

November 30, 2023
File No. 27223216.24

Mr. Brian Rath, P.E.
Iowa Department of Natural Resources
Land Quality Bureau
Wallace State Office Building
502 East 9th Street
Des Moines, Iowa 50319-0034

Subject: 2023 Annual Water Quality Report
Louisa County Sanitary Landfill (Closed)
Permit No. 58-SDP-01-74C

Dear Brian:

SCS Engineers (SCS), on behalf of the Louisa County Regional Solid Waste Agency, has completed the Annual Water Quality Report for the Louisa County Sanitary Landfill for the year 2023, as described in Permit Amendment No. 17 dated December 27, 2022 (Doc No. 105379). Our services were performed in general accordance with the requirements of the 1989 Iowa Administrative Code (IAC) 567-103(455B), 113.10(2)"f", the current requirements for implementation of the Hydrologic Monitoring System Plan (HMSP), and the Permit Amendment mentioned above. Please find enclosed a copy of the 2023 Annual Water Quality Report for the Louisa County Sanitary Landfill.

If you have any questions regarding these reports, please contact us at (515) 631-6160.

Sincerely,



Benjamin Madson
Associate Professional
SCS Engineers



Timothy C. Buelow, P.E.
Project Director
SCS Engineers

BJM/TCB

Copies: Mr. Brad Quigley, Louisa County Solid Waste Agency
Mr. Adam Shutt, Louisa County Engineer

2023 ANNUAL WATER QUALITY REPORT
LOUISA COUNTY SANITARY LANDFILL (CLOSED)
CAIRO, IOWA

PERMIT No. 58-SDP-01-74C
PROJECT No. 27223216.24
NOVEMBER 2023

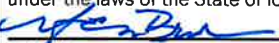
	I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.	
		Date: <u>11/30/23</u>
	Timothy C. Buelow, P.E.	
	License No. 14445	
	My license renewal date is December 31, 2023	
	Pages or sheets covered by this seal:	
	All except Appendix B-1	

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Section 1.0 Introduction

1.1 Purpose

SCS Engineers (SCS), on behalf of the Louisa County Regional Solid Waste Agency, has completed the required groundwater sampling at the closed Louisa County Sanitary Landfill (Landfill). This report was prepared in accordance with the requirements of the 1989 Iowa Administrative Code (IAC) 567-103(455B). This report summarizes the 2023 site groundwater monitoring program as discussed in Permit Amendment #17 dated December 27, 2022 (Doc No. 105379).

1.2 Report Priority

There are no request items of the DNR at this time.

1.3 Response to DNR Comments

The Iowa Department of Natural Resources (DNR) documented their review of the 2022 AWQR (Doc No. 103762) in DNR correspondence dated December 7, 2022 (Doc No. 104762). No response was required.

1.4 Site Location

The Landfill is depicted on Figure 1-1, Approved Monitoring Network. The Landfill is located approximately seven miles west of Wapello, Iowa and one-half mile north of Cairo, Iowa. The Landfill is in the SW $\frac{1}{4}$, SW $\frac{1}{4}$, Section 21, T74N, R4W in Louisa County, Iowa.

1.5 Background

According to the document entitled *Hydrogeological Investigation and Leachate Assessment Report for the Louisa County Landfill*, dated August 1990 and prepared by James M. Montgomery Consulting Engineers, Inc. (1990 HIR), the Landfill is a 40-acre site that was closed on or about February 1, 1995, although waste was no longer accepted prior to October 1994. According to current maps, the Landfill is located on a 16.2-acre property and the solid waste disposal area covers approximately 8.2 acres.

1.6 Sampling Summary

Table 1-1 summarizes the HMSP monitoring points and sampling conducted during the May 2023 annual sampling event.

Table 1-1
2023 AWQR Reporting Period Monitoring Summary

Monitoring Well	June 2023
MW-18 (u)	Reduced Metals List, TSS
MW-13	Sample Not Required This Period
MW-14	Reduced Metals List, Appendix I VOCs, TSS
MW-15	Sample Not Required This Period
MW-19	Reduced Metals List, Appendix I VOCs, TSS
SW-2	None (Dry)*

TSS: Total Suspended Solids

Reduced Metals List Includes: Arsenic, Barium, Cadmium, Cobalt, Lead, Nickel, Selenium, and Zinc.

*A sample was attempted from monitoring point SW-2, but the monitoring point was dry during the 2023 sampling event. A sample will be attempted during the 2024 annual sampling event.

A surface water sample from monitoring point SW-2 was unable to be collected during the 2023 reporting period, therefore, in accordance with Permit Amendment #17 (Doc No. 105379), a sample from monitoring point SW-2 will be attempted next in 2024 and every three years after if a sample is able to be obtained.

The reporting period for this AWQR is the 2023 calendar year and includes the May 2023 sampling event. The field sampling forms and laboratory analytical data sheets for the 2023 sampling event are included in Appendices A and B-1, respectively. Data validation documentation is included in Appendix B-2.

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Monitoring Well	Monitoring Program
MW-13	Routine
MW-14	Background
MW-15	Routine
MW-18	Background
MW-19	Routine
SW-2	Routine

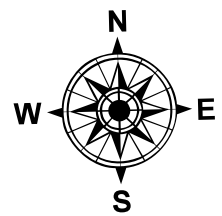


Approved Monitoring Network

Legend

- | | | |
|--------------------------------|--------------------------------|-------------------------------|
| Surface Water Monitoring Point | Surface Water Monitoring Point | Culvert |
| Monitoring Well | Leachate Monitoring Point | Located Waste Boundary |
| HMSP Monitoring Well | Methane Monitoring Point | Approximate Property Boundary |

Louisa County Sanitary
Landfill
Cairo, Iowa
Project No: 27223216.00
Drawing Date: November
2023



0 70 140 280 420
Feet

Figure 1-1

Section 2.0

Hydrogeologic Site Summary

2.1 Geology of the Site

The following information regarding the geology of the site was obtained from the previously referenced 1990 HIR:

...the surface soils in the area are derived from windblown loess and glacial till. The surface soils at the site are described as loam to silty clay loam. The Iowa Soil Conservation Survey report for Louisa County, Iowa identifies this soil as part of the Clinton-Lindley Association group of soils.

...the upland glacial deposits consist of a loess mantle of clayey silt over a light brown, sandy, silty clay. Underneath the clay, a gray, sandy, silty clay is present. The downslope glacial deposits consist of a light brown, sandy, silty clay overlying a dark gray clay.

Boring logs indicate that the uppermost bedrock systems at the landfill are Devonian units consisting of a sequence of dolomites, shales, and limestones. The geologic units comprising this system are (from youngest to oldest in descending order) the Lime Creek Formation, Cedar Valley Limestone, and Wapsipinicon Formation. The Lime Creek Formation, which is part of the upper Devonian Series, is classified as an aquiclude. The Cedar Valley Limestone and Wapsipinicon Formation are part of the Middle Devonian Series, which is classified as an aquifer. According to D.L. Gordon, of the Iowa Geologic Survey, in his report entitled, Groundwater Resources of Louisa County (#80-58WRD), water from this aquifer is highly mineralized, contains extremely high total dissolved solids and elevated concentrations of sulfate. These conditions make the water from this aquifer unfit for human and animal consumption in most parts of the county, including the area surrounding the Louisa County Sanitary Landfill.

Based on the IGSB boring log Form #13812, the elevation of the bedrock is approximately 479 feet NGVD. Therefore, the depth to bedrock is approximately 170 feet in the lowlands and approximately 240 feet in the highlands.

2.2 Hydrology of the Site

The following hydrological information for the site was obtained from the previously referenced 1990 HIR:

All of the surface water draining from the site and adjacent area flows to a small stream leaving the northern boundary of the Louisa County Sanitary Landfill. The landfill operation uses a deep ravine as the fill area. Drainage through the ravine has been modified to flow through a 1,380-foot long reinforced concrete pipe in a generally south to north orientation.

The water table is found within the surficial deposits at the site.

According to the geological cross sections in the 1990 HIR, the water table is within the glacial till layer.

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Section 3.0

Monitoring Well Maintenance and Performance Evaluation

A maintenance and performance evaluation of the monitoring wells is required in accordance with IAC 567-113.10(2)"f" and approved in Permit Amendment #9 (Doc No. 80138). Topics requiring biennial examination are discussed below.

3.1 Water Level Measurements

The results of the water level measurements obtained by SCS during the 2023 sampling event are summarized in Table 3-1.

Table 3-1
Water Level Evaluation Summary

Monitoring Point	Top of Screen Elevation	Groundwater Elevation
		May 2023
MW-5	629.4	655.06
MW-7	642.9	654.90
MW-13	644.1	652.64
MW-14	686.0	684.11
MW-15	649.0	650.27
MW-17	640.8	657.41
MW-18	695.8	703.58
MW-19	653.7	657.22

All measurements in feet.

■ - Water elevation within the screened interval

Water levels were not observed to be within the screened interval during the 2023 annual sampling event with the exception of monitoring well MW-14. Water levels during this reporting period remained generally consistent with previous measurements. Based on the information in Table 3-1, the monitoring wells are adequately placed within the appropriate water table and at a vertical location which is more likely to detect a release from the Landfill, should one take place. Additionally, the monitoring wells are appropriately placed horizontally, generally no more than 600 feet from other monitoring wells, or at alternate spacing criteria dependent upon groundwater flow paths. It is recommended that the monitoring network currently in place continue to be utilized with the proposed change described in Section 1.2.

3.2 Groundwater Flow

Groundwater contours were determined for the Landfill using water elevation data collected by SCS personnel during the May 2023 sampling event. These contours are presented in Figure 3-1. The groundwater contours indicate that the water table flows from the east and west and converges along the approximate south-north alignment of the drainage pipe. The converging groundwater flow appears to generally flow north from the northern waste boundary and south from the southern waste boundary. The southerly flow direction likely

reverses at some location south of the Landfill as creek flow indicates a northerly slope to the ravine in which the pipe beneath the Landfill is located.

3.3 Well Depth Evaluation

IAC 567-113.21(2)"c" requires annual measurements of well depths to ensure that wells are physically intact and not filling with sediment. The monitoring well depths measured during this reporting period are included in Table 3-2.

Table 3-2
Total Well Depth Evaluation

Monitoring Point	Installed Well Depth (feet)	May 2023	
		Measured Well Depth (feet)	Difference from Installed (feet)
MW-5	36.7	37.1	0.4
MW-7	30.0	30.2	0.1
MW-13	17.1	17.0	0.1
MW-14	22.1	22.1	0.0
MW-15	17.2	17.2	0.0
MW-17	34.0	34.0	0.0
MW-18	38.2	38.3	0.1
MW-19	23.2	23.3	0.1

As shown in Table 3-2, the monitoring well depths measured during the 2023 sampling event were within 1.0 foot of the installed depths. The monitoring well total depth measurements are consistent with historical well depth measurements.

The monitoring points produced sufficient water volumes for sampling during the 2023 sampling event. Based on the depth evaluation and the measured total suspended solids (TSS) concentrations, it is not likely that siltation is occurring to a sufficient extent in the monitoring wells at the Landfill to negatively affect future sampling.

3.4 Well Recharge Evaluation

IAC 567-113.21(2)"f"(4) requires a biennial evaluation of well recharge rates and chemistry to determine if well deterioration is occurring. Well recharge rates are included in Table 3-3 and based on the purge rate while stabilizing parameters.

Table 3-3
Well Recharge Rate Evaluation

Monitoring Point	May 2019 (L/min)	March 2021 (L/min)	May 2023 (L/min)
MW-13	0.154	0.166	Sample Not Required
MW-14	0.158	0.192	0.150
MW-15	0.154	0.171	Sample Not Required
MW-18	0.146	0.158	0.150
MW-19	0.150	0.167	0.150

As shown in Table 3-3, flow rates during the 2023 reporting period remain consistent with low-flow rates since implementation at the site. Factors including time for parameter stabilization and pumping rate account for differences of flow rate between monitoring wells and reporting periods.

3.5 Sampling Point Observations

A kink has been noted in monitoring well MW-13 during recent sampling events; however, as it has not affected the ability for the monitoring well to produce a sample, no changes are recommended at this time. The monitoring well will continue to be monitored. SCS field staff observed no other problems regarding the integrity of the monitoring wells during the 2023 sampling event.

Sampling of surface water monitoring point SW-2 is required every three years in accordance with Permit Amendment #17 dated December 27, 2022 (Doc No. 105379). A sample was not able to be obtained during the 2023 reporting period; therefore, the next sample will be attempted in 2024.

3.6 Monitoring System Recommendations

Efforts were made to reduce TSS concentrations prior to the 1st 2015 semi-annual sampling event with the installation of low-flow sampling apparatuses in HMSP monitoring wells. Since installation of low-flow sampling apparatuses, site-wide TSS concentrations have continued to decrease and were less than 5 mg/L during this reporting period. SCS recommends low-flow sampling methods continue to be utilized for future sampling events.

