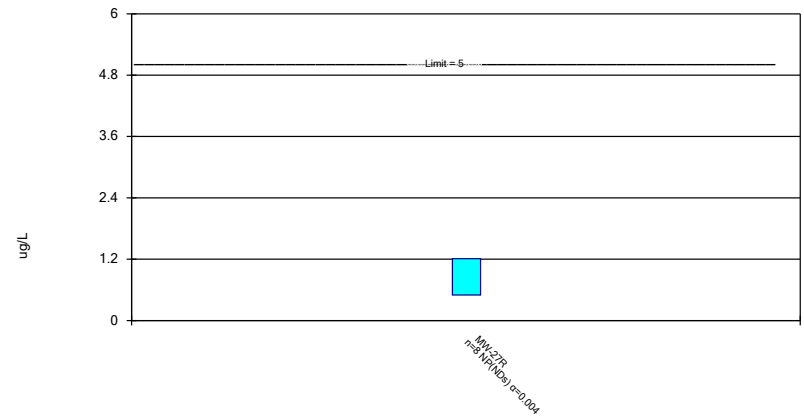
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: 1,1-Dichloroethane Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Non-Parametric Confidence Interval

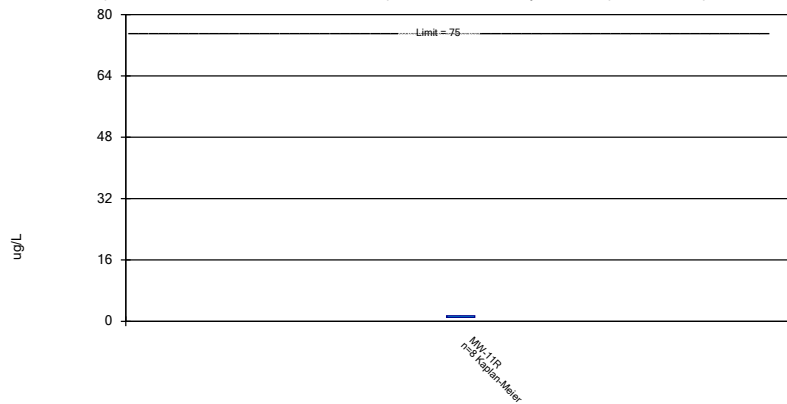
Compliance Limit is not exceeded.



Constituent: 1,2-Dichloropropane Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Parametric Confidence Interval

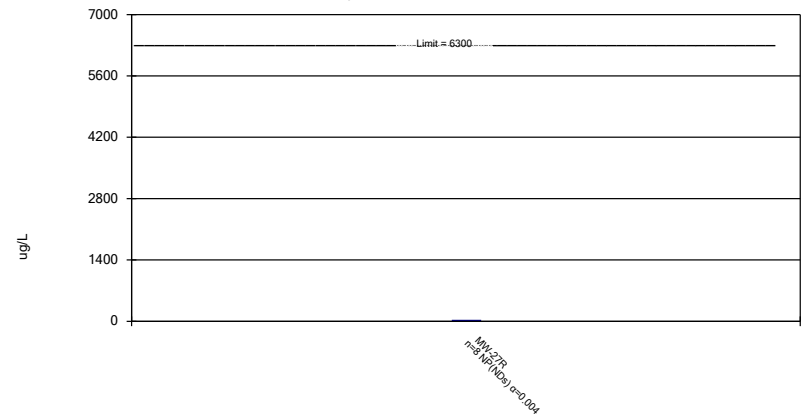
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: 1,4-Dichlorobenzene Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Non-Parametric Confidence Interval

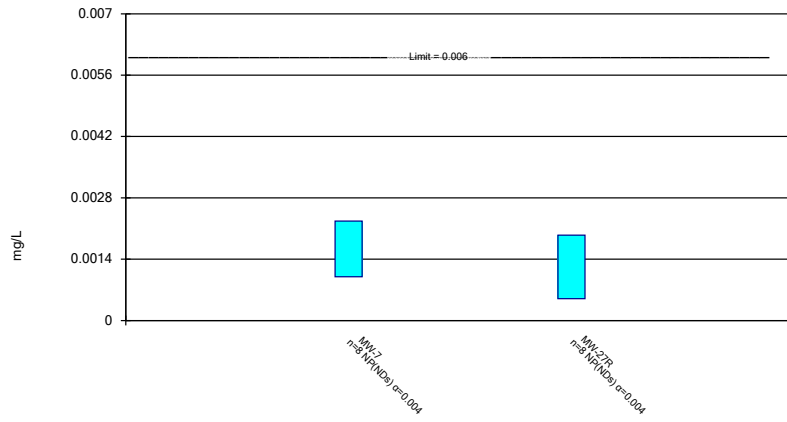
Compliance Limit is not exceeded.



Constituent: Acetone Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Non-Parametric Confidence Interval

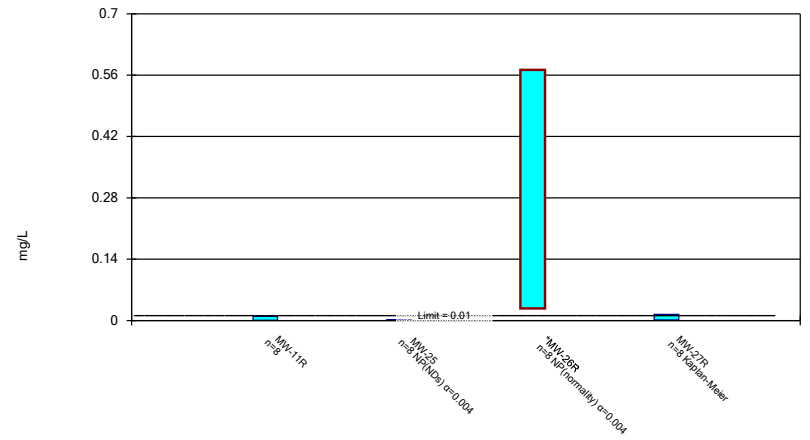
Compliance Limit is not exceeded.



Constituent: Antimony Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Parametric and Non-Parametric (NP) Confidence Interval

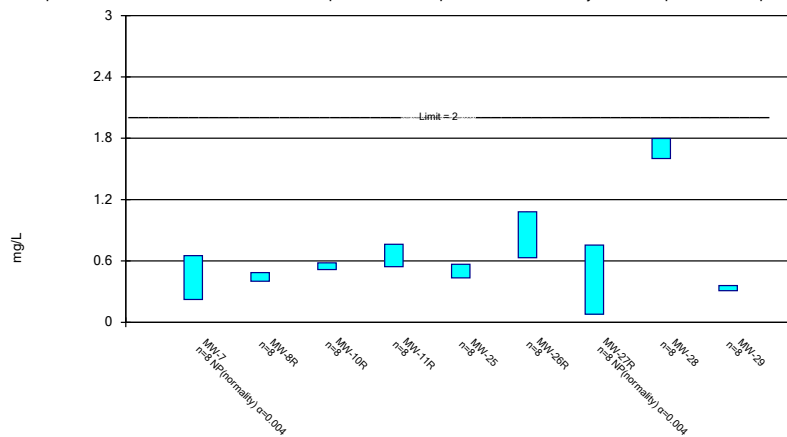
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Parametric and Non-Parametric (NP) Confidence Interval

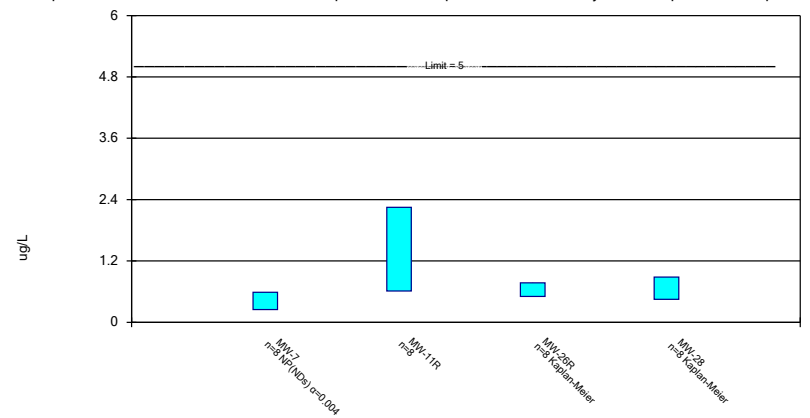
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Parametric and Non-Parametric (NP) Confidence Interval

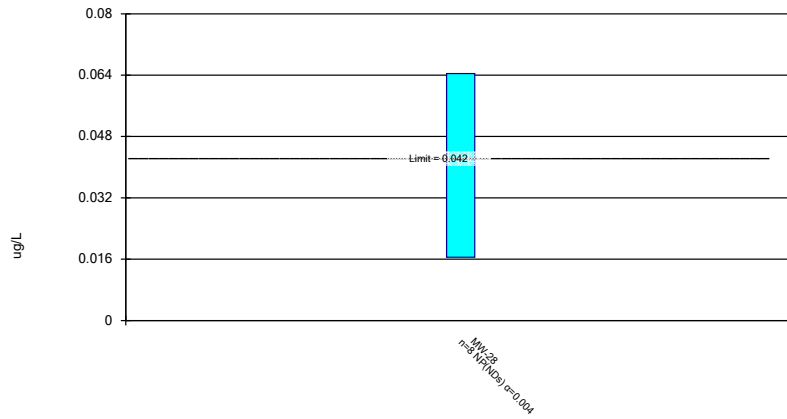
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Benzene Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Non-Parametric Confidence Interval

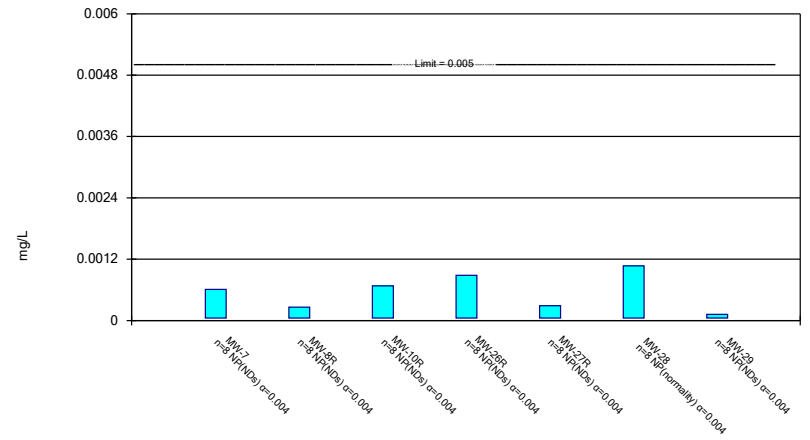
Compliance Limit is not exceeded.



Constituent: beta-BHC Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Non-Parametric Confidence Interval

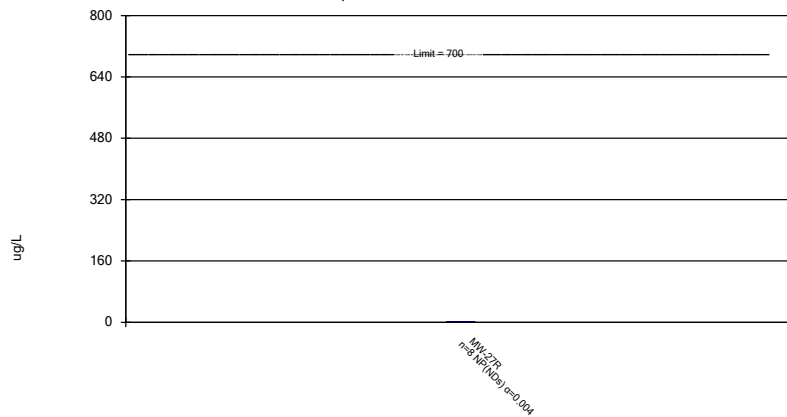
Compliance Limit is not exceeded.



Constituent: Cadmium Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Non-Parametric Confidence Interval

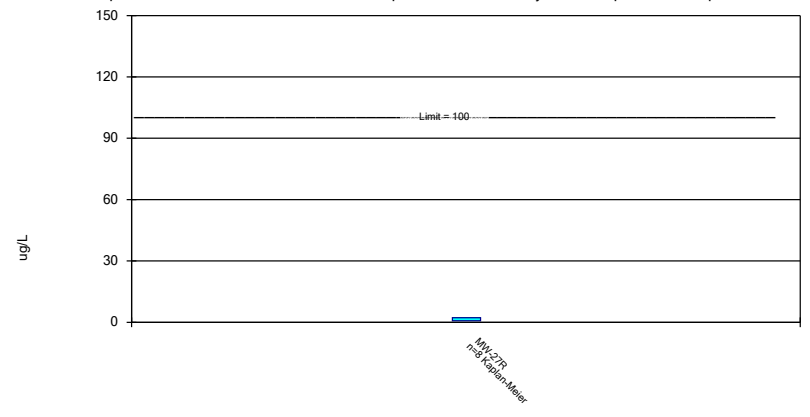
Compliance Limit is not exceeded.



Constituent: Carbon disulfide Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Parametric Confidence Interval

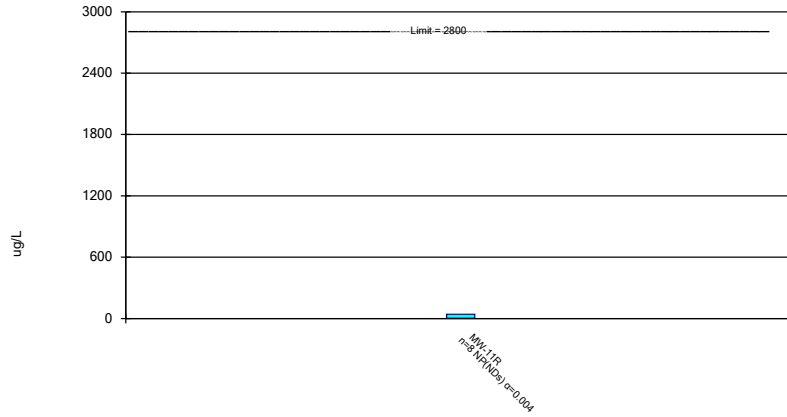
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Chlorobenzene Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Non-Parametric Confidence Interval

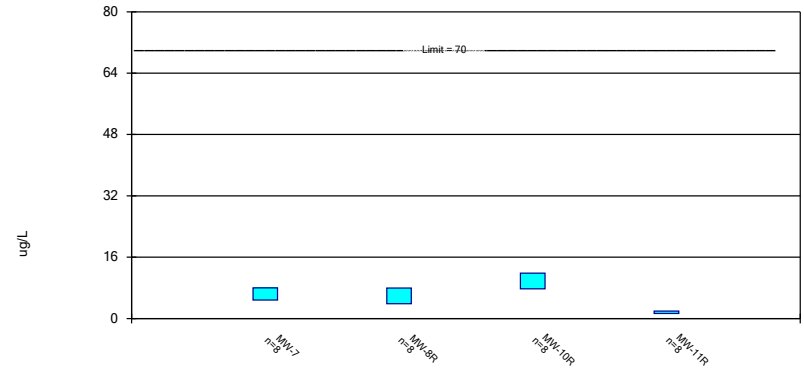
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Constituent: Chloroethane Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Parametric Confidence Interval

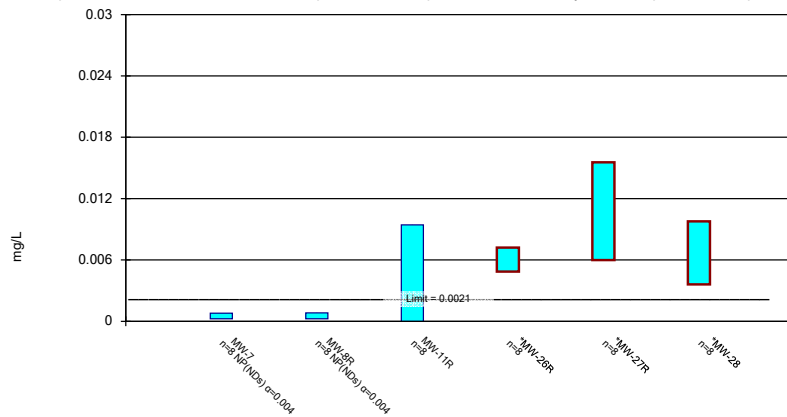
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: cis-1,2-Dichloroethene Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Parametric and Non-Parametric (NP) Confidence Interval

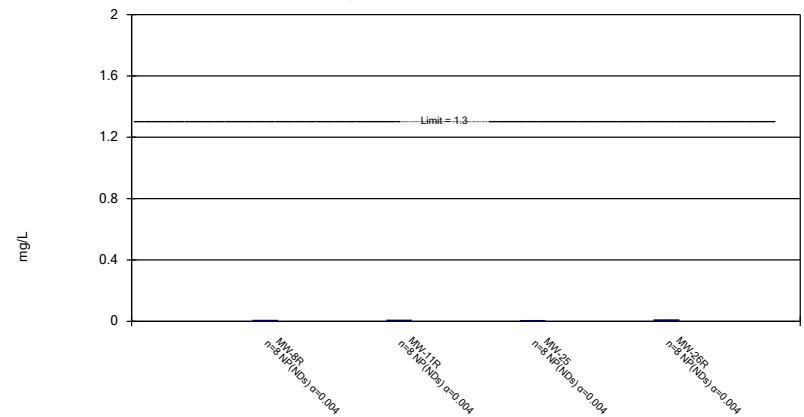
Compliance limit is exceeded.* Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cobalt Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Non-Parametric Confidence Interval

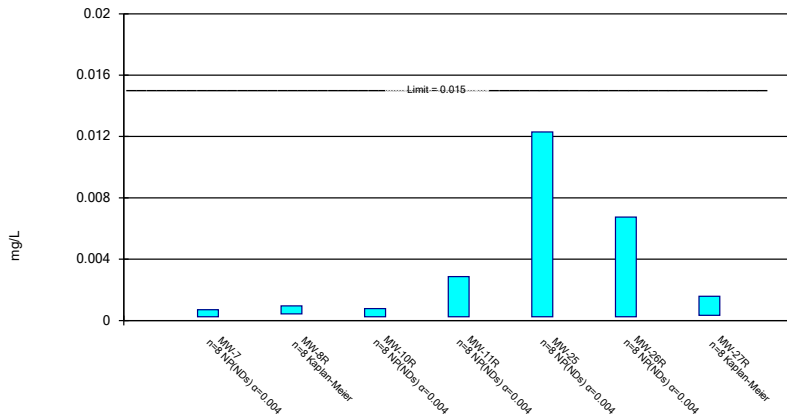
Compliance Limit is not exceeded.



Constituent: Copper Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Parametric and Non-Parametric (NP) Confidence Interval

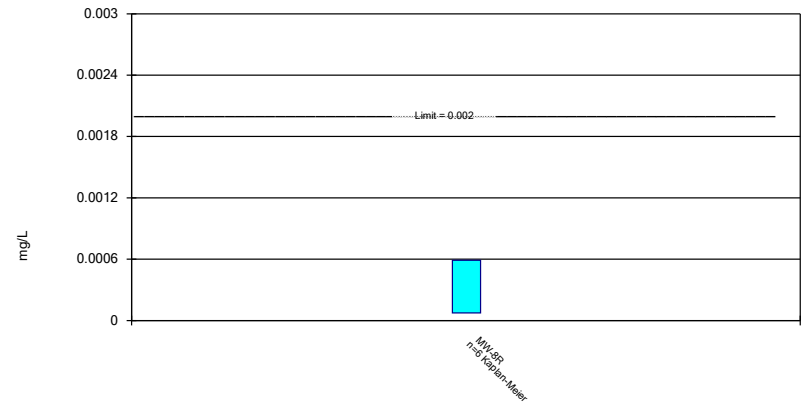
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Constituent: Lead Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Parametric Confidence Interval

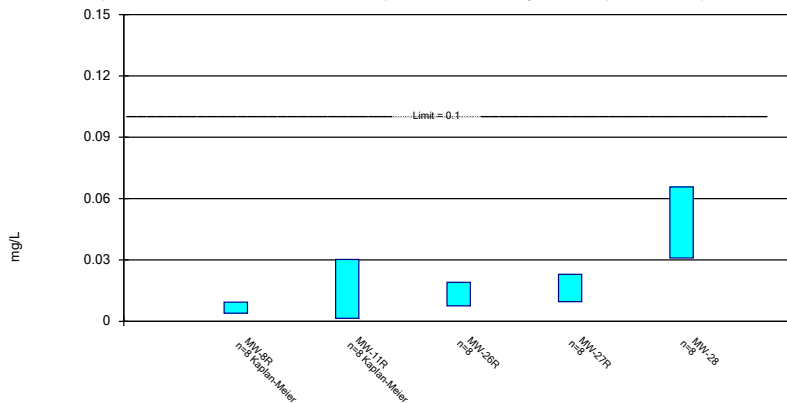
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Mercury Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Parametric Confidence Interval

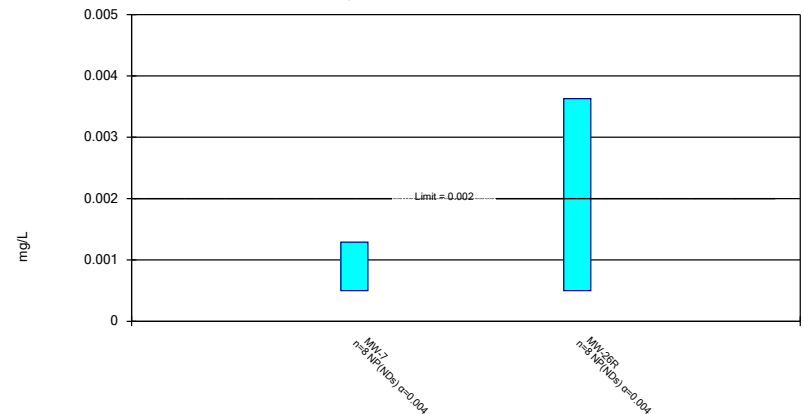
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Nickel Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
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Non-Parametric Confidence Interval

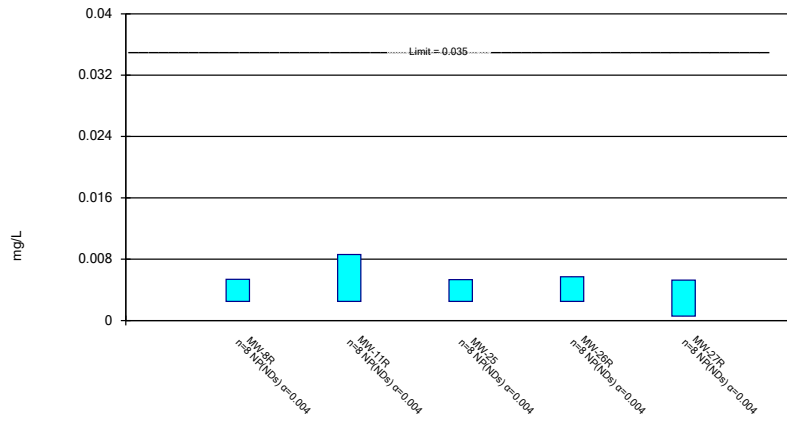
Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Non-Parametric Confidence Interval

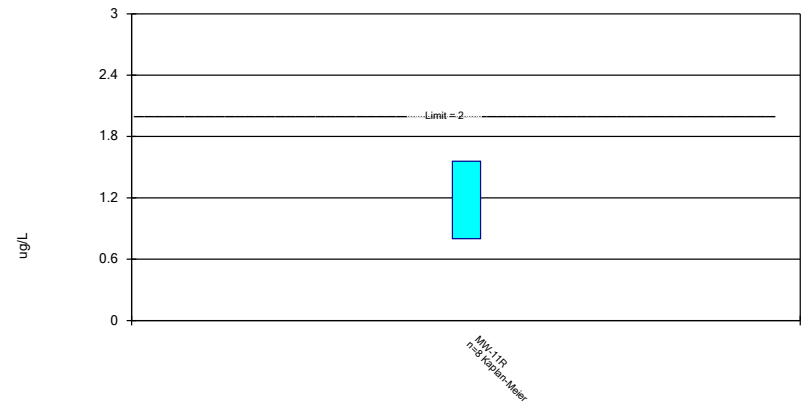
Compliance Limit is not exceeded.