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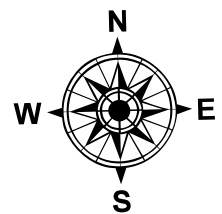


Groundwater Contours

Legend

- | | | |
|---|--------------------------------|-------------------------------|
| Approximate Groundwater Contours Based on Field Measurements Taken May 24, 2023 | Surface Water Monitoring Point | Located Waste Boundary |
| Monitoring Well | Leachate Monitoring Point | Approximate Property Boundary |
| | Methane Monitoring Point | |
| | Culvert | |

Louisa County Sanitary
Landfill
Cairo, Iowa
Project No: 27223216.00
Drawing Date: November
2023



0 70 140 280 420
Feet

Figure 3-1

Section 4.0

Evaluation of Water Quality Parameters

The historical analytical results of the groundwater monitoring points and surface water monitoring points for the Landfill are presented in Appendix C (Summary of Groundwater Chemistry). The statistical output, which includes time series graphs, Mann-Kendall trend table and graphs, confidence interval table and graphs, and Thiel Sen trend tables and graphs, are included in Appendix D.

Groundwater monitoring was performed in accordance with Permit Amendment #17 issued December 27, 2022 (Doc No. 105379), which required annual sampling of a reduced metals list and TSS for monitoring well MW-18 as well as biennial sampling of Appendix I volatile organic compounds (VOCs), reduced metals list, and TSS for monitoring wells MW-14 and MW-19, during the 2023 reporting period. Surface water sampling at location SW-2 was required in 2023 and during every 3rd year following an obtainable sample. As a sample was not obtained during the 2023 reporting period, sampling will be attempted again during the 2024 reporting period. Sampling results are summarized in Table 4-1.

Table 4-1
2023 Constituent Concentration Summary

Constituent	GWPS	MW-18 (u)	MW-13*	MW-14	MW-15*	MW-19
Barium (mg/L)	2.0	0.0252		0.0222		0.0239
Cadmium (mg/L)	0.005			0.000856		
Cobalt (mg/L)	0.0021	0.000734				0.00118
Lead (mg/L)	0.015	0.00182				0.000709
Nickel (mg/L)	0.1			0.00594		
Total Suspended Solids (mg/L)	NA	2.5				3.63

J flag concentrations not included in the table.

NA: Not Applicable; An established groundwater protection standard does not exist.

(u): Upgradient monitoring well.

*: Downgradient monitoring wells were permitted to be sampled in alternate years beginning with the 2023 reporting period. Monitoring wells MW-13 and MW-15 will be sampled next in 2024.

The measured concentrations were compared to current Iowa Statewide Standards for protected groundwater sources (GWPS). There were no VOC detections above the reporting

limit in the monitoring wells that were sampled at the Landfill during the 2023 reporting period.

Figure 4-1 shows the range of measured concentrations by monitoring point for the sampled HMSP monitoring wells.

Trends

Mann-Kendall trend analysis was conducted for the most recent eight samples including the 2023 sampling event. Mann-Kendall trend table and graphs are included in the Statistical Output in Appendix D. There was one statistically significantly decreasing trend for barium in monitoring well MW-18 during this reporting period.

Confidence Intervals

As part of this AWQR, confidence intervals were calculated on detected monitoring well-constituent pairs with five or more data points. Of the monitoring well-constituent pairs evaluated, lower confidence limits remained below the GWPS for all monitoring well-constituent pairs. A confidence interval summary table and graphs are included as part of the Statistical Output in Appendix D.

4.1 Potential Receptors

Pursuant to guidance from the DNR, if maximum contaminant levels (MCLs) are exceeded at any groundwater monitoring point, information is to be provided regarding potential receptors. There were no MCL exceedances during this reporting period.

4.2 QA/QC Information

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 provides documentation of the accuracy and precision of the analytical data and confirms that the analyses were sufficiently sensitive to detect constituents at levels below regulatory standards, where such standards exist. SCS then conducted QA/QC data validation of the produced data, which included review of sample handling, analytical sensitivity and blanks, accuracy, and precision.

Based on the QA review, no samples were rejected as unusable due to QC failures. In general, the quality of the analytical data for this reporting period does not appear to have been compromised by analytical irregularities and results affected by QC anomalies are qualified with the appropriate data flags, which are listed in the laboratory reports in Appendix B-1. A data validation checklist is provided in Appendix B-2.

4.3 Conclusions and Recommendations for Future Monitoring

Based on the above discussion, it is recommended to continue with the current monitoring program. The recommended monitoring program and sampling schedule for the upcoming reporting periods are summarized in Table 4-2.

Table 4-2
2024 & 2025 AWQR Reporting Period Sampling Schedule

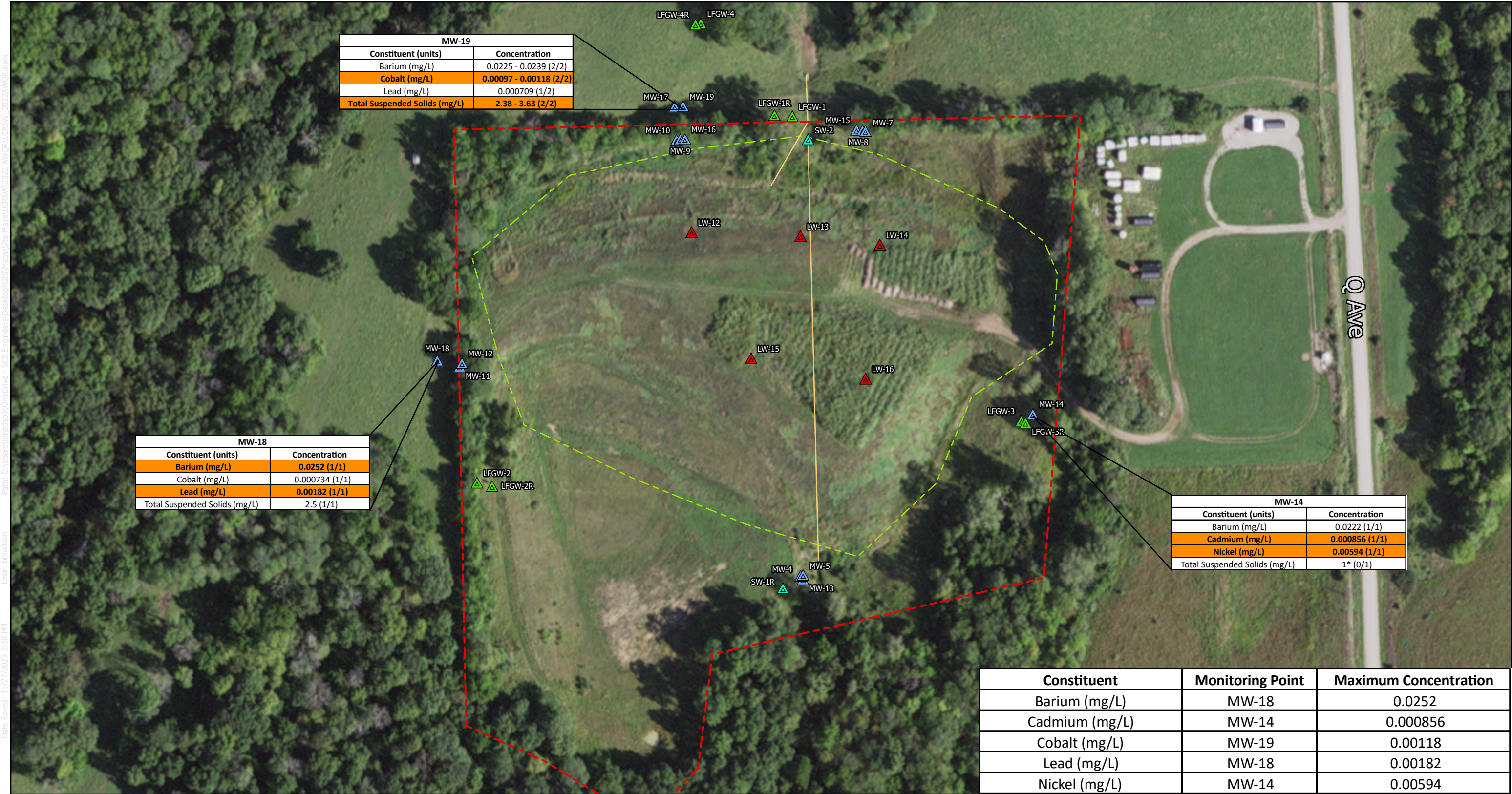
Monitoring Point	2024 Annual	2025 Annual
MW-18 (u)	Reduced Metals List, TSS	Reduced Metals List, TSS
MW-13	Reduced Metals List, TSS	NS
MW-14	NS	Reduced Metals List, Appendix I VOCs, TSS
MW-15	Reduced Metals List, TSS	NS
MW-19	NS	Reduced Metals List, Appendix I VOCs, TSS
SW-2	Appendix I, TSS*	NS

NS: No Sample, Downgradient monitoring wells are recommended to be sampled in alternate years beginning with the 2023 reporting period.

Reduced Metals List Includes: Arsenic, Barium, Cadmium, Cobalt, Lead, Nickel, Selenium, and Zinc.

* SW-2 is required to be sampled every three years. A sample was attempted during the 2023 reporting period, but the monitoring point was dry. A sample will be attempted during the 2024 sampling event and if successful the next sample will be attempted during the 2027 sampling event.

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Section 5.0

General Comments

The analysis and opinions expressed in this report are based upon data obtained from the samples collected at the indicated locations and from any other information discussed in this report. This report does not reflect any variation in subsurface stratigraphy, hydrogeology, or chemical concentrations that may occur between sampling locations or across the site. Actual subsurface conditions may vary and may not become evident without further exploration.

SCS has prepared this report for the exclusive use of our client for the specific application to the project discussed. No warranty is expressly stated or implied in this report with regard to the condition of substrate and groundwater below the surface of the facility. SCS has relied upon information furnished by others as noted in the report, and SCS accepts no responsibility for any deficiency, misstatements, or inaccuracy in this report as a result of misstatements, omissions, misrepresentations, fraudulent, or inaccurate information or data provided by others.

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Section 6.0 References

1. James M. Montgomery Consulting Engineers, Inc. *Hydrogeological Investigation and Leachate Assessment Report for the Louisa County Sanitary Landfill*, prepared for the Louisa County Regional Solid Waste Agency, Wapello, Iowa, August 1990.
2. James M. Montgomery Consulting Engineers. *Hydrologic Investigation Report, Louisa County Sanitary Landfill*, August 1992.
3. Iowa Department of Natural Resources. *Annual Report 1997, Registry of Hazardous Waste or Hazardous Substance Disposal Sites and Hazardous Waste Remedial Fund*, January 1998.
4. Evora Consulting. *2022 Annual Water Quality Report, Louisa County Sanitary Landfill (Closed)*, August 2022.

Appendix A
Field Sampling Forms

FORM FOR GROUNDWATER SAMPLING

[illegible]

FORM FOR GROUNDWATER SAMPLING

Project:	LCRSW		
Monitoring Well/Piezometer ID:	MW-18	Date:	5/24/2023
Gradient:	Up	Sampler:	Scott Stoller

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):	20.05
Initial Groundwater Elevation (ft-amsl):	703.58
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (FNU)	
4:11 PM	Purging start time.						
4:14 PM	16.0	3.6	1125.7	6.94	129.0	NM	
4:17 PM	16.2	3.3	1123.5	6.93	143.7	NM	
4:20 PM	16.0	3.2	1122.6	6.94	147.6	NM	
4:23 PM	17.2	3.1	1126.0	6.93	148.1	NM	
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:	No peri tubing in well, installed approx 35 feet of tubing. There was an equipment malfunction with the YSI probes while stabilizing, turbidity data could not be collected.

FORM FOR GROUNDWATER SAMPLING

Project:	LCRSW		
Monitoring Well/Piezometer ID:	MW-19	Date:	5/24/2023
Gradient:	Down	Sampler:	Scott Stoller

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):	23.3
Initial Static Water Level (feet):	8.64
Initial Groundwater Elevation (ft-amsl):	657.22
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)	
3:26 PM	Purging start time.						
3:29 PM	14.5	0.6	1388.8	6.65	133.4	NM	
3:32 PM	14.0	0.3	1385.7	6.67	129.4	NM	
3:35 PM	13.8	0.2	1365.7	6.68	122.8	NM	
3:38 PM	14.6	0.1	1366.9	6.68	114.2	NM	
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:	There was an equipment malfunction with the YSI probes while stabilizing, turbidity data could not be collected.

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

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JOB DESCRIPTION

Louisa County Sanitary Landfill - 2023 Annual Samp
SDG NUMBER 27223216

JOB NUMBER

310-256961-1

Eurofins Cedar Falls

Job Notes

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Chain of Custody 30

Receipt Checklists 32



Case Narrative

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual Samp

Job ID: 310-256961-1
SDG: 27223216

Job ID: 310-256961-1

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative 310-256961-1

Receipt

The samples were received on 5/26/2023 4:25 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.6°C

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-389303 recovered above the upper control limit for Vinyl chloride (33.6%D), Chloroethane (29.4%D), and Trichlorofluoromethane (37.7%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 310-389303/4).

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

Metals

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

General Chemistry

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

Sample Summary

Client: SCS Engineers

Project/Site: Louisa County Sanitary Landfill - 2023 Annual
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Job ID: 310-256961-1

SDG: 27223216

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-256961-1	MW-14	Water	05/24/23 17:37	05/26/23 16:25
310-256961-2	MW-18	Water	05/24/23 16:23	05/26/23 16:25
310-256961-3	MW-19	Water	05/24/23 15:38	05/26/23 16:25
310-256961-4	MW-D	Water	05/24/23 15:38	05/26/23 16:25
310-256961-5	Trip Blanks	Water	05/24/23 00:00	05/26/23 16:25

Detection Summary

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
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Job ID: 310-256961-1
SDG: 27223216

Client Sample ID: MW-14

Lab Sample ID: 310-256961-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichlorofluoromethane	3.71	J	4.00	0.380	ug/L	1		8260D	Total/NA
Barium	0.0222	F1	0.00200	0.000640	mg/L	1		6020B	Total/NA
Cadmium	0.000856		0.000800	0.000400	mg/L	4		6020B	Total/NA
Cobalt	0.000413	J F1	0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.000415	J F1	0.000500	0.000240	mg/L	1		6020B	Total/NA
Nickel	0.00594	F1	0.00500	0.00190	mg/L	1		6020B	Total/NA
Total Suspended Solids	1.00	J	1.88	0.638	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-18

Lab Sample ID: 310-256961-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.00119	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.0252		0.00200	0.000640	mg/L	1		6020B	Total/NA
Cobalt	0.000734		0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.00182		0.000500	0.000240	mg/L	1		6020B	Total/NA
Nickel	0.00193	J	0.00500	0.00190	mg/L	1		6020B	Total/NA
Selenium	0.00457	J	0.00500	0.00140	mg/L	1		6020B	Total/NA
Total Suspended Solids	2.50		1.88	0.638	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-19

Lab Sample ID: 310-256961-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0239		0.00200	0.000640	mg/L	1		6020B	Total/NA
Cadmium	0.000102	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.00118		0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.000709		0.000500	0.000240	mg/L	1		6020B	Total/NA
Nickel	0.00356	J	0.00500	0.00190	mg/L	1		6020B	Total/NA
Selenium	0.00311	J	0.00500	0.00140	mg/L	1		6020B	Total/NA
Zinc	0.00740	J	0.0200	0.00640	mg/L	1		6020B	Total/NA
Total Suspended Solids	3.63		1.88	0.638	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-D

Lab Sample ID: 310-256961-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0225		0.00200	0.000640	mg/L	1		6020B	Total/NA
Cobalt	0.000970		0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.000380	J	0.000500	0.000240	mg/L	1		6020B	Total/NA
Nickel	0.00297	J	0.00500	0.00190	mg/L	1		6020B	Total/NA
Selenium	0.00348	J	0.00500	0.00140	mg/L	1		6020B	Total/NA
Zinc	0.00868	J	0.0200	0.00640	mg/L	1		6020B	Total/NA
Total Suspended Solids	2.38		1.88	0.638	mg/L	1		I-3765-85	Total/NA

Client Sample ID: Trip Blanks

Lab Sample ID: 310-256961-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Acetone	3.18	J	10.0	3.10	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Quantitation Limit Exceptions Summary

Client: SCS Engineers

Job ID: 310-256961-1

Project/Site: Louisa County Sanitary Landfill - 2023 Annual

SDG: 27223216

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The requested project specific reporting limits listed below were less than laboratory standard quantitation limits (PQL) but greater than or equal to the laboratory method detection limits (MDL). It must be noted that results reported below lab standard quantitation limits may result in false positive/false negative values and less accurate quantitation. Routine laboratory procedures do not indicate corrective action for detections below the laboratory's PQL.

Method	Analyte	Matrix	Prep Type	Unit	Client RL	Lab PQL
8260D	1,2-Dibromo-3-Chloropropane	Water	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromoethane (EDB)	Water	Total/NA	ug/L	0.340	1

Client Sample Results

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
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Job ID: 310-256961-1
SDG: 27223216

Client Sample ID: MW-14

Lab Sample ID: 310-256961-1

Date Collected: 05/24/23 17:37

Matrix: Water

Date Received: 05/26/23 16:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			06/02/23 10:12	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			06/02/23 10:12	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			06/02/23 10:12	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			06/02/23 10:12	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			06/02/23 10:12	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			06/02/23 10:12	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			06/02/23 10:12	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			06/02/23 10:12	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			06/02/23 10:12	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			06/02/23 10:12	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			06/02/23 10:12	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			06/02/23 10:12	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			06/02/23 10:12	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			06/02/23 10:12	1
2-Hexanone	<10.0		10.0	2.00	ug/L			06/02/23 10:12	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			06/02/23 10:12	1
Acetone	<10.0		10.0	3.10	ug/L			06/02/23 10:12	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			06/02/23 10:12	1
Benzene	<0.500		0.500	0.220	ug/L			06/02/23 10:12	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			06/02/23 10:12	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			06/02/23 10:12	1
Bromoform	<5.00		5.00	0.780	ug/L			06/02/23 10:12	1
Bromomethane	<4.00		4.00	1.10	ug/L			06/02/23 10:12	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			06/02/23 10:12	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			06/02/23 10:12	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			06/02/23 10:12	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			06/02/23 10:12	1
Chloroethane	<4.00		4.00	0.790	ug/L			06/02/23 10:12	1
Chloroform	<3.00		3.00	1.30	ug/L			06/02/23 10:12	1
Chloromethane	<3.00		3.00	0.610	ug/L			06/02/23 10:12	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			06/02/23 10:12	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			06/02/23 10:12	1
Dibromomethane	<1.00		1.00	0.330	ug/L			06/02/23 10:12	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			06/02/23 10:12	1
Iodomethane	<10.0		10.0	7.00	ug/L			06/02/23 10:12	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			06/02/23 10:12	1
Styrene	<1.00		1.00	0.370	ug/L			06/02/23 10:12	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			06/02/23 10:12	1
Toluene	<1.00		1.00	0.430	ug/L			06/02/23 10:12	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			06/02/23 10:12	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			06/02/23 10:12	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			06/02/23 10:12	1
Trichloroethene	<1.00		1.00	0.430	ug/L			06/02/23 10:12	1
Trichlorofluoromethane	3.71	J	4.00	0.380	ug/L			06/02/23 10:12	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			06/02/23 10:12	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/02/23 10:12	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			06/02/23 10:12	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
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Job ID: 310-256961-1
SDG: 27223216

Client Sample ID: MW-14

Lab Sample ID: 310-256961-1

Date Collected: 05/24/23 17:37

Matrix: Water

Date Received: 05/26/23 16:25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	112		80 - 128		06/02/23 10:12	1
Toluene-d8 (Surr)	96		80 - 120		06/02/23 10:12	1
4-Bromofluorobenzene (Surr)	97		80 - 120		06/02/23 10:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200	F1	0.00200	0.000530	mg/L		06/01/23 09:20	06/07/23 00:16	1
Barium	0.0222	F1	0.00200	0.000640	mg/L		06/01/23 09:20	06/07/23 00:16	1
Cadmium	0.000856		0.000800	0.000400	mg/L		06/01/23 09:20	06/13/23 01:42	4
Cobalt	0.000413	J F1	0.000500	0.000170	mg/L		06/01/23 09:20	06/07/23 00:16	1
Lead	0.000415	J F1	0.000500	0.000240	mg/L		06/01/23 09:20	06/07/23 00:16	1
Nickel	0.00594	F1	0.00500	0.00190	mg/L		06/01/23 09:20	06/07/23 00:16	1
Selenium	<0.00500	F1	0.00500	0.00140	mg/L		06/01/23 09:20	06/07/23 00:16	1
Zinc	<0.0200	F1	0.0200	0.00640	mg/L		06/01/23 09:20	06/07/23 00:16	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	1.00	J	1.88	0.638	mg/L			05/31/23 11:51	1

Client Sample Results

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
Samp

Job ID: 310-256961-1
SDG: 27223216

Client Sample ID: MW-18

Lab Sample ID: 310-256961-2

Date Collected: 05/24/23 16:23

Matrix: Water

Date Received: 05/26/23 16:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.00119	J	0.00200	0.000530	mg/L		06/01/23 09:20	06/07/23 00:29	1
Barium	0.0252		0.00200	0.000640	mg/L		06/01/23 09:20	06/07/23 00:29	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		06/01/23 09:20	06/13/23 01:52	1
Cobalt	0.000734		0.000500	0.000170	mg/L		06/01/23 09:20	06/07/23 00:29	1
Lead	0.00182		0.000500	0.000240	mg/L		06/01/23 09:20	06/07/23 00:29	1
Nickel	0.00193	J	0.00500	0.00190	mg/L		06/01/23 09:20	06/07/23 00:29	1
Selenium	0.00457	J	0.00500	0.00140	mg/L		06/01/23 09:20	06/07/23 00:29	1
Zinc	<0.0200		0.0200	0.00640	mg/L		06/01/23 09:20	06/07/23 00:29	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	2.50		1.88	0.638	mg/L			05/31/23 11:51	1

Client Sample Results

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
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Job ID: 310-256961-1
SDG: 27223216

Client Sample ID: MW-19

Lab Sample ID: 310-256961-3

Date Collected: 05/24/23 15:38

Matrix: Water

Date Received: 05/26/23 16:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			06/02/23 10:34	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			06/02/23 10:34	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			06/02/23 10:34	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			06/02/23 10:34	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			06/02/23 10:34	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			06/02/23 10:34	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			06/02/23 10:34	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			06/02/23 10:34	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			06/02/23 10:34	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			06/02/23 10:34	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			06/02/23 10:34	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			06/02/23 10:34	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			06/02/23 10:34	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			06/02/23 10:34	1
2-Hexanone	<10.0		10.0	2.00	ug/L			06/02/23 10:34	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			06/02/23 10:34	1
Acetone	<10.0		10.0	3.10	ug/L			06/02/23 10:34	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			06/02/23 10:34	1
Benzene	<0.500		0.500	0.220	ug/L			06/02/23 10:34	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			06/02/23 10:34	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			06/02/23 10:34	1
Bromoform	<5.00		5.00	0.780	ug/L			06/02/23 10:34	1
Bromomethane	<4.00		4.00	1.10	ug/L			06/02/23 10:34	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			06/02/23 10:34	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			06/02/23 10:34	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			06/02/23 10:34	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			06/02/23 10:34	1
Chloroethane	<4.00		4.00	0.790	ug/L			06/02/23 10:34	1
Chloroform	<3.00		3.00	1.30	ug/L			06/02/23 10:34	1
Chloromethane	<3.00		3.00	0.610	ug/L			06/02/23 10:34	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			06/02/23 10:34	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			06/02/23 10:34	1
Dibromomethane	<1.00		1.00	0.330	ug/L			06/02/23 10:34	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			06/02/23 10:34	1
Iodomethane	<10.0		10.0	7.00	ug/L			06/02/23 10:34	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			06/02/23 10:34	1
Styrene	<1.00		1.00	0.370	ug/L			06/02/23 10:34	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			06/02/23 10:34	1
Toluene	<1.00		1.00	0.430	ug/L			06/02/23 10:34	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			06/02/23 10:34	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			06/02/23 10:34	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			06/02/23 10:34	1
Trichloroethene	<1.00		1.00	0.430	ug/L			06/02/23 10:34	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			06/02/23 10:34	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			06/02/23 10:34	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/02/23 10:34	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			06/02/23 10:34	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
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Job ID: 310-256961-1
SDG: 27223216

Client Sample ID: MW-19

Lab Sample ID: 310-256961-3

Date Collected: 05/24/23 15:38

Matrix: Water

Date Received: 05/26/23 16:25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	111		80 - 128		06/02/23 10:34	1
Toluene-d8 (Surr)	97		80 - 120		06/02/23 10:34	1
4-Bromofluorobenzene (Surr)	99		80 - 120		06/02/23 10:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		06/01/23 09:20	06/07/23 00:32	1
Barium	0.0239		0.00200	0.000640	mg/L		06/01/23 09:20	06/07/23 00:32	1
Cadmium	0.000102	J	0.000200	0.000100	mg/L		06/01/23 09:20	06/13/23 01:56	1
Cobalt	0.00118		0.000500	0.000170	mg/L		06/01/23 09:20	06/07/23 00:32	1
Lead	0.000709		0.000500	0.000240	mg/L		06/01/23 09:20	06/07/23 00:32	1
Nickel	0.00356	J	0.00500	0.00190	mg/L		06/01/23 09:20	06/07/23 00:32	1
Selenium	0.00311	J	0.00500	0.00140	mg/L		06/01/23 09:20	06/07/23 00:32	1
Zinc	0.00740	J	0.0200	0.00640	mg/L		06/01/23 09:20	06/07/23 00:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	3.63		1.88	0.638	mg/L			05/31/23 11:51	1

Client Sample Results

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
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Job ID: 310-256961-1
SDG: 27223216