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Parametric Confidence Interval

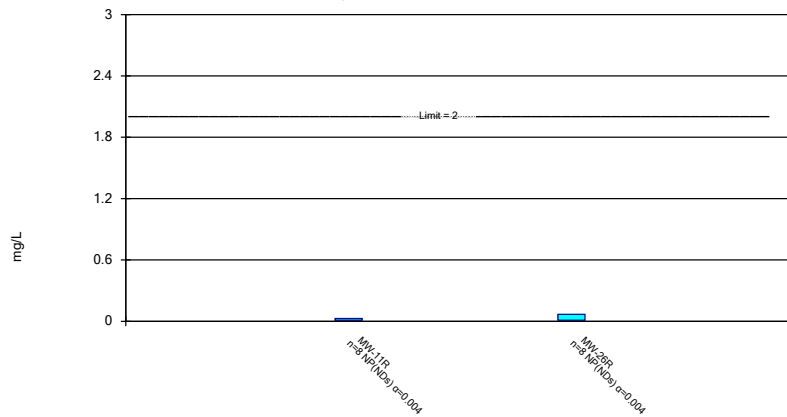
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Vinyl chloride Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Zinc Analysis Run 12/11/2024 1:44 PM View: 2024 AWQR CI
 Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Thiel Sen Trend Table and Graphs

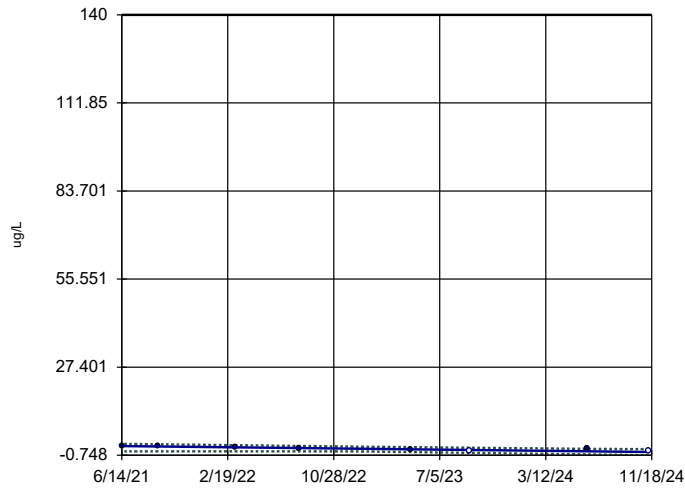
Trend Test

Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM Printed 12/5/2024, 1:24 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
1,1-Dichloroethane (ug/L)	MW-26R	-0.5522	-23	-21	Yes	8	25	0.01	NP
1,1-Dichloroethane (ug/L)	MW-27R	0.619	23	21	Yes	8	25	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-26R	-11.99	-24	-21	Yes	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-27R	7.549	25	21	Yes	8	25	0.01	NP
Trichloroethene (ug/L)	MW-27R	0.7074	23	21	Yes	8	37.5	0.01	NP

Sen's Slope and 99% Confidence Band

MW-26R

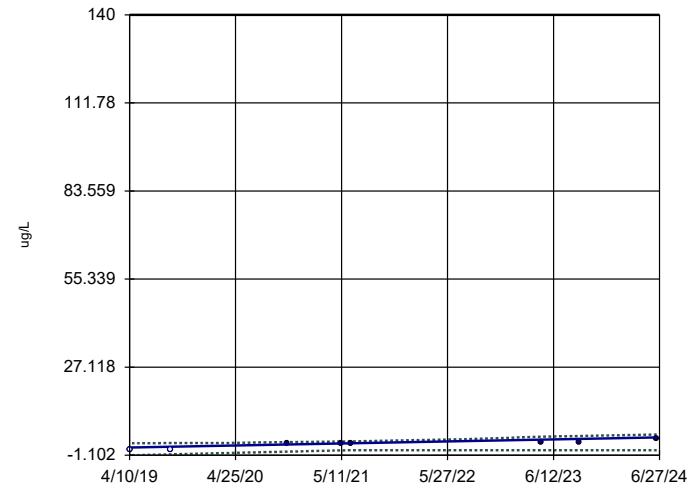


n = 8
Slope = -0.5522
units per year.
Mann-Kendall
statistic = -23
critical = -21
Decreasing trend
significant at 99%
confidence level
($\alpha = 0.005$ per
tail).
Confidence band is
below GWPS ug/L (140).

Constituent: 1,1-Dichloroethane Analysis Run 12/5/2024 1:22 PM View: 2024 AWQR Theil Sen
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope and 99% Confidence Band

MW-27R

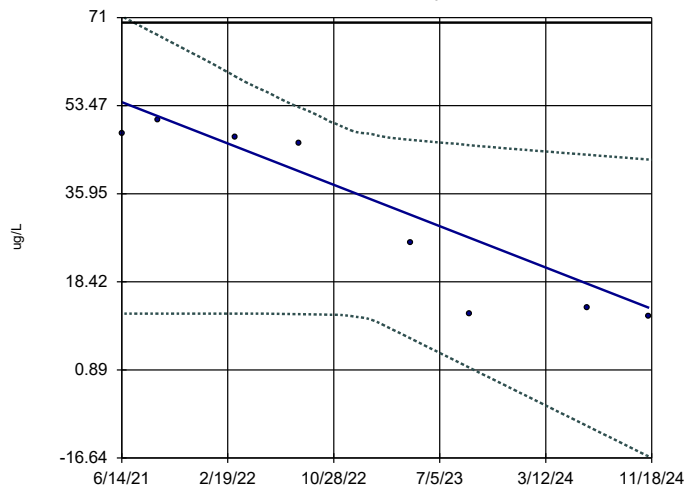


n = 8
Slope = 0.619
units per year.
Mann-Kendall
statistic = 23
critical = 21
Increasing trend
significant at 99%
confidence level
($\alpha = 0.005$ per
tail).
Confidence band is
below GWPS ug/L (140).

Constituent: 1,1-Dichloroethane Analysis Run 12/5/2024 1:22 PM View: 2024 AWQR Theil Sen
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope and 99% Confidence Band

MW-26R

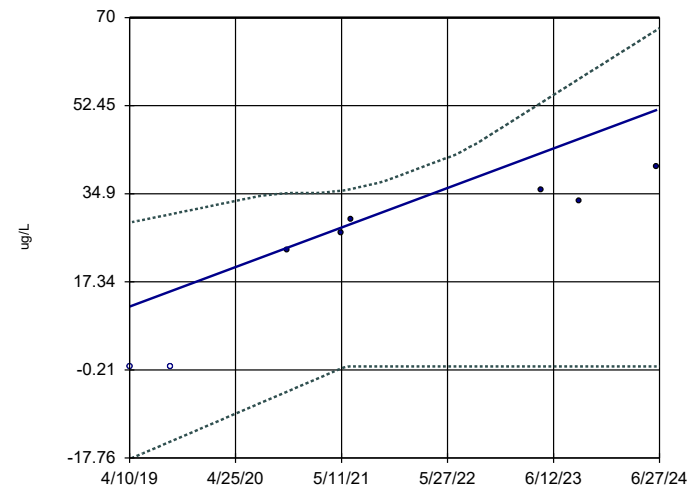


n = 8
Slope = -11.99
units per year.
Mann-Kendall
statistic = -24
critical = -21
Decreasing trend
significant at 99%
confidence level
($\alpha = 0.005$ per
tail).
Confidence band intersects
GWPS ug/L (70) on
07/15/21.

Constituent: cis-1,2-Dichloroethene Analysis Run 12/5/2024 1:22 PM View: 2024 AWQR Theil Sen
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope and 99% Confidence Band

MW-27R

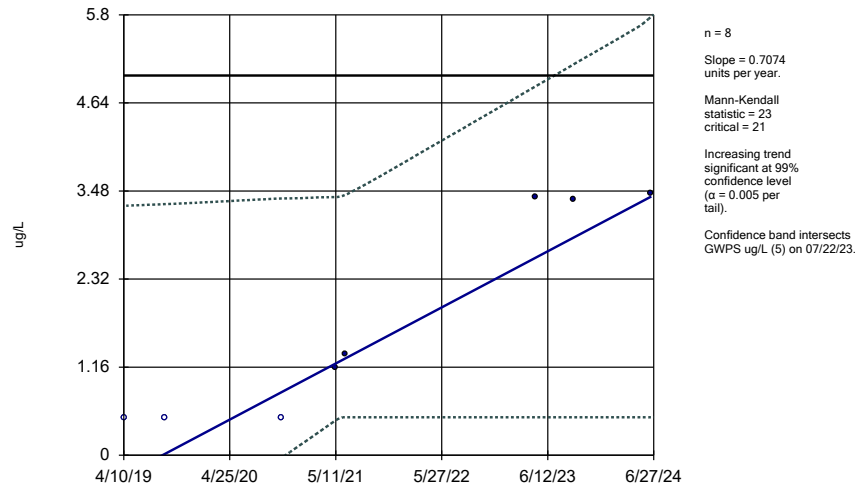


n = 8
Slope = 7.549
units per year.
Mann-Kendall
statistic = 25
critical = 21
Increasing trend
significant at 99%
confidence level
($\alpha = 0.005$ per
tail).
Confidence band is
below GWPS ug/L (70).

Constituent: cis-1,2-Dichloroethene Analysis Run 12/5/2024 1:22 PM View: 2024 AWQR Theil Sen
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Sen's Slope and 99% Confidence Band

MW-27R



Constituent: Trichloroethene Analysis Run 12/5/2024 1:22 PM View: 2024 AWQR Theil Sen
Loess Hills SLF Client: SCS Engineers Data: LoessHills-2024-AWQR-MasterAM

Appendix E

Leachate Control System Performance Evaluation Report – Prepared by SCS Engineers

Loess Hills Regional Sanitary Landfill 2024 Leachate Control System Performance Evaluation Report

Loess Hills Regional Sanitary Landfill
Iowa Waste Services, LLC
59722 290th St
Malvern, Iowa 51551

SCS ENGINEERS

Project No. 27224020.00 | January 2025

1690 All-State Court, Suite 100
West Des Moines, IA 50265
515-631-6160

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Figures

Figure 1 Leachate Control System

Tables

Table 1 Leachate Management Summary
Table 2 Cell D East Lift Station Leachate Levels

Attachments

Attachment A Historical Leachate Head Levels Table and Graphs
Attachment B Leachate Sample Analytical Report

1.0 DESCRIPTION OF LEACHATE CONTROL SYSTEM

Iowa Waste Services, LLC (IWS) owns and operates the Loess Hills Regional Sanitary Landfill (Landfill). This report was prepared by SCS Engineers (SCS) to meet the requirements of Iowa Administrative Code (IAC) 567-113.7(5)b.(14) for the Landfill in addition to site-specific requirements included in the site's operating permit (Permit No. 65-SDP-01-72P) dated December 10, 2020 and subsequent permit revisions. The reporting period covers January 2023 through December 2024.

1.1 LOCATION OF CONTROL SYSTEM

The Landfill property is shown in **Figure 1**, Site Map with Leachate Control System. The Landfill is located approximately three miles west-northwest of Malvern; more specifically described as the NW $\frac{1}{4}$ of the SE $\frac{1}{4}$, the NE $\frac{1}{4}$ of the SE $\frac{1}{4}$, the South $\frac{1}{2}$ of the NE $\frac{1}{4}$, and the SE $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 23, Township 72 North, Range 42 West, in Mills County, Iowa.

Leachate is collected from Cells A, C, D East, D West, E East, F East, E & F West (Phases 1 and 2), Cell G West, Cell G East, Cell G North, Cell M, Cell N and the abutment area collection systems as well as two toe drains (located on the east and southeast sides of the unlined area). The leachate is gravity-fed or pumped to and stored in the leachate storage lagoon located east of Cell C.

During this reporting period, the monitoring network for the Loess Hills MSWLF unit consisted of five gas extraction wells (GEW-2, GEW-3, GEW-4, GEW-6 and GEW-11) over unlined cells and five leachate piezometers (LW-6, LPZ-7, LPZ-9, LPZ-10, LW-11, and LW-12) over lined cells.

The unlined areas are required to achieve the lowest possible leachate head over the base grades as they are not over a Subtitle D-compliant liner and do not have a leachate drainage layer. The lined areas require less than 12 inches of head over the liner.

1.2 APPROVED CHANGES TO THE SYSTEM

The following changes were requested in the Cell D East Lift Station Replacement Waste Excavation Plan (Doc #109223) and approved by the DNR on March 5, 2024 (Doc #109421).

- Lift station LS-1 in the sump on the east side of Cell D East was replaced with a side slope extraction riser along with the installation of a new leachate piezometer to replace damaged or destroyed piezometers LPZ-8, LPZ-9, LPZ-10, LW-11, and LW-12 as indicated in the 2023 Leachate Control System Performance Evaluation dated February 29, 2024 (Doc #109371) in the Subtitle D lined area.
- Additionally, the previous SCADA system was replaced with a new system for monitoring of leachate levels in the new piezometer. The installation occurred in conjunction with the new side slope extraction riser and piezometer. The new system began to collect data on October 17, 2024, as shown in **Table 2**.

There were no other approved changes to the system during this reporting period.

1.3 PROPOSED CHANGES TO THE SYSTEM

There are no proposed changes to the system at this time.

2.0 MAINTENANCE OF LEACHATE CONTROL SYSTEM

2.1 LAST DATE OF CLEANING AND INSPECTION

The leachate control system was cleaned and inspected on July 10 and 11, 2023 by Hydro-Kleen.

2.2 DATE FOR NEXT CLEANING AND INSPECTION

The next scheduled cleaning and inspection of the leachate collection system will occur during 2026 unless operations determine a need to complete this sooner.

2.3 MAINTENANCE PERFORMED ON PUMPS, VALVES, TANKS, LAGOONS, CONTROLS, ETC.

See Section 1.2. No other maintenance or repair was performed on the leachate control system during this reporting period.

3.0 PERFORMANCE

3.1 HEAD LEVEL MEASUREMENTS AND LEACHATE ELEVATIONS

Monthly leachate column thicknesses at each monitoring point for this reporting period are provided in **Table 1**. Historical leachate column thicknesses are provided in **Attachment A**.

3.2 EFFECTIVENESS OF LEACHATE SYSTEM IN ATTAINING MINIMUM ACHIEVABLE LEVELS

During this reporting period, the leachate level monitoring points over the unlined cell area had thicknesses ranging from 0.80 feet to 3.00 feet. The leachate piezometers in the Subtitle D lined area are damaged, with the exceptions of LW-6 and possibly LPZ-7, resulting in leachate thickness measurements that may be erroneous. The following summarizes the conditions of the damaged or suspect piezometers in Subtitle D lined areas.

- LPZ-7: The leachate thickness ranged from 1.20 feet to 3.00 feet during this reporting period. A total depth of 29 feet was verified by Landfill staff in 2022 using an inspection camera. The camera inspection also showed a column of fluid in the piezometer that appeared to be clear and unlike the typical stained color characteristics of leachate. SCS proposes to evacuate the fluid in the piezometer using a bailer or pump and resume measurements. If subsequent measurements show that fluid levels are not increasing in the piezometer it may indicate that the piezometer is isolated from the drainage layer and restoration of the functionality of the piezometer or replacement may be necessary.
- LPZ-9: The piezometer has settled at a significant angle. A camera inspection in 2022 showed installed couplers indicating the piezometer had been extended multiple times. During measurement events, Landfill staff noted that due to the angle of settlement of the piezometer the fluid level tape runs along the sidewall of the piezometer and collects mud on the sensor. It appears that the angle of settlement and mud present has compromised the leachate level measurements at this monitoring point.

- LPZ-10: The piezometer has settled at a significant angle with the continued placement of waste in the area. Prior to January 2023, leachate level measurements were made by placing a 2-inch PVC pipe inside the piezometer to reach the fluid level. The fluid level tape was then lowered down inside the 2-inch PVC pipe to allow a measurement to be made. During the January 2023 measurement event, Landfill staff noted that the 2-inch PVC pipe could no longer be inserted deep enough in the piezometer to reach the fluid level due to a pinch or significant bend in the piezometer. Measurements have not been able to be made since December 2022.
- LW-11: During the April 2023 measurement event Landfill staff noted that the piezometer had been crushed by waste placed in the area. Previous leachate level measurements were made by attaching the fluid level tape to a 2-inch PVC pipe and inserting the PVC pipe and fluid level tape into the piezometer. Due to the angle of settlement and crushed pipe the 2-inch PVC pipe and fluid level tape were unable to reach the fluid level in the piezometer. Measurements have not been able to be made since March 2023.
- LW-12: A leachate level measurement has not been able to be made at this monitoring point. A 1-inch PVC pipe was placed in the piezometer that would allow the fluid level tape to be inserted to the measurement point. Landfill staff noted that the 1-inch pipe was unable to be removed from the piezometer during the first measurement event in January 2023 and speculated that the piezometer had been crushed by the placement of waste.

A fluid level below 30 inches above the bottom of the lift station in Cell D East was required to be maintained in order to recirculate leachate at the Landfill in accordance with permit Special Provision X.11 (Doc #111430). Daily fluid level measurements in the lift station were noted during pumping operations. Initial fluid level measurements were made manually from January 1, 2024, to October 16, 2024. Fluid level measurements were not available from July 16, 2024, to September 8, 2024, due to the Cell D East Lift Station Replacement (Doc #111386). The new SCADA system began collection on October 17, 2024.

The 2024 monthly leachate column thickness values for each monitoring point are provided in **Table 1**. The daily leachate column thickness measurements for the Cell D East lift station are provided in **Table 2** and the daily average leachate thicknesses for the new piezometer above the Cell D East sump are provided in **Table 3**.

3.3 VOLUME OF LEACHATE RECIRCULATED

Approximately 1,005,000 gallons of leachate were recirculated during this reporting period in accordance with permit Special Provision X.11.

3.4 VOLUME OF LEACHATE TREATED ON-SITE

Leachate is not treated on-site.

3.5 VOLUME OF LEACHATE TREATED OFF-SITE

Leachate was not treated off-site during this reporting period.

3.6 STORAGE CAPACITY

On-site leachate storage capacity is approximately 837,100 gallons.

3.7 LEACHATE QUALITY TESTING RESULTS

Leachate quality testing results for the sample collected May 28, 2024, are included in Attachment B.

4.0 RECOMMENDATIONS

The following recommendations are provided for the upcoming reporting period:

- Continue monthly measurements of leachate head levels and total depth (as applicable) of each piezometer in the leachate monitoring system.
- Continue to record the volume of leachate recirculated or hauled and treated at the Council Bluffs Water Pollution Control Plant.
- Continue to clean the leachate collection system once every three years or more frequently if leachate head, the volume of leachate collected, or other information indicates cleanout is necessary.
- Confirm proper operation of all pumping and monitoring systems.

FIGURES



Leachate Control System

Legend

- | | | | |
|---|----------------------------|------------------------------------|-------------------------------|
| Leachate Measurement Point | Manhole | Leachate Piezometer | Manifold Extraction Well |
| Leachate Measurement Point | Solid Leachate Piping | Approximate Location of Gas Probes | Slope Extraction Well |
| Supplemental Leachate Measurement Point | Perforated Leachate Piping | Gas Extraction Well | Future Waste Boundary |
| Leachate Cleanout | Monitoring Well | Column Extraction Well | Located Waste Boundary |
| | Groundwater Underdrain | Horizontal Extraction Well | Approximate Waste Boundary |
| | Groundwater Piezometer | | Approximate Property Boundary |

Loess Hills Regional Sanitary
Landfill
Malvern, Iowa
Project No: 27224020.00
Drawing Date: January 2025

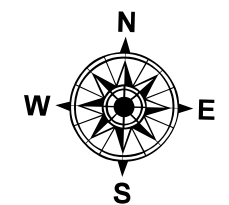


Figure 1

TABLES

Table 1
Leachate Management Summary
2024 Leachate Control System Performance Evaluation Report
Loess Hills Regional Sanitary Landfill
Permit No. 65-SDP-01-72P

Month	Unlined Cells - Column Thickness (ft)					Lined Cells - Maximum Head on Liner (ft)						Volume of Leachate Recirculated (gal)	Hauled to POTW (gal)	Precipitation (in)
	GEW-2	GEW-3	GEW-4	GEW-6	GEW-11	LW-6	LPZ-7	LPZ-9	LPZ-10	LW-11	LW-12			
January 2024	2.50	0.90	1.30	0.80	3.00	0.00	3.00	3.40	D	D	D	0	0	1.80
February 2024	2.50	0.80	1.30	0.80	2.90	0.00	3.00	3.40	D	D	D	0	0	0.00
March 2024	2.50	0.90	1.30	0.80	3.00	0.00	3.00	5.00	D	D	D	0	0	1.86
April 2024	2.50	0.80	1.30	0.80	2.90	0.00	3.00	4.60	D	D	D	0	0	2.56
May 2024	2.50	0.90	1.30	0.80	2.90	0.00	1.20	4.40	D	D	D	165,000	0	8.18
June 2024	2.50	0.90	1.30	0.80	3.00	0.00	1.90	4.40	D	D	D	160,000	0	3.74
July 2024	2.50	0.80	1.30	0.80	2.90	0.00	1.90	4.30	D	D	D	292,000	0	1.56
August 2024	2.50	0.80	1.30	0.80	3.00	0.00	1.90	4.30	D	D	D	0	0	6.25
September 2024	2.50	0.80	1.30	0.80	2.90	0.00	1.90	4.40	D	D	D	43,000	0	1.63
October 2024	2.40	0.90	1.30	0.80	2.80	0.00	1.90	4.30	D	D	D	345,000	0	2.65
November 2024	2.40	0.80	1.30	0.80	2.90	0.00	2.00	4.30	D	D	D	0	0	4.20
December 2024	2.40	0.90	1.30	0.80	2.80	0.00	2.00	Replaced by Cell D - East Sump Piezometer			0	0	0.70	
January 2024 - December 2024 Totals												1,005,000	0	35.13

Table Notes

- 1) Leachate level measurements provided by Landfill staff.
- 2) Precipitation data obtained from the National Oceanic & Atmospheric Administration station USC00136940 in Red Oak, Iowa.

D - Damaged monitoring point.

Table 2
Cell D East Lift Station Leachate Levels
2024 Leachate Control System Performance Evaluation Report
Loess Hills Regional Sanitary Landfill
Permit No. 65-SDP-01-72P

Date	Cell D East Lift Station Leachate Column Thickness (in)
1/1/2024	6
1/2/2024	6
1/3/2024	6
1/4/2024	6
1/5/2024	6
1/6/2024	-
1/7/2024	-
1/8/2024	6
1/9/2024	-
1/10/2024	6
1/11/2024	6
1/12/2024	-
1/13/2024	-
1/14/2024	-
1/15/2024	6
1/16/2024	6
1/17/2024	6
1/18/2024	6
1/19/2024	6
1/20/2024	-
1/21/2024	-
1/22/2024	6
1/23/2024	6
1/24/2024	6
1/25/2024	6
1/26/2024	6
1/27/2024	-
1/28/2024	-
1/29/2024	6
1/30/2024	6
1/31/2024	6
2/1/2024	6
2/2/2024	6
2/3/2024	-
2/4/2024	-
2/5/2024	6
2/6/2024	6
2/7/2024	6
2/8/2024	6
2/9/2024	6
2/10/2024	-
2/11/2024	-
2/12/2024	6
2/13/2024	6
2/14/2024	6
2/15/2024	6
2/16/2024	6
2/17/2024	-
2/18/2024	-
2/19/2024	6
2/20/2024	6
2/21/2024	6
2/22/2024	6
2/23/2024	6
2/24/2024	-

Table 2
Cell D East Lift Station Leachate Levels
2024 Leachate Control System Performance Evaluation Report
Loess Hills Regional Sanitary Landfill
Permit No. 65-SDP-01-72P

Date	Cell D East Lift Station Leachate Column Thickness (in)
2/25/2024	-
2/26/2024	6
2/27/2024	16
2/28/2024	18
2/29/2024	17
3/1/2024	18
3/2/2024	-
3/3/2024	-
3/4/2024	21
3/5/2024	27.2
3/6/2024	25
3/7/2024	27.9
3/8/2024	20
3/9/2024	-
3/10/2024	-
3/11/2024	19
3/12/2024	21
3/13/2024	23
3/14/2024	27
3/15/2024	24
3/16/2024	-
3/17/2024	-
3/18/2024	27
3/19/2024	24
3/20/2024	20
3/21/2024	20
3/22/2024	21
3/23/2024	-
3/24/2024	-
3/25/2024	22
3/26/2024	20
3/27/2024	19
3/28/2024	19
3/29/2024	17
3/30/2024	-
3/31/2024	-
4/1/2024	18
4/2/2024	17.8
4/3/2024	18
4/4/2024	17
4/5/2024	18
4/6/2024	-
4/7/2024	-
4/8/2024	19
4/9/2024	19
4/10/2024	21
4/11/2024	20
4/12/2024	21
4/13/2024	-
4/14/2024	-
4/15/2024	20
4/16/2024	19
4/17/2024	18
4/18/2024	18
4/19/2024	17
4/20/2024	-
4/21/2024	-
4/22/2024	18
4/23/2024	18
4/24/2024	17
4/25/2024	16
4/26/2024	17
4/27/2024	-
4/28/2024	-
4/29/2024	17
4/30/2024	18
5/1/2024	18
5/2/2024	17

Table 2
Cell D East Lift Station Leachate Levels
2024 Leachate Control System Performance Evaluation Report
Loess Hills Regional Sanitary Landfill
Permit No. 65-SDP-01-72P

Date	Cell D East Lift Station Leachate Column Thickness (in)
5/3/2024	18
5/4/2024	-
5/5/2024	-
5/6/2024	18
5/7/2024	17
5/8/2024	17
5/9/2024	19
5/10/2024	17
5/11/2024	-
5/12/2024	-
5/13/2024	17
5/14/2024	17
5/15/2024	17
5/16/2024	17
5/17/2024	17
5/18/2024	-
5/19/2024	-
5/20/2024	18
5/21/2024	18
5/22/2024	16
5/23/2024	16
5/24/2024	13
5/25/2024	-
5/26/2024	-
5/27/2024	-
5/28/2024	14
5/29/2024	15
5/30/2024	15
5/31/2024	15
6/1/2024	-
6/2/2024	-
6/3/2024	15
6/4/2024	14
6/5/2024	13
6/6/2024	14
6/7/2024	12
6/8/2024	-
6/9/2024	-
6/10/2024	13
6/11/2024	13
6/12/2024	12
6/13/2024	13
6/14/2024	13
6/15/2024	-
6/16/2024	-
6/17/2024	13
6/18/2024	12
6/19/2024	12
6/20/2024	12
6/21/2024	12
6/22/2024	-
6/23/2024	-
6/24/2024	14
6/25/2024	14
6/26/2024	15
6/27/2024	16
6/28/2024	16
6/29/2024	-
6/30/2024	-
7/1/2024	17
7/2/2024	18
7/3/2024	18
7/4/2024	-
7/5/2024	17
7/6/2024	-
7/7/2024	-
7/8/2024	11
7/9/2024	11

Table 2
Cell D East Lift Station Leachate Levels
2024 Leachate Control System Performance Evaluation Report
Loess Hills Regional Sanitary Landfill
Permit No. 65-SDP-01-72P

Date	Cell D East Lift Station Leachate Column Thickness (in)
7/10/2024	10
7/11/2024	12
7/12/2024	12
7/13/2024	-
7/14/2024	-
7/15/2024	17
7/16/2024	NA
7/17/2024	NA
7/18/2024	NA
7/19/2024	NA
7/20/2024	NA
7/21/2024	NA
7/22/2024	NA
7/23/2024	NA
7/24/2024	NA
7/25/2024	NA
7/26/2024	NA
7/27/2024	NA
7/28/2024	NA
7/29/2024	NA
7/30/2024	NA
7/31/2024	NA
8/1/2024	NA
8/2/2024	NA
8/3/2024	NA
8/4/2024	NA
8/5/2024	NA
8/6/2024	NA
8/7/2024	NA
8/8/2024	NA
8/9/2024	NA
8/10/2024	NA
8/11/2024	NA
8/12/2024	NA
8/13/2024	NA
8/14/2024	NA
8/15/2024	NA
8/16/2024	NA
8/17/2024	NA
8/18/2024	NA
8/19/2024	NA
8/20/2024	NA
8/21/2024	NA
8/22/2024	NA
8/23/2024	NA
8/24/2024	NA
8/25/2024	NA
8/26/2024	NA
8/27/2024	NA
8/28/2024	NA
8/29/2024	NA
8/30/2024	NA
8/31/2024	NA
9/1/2024	NA
9/2/2024	NA
9/3/2024	NA
9/4/2024	NA
9/5/2024	NA
9/6/2024	NA
9/7/2024	NA
9/8/2024	NA
9/9/2024	NA
9/10/2024	NA
9/11/2024	NA
9/12/2024	NA
9/13/2024	NA
9/14/2024	NA
9/15/2024	NA

Table 2
Cell D East Lift Station Leachate Levels
2024 Leachate Control System Performance Evaluation Report
Loess Hills Regional Sanitary Landfill
Permit No. 65-SDP-01-72P

Date	Cell D East Lift Station Leachate Column Thickness (in)
9/16/2024	NA
9/17/2024	NA
9/18/2024	NA
9/19/2024	NA
9/20/2024	NA
9/21/2024	NA
9/22/2024	NA
9/23/2024	NA
9/24/2024	NA
9/25/2024	NA
9/26/2024	NA
9/27/2024	NA
9/28/2024	NA
9/29/2024	NA
9/30/2024	NA
10/1/2024	NA
10/2/2024	NA
10/3/2024	NA
10/4/2024	NA
10/5/2024	NA
10/6/2024	NA
10/7/2024	NA
10/8/2024	NA
10/9/2024	NA
10/10/2024	NA
10/11/2024	NA
10/12/2024	NA
10/13/2024	NA
10/14/2024	NA
10/15/2024	NA
10/16/2024	NA

Notes:

- 1) Leachate level measurements provided by Landfill staff from January 1, 2024 to July 15, 2024, measurements were not taken on weekends.
- 2) NA - Not available, due to the Cell D East Leachate Lift Station Replacement (Doc #111386).

Table 3
Cell D East Sump Leachate Levels
2024 Leachate Control System Performance Evaluation Report
Loess Hills Regional Sanitary Landfill
Permit No. 65-SDP-01-72P

Date	Cell D East Sump Leachate Column Thickness (ft)
10/17/2024	0.07
10/18/2024	0.07
10/19/2024	0.11
10/20/2024	0.64
10/21/2024	0.68
10/22/2024	0.07
10/23/2024	0.07
10/24/2024	0.08
10/25/2024	0.07
10/26/2024	0.07
10/27/2024	0.07
10/28/2024	0.07
10/29/2024	0.07
10/30/2024	0.07
10/31/2024	0.07
11/1/2024	0.07
11/2/2024	0.07
11/3/2024	0.07
11/4/2024	0.07
11/5/2024	0.07
11/6/2024	0.07
11/7/2024	0.08
11/8/2024	0.08
11/9/2024	0.08
11/10/2024	0.08
11/11/2024	0.08
11/12/2024	0.08
11/13/2024	0.08
11/14/2024	0.08
11/15/2024	0.08
11/16/2024	0.08
11/17/2024	0.08
11/18/2024	0.08
11/19/2024	0.08
11/20/2024	0.08
11/21/2024	0.08
11/22/2024	0.08
11/23/2024	0.08
11/24/2024	0.08
11/25/2024	0.08
11/26/2024	0.07
11/27/2024	0.07
11/28/2024	0.07
11/29/2024	0.07
11/30/2024	0.07
12/1/2024	0.07
12/2/2024	0.07
12/3/2024	0.07
12/4/2024	0.07
12/5/2024	0.07
12/6/2024	0.11
12/7/2024	0.07
12/8/2024	0.07
12/9/2024	0.08
12/10/2024	0.08
12/11/2024	0.08
12/12/2024	0.07
12/13/2024	0.08
12/14/2024	0.08
12/15/2024	0.08
12/16/2024	0.08
12/17/2024	0.08
12/18/2024	0.08
12/19/2024	0.08
12/20/2024	0.08
12/21/2024	0.07
12/22/2024	0.07
12/23/2024	0.07
12/24/2024	0.07
12/25/2024	0.07
12/26/2024	0.08
12/27/2024	0.08
12/28/2024	0.08
12/29/2024	0.08
12/30/2024	0.08
12/31/2024	0.08

Notes:

- 1) Leachate level measurements provided by SCADA began October 17, 2024.



Attachment A

Historical Leachate Head Levels Table and Graphs

Attachment A
 Historical Leachate Column Thickness
 2024 Leachate Collection System Performance Evaluation Report
 Loess Hills Regional Sanitary Landfill

Date	Unlined Cells						Composite-Lined cells						
	LW-2	GEW-2	GEW-3	GEW-4	GEW-6	GEW-11	LW-6	LPZ-7	LM-2	LPZ-9	LPZ-10	LW-11	LW-12
9/9/99	0.00	NM	NI	NI	NI	NI	NM	NI	NI	NI	NI	NI	NI
4/13/00	0.00	NM	NI	NI	NI	NI	0.00	NI	NI	NI	NI	NI	NI
10/3/00	0.00	NM	NI	NI	NI	NI	0.00	NI	NI	NI	NI	NI	NI
4/5/01	0.00	NM	NI	NI	NI	NI	0.00	NI	NI	NI	NI	NI	NI
10/8/01	0.00	NM	NI	NI	NI	NI	0.00	NI	NI	NI	NI	NI	NI
4/17/02 ⁽²⁾	0.00	NM	NI	NI	NI	NI	0.00	NI	NI	NI	NI	NI	NI
10/9/02 ⁽²⁾	0.00	NM	NI	NI	NI	NI	0.00	NI	NI	NI	NI	NI	NI
4/29/03 ⁽²⁾	0.00	NM	NI	NI	NI	NI	0.00	NI	NI	NI	NI	NI	NI
10/14/03 ⁽²⁾	0.00	NM	NI	NI	NI	NI	0.00	NI	NI	NI	NI	NI	NI
4/13/04 ⁽²⁾	NM	NM	NI	NI	NI	NI	NM	NI	NI	NI	NI	NI	NI
10/6/04 ⁽²⁾	1.93	NM	NI	NI	NI	NI	0.00	NM	NI	NI	NI	NI	NI
4/13/05 ⁽²⁾	NM	NM	NI	NI	NI	NI	NM	NM	NI	NI	NI	NI	NI
10/5/05 ⁽²⁾	0.40	NM	NI	NI	NI	NI	NM	NM	NI	NI	NI	NI	NI
4/20/06 ⁽²⁾	0.54	NM	NI	NI	NI	NI	NM	NM	NI	NI	NI	NI	NI
10/17/06 ⁽²⁾	0.20	NM	NI	NI	NI	NI	NM	NM	NI	NI	NI	NI	NI
4/10/07 ⁽²⁾	0.00	NM	NI	NI	NI	NI	0.00	0.99	NI	NI	NI	NI	NI
7/1/07	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
10/5/07 ⁽²⁾	0.29	NM	NI	NI	NI	NI	0.00	1.45	NI	NI	NI	NI	NI
12/1/07	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
3/1/08	0.10	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
6/1/08	0.40	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
9/1/08	0.50	NM	NI	NI	NI	NI	0.00	1.00	NI	NI	NI	NI	NI
10/1/08	0.70	NM	NI	NI	NI	NI	0.00	1.45	NI	NI	NI	NI	NI
10/7/08 ⁽²⁾	0.00	NM	NI	NI	NI	NI	0.00	2.50	NI	NI	NI	NI	NI
2/1/09	0.35	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
4/28/09 ⁽²⁾	0.00	NM	NI	NI	NI	NI	0.00	0.70	NI	NI	NI	NI	NI
6/1/09	0.40	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
9/1/09	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
10/1/09	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
10/8/09 ⁽²⁾	0.00	NM	NI	NI	NI	NI	0.20	0.00	NI	NI	NI	NI	NI
11/1/09	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
12/1/09	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
1/1/10	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
2/1/10	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
3/9/2010 ⁽²⁾	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
3/1/10	0.70	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
4/1/10	1.00	NM	NI	NI	NI	NI	0.00	0.40	NI	NI	NI	NI	NI
5/1/10	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
6/1/10	0.00	NM	NI	NI	NI	NI	0.00	0.30	NI	NI	NI	NI	NI
7/1/10	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
8/1/10	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
9/30/10 ⁽²⁾	19.09	NM	NI	NI	NI	NI	0.00	1.85	NI	NI	NI	NI	NI
9/1/10	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
10/1/10	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
11/1/10	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
12/1/10	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	NI	NI	NI	NI
1/1/11	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
2/1/11	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
3/1/11	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
4/1/11	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
4/21/11 ⁽²⁾	0.06	NM	NI	NI	NI	NI	0.00	0.80	NI	NI	NI	NI	NI
5/1/11	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	1.00	NI	NI	NI
6/1/11	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	1.20	NI	NI	NI
7/1/11	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.09	NI	NI	NI
8/1/11	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
9/1/11	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
10/1/11	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
10/26/11 ⁽²⁾	1.15	NM	NI	NI	NI	NI	0.00	0.80	NI	NM	NI	NI	NI
11/1/11	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
12/1/11	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
1/30/12	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
2/29/12	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
3/30/12	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
4/11/12	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	1.60	NI	NI	NI
5/18/12	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	1.80	NI	NI	NI
6/27/12	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	1.70	NI	NI	NI
7/13/12	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	1.70	NI	NI	NI
8/3/12	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
9/6/12	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
10/30/12	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
11/14/12	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NI	NI	NI
1/29/13	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NM	NI	NI
2/26/13	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NM	NI	NI
3/12/13	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NM	NI	NI
4/29/13	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NM	NI	NI
5/14/13	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NM	NI	NI
6/24/13	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NM	NI	NI
7/17/13	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NM	NI	NI
8/20/13	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NM	NI	NI
9/13/13	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NM	NI	NI
10/30/13	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NM	NI	NI
11/19/13	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NM	NI	NI
12/13/13	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NM	NI	NI

Historical Leachate Column Thickness
 2024 Leachate Collection System Performance Evaluation Report
 Loess Hills Regional Sanitary Landfill

Date	Unlined Cells						Composite-Lined cells						
	LW-2	GEW-2	GEW-3	GEW-4	GEW-6	GEW-11	LW-6	LPZ-7	LM-2	LPZ-9	LPZ-10	LW-11	LW-12
1/15/14	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NM	NI	NI
2/20/14	0.00	NM	NI	NI	NI	NI	0.00	0.00	NI	0.00	NM	NI	NI
3/26/14	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
4/29/14	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
5/22/14	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
6/24/14	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
7/29/14	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
8/20/14	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
9/19/14	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
10/27/14	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
11/18/14	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
12/15/14	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
1/14/15 ⁽⁴⁾	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
2/20/15	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
3/19/15	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
4/9/15	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
5/17/15	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
6/15/15	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
7/16/15	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
8/10/15	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
9/15/15	0.00	NM	NM	NM	NM	NM	0.00	0.00	NI	0.00	NM	NI	NI
10/17/15	NA	NM	NM	NM	NM	NM	NA	NA	NI	NA	NM	NI	NI
11/6/15	NA	NM	NM	NM	NM	NM	NA	NA	NI	NA	NM	NI	NI
12/12/15	NA	NM	NM	NM	NM	NM	NA	NA	NI	NA	NM	NI	NI
1/1/16	NA	NM	NM	NM	NM	NM	NA	NA	NI	NA	NM	NI	NI
2/1/16	NA	NM	NM	NM	NM	NM	NA	NA	NI	NA	NM	NI	NI
3/31/16 ⁽⁴⁾	NA	NM	NM	NM	NM	NM	NA	0.00	0.01	NA	NM	NI	NI
4/15/16	NA	NM	NM	NM	NM	NM	NA	NA	0.00	NA	NM	NI	NI
5/18/16	NA	NM	NM	NM	NM	NM	NA	NA	1.90	NA	NM	NI	NI
6/7/16	NA	NM	NM	NM	NM	NM	NA	NA	0.28	NA	NM	NI	NI
7/2/16	NA	NM	NM	NM	NM	NM	NA	NA	6.92	NA	NM	NI	NI
8/15/2016	0.00	NM	NM	NM	NM	NM	0.00	0.00	NA	0.00	NM	NI	NI
9/26/16	0.00	NM	NM	NM	0.50	6.00	0.00	3.50	2.49	3.00	0.30	NI	NI
10/27/16	0.00	NM	NM	NM	0.60	7.80	0.00	0.00	0.56	0.90	0.30	NI	NI
11/9/16	0.00	NM	NM	NM	0.70	6.00	0.00	0.00	0.98	0.90	0.30	NI	NI
12/12/16	0.00	NM	NM	NM	0.50	6.00	0.00	0.00	0.02	0.90	0.30	NI	NI
1/18/17	0.00	NM	NM	NM	0.60	8.00	0.00	0.00	0.00	0.00	0.30	NI	NI
2/17/17	0.00	NM	NM	NM	0.50	6.00	0.00	0.00	0.00	0.00	0.20	NI	NI
3/20/17	NM	NM	NM	NM	NM	NA	NM	NM	0.00	NM	NM	NI	NI
4/20/17	NM	NM	NM	NM	NM	NA	NM	NM	1.72	NM	NM	NI	NI
5/10/17 ⁽⁵⁾	0.00	NM	NM	NM	0.60	8.00	0.00	2.90	1.47	0.00	0.00	NI	NI
6/27/17	0.00	NM	NM	NM	0.70	9.20	0.00	3.20	2.04	1.10	0.00	NI	NI
7/10/17	0.00	NM	NM	NM	0.50	9.00	0.00	0.00	2.74	0.00	0.50	NI	NI
8/16/17	0.00	NM	NM	NM	0.40	7.50	0.00	0.00	0.72	0.00	0.40	NI	NI
9/12/17	0.80	NM	NM	NM	0.50	8.00	0.00	0.00	0.08	0.00	0.50	NI	NI
10/9/17	0.00	NM	NM	NM	0.50	8.10	0.00	0.00	0.01	0.00	0.00	NI	NI
11/10/17	0.00	NM	NM	NM	0.50	8.10	0.00	0.00	0.03	0.00	0.30	NI	NI
12/10/17	0.00	NM	NM	NM	0.40	7.00	0.00	0.00	0.00	0.00	0.20	NI	NI
1/8/18	0.40	NM	NM	NM	0.30	8.40	0.00	0.00	0.00	0.00	0.40	NI	NI
2/8/18	0.20	NM	NM	NM	0.40	8.00	0.00	0.00	0.00	0.00	0.30	NI	NI
3/12/18	0.10	NM	NM	NM	0.40	8.10	0.00	0.00	0.01	0.00	0.60	NI	NI
4/10/18	0.00	NM	NM	NM	0.50	8.00	0.00	0.00	3.73	0.00	0.20	NI	NI
5/15/18	0.00	NM	NM	NM	0.50	8.00	0.00	0.00	NA	0.00	0.00	NI	NI
6/15/18	0.00	NM	NM	NM	0.50	8.00	0.00	0.00	0.03	0.00	0.00	NI	NI
7/11/18	0.00	NM	NM	NM	0.50	7.50	0.00	0.00	0.00	0.00	0.60	NI	NI
8/15/18	0.00	NM	NM	NM	0.40	7.95	0.00	0.00	1.59	0.00	0.00	NI	NI
9/13/18	0.00	NM	NM	NM	0.20	7.30	0.00	NM	0.00	0.00	0.00	NI	NI
10/15/18	0.00	NM	NM	NM	0.40	7.30	0.00	0.00	0.00	0.00	0.00	NI	NI
11/8/18	0.00	NM	NM	NM	0.50	7.00	0.00	0.00	0.00	0.00	0.00	NI	NI
12/5/18	0.00	NM	NM	NM	0.30	7.40	0.00	0.00	0.16	0.00	0.00	NI	NI
1/9/19	0.00	NM	NM	NM	0.50	7.00	0.00	0.00	0.00	0.00	0.30	NI	NI
2/5/19	0.00	NM	NM	NM	0.40	7.70	0.00	0.00	5.41	0.00	0.40	NI	NI
3/18/19	0.00	NM	NM	NM	1.00	8.00	0.00	3.50	0.96	2.70	1.80	NI	NI
4/3/19 ⁽⁶⁾	0.00	NM	NM	NM	0.80	8.00	0.00	0.00	0.00	0.00	0.20	NI	NI
5/13/19	0.00	NM	NM	NM	0.30	8.20	0.00	0.00	0.01	0.00	NA	NI	NI
6/17/19	0.00	NM	NM	NM	0.20	7.80	0.00	3.50	0.16	0.00	NA	NI	NI
7/16/19	0.00	NM	NM	NM	0.70	8.50	0.00	0.00	0.07	0.00	NA	NI	NI
8/13/19	0.00	NM	NM	NM	0.50	8.50	0.00	0.00	0.00	0.00	NA	NI	NI
9/16/19 ⁽⁷⁾	0.00	NM	NM	NM	1.00	8.70	0.00	0.00	0.10	0.00	NA	NI	NI
10/9/19	0.00	NM	NM	NM	0.90	7.50	0.00	0.00	0.14	0.00	NA	NI	NI
11/25/19	0.00	NM	NM	NM	0.30	9.00	0.00	0.00	0.85	0.00	NA	NI	NI
12/19/19	0.00	NM	NM	NM	0.80	8.60	0.00	0.00	5.01	0.00	NA	NI	NI
1/14/20	0.00	NM	NM	NM	1.50	9.00	0.00	0.00	NA	0.00	NA	NI	NI
2/24/20	0.00	NM	NM	NM	2.00	8.00	0.00	0.00	NA	0.00	NA	NI	NI
3/23/20	0.00	NM	NM	NM	1.00	11.00	0.00	0.00	2.10	0.00	NA	NI	NI
4/15/20 ⁽⁸⁾	0.00	NM	NM	NM	1.50	9.00	0.00	0.00	1.01	0.00	0.80	NI	NI
5/27/20	0.00	NM	NM	NM	2.00	9.50	0.00	0.00	1.31	0.00	0.20	NI	NI
6/15/20	0.00	NM	NM	NM	1.50	9.90	0.00	0.00	1.20	0.00	0.00	NI	NI
7/28/20	0.00	NM	NM	NM	1.00	7.00	0.00	0.00	0.73	0.00	0.00	NI	NI
8/28/20	0.00	NM	NM	NM	0.50	6.00	0.00	0.00	0.79	0.00	0.00	NI	NI
9/21/20	0.00	NM	NM	NM	0.30	5.00	0.00	0.00	1.10	0.00	0.00	NI	NI
10/22/20	0.00	NM	NA	NM	NA	NA	0.00	0.00	1.44	0.00	0.00	NI	NI
11/28/2020	1.30	NM	0.00	NM	1.20	8.00	0.00	0.00	NA	0.00	0.00	NI	NI
12/23/2020	1.30	NM	0.00	NM	1.20	8.00	0.00	0.00	0.62	0.00	0.00	NI	NI
1/27/2021	0.00	NM	2.40	NM	1.80	8.90	0.00	0.00	0.87	0.00	0.00	NI	NI
2/25/2021	1.60	NM	0.00	NM	1.80	8.20	0.00	0.00	1.10	0.00	0.00	NI	NI