Client Sample ID: MW-D

Lab Sample ID: 310-256961-4

Date Collected: 05/24/23 15:38

Matrix: Water

Date Received: 05/26/23 16:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			06/02/23 10:55	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			06/02/23 10:55	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			06/02/23 10:55	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			06/02/23 10:55	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			06/02/23 10:55	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			06/02/23 10:55	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			06/02/23 10:55	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			06/02/23 10:55	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			06/02/23 10:55	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			06/02/23 10:55	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			06/02/23 10:55	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			06/02/23 10:55	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			06/02/23 10:55	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			06/02/23 10:55	1
2-Hexanone	<10.0		10.0	2.00	ug/L			06/02/23 10:55	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			06/02/23 10:55	1
Acetone	<10.0		10.0	3.10	ug/L			06/02/23 10:55	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			06/02/23 10:55	1
Benzene	<0.500		0.500	0.220	ug/L			06/02/23 10:55	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			06/02/23 10:55	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			06/02/23 10:55	1
Bromoform	<5.00		5.00	0.780	ug/L			06/02/23 10:55	1
Bromomethane	<4.00		4.00	1.10	ug/L			06/02/23 10:55	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			06/02/23 10:55	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			06/02/23 10:55	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			06/02/23 10:55	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			06/02/23 10:55	1
Chloroethane	<4.00		4.00	0.790	ug/L			06/02/23 10:55	1
Chloroform	<3.00		3.00	1.30	ug/L			06/02/23 10:55	1
Chloromethane	<3.00		3.00	0.610	ug/L			06/02/23 10:55	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			06/02/23 10:55	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			06/02/23 10:55	1
Dibromomethane	<1.00		1.00	0.330	ug/L			06/02/23 10:55	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			06/02/23 10:55	1
Iodomethane	<10.0		10.0	7.00	ug/L			06/02/23 10:55	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			06/02/23 10:55	1
Styrene	<1.00		1.00	0.370	ug/L			06/02/23 10:55	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			06/02/23 10:55	1
Toluene	<1.00		1.00	0.430	ug/L			06/02/23 10:55	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			06/02/23 10:55	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			06/02/23 10:55	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			06/02/23 10:55	1
Trichloroethene	<1.00		1.00	0.430	ug/L			06/02/23 10:55	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			06/02/23 10:55	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			06/02/23 10:55	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/02/23 10:55	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			06/02/23 10:55	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
Samp

Job ID: 310-256961-1
SDG: 27223216

Client Sample ID: MW-D

Lab Sample ID: 310-256961-4

Date Collected: 05/24/23 15:38

Matrix: Water

Date Received: 05/26/23 16:25

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	124		80 - 128		06/02/23 10:55	1
Toluene-d8 (Surr)	96		80 - 120		06/02/23 10:55	1
4-Bromofluorobenzene (Surr)	96		80 - 120		06/02/23 10:55	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		06/01/23 09:20	06/07/23 00:35	1
Barium	0.0225		0.00200	0.000640	mg/L		06/01/23 09:20	06/07/23 00:35	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		06/01/23 09:20	06/13/23 02:00	1
Cobalt	0.000970		0.000500	0.000170	mg/L		06/01/23 09:20	06/07/23 00:35	1
Lead	0.000380	J	0.000500	0.000240	mg/L		06/01/23 09:20	06/07/23 00:35	1
Nickel	0.00297	J	0.00500	0.00190	mg/L		06/01/23 09:20	06/07/23 00:35	1
Selenium	0.00348	J	0.00500	0.00140	mg/L		06/01/23 09:20	06/07/23 00:35	1
Zinc	0.00868	J	0.0200	0.00640	mg/L		06/01/23 09:20	06/07/23 00:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	2.38		1.88	0.638	mg/L			05/31/23 11:51	1

Client Sample Results

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
Samp

Job ID: 310-256961-1
SDG: 27223216

Client Sample ID: Trip Blanks

Lab Sample ID: 310-256961-5

Date Collected: 05/24/23 00:00

Matrix: Water

Date Received: 05/26/23 16:25

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			06/02/23 05:56	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			06/02/23 05:56	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			06/02/23 05:56	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			06/02/23 05:56	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			06/02/23 05:56	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			06/02/23 05:56	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			06/02/23 05:56	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			06/02/23 05:56	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			06/02/23 05:56	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			06/02/23 05:56	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			06/02/23 05:56	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			06/02/23 05:56	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			06/02/23 05:56	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			06/02/23 05:56	1
2-Hexanone	<10.0		10.0	2.00	ug/L			06/02/23 05:56	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			06/02/23 05:56	1
Acetone	3.18	J	10.0	3.10	ug/L			06/02/23 05:56	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			06/02/23 05:56	1
Benzene	<0.500		0.500	0.220	ug/L			06/02/23 05:56	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			06/02/23 05:56	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			06/02/23 05:56	1
Bromoform	<5.00		5.00	0.780	ug/L			06/02/23 05:56	1
Bromomethane	<4.00		4.00	1.10	ug/L			06/02/23 05:56	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			06/02/23 05:56	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			06/02/23 05:56	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			06/02/23 05:56	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			06/02/23 05:56	1
Chloroethane	<4.00		4.00	0.790	ug/L			06/02/23 05:56	1
Chloroform	<3.00		3.00	1.30	ug/L			06/02/23 05:56	1
Chloromethane	<3.00		3.00	0.610	ug/L			06/02/23 05:56	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			06/02/23 05:56	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			06/02/23 05:56	1
Dibromomethane	<1.00		1.00	0.330	ug/L			06/02/23 05:56	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			06/02/23 05:56	1
Iodomethane	<10.0		10.0	7.00	ug/L			06/02/23 05:56	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			06/02/23 05:56	1
Styrene	<1.00		1.00	0.370	ug/L			06/02/23 05:56	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			06/02/23 05:56	1
Toluene	<1.00		1.00	0.430	ug/L			06/02/23 05:56	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			06/02/23 05:56	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			06/02/23 05:56	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			06/02/23 05:56	1
Trichloroethene	<1.00		1.00	0.430	ug/L			06/02/23 05:56	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			06/02/23 05:56	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			06/02/23 05:56	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/02/23 05:56	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			06/02/23 05:56	1

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Client Sample Results

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
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Job ID: 310-256961-1
SDG: 27223216

Client Sample ID: Trip Blanks

Lab Sample ID: 310-256961-5

Date Collected: 05/24/23 00:00

Matrix: Water

Date Received: 05/26/23 16:25

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
<i>Dibromofluoromethane (Surr)</i>	128		80 - 128		06/02/23 05:56	1
<i>Toluene-d8 (Surr)</i>	96		80 - 120		06/02/23 05:56	1
<i>4-Bromofluorobenzene (Surr)</i>	97		80 - 120		06/02/23 05:56	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
Samp

Job ID: 310-256961-1
SDG: 27223216

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

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

Surrogate Summary

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
Samp

Job ID: 310-256961-1
SDG: 27223216

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	DBFM (80-128)	TOL (80-120)	BFB (80-120)
310-256961-1	MW-14	112	96	97
310-256961-3	MW-19	111	97	99
310-256961-4	MW-D	124	96	96
310-256961-5	Trip Blanks	128	96	97
LCS 310-389303/6	Lab Control Sample	98	102	95
LCS 310-389303/7	Lab Control Sample	115	96	97
MB 310-389303/5	Method Blank	116	98	99

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

QC Sample Results

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
Samp

Job ID: 310-256961-1
SDG: 27223216

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

Lab Sample ID: MB 310-389303/5

Matrix: Water

Analysis Batch: 389303

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			06/02/23 03:26	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			06/02/23 03:26	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			06/02/23 03:26	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			06/02/23 03:26	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			06/02/23 03:26	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			06/02/23 03:26	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			06/02/23 03:26	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			06/02/23 03:26	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			06/02/23 03:26	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			06/02/23 03:26	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			06/02/23 03:26	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			06/02/23 03:26	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			06/02/23 03:26	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			06/02/23 03:26	1
2-Hexanone	<10.0		10.0	2.00	ug/L			06/02/23 03:26	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			06/02/23 03:26	1
Acetone	<10.0		10.0	3.10	ug/L			06/02/23 03:26	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			06/02/23 03:26	1
Benzene	<0.500		0.500	0.220	ug/L			06/02/23 03:26	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			06/02/23 03:26	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			06/02/23 03:26	1
Bromoform	<5.00		5.00	0.780	ug/L			06/02/23 03:26	1
Bromomethane	<4.00		4.00	1.10	ug/L			06/02/23 03:26	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			06/02/23 03:26	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			06/02/23 03:26	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			06/02/23 03:26	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			06/02/23 03:26	1
Chloroethane	<4.00		4.00	0.790	ug/L			06/02/23 03:26	1
Chloroform	<3.00		3.00	1.30	ug/L			06/02/23 03:26	1
Chloromethane	<3.00		3.00	0.610	ug/L			06/02/23 03:26	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			06/02/23 03:26	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			06/02/23 03:26	1
Dibromomethane	<1.00		1.00	0.330	ug/L			06/02/23 03:26	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			06/02/23 03:26	1
Iodomethane	<10.0		10.0	7.00	ug/L			06/02/23 03:26	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			06/02/23 03:26	1
Styrene	<1.00		1.00	0.370	ug/L			06/02/23 03:26	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			06/02/23 03:26	1
Toluene	<1.00		1.00	0.430	ug/L			06/02/23 03:26	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			06/02/23 03:26	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			06/02/23 03:26	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			06/02/23 03:26	1
Trichloroethene	<1.00		1.00	0.430	ug/L			06/02/23 03:26	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			06/02/23 03:26	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			06/02/23 03:26	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/02/23 03:26	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			06/02/23 03:26	1

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
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Job ID: 310-256961-1
SDG: 27223216

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

Lab Sample ID: MB 310-389303/5

Matrix: Water

Analysis Batch: 389303

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	116		80 - 128		06/02/23 03:26	1
Toluene-d8 (Surr)	98		80 - 120		06/02/23 03:26	1
4-Bromofluorobenzene (Surr)	99		80 - 120		06/02/23 03:26	1

Lab Sample ID: LCS 310-389303/6

Matrix: Water

Analysis Batch: 389303

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	20.0	18.51		ug/L		93	68 - 123
1,1,1-Trichloroethane	20.0	17.84		ug/L		89	71 - 128
1,1,2,2-Tetrachloroethane	20.0	20.83		ug/L		104	64 - 124
1,1,2-Trichloroethane	20.0	19.03		ug/L		95	70 - 124
1,1-Dichloroethane	20.0	20.32		ug/L		102	71 - 123
1,1-Dichloroethane	20.0	18.06		ug/L		90	61 - 129
1,2,3-Trichloropropane	20.0	19.20		ug/L		96	64 - 125
1,2-Dibromo-3-Chloropropane	20.0	18.07		ug/L		90	50 - 150
1,2-Dibromoethane (EDB)	20.0	17.99		ug/L		90	73 - 125
1,2-Dichlorobenzene	20.0	18.73		ug/L		94	68 - 120
1,2-Dichloroethane	20.0	19.74		ug/L		99	70 - 124
1,2-Dichloropropane	20.0	19.63		ug/L		98	73 - 121
1,4-Dichlorobenzene	20.0	18.85		ug/L		94	67 - 120
2-Butanone (MEK)	40.0	38.61		ug/L		97	50 - 150
2-Hexanone	40.0	38.52		ug/L		96	60 - 132
4-Methyl-2-pentanone (MIBK)	40.0	35.73		ug/L		89	62 - 130
Acetone	40.0	45.80		ug/L		114	50 - 150
Acrylonitrile	200	211.5		ug/L		106	50 - 150
Benzene	20.0	19.51		ug/L		98	73 - 122
Bromochloromethane	20.0	20.33		ug/L		102	68 - 132
Bromodichloromethane	20.0	18.92		ug/L		95	72 - 121
Bromoform	20.0	18.24		ug/L		91	55 - 129
Carbon disulfide	20.0	18.95		ug/L		95	58 - 131
Carbon tetrachloride	20.0	16.74		ug/L		84	67 - 132
Chlorobenzene	20.0	18.72		ug/L		94	69 - 121
Chlorodibromomethane	20.0	18.26		ug/L		91	69 - 122
Chloroform	20.0	19.39		ug/L		97	72 - 120
cis-1,2-Dichloroethene	20.0	19.53		ug/L		98	74 - 120
cis-1,3-Dichloropropene	20.0	18.32		ug/L		92	71 - 126
Dibromomethane	20.0	19.36		ug/L		97	72 - 123
Ethylbenzene	20.0	18.78		ug/L		94	69 - 122
Iodomethane	20.0	16.61		ug/L		83	10 - 150
Methylene Chloride	20.0	22.23		ug/L		111	50 - 150
Styrene	20.0	19.06		ug/L		95	67 - 125
Tetrachloroethene	20.0	16.69		ug/L		83	69 - 131
Toluene	20.0	19.20		ug/L		96	72 - 121
trans-1,2-Dichloroethene	20.0	19.14		ug/L		96	68 - 125
trans-1,3-Dichloropropene	20.0	17.83		ug/L		89	68 - 124

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
Samp

Job ID: 310-256961-1
SDG: 27223216

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

Lab Sample ID: LCS 310-389303/6

Matrix: Water

Analysis Batch: 389303

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
	Added	Result	Qualifier				Limits
trans-1,4-Dichloro-2-butene	20.0	19.87		ug/L		99	48 - 150
Trichloroethene	20.0	17.77		ug/L		89	73 - 126
Vinyl acetate	40.0	34.79		ug/L		87	50 - 150
Xylenes, Total	40.0	36.79		ug/L		92	68 - 124

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	98		80 - 128
Toluene-d8 (Surr)	102		80 - 120
4-Bromofluorobenzene (Surr)	95		80 - 120

Lab Sample ID: LCS 310-389303/7

Matrix: Water

Analysis Batch: 389303

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike	LCS	LCS	Unit	D	%Rec	%Rec
	Added	Result	Qualifier				Limits
Bromomethane	20.0	19.08		ug/L		95	24 - 150
Chloroethane	20.0	21.57		ug/L		108	51 - 137
Chloromethane	20.0	21.37		ug/L		107	37 - 150
Trichlorofluoromethane	20.0	21.99		ug/L		110	56 - 144
Vinyl chloride	20.0	22.03		ug/L		110	57 - 136

Surrogate	LCS	LCS	Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	115		80 - 128
Toluene-d8 (Surr)	96		80 - 120
4-Bromofluorobenzene (Surr)	97		80 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-389216/1-A

Matrix: Water

Analysis Batch: 389830

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 389216

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Arsenic	<0.00200		0.00200	0.000530	mg/L		06/01/23 09:20	06/06/23 23:55	1
Barium	<0.00200		0.00200	0.000640	mg/L		06/01/23 09:20	06/06/23 23:55	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		06/01/23 09:20	06/06/23 23:55	1
Lead	<0.000500		0.000500	0.000240	mg/L		06/01/23 09:20	06/06/23 23:55	1
Nickel	<0.00500		0.00500	0.00190	mg/L		06/01/23 09:20	06/06/23 23:55	1
Selenium	<0.00500		0.00500	0.00140	mg/L		06/01/23 09:20	06/06/23 23:55	1
Zinc	<0.0200		0.0200	0.00640	mg/L		06/01/23 09:20	06/06/23 23:55	1

Lab Sample ID: MB 310-389216/1-A

Matrix: Water

Analysis Batch: 390436

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 389216

Analyte	MB	MB	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Cadmium	<0.000200		0.000200	0.000100	mg/L		06/01/23 09:20	06/13/23 01:13	1

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QC Sample Results

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
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Job ID: 310-256961-1
SDG: 27223216

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

Lab Sample ID: LCS 310-389216/2-A

Matrix: Water

Analysis Batch: 389830

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 389216

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Arsenic	0.200	0.1883		mg/L		94	80 - 120	
Barium	0.100	0.1124		mg/L		112	80 - 120	
Cobalt	0.100	0.1013		mg/L		101	80 - 120	
Lead	0.200	0.2009		mg/L		100	80 - 120	
Nickel	0.200	0.2070		mg/L		104	80 - 120	
Selenium	0.400	0.3594		mg/L		90	80 - 120	
Zinc	0.200	0.2091		mg/L		105	80 - 120	

Lab Sample ID: LCS 310-389216/2-A

Matrix: Water

Analysis Batch: 390436

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 389216

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits	
Cadmium	0.100	0.08899		mg/L		89	80 - 120	

Lab Sample ID: 310-256961-1 MS

Matrix: Water

Analysis Batch: 389830

Client Sample ID: MW-14

Prep Type: Total/NA

Prep Batch: 389216

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	
Arsenic	<0.00200	F1	0.200	0.2269		mg/L		113	75 - 125	
Barium	0.0222	F1	0.100	0.1505	F1	mg/L		128	75 - 125	
Cobalt	0.000413	J F1	0.100	0.1148		mg/L		114	75 - 125	
Lead	0.000415	J F1	0.200	0.2462		mg/L		123	75 - 125	
Nickel	0.00594	F1	0.200	0.2363		mg/L		115	75 - 125	
Selenium	<0.00500	F1	0.400	0.4498		mg/L		112	75 - 125	
Zinc	<0.0200	F1	0.200	0.2385		mg/L		119	75 - 125	

Lab Sample ID: 310-256961-1 MS

Matrix: Water

Analysis Batch: 390436

Client Sample ID: MW-14

Prep Type: Total/NA

Prep Batch: 389216

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits	
Cadmium	0.000856		0.100	0.09515		mg/L		94	75 - 125	

Lab Sample ID: 310-256961-1 MSD

Matrix: Water

Analysis Batch: 389830

Client Sample ID: MW-14

Prep Type: Total/NA

Prep Batch: 389216

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits		RPD	
											RPD	Limit
Arsenic	<0.00200	F1	0.200	0.2645	F1	mg/L		132	75 - 125		15	20
Barium	0.0222	F1	0.100	0.1691	F1	mg/L		147	75 - 125		12	20
Cobalt	0.000413	J F1	0.100	0.1346	F1	mg/L		134	75 - 125		16	20
Lead	0.000415	J F1	0.200	0.2891	F1	mg/L		144	75 - 125		16	20
Nickel	0.00594	F1	0.200	0.2758	F1	mg/L		135	75 - 125		15	20
Selenium	<0.00500	F1	0.400	0.5270	E F1	mg/L		132	75 - 125		16	20
Zinc	<0.0200	F1	0.200	0.2811	F1	mg/L		141	75 - 125		16	20

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QC Sample Results

Client: SCS Engineers
 Project/Site: Louisa County Sanitary Landfill - 2023 Annual
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Job ID: 310-256961-1
 SDG: 27223216

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

Lab Sample ID: 310-256961-1 MSD
 Matrix: Water
 Analysis Batch: 390436

Client Sample ID: MW-14
 Prep Type: Total/NA
 Prep Batch: 389216

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Cadmium	0.000856		0.100	0.1141		mg/L		113	75 - 125	18	20

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

Lab Sample ID: MB 310-389161/1
 Matrix: Water
 Analysis Batch: 389161

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	1.70	mg/L			05/31/23 11:51	1

Lab Sample ID: LCS 310-389161/2
 Matrix: Water
 Analysis Batch: 389161

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	99.00		mg/L		99	75 - 116

QC Association Summary

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
Samp

Job ID: 310-256961-1
SDG: 27223216

GC/MS VOA

Analysis Batch: 389303

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-256961-1	MW-14	Total/NA	Water	8260D	
310-256961-3	MW-19	Total/NA	Water	8260D	
310-256961-4	MW-D	Total/NA	Water	8260D	
310-256961-5	Trip Blanks	Total/NA	Water	8260D	
MB 310-389303/5	Method Blank	Total/NA	Water	8260D	
LCS 310-389303/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-389303/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 389216

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-256961-1	MW-14	Total/NA	Water	3005A	
310-256961-2	MW-18	Total/NA	Water	3005A	
310-256961-3	MW-19	Total/NA	Water	3005A	
310-256961-4	MW-D	Total/NA	Water	3005A	
MB 310-389216/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-389216/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-256961-1 MS	MW-14	Total/NA	Water	3005A	
310-256961-1 MSD	MW-14	Total/NA	Water	3005A	

Analysis Batch: 389830

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-256961-1	MW-14	Total/NA	Water	6020B	389216
310-256961-2	MW-18	Total/NA	Water	6020B	389216
310-256961-3	MW-19	Total/NA	Water	6020B	389216
310-256961-4	MW-D	Total/NA	Water	6020B	389216
MB 310-389216/1-A	Method Blank	Total/NA	Water	6020B	389216
LCS 310-389216/2-A	Lab Control Sample	Total/NA	Water	6020B	389216
310-256961-1 MS	MW-14	Total/NA	Water	6020B	389216
310-256961-1 MSD	MW-14	Total/NA	Water	6020B	389216

Analysis Batch: 390436

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-256961-1	MW-14	Total/NA	Water	6020B	389216
310-256961-2	MW-18	Total/NA	Water	6020B	389216
310-256961-3	MW-19	Total/NA	Water	6020B	389216
310-256961-4	MW-D	Total/NA	Water	6020B	389216
MB 310-389216/1-A	Method Blank	Total/NA	Water	6020B	389216
LCS 310-389216/2-A	Lab Control Sample	Total/NA	Water	6020B	389216
310-256961-1 MS	MW-14	Total/NA	Water	6020B	389216
310-256961-1 MSD	MW-14	Total/NA	Water	6020B	389216

General Chemistry

Analysis Batch: 389161

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-256961-1	MW-14	Total/NA	Water	I-3765-85	
310-256961-2	MW-18	Total/NA	Water	I-3765-85	
310-256961-3	MW-19	Total/NA	Water	I-3765-85	
310-256961-4	MW-D	Total/NA	Water	I-3765-85	

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QC Association Summary

Client: SCS Engineers

Job ID: 310-256961-1

Project/Site: Louisa County Sanitary Landfill - 2023 Annual

SDG: 27223216

Samp

General Chemistry (Continued)

Analysis Batch: 389161 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 310-389161/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-389161/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Lab Chronicle

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
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Job ID: 310-256961-1
SDG: 27223216

Client Sample ID: MW-14

Lab Sample ID: 310-256961-1

Date Collected: 05/24/23 17:37

Matrix: Water

Date Received: 05/26/23 16:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	389303	WSE8	EET CF	06/02/23 10:12
Total/NA	Prep	3005A			389216	DHM5	EET CF	06/01/23 09:20
Total/NA	Analysis	6020B		4	390436	A6US	EET CF	06/13/23 01:42
Total/NA	Prep	3005A			389216	DHM5	EET CF	06/01/23 09:20
Total/NA	Analysis	6020B		1	389830	A6US	EET CF	06/07/23 00:16
Total/NA	Analysis	I-3765-85		1	389161	DGU1	EET CF	05/31/23 11:51

Client Sample ID: MW-18

Lab Sample ID: 310-256961-2

Date Collected: 05/24/23 16:23

Matrix: Water

Date Received: 05/26/23 16:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			389216	DHM5	EET CF	06/01/23 09:20
Total/NA	Analysis	6020B		1	390436	A6US	EET CF	06/13/23 01:52
Total/NA	Prep	3005A			389216	DHM5	EET CF	06/01/23 09:20
Total/NA	Analysis	6020B		1	389830	A6US	EET CF	06/07/23 00:29
Total/NA	Analysis	I-3765-85		1	389161	DGU1	EET CF	05/31/23 11:51

Client Sample ID: MW-19

Lab Sample ID: 310-256961-3

Date Collected: 05/24/23 15:38

Matrix: Water

Date Received: 05/26/23 16:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	389303	WSE8	EET CF	06/02/23 10:34
Total/NA	Prep	3005A			389216	DHM5	EET CF	06/01/23 09:20
Total/NA	Analysis	6020B		1	390436	A6US	EET CF	06/13/23 01:56
Total/NA	Prep	3005A			389216	DHM5	EET CF	06/01/23 09:20
Total/NA	Analysis	6020B		1	389830	A6US	EET CF	06/07/23 00:32
Total/NA	Analysis	I-3765-85		1	389161	DGU1	EET CF	05/31/23 11:51

Client Sample ID: MW-D

Lab Sample ID: 310-256961-4

Date Collected: 05/24/23 15:38

Matrix: Water

Date Received: 05/26/23 16:25

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	389303	WSE8	EET CF	06/02/23 10:55
Total/NA	Prep	3005A			389216	DHM5	EET CF	06/01/23 09:20
Total/NA	Analysis	6020B		1	390436	A6US	EET CF	06/13/23 02:00
Total/NA	Prep	3005A			389216	DHM5	EET CF	06/01/23 09:20
Total/NA	Analysis	6020B		1	389830	A6US	EET CF	06/07/23 00:35
Total/NA	Analysis	I-3765-85		1	389161	DGU1	EET CF	05/31/23 11:51

Lab Chronicle

Client: SCS Engineers
Project/Site: Louisa County Sanitary Landfill - 2023 Annual
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Job ID: 310-256961-1
SDG: 27223216

Client Sample ID: Trip Blanks
Date Collected: 05/24/23 00:00
Date Received: 05/26/23 16:25

Lab Sample ID: 310-256961-5
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	389303	WSE8	EET CF	06/02/23 05:56

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: Louisa County Sanitary Landfill - 2023 Annual
Samp

Job ID: 310-256961-1
SDG: 27223216

Laboratory: Eurofins Cedar Falls

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-23

1
2
3
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16

Method Summary

Client: SCS Engineers

Project/Site: Louisa County Sanitary Landfill - 2023 Annual
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Job ID: 310-256961-1

SDG: 27223216

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

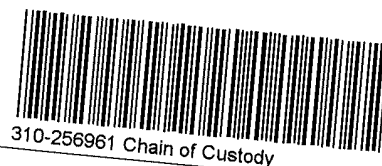
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

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



Environment Testing
America



Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SCS</u>			
City/State:	CITY <u>SCS</u>	STATE <u>ND</u>	Project:
Receipt Information			
Date/Time Received:	DATE <u>5/26/23</u>	TIME <u>1625</u>	Received By: <u>SO</u>
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No	If yes: Cooler ID: _____
Multiple Coolers?		☐ Yes ☒ No	If yes: Cooler # _____ of _____
Cooler Custody Seals Present?		☐ Yes ☒ No	If yes: Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?		☐ Yes ☒ No	If yes: Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?		☒ Yes ☐ No	If yes: Which VOA samples are in cooler? ↓ <u>All</u>
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>W</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>0.6</u>		Corrected Temp (°C): <u>0.6</u>	
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>		<u>CONTAINER 2</u>
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			

3019 Venture Way
Cedar Falls, Iowa 50613

319 277 2401 (phone)
515 792 7989 (fax)

SAMPLER. SCS Engineers

SITE NAME. Louisa County Sanitary Landfill

ADDRESS: 1690 All State Ct, Ste 100

CITY/STATE/ZIP- West Des Moines, IA 50265

TELEPHONE NUMBER.

Fax:

SAMPLED BY (PRINT NAME)

SIGNATURE.

REPORT TO:

NAME.

Ben Madson (bmadson@evora-group.com)

COMPANY NAME.

SCS Engineers

PROJECT NAME:

Louisa County Sanitary Landfill 2023 Annual Sampling Event

PROJECT NUMBER:

27223216

ADDRESS.