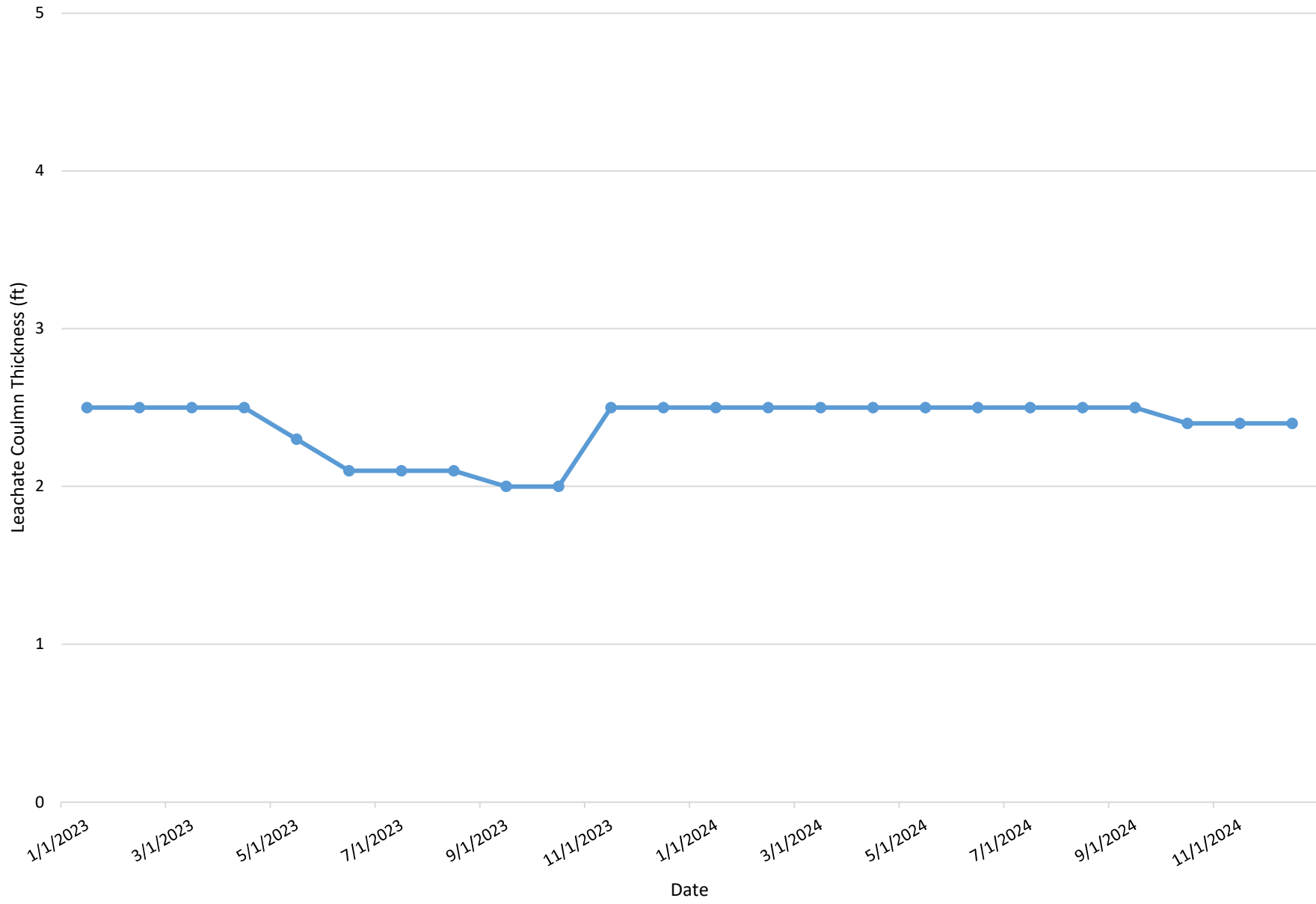
Historical Leachate Column Thickness
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 Loess Hills Regional Sanitary Landfill

Date	Unlined Cells						Composite-Lined cells						
	LW-2	GEW-2	GEW-3	GEW-4	GEW-6	GEW-11	LW-6	LPZ-7	LM-2	LPZ-9	LPZ-10	LW-11	LW-12
3/18/2021	3.40	NM	0.00	NM	1.80	8.80	0.00	0.40	1.57	0.00	0.00	NI	NI
4/2/21 ⁽¹⁰⁾	4.20	NM	2.20	NM	1.80	8.90	0.00	0.70	1.31	0.00	0.00	NI	NI
5/4/2021	3.00	NM	2.30	NM	1.80	9.20	0.00	0.00	0.76	0.00	0.80	NI	NI
6/8/2021	2.40	NM	0.00	NM	1.80	9.10	0.00	0.00	1.65	0.00	0.40	NI	NI
7/8/2021	2.00	NM	0.00	NM	1.80	8.80	0.00	0.00	1.86	0.00	0.10	NI	NI
8/11/2021	0.00	NM	0.00	NM	0.00	0.00	0.00	0.00	1.90	0.00	0.00	NI	NI
9/22/2021	0.00	NM	0.00	NM	1.80	8.40	0.00	0.00	1.80	0.00	0.07	NI	NI
10/5/2021	0.00	NM	1.90	NM	1.80	8.60	0.00	0.00	6.98	0.00	1.90	NM	NI
11/15/2021	0.00	NM	1.90	NM	1.80	9.00	0.00	0.00	8.38	0.00	3.20	NM	NI
12/1/2021	0.00	NM	1.90	NM	1.80	8.90	0.00	ND	NA	ND	2.60	NM	NI
1/11/2022	0.00	NM	1.90	NM	2.70	8.40	0.00	ND	NA	ND	0.90	0.00	NI
2/18/2022	2.00	NM	1.90	NM	3.20	8.80	0.00	ND	NA	ND	0.10	0.00	NI
3/8/2022	0.00	NM	0.00	NM	1.90	8.60	0.00	ND	NA	ND	0.00	0.00	NI
4/4/2022	0.00	NM	0.90	NM	0.90	2.90	0.00	ND	NA	ND	0.20	0.00	NI
5/6/2022	0.00	NM	0.90	NM	0.90	3.20	0.00	3.00	NA	2.50	0.20	0.00	NI
6/3/2022	0.00	NM	0.90	NM	0.90	3.00	0.00	3.60	NA	2.40	0.30	0.00	NI
7/21/2022	0.00	NM	0.80	2.70	0.90	2.60	0.00	3.40	NA	2.30	0.30	0.00	NI
8/8/2022	0.00	NM	0.90	2.70	0.80	2.50	0.00	3.40	NA	2.30	0.20	0.00	NI
9/1/2022	D	NM	0.90	2.60	0.80	2.40	0.00	3.40	NA	2.30	0.80	0.00	NI
10/17/2022	D	NM	0.00	2.40	0.80	2.10	0.00	3.40	NA	2.10	0.50	0.00	NI
11/1/2022	D	NM	0.90	2.40	0.80	2.30	0.00	3.00	NA	2.10	0.50	0.00	NI
12/7/2022	D	NM	0.80	2.30	0.80	2.50	0.00	3.00	NA	2.10	0.00	0.00	NI
1/25/2023	D	2.50	0.70	2.20	0.80	2.20	0.00	3.00	NA	3.00	D	0.00	D
2/28/2023	D	2.50	0.90	2.20	0.80	2.30	0.00	3.00	NA	4.80	D	0.00	D
3/13/2023	D	2.50	0.90	2.10	0.80	2.70	0.00	3.00	NA	4.60	D	0.00	D
4/14/2023	D	2.50	0.90	2.00	0.80	3.30	0.00	3.00	NA	5.10	D	D	D
5/3/2023	D	2.30	0.70	1.80	0.80	3.00	0.00	3.00	NA	5.20	D	D	D
6/27/2023	D	2.10	0.70	1.80	1.20	3.00	0.00	3.00	NA	5.20	D	D	D
7/20/2023	D	2.10	0.90	1.30	0.80	2.70	0.00	3.00	NA	4.40	D	D	D
8/22/2023	D	2.10	0.90	1.30	0.80	2.70	0.00	3.00	NA	7.70	D	D	D
9/5/2023	D	2.00	0.90	1.30	0.80	2.90	0.00	3.00	NA	7.70	D	D	D
10/17/2023	D	2.00	0.80	1.30	0.80	2.90	0.00	3.00	NA	3.40	D	D	D
11/6/2023	D	2.50	0.90	1.30	0.80	3.00	0.00	3.00	NA	3.40	D	D	D
12/6/2023	D	2.50	0.90	1.30	0.80	2.90	0.00	3.00	NA	3.70	D	D	D
1/4/2024	D	2.50	0.90	1.30	0.80	3.00	0.00	3.00	NA	3.40	D	D	D
2/9/2024	D	2.50	0.80	1.30	0.80	2.90	0.00	3.00	NA	3.40	D	D	D
3/1/2024	D	2.50	0.90	1.30	0.80	3.00	0.00	3.00	NA	5.00	D	D	D
4/1/2024	D	2.50	0.80	1.30	0.80	2.90	0.00	3.00	NA	4.60	D	D	D
5/9/2024	D	2.50	0.90	1.30	0.80	2.90	0.00	1.20	NA	4.40	D	D	D
6/3/2024	D	2.50	0.90	1.30	0.80	3.00	0.00	1.90	NA	4.40	D	D	D
7/8/2024	D	2.50	0.80	1.30	0.80	2.90	0.00	1.90	NA	4.30	D	D	D
8/15/2024	D	2.50	0.80	1.30	0.80	3.00	0.00	1.90	NA	4.30	D	D	D
9/24/2024	D	2.50	0.80	1.30	0.80	2.90	0.00	1.90	NA	4.40	D	D	D
10/29/2024	D	2.40	0.90	1.30	0.80	2.80	0.00	1.90	NA	4.30	D	D	D
11/27/2024	D	2.40	0.80	1.30	0.80	2.90	0.00	2.00	NA	4.30	D	D	D
12/6/2024	D	2.40	0.90	1.30	0.80	2.80	0.00	2.00	NA	4.40	D	D	D

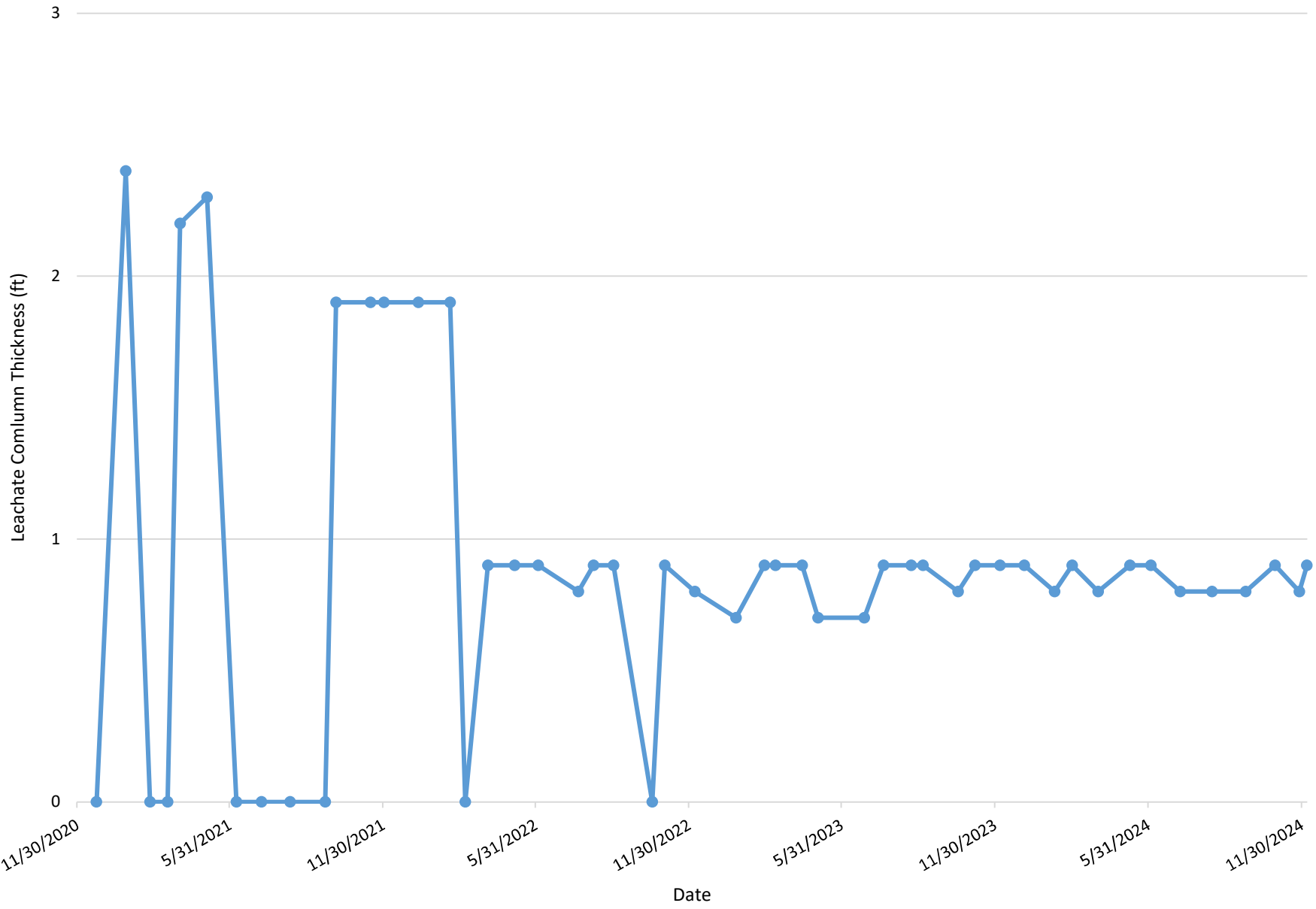
Notes:

1. NM indicates not measured, NI indicates not installed, NA indicates not available, ND indicated not determined, and D indicates damaged monitoring point.
2. Measured by Evora Group (formerly Barker Lemar).
3. Column thickness starting in 2009 based on total well depth measured by Evora Group (formerly Barker Lemar). Other column thicknesses measured by landfill staff.
4. Beginning March 2016, LM-2 replaced LPZ-8 as the compliance point. LM-2 column thicknesses based on minimum monthly SCADA values obtained from Evora Group.
5. Total depth for LW-2 was increased from 45.4 feet to 59 feet per Iowa Waste Systems, Inc.
6. LPZ-10 was extended from 27' to 43' by Landfill staff between the March 2019 and April 2019 measurement events.
7. GEW-11 was extended from 98' to 103' by Landfill staff between the August 2019 and September 2019 measurement events.
8. LPZ-10 was straightened and extended from 43' to 60' by Landfill staff prior to the April 2020 measurement event.
9. LW-3 was damaged and approved for abandonment by the DNR in correspondence dated October 19, 2020. LW-3 was approved to be replaced with GEW-4 (Doc #98723).
10. LPZ-10 was extended from 60' to 62' by Coleman and Sons on May 3, 2021. A 2" pipe was placed within the LPZ-10 casing which allows the liquid level tape to measure the full depth of the well. This 2" pipe extends 2 feet over the LPZ-10 top of casing.
11. IWS staff measured well depths on March 27 and 28, 2022 and adjusted total depths based on measure depths.
12. LW-12 was installed in Cell M in 2022 to allow for leachate head monitoring.
13. LW-2 and LM-2 were approved for removal from the monitoring network by the DNR in correspondence dated March 28, 2023 (Doc #106136).