1690 All State Court Ste 100

CITY/STATE/ZIP-

West Des Moines, IA 50265

[illegible]

*Reduced Metals List: arsenic, barium, cadmium, cobalt, lead, nickel, selenium, and zinc

Laboratory Comments: (1) For Appendix A and B analysis, report to the reporting limits, not the detection limits. Make sure that the reporting limits are below the EPA's MCLs.
(2) For analysis other than Appendix A and B, report to the detection limits. Please make sure that the detection limits are below the EPA's MCLs.
(3) In the "Result" column for all EDDs, when non-detect, please report "<" the reporting limits or the detection limits instead of indicating with "ND".

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-256961-1

SDG Number: 27223216

Login Number: 256961

List Number: 1

Creator: Homolar, Dana J

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)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Appendix B-2

Data Validation Documentation

Completed by: Benjamin Madson
Date of Sampling: 5/24/2023
Lab Report Date: 6/13/2023
Site Name: Louisa County Sanitary Landfill
SCS Engineers Project Number: 27223216.24
Project Type: Annual HMSP
Lab Report Number: 310-256961

OK NO N/A NOTES

Sample Collection and Sample Handling

Chain of Custody
Temperature
Preservation
Condition
Case Narrative
Holding Times

X			
X			
X			
X			
X			
X			

Analytical Sensitivity and Blanks

Method Blank Detections
Trip Blank Detections

X			No detections.
	X		J-Flag detection of Acetone.

Accuracy

ICV/CCV
LCS/LCSD
MS/MSD
Surrogates (organics only)

	X		The CCV associated with batch 310-389303 recovered outside the control limit for Vinyl Chloride, Chloroethane, and Trichlorofluoromethane. The LCS associated with this CCV passed criteria for the affected analytes.
X			
X			
X			

Precision

QA/QC Sample RPDs
Field Duplicates

X			
X			MW-19; all constituents <50% relative percent difference.

Appendix C

Summary of Groundwater Chemistry

SCS ENGINEERS

Summary of Groundwater Chemistry

Louisa County Sanitary Landfill (Closed) - 58-SDP-01-74C

Total Metals Constituents	Sample Date	MW-14 UPG	MW-18 UPG	MW-5 DNG	MW-7 DNG	MW-13 DNG	MW-15 DNG	MW-17 DNG	MW-19 DNG	SW-2 DNG
Antimony, mg/L (CAS NO - 7440-36-0)	5/28/2014	N/A	N/A	< 0.006	< 0.006	< 0.006	< 0.006	N/A	N/A	N/A
	7/23/2015	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A
	11/19/2015	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A
	4/7/2016	< 0.001	N/A	N/A	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A
	10/25/2016	< 0.001	0.00046*	N/A	< 0.001	< 0.001	< 0.001	0.00031*	< 0.001	N/A
	3/24/2017	< 0.001	0.00048*	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A
	7/20/2017	< 0.001	0.000357*	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A
	3/22/2018	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A
	7/11/2018	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A
	5/29/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.003
Arsenic, mg/L (CAS NO - 7440-38-2)	5/28/2014	N/A	N/A	< 0.001	0.000682*	< 0.001	< 0.001	N/A	N/A	N/A
	7/23/2015	< 0.002	N/A	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A
	11/19/2015	< 0.002	N/A	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A
	4/7/2016	< 0.002	N/A	N/A	0.00107*	< 0.002	< 0.002	N/A	N/A	N/A
	10/25/2016	0.00378	0.00407	N/A	0.00426	0.00326	0.00297	0.0072	0.00316	N/A
	3/24/2017	< 0.002	0.00118*	< 0.002	0.00139*	< 0.002	< 0.002	0.0221	< 0.002	N/A
	7/20/2017	< 0.002	< 0.002	< 0.002	0.000553*	< 0.002	< 0.002	0.00164*	< 0.002	N/A
	3/22/2018	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.00411	< 0.002	N/A
	7/11/2018	0.000727*	< 0.002	< 0.002	0.000596*	< 0.002	< 0.002	0.00689	< 0.002	N/A
	5/29/2019	0.000783*	0.000603*	0.000344*	0.00277	0.000505*	0.000638*	0.00608	0.000663*	0.00243
	9/2/2020	0.00146*	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.000889*	< 0.002	N/A
	9/2/2020	N/A	N/A	N/A	N/A	N/A	N/A	0.000964*	N/A	N/A
	3/3/2021	< 0.002	< 0.002	< 0.002	< 0.002	0.00247	< 0.002	< 0.002	< 0.002	N/A
	3/3/2021	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A
	6/15/2022	< 0.002	< 0.002	< 0.002	0.000771*	< 0.002	< 0.002	< 0.002	< 0.002	N/A
	6/15/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A
	5/24/2023	< 0.002	0.00119*	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002	N/A
Barium, mg/L (CAS NO - 7440-39-3)	5/28/2014	N/A	N/A	0.275	0.284	0.0745	0.118	N/A	N/A	N/A
	7/23/2015	0.0292	N/A	0.316	0.16	0.0417	0.0706	N/A	N/A	N/A
	11/19/2015	0.0251	N/A	0.315	0.157	0.0357	0.0757	N/A	N/A	N/A
	4/7/2016	0.015	N/A	N/A	0.173	0.0467	0.0531	N/A	N/A	N/A
	10/25/2016	0.0242	0.0561	N/A	0.119	0.0394	0.0501	0.0334	0.0271	N/A
	3/24/2017	0.0252	0.0594	0.312	0.229	0.0326	0.0886	0.025	0.0214	N/A
	7/20/2017	0.023	0.037	0.29	0.145	0.0249	0.0772	0.0162	0.0219	N/A
	3/22/2018	0.0369	0.0384	0.31	0.144	0.0366	0.0564	0.0179	0.0171	N/A
	7/11/2018	0.0224	0.0348	0.238	0.141	0.0423	0.0642	0.0175	0.0227	N/A
	5/29/2019	0.0218	0.0268	0.274	0.31	0.0396	0.0558	0.0177	0.0252	0.144
	9/2/2020	0.0354	0.0258	0.328	0.141	0.0606	0.0874	0.018	0.0223	N/A
	9/2/2020	N/A	N/A	N/A	N/A	N/A	N/A	0.0185	N/A	N/A
	3/3/2021	0.0197	0.0261	0.317	0.142	0.0405	0.0632	0.0159	0.0205	N/A
	3/3/2021	N/A	N/A	N/A	N/A	0.0405	N/A	N/A	N/A	N/A
	6/15/2022	0.0303	0.0244	0.296	0.144	0.07	0.0696	0.0189	0.0224	N/A
	6/15/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0225	N/A
	5/24/2023	0.0222	0.0252	N/A	N/A	N/A	N/A	N/A	0.0225	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0239	N/A
Beryllium, mg/L (CAS NO - 7440-41-7)	5/28/2014	N/A	N/A	< 0.001	0.000745*	0.000268*	0.000275*	N/A	N/A	N/A
	7/23/2015	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A
	11/19/2015	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A
	4/7/2016	< 0.001	N/A	N/A	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A
	10/25/2016	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A
	3/24/2017	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A
	7/20/2017	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A
	3/22/2018	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A
	7/11/2018	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A
	5/29/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.001
Cadmium, mg/L (CAS NO - 7440-43-9)	5/28/2014	N/A	N/A	0.00262	0.00327	0.0145	0.000904	N/A	N/A	N/A
	7/23/2015	0.000656	N/A	0.000475*	< 0.0005	0.00169	< 0.0005	N/A	N/A	N/A
	11/19/2015	0.000478*	N/A	0.000575	< 0.0005	< 0.0005	< 0.0005	N/A	N/A	N/A
	4/7/2016	0.000156*	N/A	N/A	< 0.0005	0.000654	< 0.0005	N/A	N/A	N/A
	10/25/2016	0.000255*	0.000117*	N/A	< 0.0005	< 0.0005	0.000075*	0.000043*	0.000245*	N/A
	3/24/2017	0.000319*	0.000075*	0.000135*	< 0.0005	0.000099*	0.000074*	< 0.0005	0.000192*	N/A
	7/20/2017	0.00021*	0.000197*	< 0.0005	< 0.0005	< 0.0005	0.000061*	< 0.0005	0.00017*	N/A
	3/22/2018	0.000401*	0.000084*	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.000104*	N/A
	7/11/2018	< 0.0005	0.000113*	< 0.0005	0.000082*	0.00008*	0.000066*	< 0.0005	0.000177*	N/A
	5/29/2019	0.000404*	< 0.0005	< 0.0005	< 0.0005	0.000201*	< 0.0005	< 0.0005	< 0.0005	< 0.0005
	9/2/2020	0.00015	< 0.0001	0.000182	< 0.0001	0.000055*	0.000053*	< 0.0001	0.000167	N/A
	9/2/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0001	N/A	N/A
	3/3/2021	0.000206	< 0.0001	< 0.0001	< 0.0001	0.000503	< 0.0001	< 0.0001	0.000143	N/A
	3/3/2021	N/A	N/A	N/A	N/A	< 0.0001	N/A	N/A	N/A	N/A
	6/15/2022	0.000161	< 0.0001	0.000183	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.000096*	N/A
	6/15/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000113	N/A
	5/24/2023	0.000856	< 0.0002	N/A	N/A	N/A	N/A	N/A	< 0.0002	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000102*	N/A

SCS ENGINEERS

Summary of Groundwater Chemistry

Louisiana County Sanitary Landfill (Closed) - 58-SDP-01-74C

Total Metals Constituents	Sample Date	MW-14 UPG	MW-18 UPG	MW-5 DNG	MW-7 DNG	MW-13 DNG	MW-15 DNG	MW-17 DNG	MW-19 DNG	SW-2 DNG
Chromium, mg/L (CAS NO - 7440-47-3)	5/28/2014	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A
	7/23/2015	< 0.005	N/A	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A
	11/19/2015	< 0.005	N/A	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A
	4/7/2016	< 0.005	N/A	N/A	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A
	10/25/2016	< 0.005	< 0.005	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	3/24/2017	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	7/20/2017	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	3/22/2018	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	7/11/2018	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	5/29/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00248*
Cobalt, mg/L (CAS NO - 7440-48-4)	5/28/2014	N/A	N/A	< 0.00241	< 0.00241	0.00755	0.0392	N/A	N/A	N/A
	7/23/2015	0.00223	N/A	0.00159	0.000146*	0.00232	0.00104	N/A	N/A	N/A
	11/19/2015	0.00214	N/A	0.00144	0.000135*	0.000826	0.000838	N/A	N/A	N/A
	4/7/2016	0.000195*	N/A	N/A	0.000127*	0.00116	0.000377*	N/A	N/A	N/A
	10/25/2016	0.00106	0.00724	N/A	0.000332*	0.00124	0.00104	0.0061	0.0017	N/A
	3/24/2017	0.000833	0.00256	0.0013	0.000149*	0.00045*	0.000677	0.00301	0.00126	N/A
	7/20/2017	0.0036	0.000447*	0.00119	0.000102*	0.00276	0.000699	0.0024	0.00105	N/A
	3/22/2018	0.00545	0.000611	0.000644	0.000149*	0.00338	< 0.0005	0.00302	0.000935	N/A
	7/11/2018	0.0169	0.000924	0.00168	0.000132*	0.00461	0.000283*	0.00276	0.00144	N/A
	5/29/2019	0.000899*	< 0.001	0.00123	0.000442*	0.000527*	0.000481*	0.00297	0.00358	0.00115
	9/2/2020	0.039	0.000111*	0.00148	0.000126*	0.00028*	0.0032	0.00243	0.00111	N/A
	9/2/2020	N/A	N/A	N/A	N/A	N/A	N/A	0.00254	N/A	N/A
	3/3/2021	0.00489	0.000188*	0.00119	0.000125*	0.0012	< 0.0005	0.00159	0.001	N/A
	3/3/2021	N/A	N/A	N/A	N/A	0.000507	N/A	N/A	N/A	N/A
	6/15/2022	0.00412	< 0.0005	0.00116	0.000199*	0.0037	0.000216*	0.00501	0.00125	N/A
	6/15/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00137	N/A
	5/24/2023	0.000413*	0.000734	N/A	N/A	N/A	N/A	N/A	0.00097	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00118	N/A
Copper, mg/L (CAS NO - 7440-50-8)	5/28/2014	N/A	N/A	< 0.02	0.0184*	< 0.02	0.0133*	N/A	N/A	N/A
	7/23/2015	0.00199*	N/A	0.000642*	< 0.002	< 0.002	0.000744*	N/A	N/A	N/A
	11/19/2015	0.00108*	N/A	0.00095*	< 0.002	0.000496*	0.00067*	N/A	N/A	N/A
	4/7/2016	< 0.005	N/A	N/A	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A
	10/25/2016	< 0.005	< 0.005	N/A	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	3/24/2017	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	7/20/2017	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	3/22/2018	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	7/11/2018	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	5/29/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00339
Lead, mg/L (CAS NO - 7439-92-1)	5/28/2014	N/A	N/A	< 0.004	< 0.004	0.0052	0.00591	N/A	N/A	N/A
	7/23/2015	0.000373*	N/A	0.000157*	< 0.0005	0.00017*	0.000203*	N/A	N/A	N/A
	11/19/2015	0.000131*	N/A	0.000161*	< 0.0005	< 0.0005	< 0.0005	N/A	N/A	N/A
	4/7/2016	< 0.0005	N/A	N/A	< 0.0005	< 0.0005	< 0.0005	N/A	N/A	N/A
	10/25/2016	< 0.0005	< 0.0005	N/A	< 0.0005	< 0.0005	< 0.0005	0.000287*	< 0.0005	N/A
	3/24/2017	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.000508	< 0.0005	N/A
	7/20/2017	< 0.0005	0.00308	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	N/A
	3/22/2018	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.000251*	< 0.0005	N/A
	7/11/2018	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	N/A
	5/29/2019	< 0.0005	< 0.0005	< 0.0005	0.000423*	< 0.0005	< 0.0005	0.000188*	< 0.0005	0.00159
	9/2/2020	0.000571	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	N/A
	9/2/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A
	3/3/2021	0.00021*	< 0.0005	< 0.0005	< 0.0005	0.00124	< 0.0005	< 0.0005	< 0.0005	N/A
	3/3/2021	N/A	N/A	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A
	6/15/2022	0.000718	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005	N/A
	6/15/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005	N/A
	5/24/2023	0.000415*	0.00182	N/A	N/A	N/A	N/A	N/A	0.00038*	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.000709	N/A
Nickel, mg/L (CAS NO - 7440-02-0)	5/28/2014	N/A	N/A	< 0.05	< 0.05	0.0346*	0.0394*	N/A	N/A	N/A
	7/23/2015	0.00467*	N/A	0.0037*	< 0.005	0.0162	0.00733	N/A	N/A	N/A
	11/19/2015	0.00533	N/A	0.00321*	< 0.005	0.0141	0.00942	N/A	N/A	N/A
	4/7/2016	0.00172*	N/A	N/A	< 0.005	0.0274	0.00688	N/A	N/A	N/A
	10/25/2016	0.00406*	0.0104	N/A	< 0.005	0.0066	0.00726	0.00994	0.00451*	N/A
	3/24/2017	0.00412*	0.0106	0.00275*	< 0.005	0.0113	0.0121	0.00358*	0.00304*	N/A
	7/20/2017	0.00333*	0.00501	0.00229*	< 0.005	0.0135	0.00979	0.00263*	0.00243*	N/A
	3/22/2018	0.0189	0.00589	0.0029*	< 0.005	0.0265	0.00667	0.00316*	0.00244*	N/A
	7/11/2018	0.0127	0.00765	0.00346*	0.00578	0.0109	0.0133	0.0045*	0.00345*	N/A
	5/29/2019	0.00532	0.00222	0.00265	0.000649*	0.00701	0.00608	0.00321	0.00265	0.00381
	9/2/2020	0.00978	< 0.005	0.00277*	< 0.005	0.00725	0.0104	0.00243*	0.00298*	N/A
	9/2/2020	N/A	N/A	N/A	N/A	N/A	N/A	0.00258*	N/A	N/A
	3/3/2021	0.00432*	< 0.005	< 0.005	< 0.005	0.0134	0.00678	< 0.005	0.00195*	N/A
	3/3/2021	N/A	N/A	N/A	N/A	0.0119	N/A	N/A	N/A	N/A
	6/15/2022	0.00567	< 0.005	0.00257*	< 0.005	0.01	0.00753	0.00245*	0.00272*	N/A
	6/15/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00267*	N/A
	5/24/2023	0.00594	0.00193*	N/A	N/A	N/A	N/A	N/A	0.00297*	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00356*	N/A