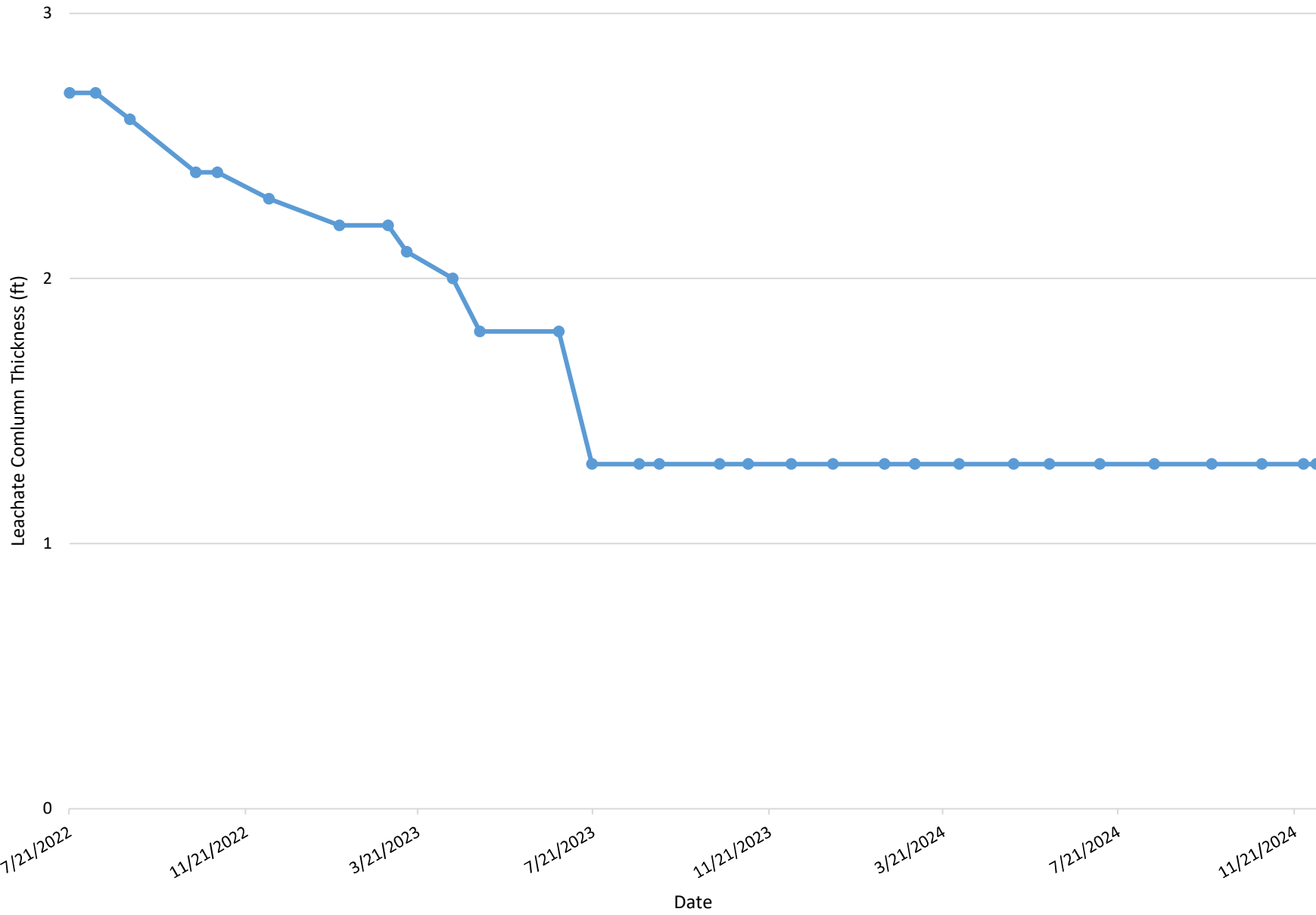
GEW-2



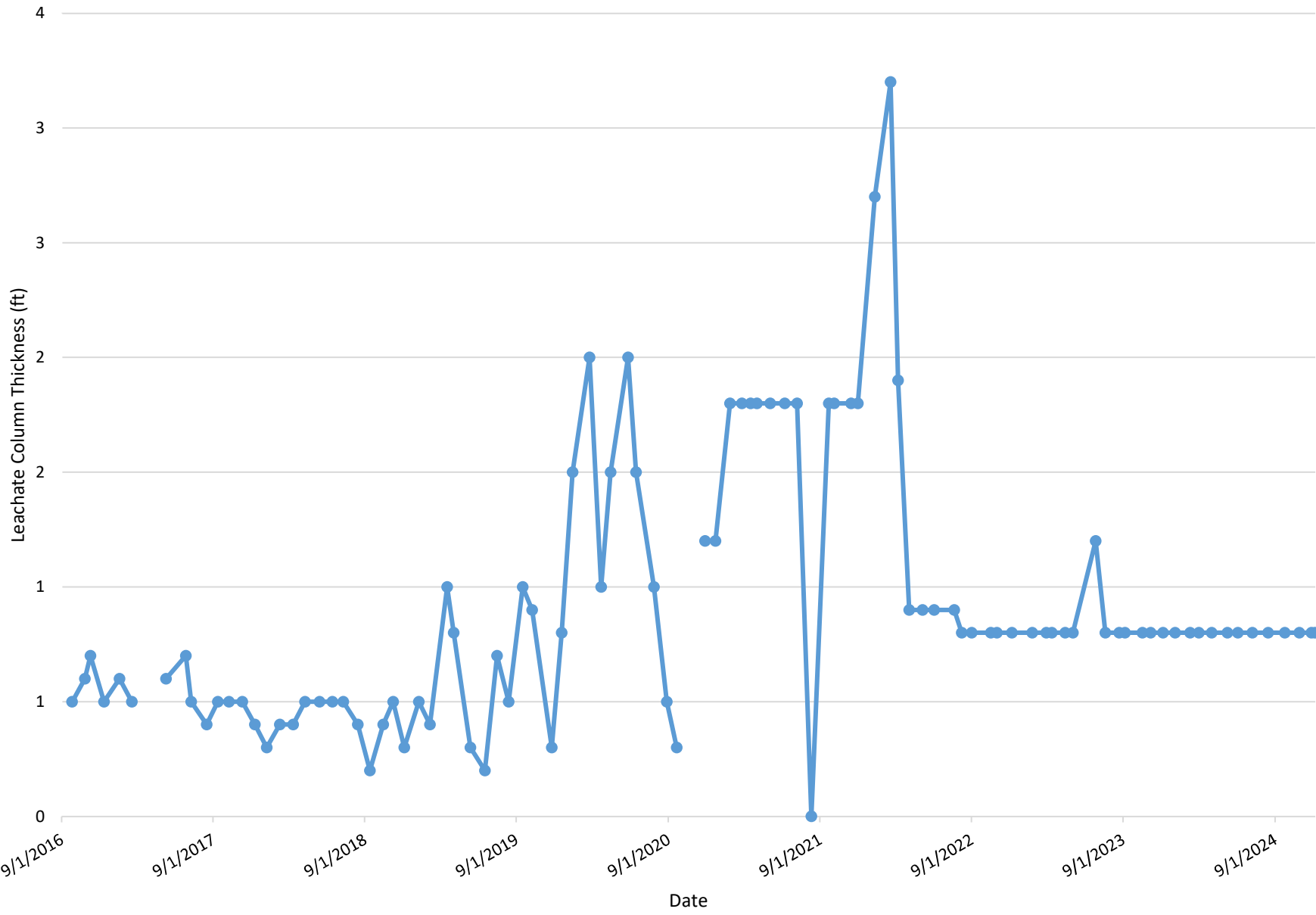
GEW-3



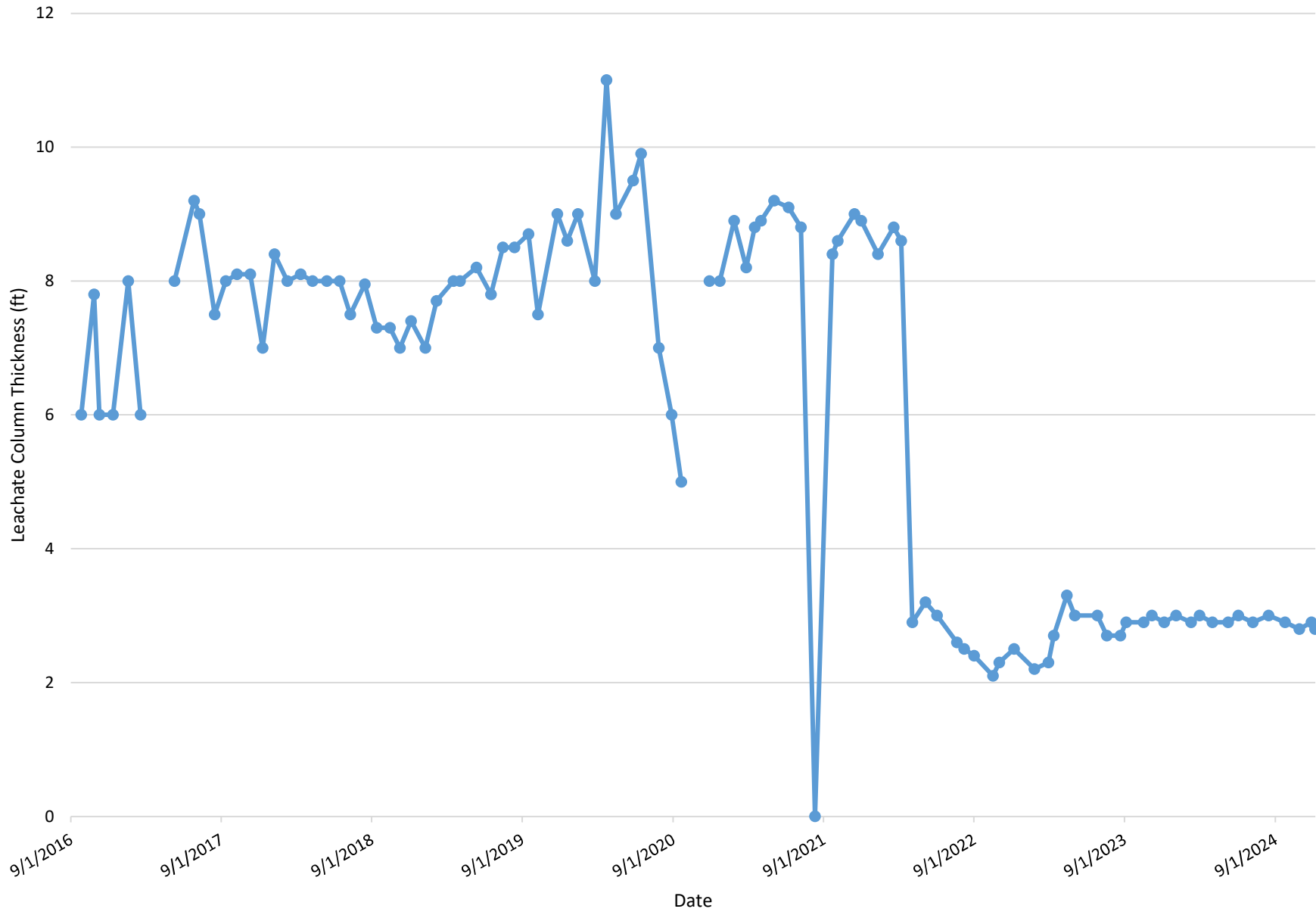
GEW-4



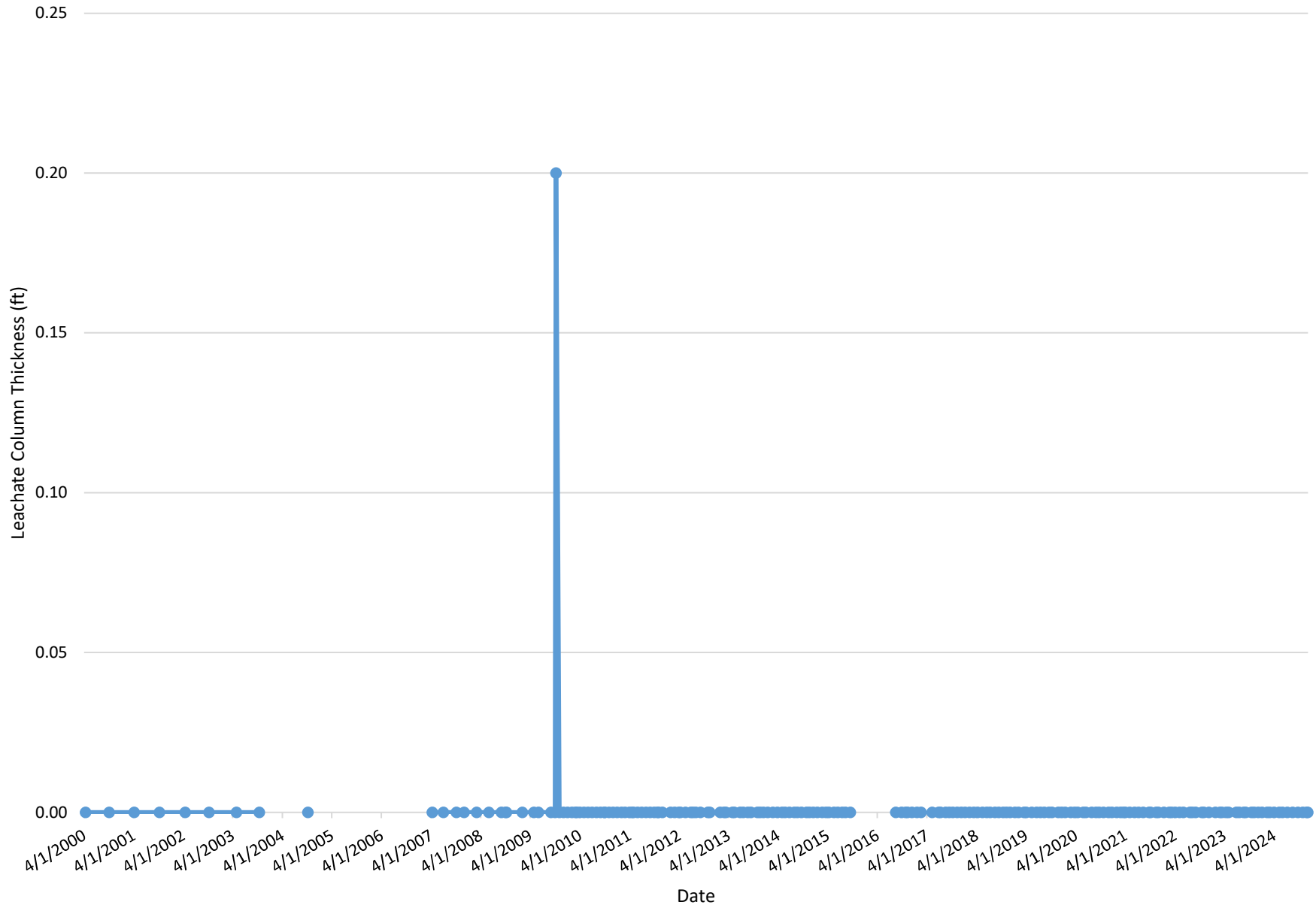
GEW-6



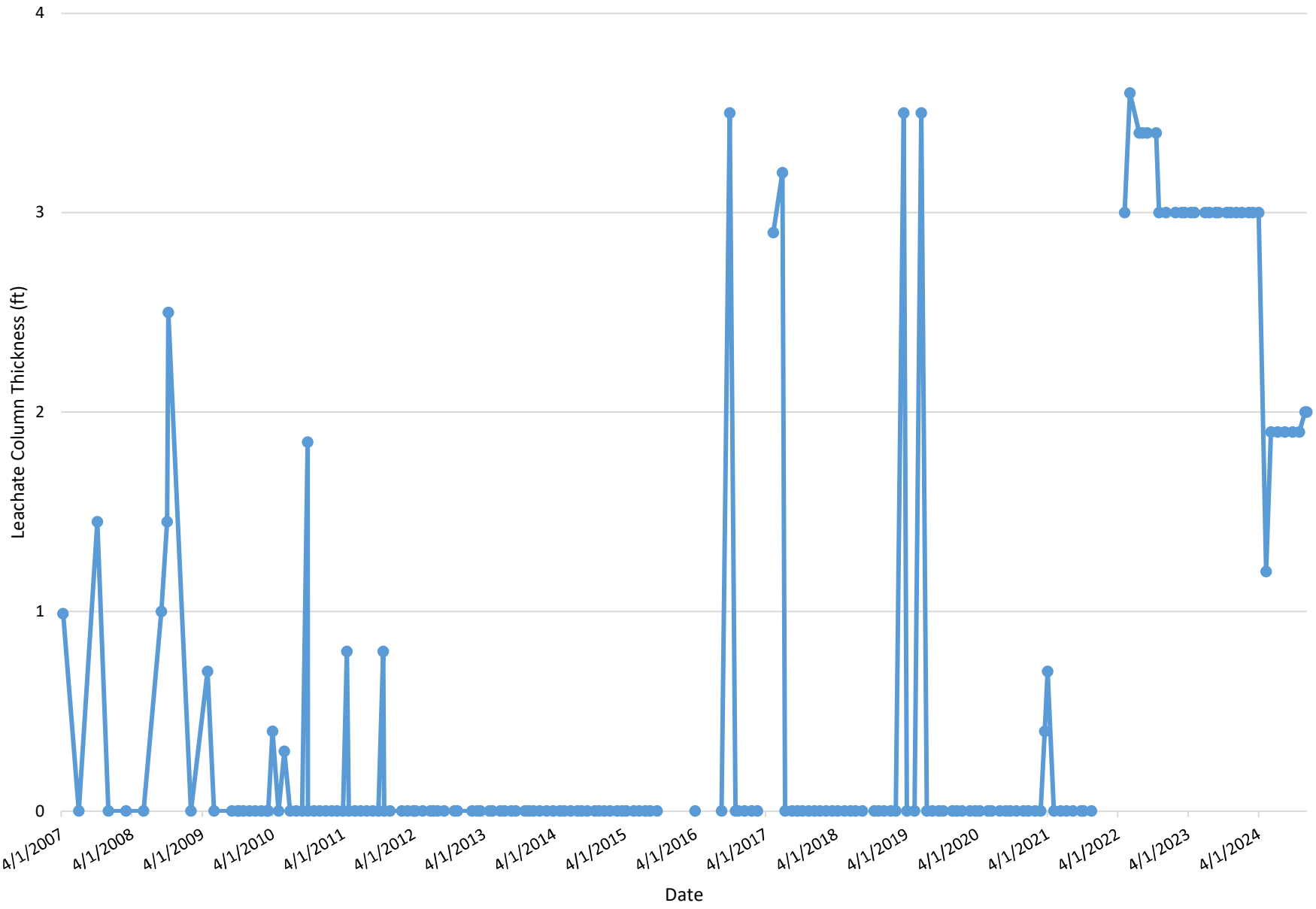
GEW-11



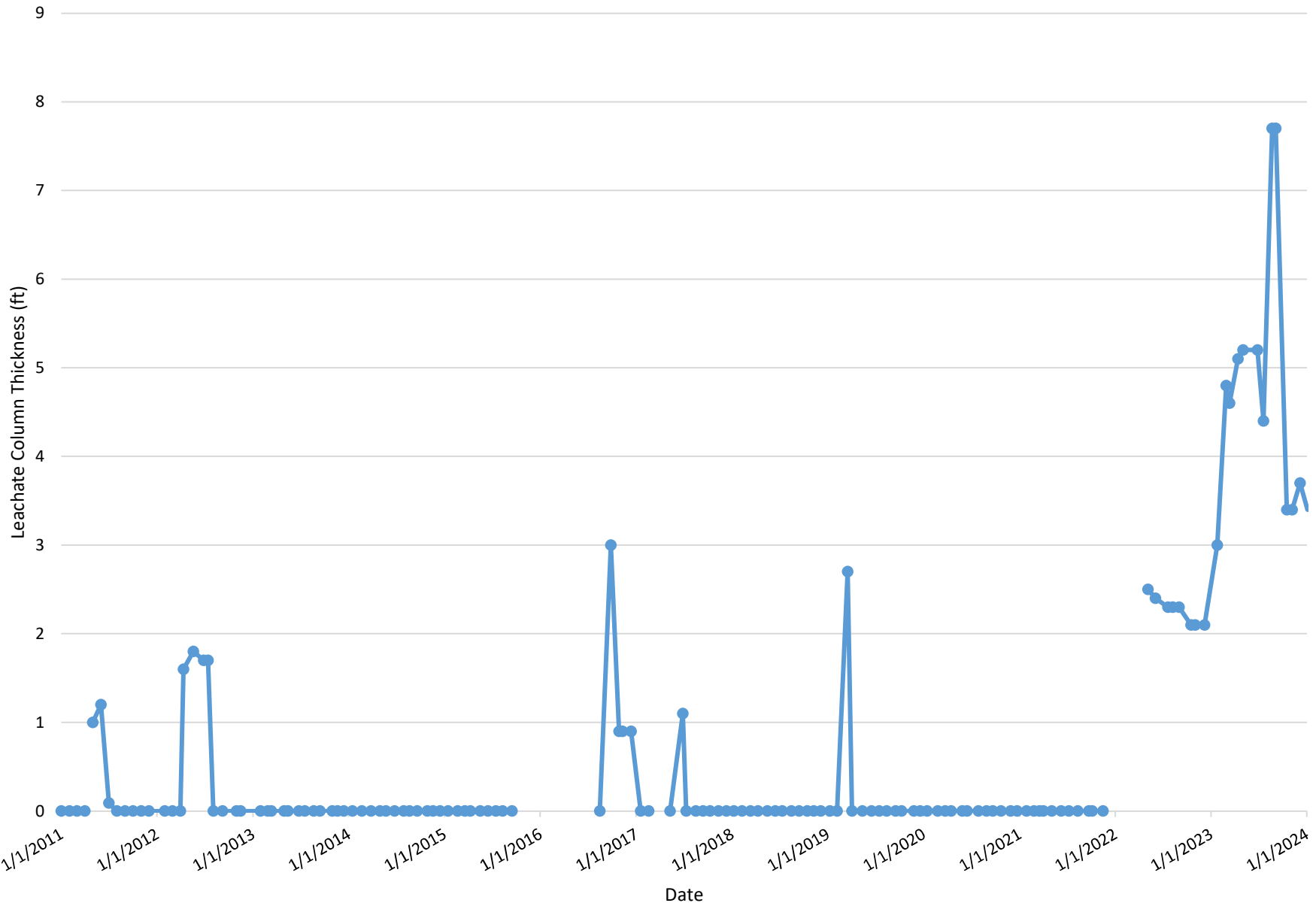
LW-6



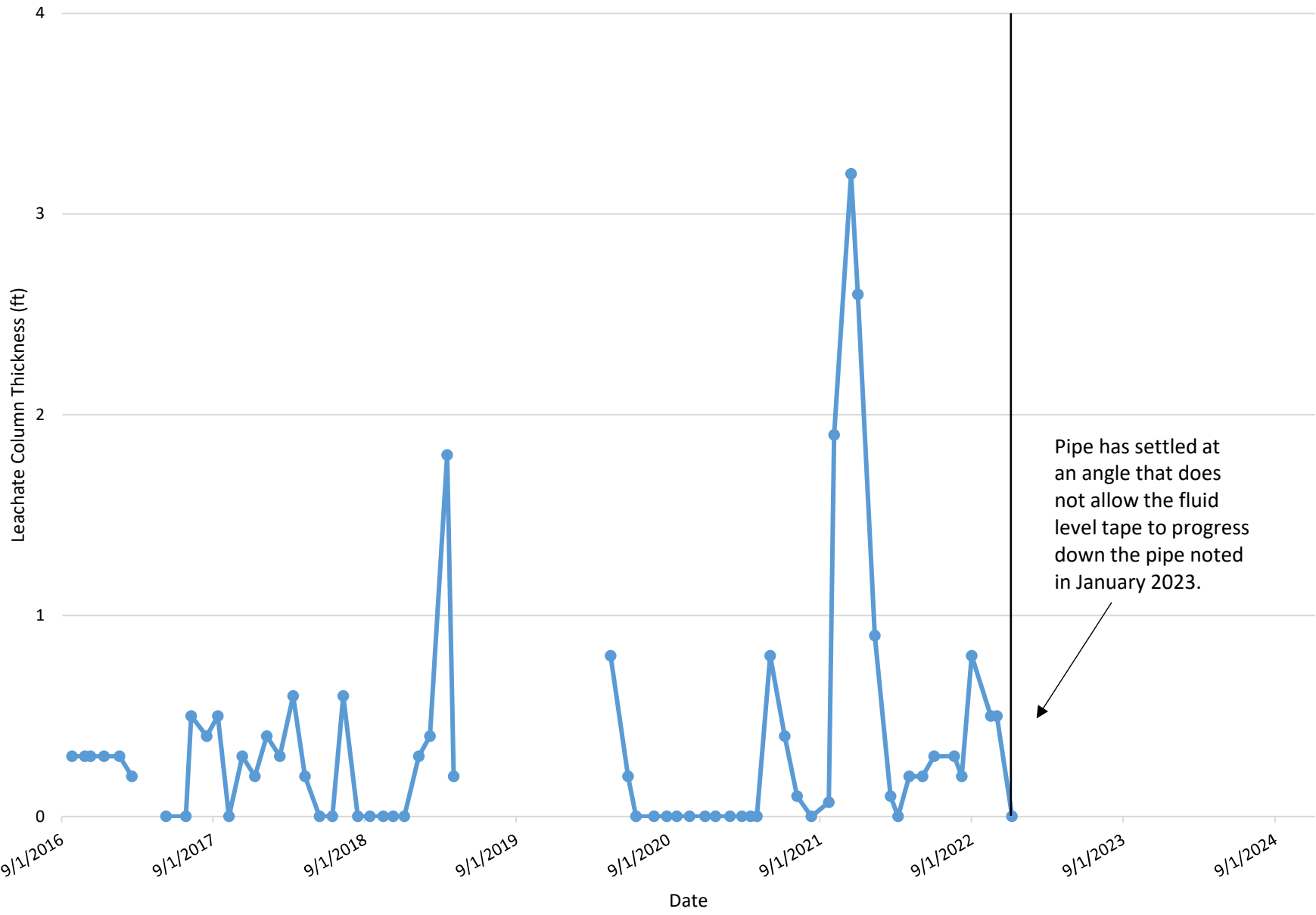
LPZ-7



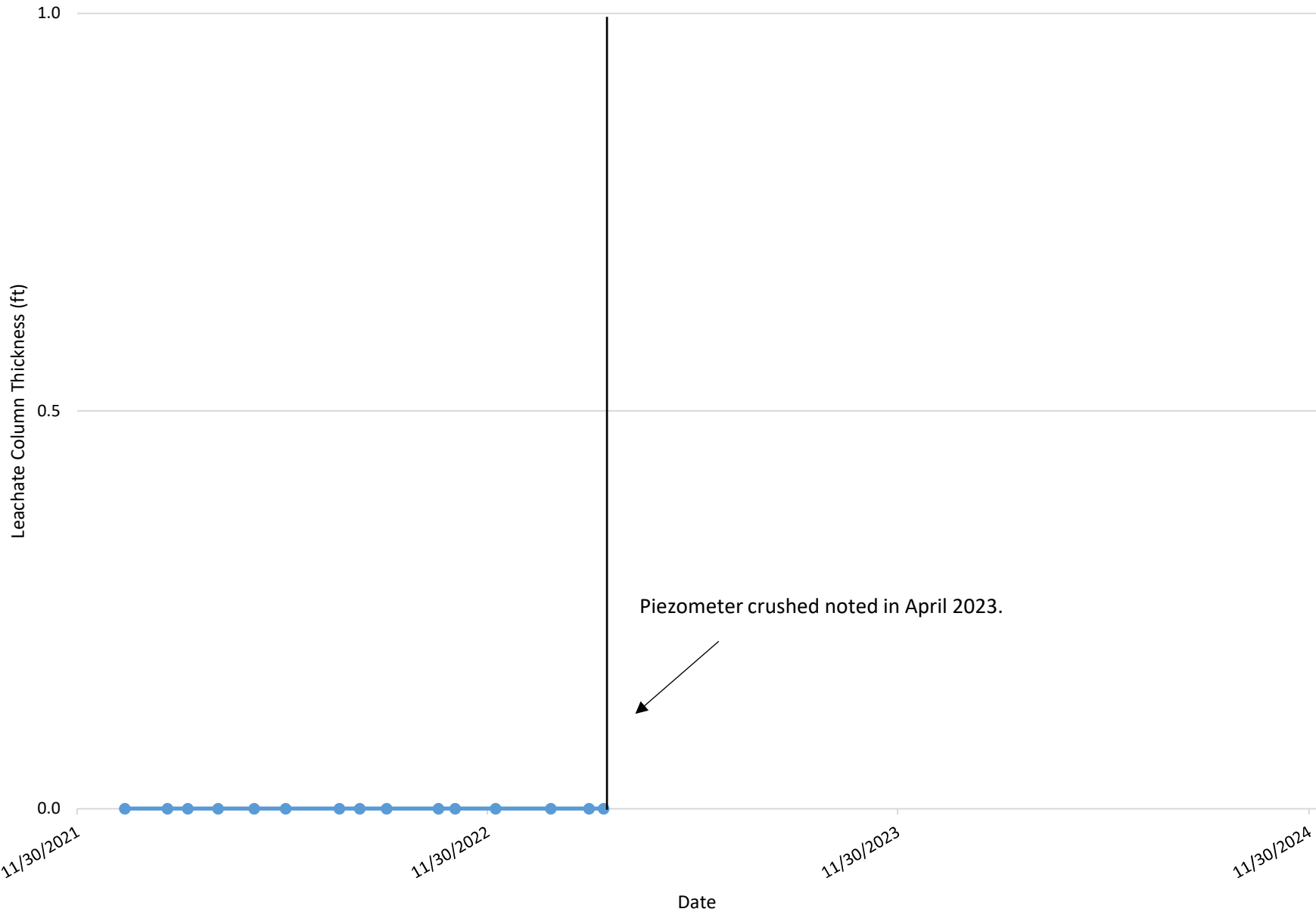
LPZ-9




LPZ-10



LW-11





Attachment B
Leachate Sample Analytical Report

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ANALYTICAL REPORT

PREPARED FOR

Attn: Bret Stephens
Loess Hills Landfill
59722 290th St
Malvern, Iowa 51551

Generated 6/12/2024 12:19:01 PM

JOB DESCRIPTION

Loess Hills Landfill

JOB NUMBER

310-282178-1

Eurofins Cedar Falls

Job Notes

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

Authorization



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Authorized for release by
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Case Narrative

Client: Loess Hills Landfill
Project: Loess Hills Landfill

Job ID: 310-282178-1

Job ID: 310-282178-1

Eurofins Cedar Falls

Job Narrative 310-282178-1

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 are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

- Matrix QC may not be reported if insufficient sample 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 sample was received on 5/29/2024 8:50 AM. Unless otherwise noted below, the sample arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.1°C.

GC/MS VOA

Method 8260D - TCLP: The continuing calibration verification (CCV) associated with batch 310-423450 recovered outside of the control limits for Chloroform (-21.9%D) and 1,1,-Dichloroethene (-21.9%D). The LCS associated with this CCV passed CCV criteria for the affected analytes; therefore, the data have been reported. The associated sample is impacted: (CCV 310-423450/3).

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

GC/MS Semi VOA

Method 8270E - TCLP: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-423469 and 310-423505. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method 8270E - TCLP: The surrogate recovery for the laboratory control sample associated with preparation batch 310-423505 and analytical batch 310-423700 was outside the upper control limits.

Method 8270E - TCLP: The following sample was diluted due to the nature of the sample matrix: Loess Hills Leachate (310-282178-1). 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.

Herbicides

Method 8151A - TCLP: Surrogate recovery for the following sample was outside control limits: Loess Hills Leachate (310-282178-1). Evidence of matrix interference is present; therefore, re-extraction and/or re-analysis was not performed.

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

Pesticides

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

Metals

Method 200.8_CWA: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: Loess Hills Leachate (310-282178-1). The sample(s) was preserved to the appropriate pH in the laboratory.

Method 200.8_CWA: The initial calibration verification (ICV) result for batch 310-423836 was above the upper control limit. The affected analytes are: Silver. Sample results were non-detects, and have been reported as qualified data. Loess Hills Leachate (310-282178-1)

Method 200.8_CWA: The ICSAB for batch 310-423836 was above the upper control limit. The affected analytes are: Silver. Sample results were non-detects, and have been reported as qualified data.

Eurofins Cedar Falls

Case Narrative

Client: Loess Hills Landfill
Project: Loess Hills Landfill

Job ID: 310-282178-1

Job ID: 310-282178-1 (Continued)

Eurofins Cedar Falls

Loess Hills Leachate (310-282178-1)

Method 200.8_CWA: The laboratory control sample (LCS) and / or laboratory control sample duplicate (LCSD) for preparation batch 310-422998 and analytical batch 310-423836 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 245.1: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: Loess Hills Leachate (310-282178-1). The sample(s) was preserved to the appropriate pH in the laboratory.

Method 245.1: The continuing calibration verification (CCV) associated with batch 310-423397 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. The associated sample is impacted: Loess Hills Leachate (310-282178-1).

Method 6010D - TCLP: Due to the difficult matrix of the sample, only 10mL was taken.

Loess Hills Leachate (310-282178-1)

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

General Chemistry

Method SM5210B_Calc: The USB dilution water D.O. depletion was greater than 0.2 mg/L. The associated sample results in batch 310-422921 are qualified and reported. The USB depletion was 0.225 mg/L.

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

Sample Summary

Client: Loess Hills Landfill
Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

<u>Lab Sample ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Collected</u>	<u>Received</u>
310-282178-1	Loess Hills Leachate	Water	05/28/24 12:20	05/29/24 08:50

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Detection Summary

Client: Loess Hills Landfill
 Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

Client Sample ID: Loess Hills Leachate

Lab Sample ID: 310-282178-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.0573		0.00200		mg/L	1		200.8	Total/NA
Chromium	0.137		0.00500		mg/L	1		200.8	Total/NA
Lead	0.00188		0.000500		mg/L	1		200.8	Total/NA
Molybdenum	0.0218		0.00200		mg/L	1		200.8	Total/NA
Nickel	0.266		0.00500		mg/L	1		200.8	Total/NA
Zinc	0.0355		0.0200		mg/L	1		200.8	Total/NA
Barium	1.02		1.00		mg/L	1		6010D	TCLP
Chromium	0.111		0.100		mg/L	1		6010D	TCLP
Total Suspended Solids	114		30.0		mg/L	1		I-3765-85	Total/NA
Biochemical Oxygen Demand	3790	b	3.00		mg/L	1		SM 5210B	Total/NA

This Detection Summary does not include radiochemical test results.

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Client Sample Results

Client: Loess Hills Landfill
 Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

Client Sample ID: Loess Hills Leachate

Lab Sample ID: 310-282178-1

Date Collected: 05/28/24 12:20

Matrix: Water

Date Received: 05/29/24 08:50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.100		0.100		mg/L			06/04/24 15:09	20
2-Butanone (MEK)	<5.00		5.00		mg/L			06/04/24 15:09	20
Carbon tetrachloride	<0.100		0.100		mg/L			06/04/24 15:09	20
Chlorobenzene	<0.100		0.100		mg/L			06/04/24 15:09	20
Chloroform	<0.100		0.100		mg/L			06/04/24 15:09	20
1,2-Dichloroethane	<0.100		0.100		mg/L			06/04/24 15:09	20
1,1-Dichloroethene	<0.100		0.100		mg/L			06/04/24 15:09	20
Tetrachloroethene	<0.200		0.200		mg/L			06/04/24 15:09	20
Trichloroethene	<0.200		0.200		mg/L			06/04/24 15:09	20
Vinyl chloride	<0.100		0.100		mg/L			06/04/24 15:09	20

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		80 - 120		06/04/24 15:09	20
Dibromofluoromethane (Surr)	100		80 - 125		06/04/24 15:09	20
Toluene-d8 (Surr)	97		80 - 120		06/04/24 15:09	20

Method: SW846 8270E - Semivolatile Organic Compounds (GC/MS) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,4-Dichlorobenzene	<0.250		0.250		mg/L		06/04/24 12:46	06/06/24 15:46	5
2,4-Dinitrotoluene	<0.250		0.250		mg/L		06/04/24 12:46	06/06/24 15:46	5
Hexachlorobenzene	<0.250		0.250		mg/L		06/04/24 12:46	06/06/24 15:46	5
Hexachlorobutadiene	<0.250		0.250		mg/L		06/04/24 12:46	06/06/24 15:46	5
Hexachloroethane	<0.250		0.250		mg/L		06/04/24 12:46	06/06/24 15:46	5
2-Methylphenol	<0.250		0.250		mg/L		06/04/24 12:46	06/06/24 15:46	5
4-Methylphenol (and/or 3-Methylphenol)	<0.250		0.250		mg/L		06/04/24 12:46	06/06/24 15:46	5
Nitrobenzene	<0.250		0.250		mg/L		06/04/24 12:46	06/06/24 15:46	5
Pentachlorophenol	<0.250		0.250		mg/L		06/04/24 12:46	06/06/24 15:46	5
Pyridine	<0.250		0.250		mg/L		06/04/24 12:46	06/06/24 15:46	5
Total Cresols	<0.250		0.250		mg/L		06/04/24 12:46	06/06/24 15:46	5
2,4,5-Trichlorophenol	<0.250		0.250		mg/L		06/04/24 12:46	06/06/24 15:46	5
2,4,6-Trichlorophenol	<0.250		0.250		mg/L		06/04/24 12:46	06/06/24 15:46	5

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl (Surr)	77		39 - 118	06/04/24 12:46	06/06/24 15:46	5
2-Fluorophenol (Surr)	80		25 - 110	06/04/24 12:46	06/06/24 15:46	5
Nitrobenzene-d5 (Surr)	111		45 - 129	06/04/24 12:46	06/06/24 15:46	5
Phenol-d5 (Surr)	83		21 - 110	06/04/24 12:46	06/06/24 15:46	5
Terphenyl-d14 (Surr)	91		12 - 144	06/04/24 12:46	06/06/24 15:46	5
2,4,6-Tribromophenol (Surr)	106		27 - 136	06/04/24 12:46	06/06/24 15:46	5

Method: SW846 8081B - Organochlorine Pesticides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	<0.00188		0.00188		mg/L		06/05/24 09:28	06/11/24 23:10	1
Endrin	<0.0000938		0.0000938		mg/L		06/05/24 09:28	06/11/24 23:10	1
gamma-BHC (Lindane)	<0.0000938		0.0000938		mg/L		06/05/24 09:28	06/11/24 23:10	1
Heptachlor	<0.0000938		0.0000938		mg/L		06/05/24 09:28	06/11/24 23:10	1
Heptachlor epoxide	<0.0000938		0.0000938		mg/L		06/05/24 09:28	06/11/24 23:10	1
Methoxychlor	<0.0000938		0.0000938		mg/L		06/05/24 09:28	06/11/24 23:10	1
Toxaphene	<0.00188		0.00188		mg/L		06/05/24 09:28	06/11/24 23:10	1

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Client Sample Results

Client: Loess Hills Landfill
 Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

Client Sample ID: Loess Hills Leachate

Lab Sample ID: 310-282178-1

Date Collected: 05/28/24 12:20

Matrix: Water

Date Received: 05/29/24 08:50

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	88		11 - 122	06/05/24 09:28	06/11/24 23:10	1
Tetrachloro-m-xylene (Surr)	82		23 - 123	06/05/24 09:28	06/11/24 23:10	1

Method: SW846 8151A - Herbicides (GC) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silvex (2,4,5-TP)	<0.00500		0.00500		mg/L		06/09/24 10:27	06/10/24 19:56	1
2,4-D	<0.0500		0.0500		mg/L		06/09/24 10:27	06/10/24 19:56	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
2,4-Dichlorophenylacetic acid (Surr)	147	p S1+	26 - 136	06/09/24 10:27	06/10/24 19:56	1
2,4-Dichlorophenylacetic acid (Surr)	772	S1+	26 - 136	06/09/24 10:27	06/10/24 19:56	1

Method: EPA 200.8 - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0573		0.00200		mg/L		05/30/24 09:00	06/03/24 20:09	1
Cadmium	<0.000200		0.000200		mg/L		05/30/24 09:00	06/03/24 20:09	1
Chromium	0.137		0.00500		mg/L		05/30/24 09:00	06/03/24 20:09	1
Copper	<0.00500		0.00500		mg/L		05/30/24 09:00	06/03/24 20:09	1
Lead	0.00188		0.000500		mg/L		05/30/24 09:00	06/03/24 20:09	1
Molybdenum	0.0218		0.00200		mg/L		05/30/24 09:00	06/03/24 20:09	1
Nickel	0.266		0.00500		mg/L		05/30/24 09:00	06/03/24 20:09	1
Selenium	<0.00500		0.00500		mg/L		05/30/24 09:00	06/03/24 20:09	1
Silver	<0.00100	^6+ *+ ^1+	0.00100		mg/L		05/30/24 09:00	06/06/24 14:45	1
Zinc	0.0355		0.0200		mg/L		05/30/24 09:00	06/03/24 20:09	1

Method: EPA 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200	^+	0.000200		mg/L		05/31/24 13:20	06/03/24 11:24	1

Method: SW846 6010D - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.500		0.500		mg/L		06/06/24 09:30	06/06/24 16:20	1
Barium	1.02		1.00		mg/L		06/06/24 09:30	06/06/24 16:20	1
Cadmium	<0.100		0.100		mg/L		06/06/24 09:30	06/06/24 16:20	1
Chromium	0.111		0.100		mg/L		06/06/24 09:30	06/06/24 16:20	1
Lead	<0.500		0.500		mg/L		06/06/24 09:30	06/06/24 16:20	1
Selenium	<0.500		0.500		mg/L		06/06/24 09:30	06/06/24 16:20	1
Silver	<0.250		0.250		mg/L		06/06/24 09:30	06/06/24 16:20	1

Method: SW846 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00200		0.00200		mg/L		06/04/24 11:03	06/06/24 10:21	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total (EPA 335.4)	<0.0100		0.0100		mg/L		05/30/24 09:42	05/30/24 17:05	1
Total Suspended Solids (USGS I-3765-85)	114		30.0		mg/L			05/30/24 10:29	1

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand (SM 5210B)	3790	b	3.00		mg/L			05/29/24 09:22	1

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Definitions/Glossary

Client: Loess Hills Landfill
Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

GC/MS Semi VOA

Qualifier	Qualifier Description
S1+	Surrogate recovery exceeds control limits, high biased.

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
p	The %RPD between the primary and confirmation column/detector is >40%. The lower value has been reported.
S1+	Surrogate recovery exceeds control limits, high biased.

Metals

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
^+	Continuing Calibration Verification (CCV) is outside acceptance limits, high biased.
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.
^6+	Interference Check Standard (ICSA and/or ICSAB) is outside acceptance limits, high biased.

General Chemistry

Qualifier	Qualifier Description
b	Result Detected in the Unseeded Control blank (USB).

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

Eurofins Cedar Falls

Definitions/Glossary

Client: Loess Hills Landfill
Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

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Surrogate Summary

Client: Loess Hills Landfill
 Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

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

Matrix: Water

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB	DBFM	TOL
		(80-120)	(80-125)	(80-120)
310-282178-1	Loess Hills Leachate	104	100	97
LB 310-423380/1-A	Method Blank	106	101	99
LCS 310-423380/2-A	Lab Control Sample	95	98	103

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)
 DBFM = Dibromofluoromethane (Surr)
 TOL = Toluene-d8 (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	FBP	2FP	NBZ	PHL	TPHL	TBP
		(39-118)	(25-110)	(45-129)	(21-110)	(12-144)	(27-136)
LCS 310-423505/2-A	Lab Control Sample	91	99	111	96	123	139 S1+
LCSD 310-423505/3-A	Lab Control Sample Dup	74	79	88	75	102	107

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
 2FP = 2-Fluorophenol (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 PHL = Phenol-d5 (Surr)
 TPHL = Terphenyl-d14 (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Matrix: Water

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	FBP	2FP	NBZ	PHL	TPHL	TBP
		(39-118)	(25-110)	(45-129)	(21-110)	(12-144)	(27-136)
310-282178-1	Loess Hills Leachate	77	80	111	83	91	106
LB 310-423469/1-B	Method Blank	81	56	96	47	106	60

Surrogate Legend

FBP = 2-Fluorobiphenyl (Surr)
 2FP = 2-Fluorophenol (Surr)
 NBZ = Nitrobenzene-d5 (Surr)
 PHL = Phenol-d5 (Surr)
 TPHL = Terphenyl-d14 (Surr)
 TBP = 2,4,6-Tribromophenol (Surr)

Method: 8081B - Organochlorine Pesticides (GC)

Matrix: Water

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCB2	TCX2
		(11-122)	(23-123)
310-282178-1	Loess Hills Leachate	88	82

Surrogate Legend

DCB = DCB Decachlorobiphenyl (Surr)

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Surrogate Summary

Client: Loess Hills Landfill
Project/Site: Loess Hills Landfill
TCX = Tetrachloro-m-xylene (Surr)

Job ID: 310-282178-1

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)	DCPAA2 (26-136)
LCS 410-515270/2-A	Lab Control Sample	58	56
MB 410-515249/1-A	Method Blank	85	78

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

Method: 8151A - Herbicides (GC)

Matrix: Water

Prep Type: TCLP

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	DCPAA1 (26-136)	DCPAA2 (26-136)
310-282178-1	Loess Hills Leachate	147 p S1+	772 S1+

Surrogate Legend

DCPAA = 2,4-Dichlorophenylacetic acid (Surr)

QC Sample Results

Client: Loess Hills Landfill
 Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

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

Lab Sample ID: LB 310-423380/1-A
Matrix: Water
Analysis Batch: 423450

Client Sample ID: Method Blank
Prep Type: TCLP

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Benzene	<0.100		0.100		mg/L			06/04/24 11:28	20
2-Butanone (MEK)	<5.00		5.00		mg/L			06/04/24 11:28	20
Carbon tetrachloride	<0.100		0.100		mg/L			06/04/24 11:28	20
Chlorobenzene	<0.100		0.100		mg/L			06/04/24 11:28	20
Chloroform	<0.100		0.100		mg/L			06/04/24 11:28	20
1,2-Dichloroethane	<0.100		0.100		mg/L			06/04/24 11:28	20
1,1-Dichloroethene	<0.100		0.100		mg/L			06/04/24 11:28	20
Tetrachloroethene	<0.200		0.200		mg/L			06/04/24 11:28	20
Trichloroethene	<0.200		0.200		mg/L			06/04/24 11:28	20
Vinyl chloride	<0.100		0.100		mg/L			06/04/24 11:28	20

Surrogate	LB LB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene (Surr)	106		80 - 120		06/04/24 11:28	20
Dibromofluoromethane (Surr)	101		80 - 125		06/04/24 11:28	20
Toluene-d8 (Surr)	99		80 - 120		06/04/24 11:28	20

Lab Sample ID: LCS 310-423380/2-A
Matrix: Water
Analysis Batch: 423450

Client Sample ID: Lab Control Sample
Prep Type: TCLP

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Benzene	2.00	1.937		mg/L		97	69 - 120
2-Butanone (MEK)	4.00	4.153	J	mg/L		104	50 - 150
Carbon tetrachloride	2.00	1.885		mg/L		94	64 - 120
Chlorobenzene	2.00	1.952		mg/L		98	70 - 120
Chloroform	2.00	1.930		mg/L		97	64 - 120
1,2-Dichloroethane	2.00	1.823		mg/L		91	62 - 120
1,1-Dichloroethene	2.00	1.744		mg/L		87	47 - 120
Tetrachloroethene	2.00	1.910		mg/L		96	64 - 120
Trichloroethene	2.00	1.959		mg/L		98	69 - 120
Vinyl chloride	2.00	1.584		mg/L		79	36 - 120

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene (Surr)	95		80 - 120
Dibromofluoromethane (Surr)	98		80 - 125
Toluene-d8 (Surr)	103		80 - 120

Method: 8270E - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: LCS 310-423505/2-A
Matrix: Water
Analysis Batch: 423700

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 423505

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
1,4-Dichlorobenzene	0.125	0.1104		mg/L		88	32 - 110
2,4-Dinitrotoluene	0.125	0.1357		mg/L		109	47 - 137
Hexachlorobenzene	0.125	0.1331		mg/L		106	48 - 119
Hexachlorobutadiene	0.125	0.1305		mg/L		104	32 - 110

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QC Sample Results

Client: Loess Hills Landfill
Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 310-423505/2-A

Matrix: Water

Analysis Batch: 423700

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 423505

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec	
							Limits	
Hexachloroethane	0.125	0.1114		mg/L		89	31 - 110	
2-Methylphenol	0.125	0.1197		mg/L		96	47 - 118	
4-Methylphenol (and/or 3-Methylphenol)	0.125	0.1215		mg/L		97	46 - 117	
Nitrobenzene	0.125	0.1256		mg/L		101	47 - 116	
Pentachlorophenol	0.250	0.2945		mg/L		118	26 - 133	
Pyridine	0.250	0.1016		mg/L		41	10 - 110	
2,4,5-Trichlorophenol	0.125	0.1325		mg/L		106	35 - 133	
2,4,6-Trichlorophenol	0.125	0.1336		mg/L		107	28 - 139	

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl (Surr)	91		39 - 118
2-Fluorophenol (Surr)	99		25 - 110
Nitrobenzene-d5 (Surr)	111		45 - 129
Phenol-d5 (Surr)	96		21 - 110
Terphenyl-d14 (Surr)	123		12 - 144
2,4,6-Tribromophenol (Surr)	139	S1+	27 - 136

Lab Sample ID: LCSD 310-423505/3-A

Matrix: Water

Analysis Batch: 423700

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 423505

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec		RPD	
							Limits		RPD	Limit
1,4-Dichlorobenzene	0.125	0.1038		mg/L		83	32 - 110	6	35	
2,4-Dinitrotoluene	0.125	0.1227		mg/L		98	47 - 137	10	35	
Hexachlorobenzene	0.125	0.1301		mg/L		104	48 - 119	2	35	
Hexachlorobutadiene	0.125	0.1220		mg/L		98	32 - 110	7	35	
Hexachloroethane	0.125	0.1051		mg/L		84	31 - 110	6	35	
2-Methylphenol	0.125	0.1102		mg/L		88	47 - 118	8	35	
4-Methylphenol (and/or 3-Methylphenol)	0.125	0.1107		mg/L		89	46 - 117	9	35	
Nitrobenzene	0.125	0.1207		mg/L		97	47 - 116	4	35	
Pentachlorophenol	0.250	0.2828		mg/L		113	26 - 133	4	35	
Pyridine	0.250	0.1086		mg/L		43	10 - 110	7	35	
2,4,5-Trichlorophenol	0.125	0.1276		mg/L		102	35 - 133	4	35	
2,4,6-Trichlorophenol	0.125	0.1279		mg/L		102	28 - 139	4	35	

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl (Surr)	74		39 - 118
2-Fluorophenol (Surr)	79		25 - 110
Nitrobenzene-d5 (Surr)	88		45 - 129
Phenol-d5 (Surr)	75		21 - 110
Terphenyl-d14 (Surr)	102		12 - 144
2,4,6-Tribromophenol (Surr)	107		27 - 136

QC Sample Results

Client: Loess Hills Landfill
 Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

Method: 8270E - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LB 310-423469/1-B
Matrix: Water
Analysis Batch: 423700

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 423505

Analyte	LB LB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,4-Dichlorobenzene	<0.0500		0.0500		mg/L		06/04/24 12:46	06/06/24 11:24	1
2,4-Dinitrotoluene	<0.0500		0.0500		mg/L		06/04/24 12:46	06/06/24 11:24	1
Hexachlorobenzene	<0.0500		0.0500		mg/L		06/04/24 12:46	06/06/24 11:24	1
Hexachlorobutadiene	<0.0500		0.0500		mg/L		06/04/24 12:46	06/06/24 11:24	1
Hexachloroethane	<0.0500		0.0500		mg/L		06/04/24 12:46	06/06/24 11:24	1
2-Methylphenol	<0.0500		0.0500		mg/L		06/04/24 12:46	06/06/24 11:24	1
4-Methylphenol (and/or 3-Methylphenol)	<0.0500		0.0500		mg/L		06/04/24 12:46	06/06/24 11:24	1
Nitrobenzene	<0.0500		0.0500		mg/L		06/04/24 12:46	06/06/24 11:24	1
Pentachlorophenol	<0.0500		0.0500		mg/L		06/04/24 12:46	06/06/24 11:24	1
Pyridine	<0.0500		0.0500		mg/L		06/04/24 12:46	06/06/24 11:24	1
Total Cresols	<0.0500		0.0500		mg/L		06/04/24 12:46	06/06/24 11:24	1
2,4,5-Trichlorophenol	<0.0500		0.0500		mg/L		06/04/24 12:46	06/06/24 11:24	1
2,4,6-Trichlorophenol	<0.0500		0.0500		mg/L		06/04/24 12:46	06/06/24 11:24	1

Surrogate	LB LB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2-Fluorobiphenyl (Surr)	81		39 - 118	06/04/24 12:46	06/06/24 11:24	1
2-Fluorophenol (Surr)	56		25 - 110	06/04/24 12:46	06/06/24 11:24	1
Nitrobenzene-d5 (Surr)	96		45 - 129	06/04/24 12:46	06/06/24 11:24	1
Phenol-d5 (Surr)	47		21 - 110	06/04/24 12:46	06/06/24 11:24	1
Terphenyl-d14 (Surr)	106		12 - 144	06/04/24 12:46	06/06/24 11:24	1
2,4,6-Tribromophenol (Surr)	60		27 - 136	06/04/24 12:46	06/06/24 11:24	1

Method: 8151A - Herbicides (GC)