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Summary of Groundwater Chemistry

Louisia County Sanitary Landfill (Closed) - 58-SDP-01-74C

	Sample Date	MW-14 UPG	MW-18 UPG	MW-5 DNG	MW-7 DNG	MW-13 DNG	MW-15 DNG	MW-17 DNG	MW-19 DNG	SW-2 DNG
Total Metals Constituents										
Selenium, mg/L (CAS NO - 7782-49-2)	5/28/2014	N/A	N/A	< 0.005	< 0.005	< 0.005	0.00058*	N/A	N/A	N/A
	7/23/2015	< 0.005	N/A	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A
	11/19/2015	< 0.005	N/A	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A
	4/7/2016	< 0.005	N/A	N/A	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A
	10/25/2016	0.00643	0.00551	N/A	0.00405*	0.00422*	0.00338*	0.00483*	0.0044*	N/A
	3/24/2017	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	7/20/2017	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	3/22/2018	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00664	< 0.005	< 0.005	N/A
	7/11/2018	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	5/29/2019	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025	0.00169*
	9/2/2020	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	9/2/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A
	3/3/2021	< 0.005	< 0.005	< 0.005	< 0.005	0.00424*	< 0.005	< 0.005	< 0.005	N/A
	3/3/2021	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A
	6/15/2022	< 0.005	< 0.005	< 0.005	0.00132*	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	6/15/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.005	N/A
	5/24/2023	< 0.005	0.00457*	N/A	N/A	N/A	N/A	N/A	0.00348*	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00311*	N/A
Silver, mg/L (CAS NO - 7440-22-4)	5/28/2014	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A
	7/23/2015	< 0.001	N/A	< 0.001	0.000064*	0.000058*	< 0.001	N/A	N/A	N/A
	11/19/2015	< 0.001	N/A	0.000076*	0.000085*	< 0.001	< 0.001	N/A	N/A	N/A
	4/7/2016	< 0.001	N/A	N/A	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A
	10/25/2016	< 0.001	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A
	3/24/2017	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A
	7/20/2017	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.000172*	< 0.001	< 0.001	N/A
	3/22/2018	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A
	7/11/2018	< 0.001	0.000356*	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A
	5/29/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.0005
Thallium, mg/L (CAS NO - 7440-28-0)	5/28/2014	N/A	N/A	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A
	7/23/2015	< 0.001	N/A	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A
	11/19/2015	0.000065*	N/A	0.000036*	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A
	4/7/2016	0.000036*	N/A	N/A	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A
	10/25/2016	0.000054*	0.000028*	N/A	< 0.001	< 0.001	< 0.001	< 0.001	0.000382*	N/A
	3/24/2017	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.000267*	N/A
	7/20/2017	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	0.000284*	N/A
	3/22/2018	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A
	7/11/2018	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A
	5/29/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.002
Vanadium, mg/L (CAS NO - 7440-62-2)	5/28/2014	N/A	N/A	< 0.05	0.0105*	0.00543*	0.00546*	N/A	N/A	N/A
	7/23/2015	0.000819*	N/A	0.000857*	0.000574*	0.00048*	0.000474*	N/A	N/A	N/A
	11/19/2015	0.000652*	N/A	0.000795*	< 0.005	0.000744*	< 0.005	N/A	N/A	N/A
	4/7/2016	0.000332*	N/A	N/A	0.000634*	0.000919*	< 0.005	N/A	N/A	N/A
	10/25/2016	0.000397*	< 0.005	N/A	< 0.005	< 0.005	0.000382*	< 0.005	< 0.005	N/A
	3/24/2017	0.00084*	< 0.005	< 0.005	0.000994*	< 0.005	< 0.005	0.00173*	< 0.005	N/A
	7/20/2017	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	3/22/2018	0.00146*	0.00123*	0.00123*	0.00155*	0.00145*	0.0012*	0.00166*	0.00105*	N/A
	7/11/2018	< 0.005	< 0.005	< 0.005	0.000536*	< 0.005	< 0.005	< 0.005	< 0.005	N/A
	5/29/2019	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.00764
Zinc, mg/L (CAS NO - 7440-66-6)	5/28/2014	N/A	N/A	< 0.02	< 0.02	< 0.02	< 0.02	N/A	N/A	N/A
	7/23/2015	< 0.01	N/A	< 0.01	< 0.01	< 0.01	< 0.01	N/A	N/A	N/A
	11/19/2015	< 0.01	N/A	< 0.01	< 0.01	< 0.01	< 0.01	N/A	N/A	N/A
	4/7/2016	0.013	N/A	N/A	< 0.01	0.0187	< 0.01	N/A	N/A	N/A
	10/25/2016	< 0.01	< 0.01	N/A	< 0.01	< 0.01	< 0.01	0.00885*	0.0089*	N/A
	3/24/2017	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A
	7/20/2017	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A
	3/22/2018	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A
	7/11/2018	< 0.02	< 0.02	< 0.02	0.0222	< 0.02	< 0.02	< 0.02	< 0.02	N/A
	5/29/2019	0.00752*	0.00759*	< 0.02	0.0075*	0.0073*	0.0239	0.00747*	0.00735*	0.0393
	9/2/2020	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A
	9/2/2020	N/A	N/A	N/A	N/A	N/A	N/A	< 0.02	N/A	N/A
	3/3/2021	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A
	3/3/2021	N/A	N/A	N/A	N/A	< 0.02	N/A	N/A	N/A	N/A
	6/15/2022	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	N/A
	6/15/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.02	N/A
	5/24/2023	< 0.02	< 0.02	N/A	N/A	N/A	N/A	N/A	0.00868*	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	0.0074*	N/A

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Summary of Groundwater Chemistry

Louisa County Sanitary Landfill (Closed) - 58-SDP-01-74C

	Sample Date	MW-14 UPG	MW-18 UPG	MW-5 DNG	MW-7 DNG	MW-13 DNG	MW-15 DNG	MW-17 DNG	MW-19 DNG	SW-2 DNG
Total Metals Constituents										
Total Suspended Solids, mg/L (CAS NO - TSS)	5/28/2014	N/A	N/A	53	930	525	396	N/A	N/A	N/A
	7/23/2015	11.6	N/A	17.8	45.6	15.3	10.5	N/A	N/A	N/A
	11/19/2015	3.25	N/A	19.1	24.3	5.63	3.5	N/A	N/A	N/A
	4/7/2016	< 1.88	N/A	N/A	52	24.5	< 1.88	N/A	N/A	N/A
	10/25/2016	0.875*	5.25	N/A	31.6	1*	2.25	33.4	0.75*	N/A
	3/24/2017	2.13	1.13*	3.5	57.9	7.88	2.25	77.6	2.63	N/A
	7/20/2017	1.25*	6.75	0.625*	27	< 1.88	1.5*	2.38	1.38*	N/A
	3/22/2018	2.25	0.875*	3.75	N/A	6.12	< 1.88	14.5	0.75*	N/A
	7/11/2018	2.75	< 1.88	1.25*	41	3.87	1.88	19.3	3.13	N/A
	5/29/2019	< 1.88	< 1.88	2.13	102	3.38	< 1.88	18.3	4.5	57.6
	9/2/2020	6.4	< 1.88	6.88	24	3.5	117	5.8	2.38	N/A
	9/2/2020	N/A	N/A	N/A	N/A	N/A	N/A	6.4	N/A	N/A
	3/3/2021	2.25	1.25*	< 1.88	21.6	2.13	< 1.88	2.25	1.13*	N/A
	3/3/2021	N/A	N/A	N/A	N/A	2.88	N/A	N/A	N/A	N/A
	6/15/2022	4.5	< 1.88	1.63*	32	4.5	< 1.88	10.3	1*	N/A
	6/15/2022	N/A	N/A	N/A	N/A	N/A	N/A	N/A	1.13*	N/A
	5/24/2023	1*	2.5	N/A	N/A	N/A	N/A	N/A	2.38	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	3.63	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

Louisiana County Sanitary Landfill (Closed) - 58-SDP-01-74C

Appendix I VOC Constituents	Sample Date	MW-14 UPG	MW-18 UPG	MW-5 DNG	MW-7 DNG	MW-13 DNG	MW-15 DNG	MW-17 DNG	MW-19 DNG	SW-2 DNG
1,1,1,2-Tetrachloroethane, ug/L (CAS NO - 630-20-6)	5/28/2014	N/A	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	7/23/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	11/19/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	4/7/2016	<1	N/A	N/A	<1	<1	<1	N/A	N/A	N/A
	10/25/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A
	3/24/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/20/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	3/22/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/11/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	5/29/2019	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1
	9/2/2020	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	3/3/2021	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	6/15/2022	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
1,1,1-Trichloroethane, ug/L (CAS NO - 71-55-6)	5/28/2014	N/A	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	7/23/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	11/19/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	4/7/2016	<1	N/A	N/A	<1	<1	<1	N/A	N/A	N/A
	10/25/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A
	3/24/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/20/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	3/22/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/11/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	5/29/2019	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1
	9/2/2020	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	3/3/2021	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	6/15/2022	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
1,1,2,2-Tetrachloroethane, ug/L (CAS NO - 79-34-5)	5/28/2014	N/A	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	7/23/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	11/19/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	4/7/2016	<1	N/A	N/A	<1	<1	<1	N/A	N/A	N/A
	10/25/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A
	3/24/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/20/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	3/22/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/11/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	5/29/2019	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1
	9/2/2020	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	3/3/2021	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	6/15/2022	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
1,1,2-Trichloroethane, ug/L (CAS NO - 79-00-5)	5/28/2014	N/A	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	7/23/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	11/19/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	4/7/2016	<1	N/A	N/A	<1	<1	<1	N/A	N/A	N/A
	10/25/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A
	3/24/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/20/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	3/22/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/11/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	5/29/2019	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1
	9/2/2020	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	3/3/2021	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	6/15/2022	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
1,1-Dichloroethane, ug/L (CAS NO - 75-34-3)	5/28/2014	N/A	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	7/23/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	11/19/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	4/7/2016	<1	N/A	N/A	<1	<1	<1	N/A	N/A	N/A
	10/25/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A
	3/24/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/20/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	3/22/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/11/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	5/29/2019	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1
	9/2/2020	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	3/3/2021	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	6/15/2022	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A