Lab Sample ID: MB 410-515249/1-A
Matrix: Water
Analysis Batch: 515354

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 515249

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Silvex (2,4,5-TP)	<0.00500		0.00500		mg/L		06/08/24 20:19	06/10/24 14:17	1
2,4-D	<0.0500		0.0500		mg/L		06/08/24 20:19	06/10/24 14:17	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
2,4-Dichlorophenylacetic acid (Surr)	85		26 - 136	06/08/24 20:19	06/10/24 14:17	1
2,4-Dichlorophenylacetic acid (Surr)	78		26 - 136	06/08/24 20:19	06/10/24 14:17	1

Lab Sample ID: LCS 410-515270/2-A
Matrix: Water
Analysis Batch: 515354

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 515270

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	%Rec Limits
		Result	Qualifier				
Silvex (2,4,5-TP)	0.00500	0.004114	J	mg/L		82	58 - 148
2,4-D	0.0502	0.04646	J	mg/L		93	42 - 147

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
2,4-Dichlorophenylacetic acid (Surr)	58		26 - 136

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QC Sample Results

Client: Loess Hills Landfill
 Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

Method: 8151A - Herbicides (GC) (Continued)

Lab Sample ID: LCS 410-515270/2-A
 Matrix: Water
 Analysis Batch: 515354

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 515270

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2,4-Dichlorophenylacetic acid (Surr)	56		26 - 136

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 310-422998/1-A
 Matrix: Water
 Analysis Batch: 423437

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 422998

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		05/30/24 09:00	06/03/24 18:00	1
Cadmium	<0.000200		0.000200		mg/L		05/30/24 09:00	06/03/24 18:00	1
Chromium	<0.00500		0.00500		mg/L		05/30/24 09:00	06/03/24 18:00	1
Copper	<0.00500		0.00500		mg/L		05/30/24 09:00	06/03/24 18:00	1
Lead	<0.000500		0.000500		mg/L		05/30/24 09:00	06/03/24 18:00	1
Molybdenum	<0.00200		0.00200		mg/L		05/30/24 09:00	06/03/24 18:00	1
Nickel	<0.00500		0.00500		mg/L		05/30/24 09:00	06/03/24 18:00	1
Selenium	<0.00500		0.00500		mg/L		05/30/24 09:00	06/03/24 18:00	1
Zinc	<0.0200		0.0200		mg/L		05/30/24 09:00	06/03/24 18:00	1

Lab Sample ID: MB 310-422998/1-A
 Matrix: Water
 Analysis Batch: 423836

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 422998

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Silver	<0.00100	^6+ ^1+	0.00100		mg/L		05/30/24 09:00	06/06/24 14:20	1

Lab Sample ID: LCS 310-422998/2-A
 Matrix: Water
 Analysis Batch: 423437

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 422998

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.2097		mg/L		105	85 - 115
Cadmium	0.100	0.09230		mg/L		92	85 - 115
Chromium	0.100	0.09897		mg/L		99	85 - 115
Copper	0.200	0.1972		mg/L		99	85 - 115
Lead	0.200	0.2003		mg/L		100	85 - 115
Molybdenum	0.200	0.1910		mg/L		96	85 - 115
Nickel	0.200	0.2018		mg/L		101	85 - 115
Selenium	0.400	0.3694		mg/L		92	85 - 115
Zinc	0.200	0.1875		mg/L		94	85 - 115

Lab Sample ID: LCS 310-422998/2-A
 Matrix: Water
 Analysis Batch: 423836

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 422998

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Silver	0.100	0.1424	^6+ ^*+ ^1+	mg/L		142	85 - 115

QC Sample Results

Client: Loess Hills Landfill
 Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 310-423149/1-A
 Matrix: Water
 Analysis Batch: 423397

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 423149

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.000200	^+	0.000200		mg/L		05/31/24 13:20	06/03/24 10:35	1

Lab Sample ID: LCS 310-423149/2-A
 Matrix: Water
 Analysis Batch: 423397

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 423149

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.00167	0.001731	^+	mg/L		104	85 - 115

Method: 6010D - Metals (ICP)

Lab Sample ID: LB 310-423468/1-C
 Matrix: Water
 Analysis Batch: 423857

Client Sample ID: Method Blank
 Prep Type: TCLP
 Prep Batch: 423666

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.100		0.100		mg/L		06/06/24 09:30	06/06/24 16:08	1
Barium	<0.200		0.200		mg/L		06/06/24 09:30	06/06/24 16:08	1
Cadmium	<0.0200		0.0200		mg/L		06/06/24 09:30	06/06/24 16:08	1
Chromium	<0.0200		0.0200		mg/L		06/06/24 09:30	06/06/24 16:08	1
Lead	<0.100		0.100		mg/L		06/06/24 09:30	06/06/24 16:08	1
Selenium	<0.100		0.100		mg/L		06/06/24 09:30	06/06/24 16:08	1
Silver	<0.0500		0.0500		mg/L		06/06/24 09:30	06/06/24 16:08	1

Lab Sample ID: LCS 310-423468/2-C
 Matrix: Water
 Analysis Batch: 423857

Client Sample ID: Lab Control Sample
 Prep Type: TCLP
 Prep Batch: 423666

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	4.00	4.019		mg/L		100	80 - 120
Barium	2.00	2.029		mg/L		101	80 - 120
Cadmium	2.00	1.913		mg/L		96	80 - 120
Chromium	2.00	1.953		mg/L		98	80 - 120
Lead	4.00	3.809		mg/L		95	80 - 120
Selenium	8.00	7.863		mg/L		98	80 - 120
Silver	2.00	1.923		mg/L		96	80 - 120

Method: 7470A - Mercury (CVAA)

Lab Sample ID: LB 310-423468/1-B
 Matrix: Water
 Analysis Batch: 423808

Client Sample ID: Method Blank
 Prep Type: TCLP
 Prep Batch: 423486

Analyte	LB Result	LB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	<0.00200		0.00200		mg/L		06/04/24 11:03	06/06/24 10:03	1

QC Sample Results

Client: Loess Hills Landfill
 Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

Method: 7470A - Mercury (CVAA) (Continued)

Lab Sample ID: LCS 310-423468/2-B
 Matrix: Water
 Analysis Batch: 423808

Client Sample ID: Lab Control Sample
 Prep Type: TCLP
 Prep Batch: 423486

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Mercury	0.0167	0.01677		mg/L		101	80 - 120

Method: 335.4 - Cyanide, Total

Lab Sample ID: MB 310-423077/1-A
 Matrix: Water
 Analysis Batch: 423153

Client Sample ID: Method Blank
 Prep Type: Total/NA
 Prep Batch: 423077

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	<0.0100		0.0100		mg/L		05/30/24 09:42	05/30/24 16:57	1

Lab Sample ID: LCS 310-423077/2-A
 Matrix: Water
 Analysis Batch: 423153

Client Sample ID: Lab Control Sample
 Prep Type: Total/NA
 Prep Batch: 423077

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cyanide, Total	0.200	0.1920		mg/L		96	90 - 110

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

Lab Sample ID: MB 310-423107/1
 Matrix: Water
 Analysis Batch: 423107

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	<5.0		5.0		mg/L			05/30/24 10:29	1

Lab Sample ID: LCS 310-423107/2
 Matrix: Water
 Analysis Batch: 423107

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	107.0		mg/L		107	81 - 116

Method: SM 5210B - BOD, 5-Day

Lab Sample ID: USB 310-422921/1
 Matrix: Water
 Analysis Batch: 422921

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

Analyte	USB Result	USB Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	<3.00		3.00		mg/L			05/29/24 07:16	1

Lab Sample ID: LCS 310-422921/2
 Matrix: Water
 Analysis Batch: 422921

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Biochemical Oxygen Demand	198	184.6		mg/L		93	85 - 115

Eurofins Cedar Falls

QC Association Summary

Client: Loess Hills Landfill
 Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

GC/MS VOA

Leach Batch: 423380

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	1311	
LB 310-423380/1-A	Method Blank	TCLP	Water	1311	
LCS 310-423380/2-A	Lab Control Sample	TCLP	Water	1311	

Analysis Batch: 423450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	8260D	423380
LB 310-423380/1-A	Method Blank	TCLP	Water	8260D	423380
LCS 310-423380/2-A	Lab Control Sample	TCLP	Water	8260D	423380

GC/MS Semi VOA

Leach Batch: 423469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	1311	
LB 310-423469/1-B	Method Blank	TCLP	Water	1311	

Prep Batch: 423505

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	3510C	423469
LB 310-423469/1-B	Method Blank	TCLP	Water	3510C	423469
LCS 310-423505/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-423505/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 423700

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	8270E	423505
LB 310-423469/1-B	Method Blank	TCLP	Water	8270E	423505
LCS 310-423505/2-A	Lab Control Sample	Total/NA	Water	8270E	423505
LCSD 310-423505/3-A	Lab Control Sample Dup	Total/NA	Water	8270E	423505

GC Semi VOA

Leach Batch: 423469

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	1311	

Prep Batch: 423582

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	3511	423469

Analysis Batch: 424212

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	8081B	423582

Leach Batch: 513827

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	1311	

Prep Batch: 515249

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 410-515249/1-A	Method Blank	Total/NA	Water	8151A	

Eurofins Cedar Falls

QC Association Summary

Client: Loess Hills Landfill
 Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

GC Semi VOA

Prep Batch: 515270

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	8151A	513827
LCS 410-515270/2-A	Lab Control Sample	Total/NA	Water	8151A	

Analysis Batch: 515354

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	8151A	515270
MB 410-515249/1-A	Method Blank	Total/NA	Water	8151A	515249
LCS 410-515270/2-A	Lab Control Sample	Total/NA	Water	8151A	515270

Metals

Prep Batch: 422998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	Total/NA	Water	200.8	
MB 310-422998/1-A	Method Blank	Total/NA	Water	200.8	
LCS 310-422998/2-A	Lab Control Sample	Total/NA	Water	200.8	

Prep Batch: 423149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	Total/NA	Water	245.1	
MB 310-423149/1-A	Method Blank	Total/NA	Water	245.1	
LCS 310-423149/2-A	Lab Control Sample	Total/NA	Water	245.1	

Analysis Batch: 423397

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	Total/NA	Water	245.1	423149
MB 310-423149/1-A	Method Blank	Total/NA	Water	245.1	423149
LCS 310-423149/2-A	Lab Control Sample	Total/NA	Water	245.1	423149

Analysis Batch: 423437

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	Total/NA	Water	200.8	422998
MB 310-422998/1-A	Method Blank	Total/NA	Water	200.8	422998
LCS 310-422998/2-A	Lab Control Sample	Total/NA	Water	200.8	422998

Leach Batch: 423468

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	1311	
LB 310-423468/1-B	Method Blank	TCLP	Water	1311	
LB 310-423468/1-C	Method Blank	TCLP	Water	1311	
LCS 310-423468/2-B	Lab Control Sample	TCLP	Water	1311	
LCS 310-423468/2-C	Lab Control Sample	TCLP	Water	1311	

Prep Batch: 423486

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	7470A	423468
LB 310-423468/1-B	Method Blank	TCLP	Water	7470A	423468
LCS 310-423468/2-B	Lab Control Sample	TCLP	Water	7470A	423468

QC Association Summary

Client: Loess Hills Landfill
 Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

Metals

Prep Batch: 423666

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	3010A	423468
LB 310-423468/1-C	Method Blank	TCLP	Water	3010A	423468
LCS 310-423468/2-C	Lab Control Sample	TCLP	Water	3010A	423468

Analysis Batch: 423808

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	7470A	423486
LB 310-423468/1-B	Method Blank	TCLP	Water	7470A	423486
LCS 310-423468/2-B	Lab Control Sample	TCLP	Water	7470A	423486

Analysis Batch: 423836

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	Total/NA	Water	200.8	422998
MB 310-422998/1-A	Method Blank	Total/NA	Water	200.8	422998
LCS 310-422998/2-A	Lab Control Sample	Total/NA	Water	200.8	422998

Analysis Batch: 423857

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	TCLP	Water	6010D	423666
LB 310-423468/1-C	Method Blank	TCLP	Water	6010D	423666
LCS 310-423468/2-C	Lab Control Sample	TCLP	Water	6010D	423666

General Chemistry

Analysis Batch: 422921

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	Total/NA	Water	SM 5210B	
USB 310-422921/1	Method Blank	Total/NA	Water	SM 5210B	
LCS 310-422921/2	Lab Control Sample	Total/NA	Water	SM 5210B	

Prep Batch: 423077

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	Total/NA	Water	Distill/CN	
MB 310-423077/1-A	Method Blank	Total/NA	Water	Distill/CN	
LCS 310-423077/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	

Analysis Batch: 423107

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	Total/NA	Water	I-3765-85	
MB 310-423107/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-423107/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 423153

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-282178-1	Loess Hills Leachate	Total/NA	Water	335.4	423077
MB 310-423077/1-A	Method Blank	Total/NA	Water	335.4	423077
LCS 310-423077/2-A	Lab Control Sample	Total/NA	Water	335.4	423077

Lab Chronicle

Client: Loess Hills Landfill
 Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

Client Sample ID: Loess Hills Leachate

Lab Sample ID: 310-282178-1

Date Collected: 05/28/24 12:20

Matrix: Water

Date Received: 05/29/24 08:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Batch Analyst	Lab	Prepared or Analyzed
TCLP	Leach	1311			423380	D0DG	EET CF	06/03/24 11:58 - 06/03/24 13:00 ¹
TCLP	Analysis	8260D		20	423450	WSE8	EET CF	06/04/24 15:09
TCLP	Leach	1311			423469	D0DG	EET CF	06/04/24 10:10 - 06/04/24 10:30 ¹
TCLP	Prep	3510C			423505	JT8P	EET CF	06/04/24 12:46
TCLP	Analysis	8270E		5	423700	L0FS	EET CF	06/06/24 15:46
TCLP	Leach	1311			423469	D0DG	EET CF	06/04/24 10:10 - 06/04/24 10:30 ¹
TCLP	Prep	3511			423582	D2YP	EET CF	06/05/24 09:28
TCLP	Analysis	8081B		1	424212	BW2O	EET CF	06/11/24 23:10
TCLP	Leach	1311			513827	HA8T	ELLE	06/06/24 07:31 - 06/06/24 09:09 ¹
TCLP	Prep	8151A			515270	QJZ6	ELLE	06/09/24 10:27
TCLP	Analysis	8151A		1	515354	UAMZ	ELLE	06/10/24 19:56
Total/NA	Prep	200.8			422998	KM3E	EET CF	05/30/24 09:00
Total/NA	Analysis	200.8		1	423437	NFT2	EET CF	06/03/24 20:09
Total/NA	Prep	200.8			422998	KM3E	EET CF	05/30/24 09:00
Total/NA	Analysis	200.8		1	423836	NFT2	EET CF	06/06/24 14:45
Total/NA	Prep	245.1			423149	A6US	EET CF	05/31/24 13:20
Total/NA	Analysis	245.1		1	423397	A6US	EET CF	06/03/24 11:24
TCLP	Leach	1311			423468	D0DG	EET CF	06/04/24 10:10 - 06/04/24 10:30 ¹
TCLP	Prep	3010A			423666	DHM5	EET CF	06/06/24 09:30
TCLP	Analysis	6010D		1	423857	ZRI4	EET CF	06/06/24 16:20
TCLP	Leach	1311			423468	D0DG	EET CF	06/04/24 10:10 - 06/04/24 10:30 ¹
TCLP	Prep	7470A			423486	A6US	EET CF	06/04/24 11:03
TCLP	Analysis	7470A		1	423808	A6US	EET CF	06/06/24 10:21
Total/NA	Prep	Distill/CN			423077	WZC8	EET CF	05/30/24 09:42
Total/NA	Analysis	335.4		1	423153	ZJX4	EET CF	05/30/24 17:05
Total/NA	Analysis	I-3765-85		1	423107	HE7K	EET CF	05/30/24 10:29
Total/NA	Analysis	SM 5210B		1	422921	W9YR	EET CF	05/29/24 09:22

¹ This procedure uses a method stipulated length of time for the process. Both start and end times are displayed.

Laboratory References:

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

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300

Accreditation/Certification Summary

Client: Loess Hills Landfill
Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

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
8270E	3510C	Water	Pyridine
8270E	3510C	Water	Total Cresols

Laboratory: Eurofins Lancaster Laboratories Environment Testing, LLC

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	361	03-01-24 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.



Method Summary

Client: Loess Hills Landfill
 Project/Site: Loess Hills Landfill

Job ID: 310-282178-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
8270E	Semivolatile Organic Compounds (GC/MS)	SW846	EET CF
8081B	Organochlorine Pesticides (GC)	SW846	EET CF
8151A	Herbicides (GC)	SW846	ELLE
200.8	Metals (ICP/MS)	EPA	EET CF
245.1	Mercury (CVAA)	EPA	EET CF
6010D	Metals (ICP)	SW846	EET CF
7470A	Mercury (CVAA)	SW846	EET CF
335.4	Cyanide, Total	EPA	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 5210B	BOD, 5-Day	SM	EET CF
1311	TCLP Extraction	SW846	EET CF
1311	TCLP Zero Headspace Extraction	SW846	EET CF
1311	TCLP Extraction	SW846	ELLE
200.8	Preparation, Total Metals	EPA	EET CF
245.1	Preparation, Mercury	EPA	EET CF
3010A	Preparation, Total Metals	SW846	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
3511	Microextraction of Organic Compounds	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
7470A	Preparation, Mercury	SW846	EET CF
8151A	Extraction (Herbicides)	SW846	ELLE
Distill/CN	Distillation, Cyanide	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

ELLE = Eurofins Lancaster Laboratories Environment Testing, LLC, 2425 New Holland Pike, Lancaster, PA 17601, TEL (717)656-2300



Environment Testing
America



310-282178 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>Waste Connections</u>			
City/State:	CITY	STATE	Project:
		<u>IA</u>	
Receipt Information			
Date/Time Received:	DATE	TIME	Received By:
	<u>5-29-24</u>	<u>850</u>	<u>MV</u>
Delivery Type: <input checked="" type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> FedEx Ground <input type="checkbox"/> US Mail <input type="checkbox"/> Spee-Dee <input type="checkbox"/> Lab Courier <input type="checkbox"/> Lab Field Services <input type="checkbox"/> Client Drop-off <input type="checkbox"/> Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler ID: _____	
Multiple Coolers?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Cooler # _____ of _____	
Cooler Custody Seals Present?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If yes: Cooler custody seals intact? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	
Sample Custody Seals Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Sample custody seals intact? <input type="checkbox"/> Yes <input type="checkbox"/> No	
Trip Blank Present?	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If yes: Which VOA samples are in cooler? ↓	
Temperature Record			
Coolant:	<input checked="" type="checkbox"/> Wet Ice <input type="checkbox"/> Blue Ice <input type="checkbox"/> Dry Ice <input type="checkbox"/> Other: _____ <input type="checkbox"/> NONE		
Thermometer ID:	<u>X</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>0-1</u>	Corrected Temp (°C):	<u>0-1</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? <input type="checkbox"/> Yes <input type="checkbox"/> No a) If yes: Is there evidence that the chilling process began? <input type="checkbox"/> Yes <input type="checkbox"/> 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?) <input type="checkbox"/> Yes <input type="checkbox"/> No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

Client Information Client Contact: Bret Stephens Phone: 402-659-8419 E-Mail: Zach Bindert@et.eurofins.com		Lab P/N: Bindert, Zach T E-Mail: Zach Bindert@et.eurofins.com		Carrier Tracking No(s): State of Origin:		COC No: 310-93445-20450 1 Page: Page 1 of 1 Job #:	
Due Date Requested TAT Requested (days): Standard Compliance Project: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No PO #: Purchase Order Requested WO #:		Analysis Requested TSS - L3765_85, BOD - SM5210B_Calc 335 4 - Cyanide, Total 8161A - TCLP Herbicides		Preservation Codes: N - None D - HNO3 B - NaOH		Total Number of Containers Other	
Address: 1704 L Ave City: Red Oak State, Zip: IA, 51566 Phone:		Matrix (W=water, S=solid, O=wastewater, G=grab, T=tissue, A=air) Preservation Code: Water		Field Filtered Sample (Yes or No) <input checked="" type="checkbox"/> Perform MS/MSD (Yes or No) <input checked="" type="checkbox"/>		Special Instructions/Note: BOD 48 HOUR HOLD TIME	
Email: bret.stephens@wastecoconnections.com Project Name: Loes Hills Landfill Project #: 31014819 SSOW#:		Sample Date: 5-28-24 12:20 Sample Time: 6 Sample Type (C=Comp, G=grab)		Total Metals -- 200.8_CWA, 246.1 TCLP - 6010D, 7470A, 8081B, 8260D, 8270E		Total Number of Containers: 7	
Possible Hazard Identification <input type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		Deliverable Requested I, II, III, IV Other (specify)		Sample Disposal (A fee may be assessed if samples are retained longer than 1 month) <input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months		Special Instructions/QC Requirements	
Empty Kit Relinquished by: BA SK Relinquished by: BA SK Relinquished by:		Date: 5-20-24 Date/Time: 5-28-24/13:30 Date/Time:		Method of Shipment: FZ Date/Time: 5-29-24 8:50 Date/Time:		Company: WCN Company:	
Relinquished by: BA SK Relinquished by:		Date: 5-20-24 Date/Time:		Method of Shipment: FZ Date/Time: 5-29-24 8:50 Date/Time:		Company: WCN Company:	
Relinquished by:		Date:		Method of Shipment:		Company:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No		Cooler Temperature(s) °C and Other Remarks:		Company:	



Eurofins Cedar Falls

3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record



Client Information (Sub Contract Lab)		Sampler: Bindert, Zach T		Lab PM: Bindert, Zach T		Carrier Tracking No(s):		COC No: 310-72861.1			
Client Contact: Shipping/Receiving		Phone:		E-Mail: Zach.Bindert@et.eurofinsus.com		State of Origin: Iowa		Page: Page 1 of 1			
Company: Eurofins Lancaster Laboratories Environm				Accreditations Required (See note): State - Iowa; State Program - Iowa				Job #: 310-282178-1			
Address: 2425 New Holland Pike, City: Lancaster State, Zip: PA, 17601 Phone: 717-656-2300(Tel) Email:		Due Date Requested: 6/11/2024 TAT Requested (days): PO #: WO #:		Analysis Requested						Preservation Codes:	
Project Name: Loess Hills Landfill Site:		Project #: 31014819 SSOW#:								Other:	
Sample Identification - Client ID (Lab ID)		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (Water, Solid, Oil, BT=Diesel, AA=As)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8151A1311_T TCLP Herbicides	Total Number of containers	Special Instructions/Note:	
Loess Hills Leachate (310-282178-1)		5/28/24	12.20 Central		Water		X		1		
<p>Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.</p>											
Possible Hazard Identification						Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)					
Unconfirmed						<input type="checkbox"/> Return To Client <input type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Deliverable Requested: I, II, III, IV, Other (specify)				Primary Deliverable Rank: 2		Special Instructions/QC Requirements:					
Empty Kit Relinquished by:			Date:		Time:		Method of Shipment:				
Relinquished by: <i>[Signature]</i>			Date/Time: 5/29/24 11:55		Company:		Received by:		Date/Time: _____ Company:		
Relinquished by:			Date/Time:		Company:		Received by:		Date/Time: _____ Company:		
Relinquished by:			Date/Time:		Company:		Received by: Debra A. Byan		Date/Time: 5-30-24 10:20 Company: ELLET		
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) and Other Remarks: 12.3.5 C: 3.4							

HM

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

Login Sample Receipt Checklist

Client: Loess Hills Landfill

Job Number: 310-282178-1

Login Number: 282178

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Costello, Mackenzie K

Question	Answer	Comment
Radioactivity wasn't checked or is <=/ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: Loess Hills Landfill

Job Number: 310-282178-1

Login Number: 282178

List Number: 2

Creator: Arroyo, Haley

List Source: Eurofins Lancaster Laboratories Environment Testing, LLC

List Creation: 05/30/24 01:56 PM

Question	Answer	Comment
The cooler's custody seal is 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 acceptable,where thermal pres is required(</=6C, not frozen).	True	
Cooler Temperature is recorded.	True	
WV:Container Temp acceptable,where thermal pres is required (</=6C, not frozen).	N/A	
WV: Container Temperature is recorded.	N/A	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
There are no discrepancies between the containers received and the COC.	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	
There is sufficient vol. for all requested analyses.	True	
Is the Field Sampler's name present on COC?	False	Received project as a subcontract.
Sample custody seals are intact.	N/A	
VOA sample vials do not have headspace >6mm in diameter (none, if from WV)?	N/A	



Appendix F

Landfill Gas Annual Report – Prepared by Iowa Waste Services, LLC



LOESS HILLS REGIONAL SOLID WASTE LANDFILL

59722 290TH Street

Malvern, IA 51551

November 18, 2024

Mr. Mike Smith
Iowa Department of Natural Resources
Land Quality Bureau
Wallace Street Office Building
502 E 9th Street
Des Moines, IA 50319-0034

Re: **2024 Landfill Gas Annual Report, Loess Hills Regional Sanitary Landfill
Permit No. 65-SDP-01-72P**

Dear Mike,

In general accordance with Iowa Administrative Code (IAC) 657-113.9(2), Iowa Waste Services, LLC, has completed the required quarterly landfill gas monitoring and landfill gas annual report for the Loess Hills Regional Sanitary Landfill for the year 2024.

MONITORING ACTIVITIES

Monitoring activities for the 2024 landfill gas monitoring events were performed on March 4, May 28, September 24, & October 14, 2024. Facility personnel performed the monitoring activities which included monitoring for methane (CH₄), carbon dioxide (CO₂), and oxygen (O₂) at the applicable monitoring locations. A Landtec GEM 5000 gas analyzer was used to monitor all of the applicable monitoring locations at the facility during each quarterly monitoring event.

SUMMARY OF FINDINGS

Methane was detected above regulatory limits during the 3rd quarter monitoring event of 2024 at subsurface monitoring locations only. Per IAC 657-113.9, a notification letter was sent to the Iowa Department of Natural Resources (IDNR) within 7 days after the monitoring event in which an exceedance had occurred. Iowa Waste Services, LLC, had previously requested and was approved by IDNR to continue to utilize the newly installed Gas Collection and Control System (GCCS) as a current remedy for the exceedances. The results of the quarterly events are included in the enclosed Landfill Gas Monitoring Summary Table along with a Methane Monitoring Network Figure.

Thanks,

A handwritten signature in blue ink that reads "Bret Stephens".

Bret Stephens

Iowa Waste Services, LLC

cc: Kelly Danielson, Iowa Waste Services, LLC
Ryan Mitchell, Iowa Waste Services, LLC
Chaz Roberts, Iowa Waste Services, LLC
Rachel Hanigan, Iowa Waste Services, LLC

Encl. Landfill Gas Monitoring Summary Table
Methane Monitoring Network Figure

Landfill Gas Monitoring Summary Table
Loess Hills Regional Landfill
Permit No. 65-SDP-01-72P

Point #	Name	Type	Description	Methane Results (% LEL)							
				3/4/2024	S (Y/N)	5/28/2024	S (Y/N)	9/24/2024	S (Y/N)	10/14/2024	S (Y/N)
2	Office	Indoor	Inside Office	0.0		0.0		0.0		0.0	
3	Shop	Indoor	Inside Shop	0.0		0.0		0.0		0.0	
11	Breakroom	Indoor	Inside Breakroom	0.0		0.0		0.0		0.0	
12	MW-7	Subsurface	Vadose zone, west of area referred to as Cell "B"	0.0	N	0.0	Y	0.0	N	0.0	N
13	MW-8	Subsurface	Vadose zone, south side of the Southern Waste Footprint	0.0	N	0.0	N	20.0	N	0.0	N
15	MW-11	Subsurface	Vadose zone, southeast waste boundary of Cell A near the southeast property boundary	0.0	N	0.0	N	98.0	N	0.0	N
16	GUCO-1	Subsurface	Vadose zone, groundwater underdrain cleanout on the east end of Cell D	0.0		0.0		0.0		0.0	
17A	GUCO-2A	Subsurface	Temporary monitoring point, vadose zone, groundwater underdrain cleanout on the west end of Cell D	0.0		0.0		100.0		56.0	
18	GUCO-3	Subsurface	Vadose zone, groundwater underdrain cleanout on the east end of Cell E	0.0		0.0		0.0		0.0	
19A	GUCO-4A	Subsurface	Temporary monitoring point, vadose zone, groundwater underdrain cleanout on the west end of Cell E	0.0		0.0		100.0		0.0	
20	GUCO-5	Subsurface	Vadose zone, groundwater underdrain cleanout on the east end of Cell F	0.0		0.0		0.0		0.0	
21A	GUCO-6A	Subsurface	Temporary monitoring point, vadose zone, groundwater underdrain cleanout on the west end of Cell F	0.0		0.0		0.0		0.0	
22A	GUCO-7A	Subsurface	Vadose zone, groundwater underdrain cleanout on the east end of Cell G	0.0		0.0		0.0		0.0	
23A	GUCO-8A	Subsurface	Temporary monitoring point, vadose zone, groundwater underdrain cleanout on west end of Cell G West	0.0		0.0		0.0		0.0	
25	GUCO-20	Subsurface	Vadose zone, groundwater underdrain cleanout on west end of Cell M	0.0		0.0		0.0		0.0	
26	GUCO-21	Subsurface	Vadose zone, groundwater underdrain cleanout northeast of Cell G West	0.0		0.0		0.0		0.0	
27	GUCO-22	Subsurface	Vadose zone, groundwater underdrain cleanout on east end of Cells D, E, F, G, & N	0.0		0.0		0.0		0.0	
24A	GUCO-23	Subsurface	Vadose zone, groundwater underdrain cleanout on the north side of Cell N	0.0		0.0		0.0		0.0	
42	GW-1	Subsurface	Vadose zone, groundwater sump GW-1	0.0		0.0		0.0		0.0	

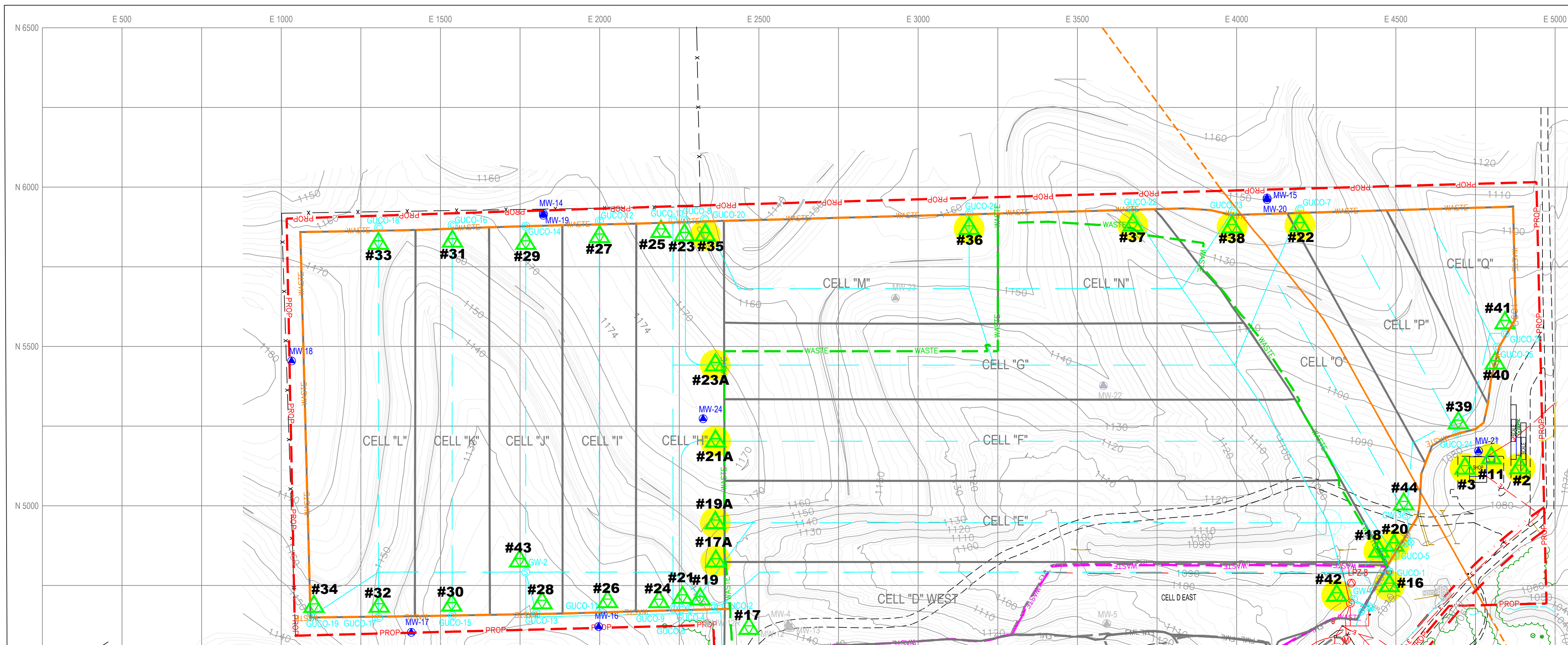
Notes:

S(Y/N) - Was screen submerged, yes or no or blank is non-applicable

NM - Indicates not measured; monitoring points unable to be located and/or under construction

1) Subsurface monitoring probes GP-2 (#60), GP-4 (#62), GP-17 (#76), GP-18 (#77), GP-19 (#79), GP-20 (#80), GP-21 (#81), GP-22 (#82), GP-23 (#83), and GP-24 (#84) were installed at the site during the period from December 10 – 12, 2024. In accordance with the Permit Revision Request - Landfill Gas Monitoring Network dated August 7, 2023 (Doc # 107406), approved by DNR in the revised permit dated August 11, 2023 (Doc # 107455), quarterly methane monitoring beginning with 2025 will be in accordance with the August 7, 2023 revisions.

C:\PROJECTS\222400\DRAWING\222400\METHANE MONITORING NETWORK.DWG



- ### LEGEND
- ▲ MW-1 APPROX. LOCATION OF MONITORING WELL
 - ▲ MW-12 ABANDONED MONITORING WELL
 - ▲ LW-4 APPROX. LOCATION OF LEACHATE PIEZOMETER
 - ▲ APPROX. LOCATION OF WATER SUPPLY WELL
 - EXISTING GROUND SURFACE (2 FT. CONTOUR INTERVAL)
 - ▭ BUILDING/STRUCTURE
 - - - APPROXIMATE LOCATION OF GRAVEL ROAD
 - PAVED ROAD
 - CULVERT
 - PROP APPROXIMATE PROPERTY BOUNDARY
 - WASTE APPROXIMATE WASTE BOUNDARY
 - WASTE LOCATED WASTE BOUNDARY
 - WASTE FUTURE WASTE BOUNDARY
 - STREAM CHANNEL
 - AMOCO OIL PIPELINE (APPROXIMATE LOCATION)
 - AMOCO OIL PIPELINE (BASED ON 12/16/98 SURVEY OF UTILITY LOCATE PERFORMED BY AMOCO PIPELINE ON 12/9/98)
 - EXISTING PERFORATED HDPE LEACHATE PIPING
 - EXISTING SOLID WALL HDPE LEACHATE PIPING
 - EXISTING PERFORATED HDPE GROUNDWATER UNDERDRAIN PIPING
 - EXISTING SOLID WALL HDPE GROUNDWATER UNDERDRAIN PIPING
 - ⊙ LEACHATE MANHOLE
 - ⊙ LEACHATE SUMP
 - ⊙ GROUNDWATER UNDERDRAIN SUMP
 - ⊙ LEACHATE CLEANOUT
 - ⊙ GROUNDWATER UNDERDRAIN CLEANOUT
 - FML FML ANCHOR TRENCH
 - 1973 EASEMENT (66')
 - FENCELINE
 - BURIED ELECTRIC LINE
 - ▲ SURVEY CONTROL
 - ▲ METHANE MONITORING POINT
 - ▲ CURRENT METHANE MONITORING POINT


Map Point No.	Monitoring Point	Type	Description
#2	Office	Indoor	Inside office
#3	Shop	Indoor	Inside shop
#11	Break Room	Indoor	Inside break room
#12	MW-7	Subsurface	Vadose zone, west of the current borrow area referred to as Cell "B".
#13	MW-8	Indoor	Vadose zone, south side of the Southern Waste Footprint.
#15	MW-11	Subsurface	Vadose zone, southeast waste boundary of Cell A near the southeast property boundary.
#16	GUCO-1	Subsurface	Vadose zone, groundwater underdrain cleanout on the east end of Cell D.
#17	GUCO-2	Subsurface	Vadose zone, groundwater underdrain cleanout on the west end of Cell D.
#17A	GUCO-2A	Subsurface	Temporary monitoring point. Vadose zone, groundwater underdrain cleanout on the west end of Cell D.
#18	GUCO-3	Subsurface	Vadose zone, groundwater underdrain cleanout on the east end of Cell E.
#19	GUCO-4	Subsurface	Vadose zone, groundwater underdrain cleanout on the west end of Cell E.
#19A	GUCO-4A	Subsurface	Temporary monitoring point. Vadose zone, groundwater underdrain cleanout on the west end of Cell E.
#20	GUCO-5	Subsurface	Vadose zone, groundwater underdrain cleanout on the east end of Cell F.
#21	GUCO-6	Subsurface	Vadose zone, groundwater underdrain cleanout on the west end of Cell F.
#21A	GUCO-6A	Subsurface	Temporary monitoring point. Vadose zone, groundwater underdrain cleanout on the west end of Cell F.
#22	GUCO-7	Subsurface	Vadose zone, groundwater underdrain cleanout on the east end of Cell G.
#23	GUCO-8	Subsurface	Vadose zone, groundwater underdrain cleanout on the west end of Cell G.
#23A	GUCO-8A	Subsurface	Temporary monitoring point. Vadose zone, groundwater underdrain cleanout on the west end of Cell G.
#24	GUCO-9	Subsurface	Vadose zone, groundwater underdrain cleanout on the north end of Cell H.
#25	GUCO-10	Subsurface	Vadose zone, groundwater underdrain cleanout on the north end of Cell H.

Map Point No.	Monitoring Point	Type	Description
#26	GUCO-11	Subsurface	Vadose zone, groundwater underdrain cleanout on the south end of Cell I.
#27	GUCO-12	Subsurface	Vadose zone, groundwater underdrain cleanout on the north end of Cell I.
#28	GUCO-13	Subsurface	Vadose zone, groundwater underdrain cleanout on the south end of Cell J.
#29	GUCO-14	Subsurface	Vadose zone, groundwater underdrain cleanout on the north end of Cell J.
#30	GUCO-15	Subsurface	Vadose zone, groundwater underdrain cleanout on the south end of Cell K.
#31	GUCO-16	Subsurface	Vadose zone, groundwater underdrain cleanout on the north end of Cell K.
#32	GUCO-17	Subsurface	Vadose zone, groundwater underdrain cleanout on the south end of Cell L.
#33	GUCO-18	Subsurface	Vadose zone, groundwater underdrain cleanout on north end of Cell L.
#34	GUCO-19	Subsurface	Vadose zone, groundwater underdrain cleanout of south sump area of Cells L, K, J, I, and H.
#35	GUCO-20	Subsurface	Vadose zone, groundwater underdrain cleanout on west end of Cell M.
#36	GUCO-21	Subsurface	Vadose zone, groundwater underdrain cleanout on east end of Cell M.
#37	GUCO-22	Subsurface	Vadose zone, groundwater underdrain cleanout on east end of Cells D, E, F, G, and N.
#38	GUCO-23	Subsurface	Vadose zone, groundwater underdrain cleanout on the north side of Cell N.
#39	GUCO-24	Subsurface	Vadose zone, groundwater underdrain cleanout of Cell P.
#40	GUCO-25	Subsurface	Vadose zone, groundwater underdrain cleanout of Cell Q.
#41	GUCO-26	Subsurface	Vadose zone, groundwater underdrain cleanout of Cells O, P, and Q.
#42	GW-1	Subsurface	Vadose zone, groundwater sump for Cells D East, D West, E, F, G, M, and N.
#43	GW-2	Subsurface	Vadose zone, groundwater sump for Cells H, I, J, K, and L.
#44	GW-3	Subsurface	Vadose zone, groundwater sump for Cells O, P, and Q.



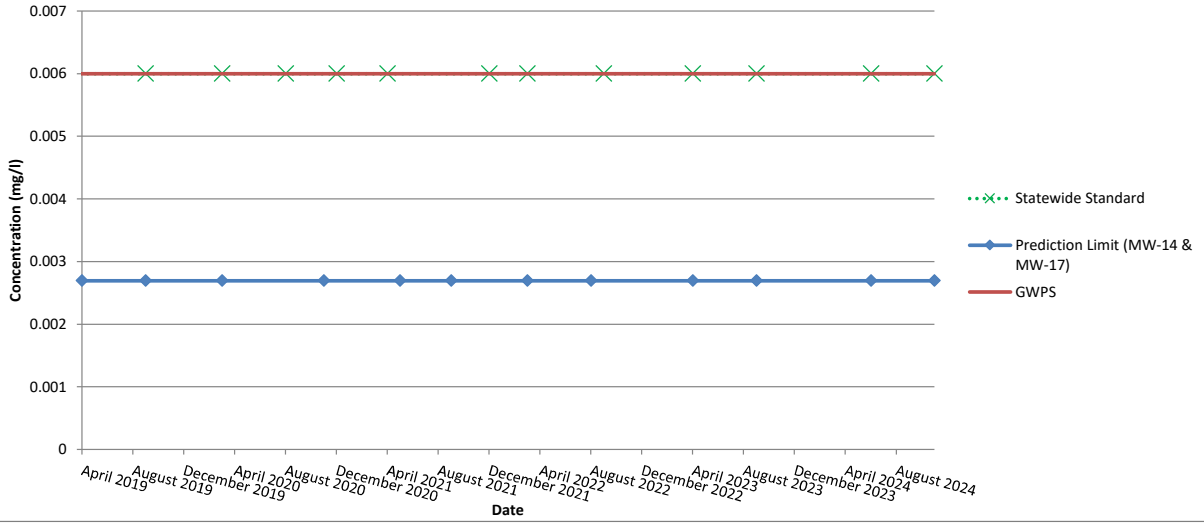
CK BY		DATE	
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SHEET TITLE	METHANE MONITORING NETWORK	PROJECT TITLE	2022 ENGINEERING SUPPORT
CLIENT	WASTE CONNECTIONS	PROJECT TITLE	LOESS HILLS REGIONAL SANITARY LANDFILL MALVERN, IOWA
DRAWN BY	MRK	CHECKED BY	CLC
DESIGNED BY	CLC	PROJECT MGR	CLC
CADD FILE:	METHANE MONITORING NETWORK.DWG		
DATE:	11/19/24		
DRAWING NO.	1		

SCS ENGINEERS
 14755 Gower Street
 Omaha, NE 68144
 PH. (402) 884-6202 FAX. (402) 884-6202

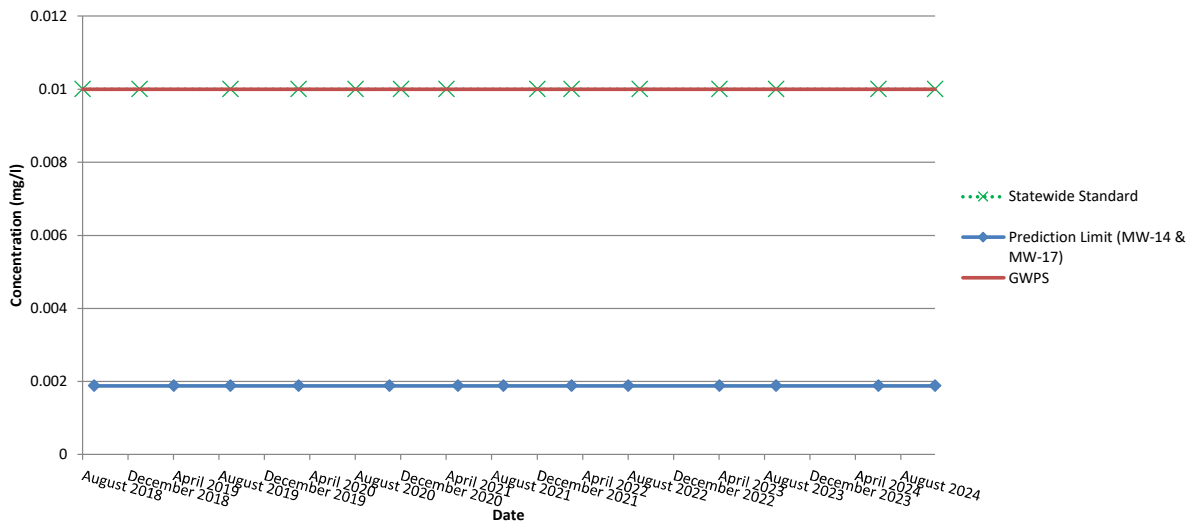


Appendix G
Standards History Graphs

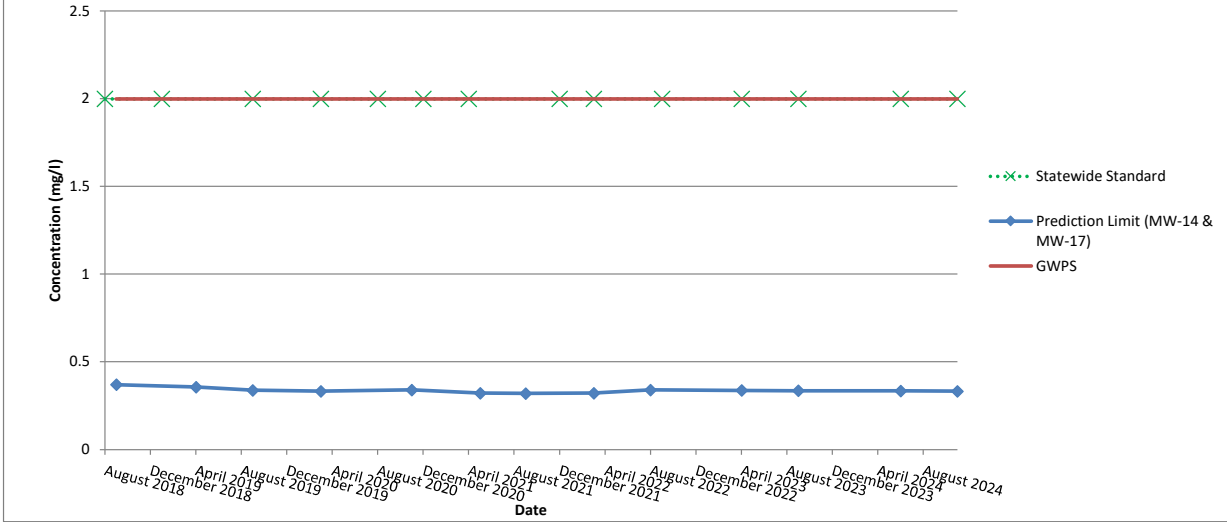
Antimony Prediction Limit and GWPS vs. Time



Arsenic Prediction Limit and GWPS vs. Time



Barium Prediction Limit and GWPS vs. Time



Beryllium Prediction Limit and GWPS vs. Time