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Summary of Groundwater Chemistry

Louisa County Sanitary Landfill (Closed) - 58-SDP-01-74C

Appendix I VOC Constituents	Sample Date	MW-14 UPG	MW-18 UPG	MW-5 DNG	MW-7 DNG	MW-13 DNG	MW-15 DNG	MW-17 DNG	MW-19 DNG	SW-2 DNG
1,1-Dichloroethene, ug/L (CAS NO - 75-35-4)	5/28/2014	N/A	N/A	< 2	< 2	< 2	< 2	N/A	N/A	N/A
	7/23/2015	< 2	N/A	< 2	< 2	< 2	< 2	N/A	N/A	N/A
	11/19/2015	< 2	N/A	< 2	< 2	< 2	< 2	N/A	N/A	N/A
	4/7/2016	< 2	N/A	N/A	< 2	< 2	< 2	N/A	N/A	N/A
	10/25/2016	< 2	< 2	N/A	< 2	< 2	< 2	< 2	< 2	N/A
	3/24/2017	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	N/A
	7/20/2017	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	N/A
	3/22/2018	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	N/A
	7/11/2018	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	N/A
	5/29/2019	< 2	N/A	N/A	N/A	N/A	N/A	N/A	< 2	< 2
	9/2/2020	< 2	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A
	3/3/2021	< 2	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A
	6/15/2022	< 2	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A
	5/24/2023	< 2	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A
1,2,3-Trichloropropane, ug/L (CAS NO - 96-18-4)	5/28/2014	N/A	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	7/23/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	11/19/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	4/7/2016	< 1	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A
	10/25/2016	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A
	3/24/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/20/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	3/22/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/11/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	5/29/2019	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1
	9/2/2020	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	3/3/2021	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	6/15/2022	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
1,2-Dibromo-3-Chloropropane, ug/L (CAS NO - 96-12-8)	5/28/2014	N/A	N/A	< 0.12	< 0.12	< 0.12	< 0.12	N/A	N/A	N/A
	7/23/2015	< 0.5	N/A	< 0.5	< 0.5	< 0.5	< 0.5	N/A	N/A	N/A
	11/19/2015	< 0.5	N/A	< 0.5	< 0.5	< 0.5	< 0.5	N/A	N/A	N/A
	4/7/2016	< 0.5	N/A	N/A	< 0.5	< 0.5	< 0.5	N/A	N/A	N/A
	10/25/2016	< 0.5	< 0.5	N/A	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
	3/24/2017	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
	7/20/2017	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
	3/22/2018	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
	7/11/2018	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
	5/29/2019	< 1.2	N/A	N/A	N/A	N/A	N/A	N/A	< 1.2	< 1.2
	9/2/2020	< 1.2	N/A	N/A	N/A	N/A	N/A	N/A	< 1.2	N/A
	3/3/2021	< 1.2	N/A	N/A	N/A	N/A	N/A	N/A	< 1.2	N/A
	6/15/2022	< 1.2	N/A	N/A	N/A	N/A	N/A	N/A	< 1.2	N/A
	5/24/2023	< 1.2	N/A	N/A	N/A	N/A	N/A	N/A	< 1.2	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1.2	N/A
1,2-Dibromoethane [EDB], ug/L (CAS NO - 106-93-4)	5/28/2014	N/A	N/A	< 0.13	< 0.13	< 0.13	< 0.13	N/A	N/A	N/A
	7/23/2015	< 0.13	N/A	< 0.13	< 0.13	< 0.13	< 0.13	N/A	N/A	N/A
	11/19/2015	< 0.13	N/A	< 0.13	< 0.13	< 0.13	< 0.13	N/A	N/A	N/A
	4/7/2016	< 0.13	N/A	N/A	< 0.13	< 0.13	< 0.13	N/A	N/A	N/A
	10/25/2016	< 0.13	< 0.13	N/A	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	N/A
	3/24/2017	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	N/A
	7/20/2017	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	N/A
	3/22/2018	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	N/A
	7/11/2018	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	< 0.13	N/A
	5/29/2019	< 0.34	N/A	N/A	N/A	N/A	N/A	N/A	< 0.34	< 0.34
	9/2/2020	< 0.34	N/A	N/A	N/A	N/A	N/A	N/A	< 0.34	N/A
	3/3/2021	< 0.34	N/A	N/A	N/A	N/A	N/A	N/A	< 0.34	N/A
	6/15/2022	< 0.34	N/A	N/A	N/A	N/A	N/A	N/A	< 0.34	N/A
	5/24/2023	< 0.34	N/A	N/A	N/A	N/A	N/A	N/A	< 0.34	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.34	N/A
1,2-Dichlorobenzene, ug/L (CAS NO - 95-50-1)	5/28/2014	N/A	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	7/23/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	11/19/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	4/7/2016	< 1	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A
	10/25/2016	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A
	3/24/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/20/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	3/22/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/11/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	5/29/2019	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1
	9/2/2020	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	3/3/2021	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	6/15/2022	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A

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Summary of Groundwater Chemistry

Louisa County Sanitary Landfill (Closed) - 58-SDP-01-74C

Appendix I VOC Constituents	Sample Date	MW-14 UPG	MW-18 UPG	MW-5 DNG	MW-7 DNG	MW-13 DNG	MW-15 DNG	MW-17 DNG	MW-19 DNG	SW-2 DNG
1,2-Dichloroethane, ug/L (CAS NO - 107-06-2)	5/28/2014	N/A	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	7/23/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	11/19/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	4/7/2016	< 1	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A
	10/25/2016	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A
	3/24/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/20/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	3/22/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/11/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	1.13	N/A
	5/29/2019	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1
	9/2/2020	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	3/3/2021	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	6/15/2022	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
1,2-Dichloropropane, ug/L (CAS NO - 78-87-5)	5/28/2014	N/A	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	7/23/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	11/19/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	4/7/2016	< 1	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A
	10/25/2016	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A
	3/24/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/20/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	3/22/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/11/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	5/29/2019	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1
	9/2/2020	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	3/3/2021	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	6/15/2022	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
1,4-Dichlorobenzene, ug/L (CAS NO - 106-46-7)	5/28/2014	N/A	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	7/23/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	11/19/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	4/7/2016	< 1	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A
	10/25/2016	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A
	3/24/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/20/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	3/22/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/11/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	5/29/2019	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1
	9/2/2020	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	3/3/2021	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	6/15/2022	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
2-Butanone, ug/L (CAS NO - 78-93-3)	5/28/2014	N/A	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	7/23/2015	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	11/19/2015	< 10	N/A	< 10	< 10	< 10	1.53*	N/A	N/A	N/A
	4/7/2016	< 10	N/A	N/A	< 10	< 10	< 10	N/A	N/A	N/A
	10/25/2016	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A
	3/24/2017	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	7/20/2017	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	3/22/2018	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	7/11/2018	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	5/29/2019	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10
	9/2/2020	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	3/3/2021	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	6/15/2022	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
2-Hexanone, ug/L (CAS NO - 591-78-6)	5/28/2014	N/A	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	7/23/2015	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	11/19/2015	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	4/7/2016	< 10	N/A	N/A	< 10	< 10	< 10	N/A	N/A	N/A
	10/25/2016	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A
	3/24/2017	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	7/20/2017	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	3/22/2018	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	7/11/2018	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	5/29/2019	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10
	9/2/2020	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	3/3/2021	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	6/15/2022	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A

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Summary of Groundwater Chemistry

Louisa County Sanitary Landfill (Closed) - 58-SDP-01-74C

Appendix I VOC Constituents	Sample Date	MW-14 UPG	MW-18 UPG	MW-5 DNG	MW-7 DNG	MW-13 DNG	MW-15 DNG	MW-17 DNG	MW-19 DNG	SW-2 DNG
4-Methyl-2-Pentanone, ug/L (CAS NO - 108-10-1)	5/28/2014	N/A	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	7/23/2015	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	11/19/2015	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	4/7/2016	< 10	N/A	N/A	< 10	< 10	< 10	N/A	N/A	N/A
	10/25/2016	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A
	3/24/2017	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	7/20/2017	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	3/22/2018	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	7/11/2018	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	5/29/2019	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10
	9/2/2020	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	3/3/2021	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	6/15/2022	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
Acetone, ug/L (CAS NO - 67-64-1)	5/28/2014	N/A	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	7/23/2015	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	11/19/2015	4.54*	N/A	< 10	2.08*	< 10	1.99*	N/A	N/A	N/A
	4/7/2016	2.53*	N/A	N/A	6.13*	5.3*	1.84*	N/A	N/A	N/A
	10/25/2016	< 10	< 10	N/A	< 10	< 10	< 10	5.52*	< 10	N/A
	3/24/2017	< 10	2.24*	2.53*	< 10	2.27*	< 10	1.96*	< 10	N/A
	7/20/2017	3.34*	3.12*	2.62*	5.78*	4.84*	5.07*	2.37*	4.97*	N/A
	3/22/2018	< 10	< 10	2.82*	< 10	2.02*	< 10	< 10	< 10	N/A
	7/11/2018	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	5/29/2019	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10
	9/2/2020	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	3/3/2021	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	6/15/2022	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
Acrylonitrile, ug/L (CAS NO - 107-13-1)	5/28/2014	N/A	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	7/23/2015	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	11/19/2015	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	4/7/2016	< 10	N/A	N/A	< 10	< 10	< 10	N/A	N/A	N/A
	10/25/2016	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A
	3/24/2017	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	7/20/2017	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	3/22/2018	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	7/11/2018	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	5/29/2019	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10
	9/2/2020	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	3/3/2021	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	6/15/2022	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
Benzene, ug/L (CAS NO - 71-43-2)	1/1/1993	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	4/1/1993	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	7/1/1993	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	10/1/1993	< 1	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	5/28/2014	N/A	N/A	< 0.5	< 0.5	< 0.5	< 0.5	N/A	N/A	N/A
	7/23/2015	< 0.5	N/A	< 0.5	< 0.5	< 0.5	< 0.5	N/A	N/A	N/A
	11/19/2015	< 0.5	N/A	< 0.5	< 0.5	< 0.5	< 0.5	N/A	N/A	N/A
	4/7/2016	0.167*	N/A	N/A	< 0.5	0.225*	0.164*	N/A	N/A	N/A
	10/25/2016	< 0.5	< 0.5	N/A	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
	3/24/2017	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
	7/20/2017	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
	3/22/2018	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
	7/11/2018	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	< 0.5	N/A
	5/29/2019	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	< 0.5
	9/2/2020	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	3/3/2021	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	6/15/2022	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	5/24/2023	< 0.5	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A

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Summary of Groundwater Chemistry

Louisa County Sanitary Landfill (Closed) - 58-SDP-01-74C

Appendix I VOC Constituents	Sample Date	MW-14 UPG	MW-18 UPG	MW-5 DNG	MW-7 DNG	MW-13 DNG	MW-15 DNG	MW-17 DNG	MW-19 DNG	SW-2 DNG
Bromochloromethane, ug/L (CAS NO - 74-97-5)	5/28/2014	N/A	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A
	7/23/2015	< 5	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A
	11/19/2015	< 5	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A
	4/7/2016	< 5	N/A	N/A	< 5	< 5	< 5	N/A	N/A	N/A
	10/25/2016	< 5	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A
	3/24/2017	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	7/20/2017	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	3/22/2018	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	7/11/2018	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	5/29/2019	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	< 5
	9/2/2020	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	3/3/2021	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	6/15/2022	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	5/24/2023	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
Bromodichloromethane, ug/L (CAS NO - 75-27-4)	5/28/2014	N/A	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	7/23/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	11/19/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	4/7/2016	< 1	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A
	10/25/2016	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A
	3/24/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/20/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	3/22/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/11/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	5/29/2019	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1
	9/2/2020	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	3/3/2021	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	6/15/2022	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
Bromoform, ug/L (CAS NO - 75-25-2)	5/28/2014	N/A	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A
	7/23/2015	< 5	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A
	11/19/2015	< 5	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A
	4/7/2016	< 5	N/A	N/A	< 5	< 5	< 5	N/A	N/A	N/A
	10/25/2016	< 5	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A
	3/24/2017	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	7/20/2017	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	3/22/2018	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	7/11/2018	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	5/29/2019	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	< 5
	9/2/2020	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	3/3/2021	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	6/15/2022	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	5/24/2023	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
Bromomethane, ug/L (CAS NO - 74-83-9)	5/28/2014	N/A	N/A	< 4	< 4	< 4	< 4	N/A	N/A	N/A
	7/23/2015	< 4	N/A	< 4	< 4	< 4	< 4	N/A	N/A	N/A
	11/19/2015	< 4	N/A	0.409*	0.279*	0.343*	< 4	N/A	N/A	N/A
	4/7/2016	0.264*	N/A	N/A	0.374*	0.246*	0.329*	N/A	N/A	N/A
	10/25/2016	< 4	< 4	N/A	< 4	< 4	< 4	< 4	< 4	N/A
	3/24/2017	< 4	0.277*	< 4	< 4	0.273*	< 4	< 4	< 4	N/A
	7/20/2017	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	N/A
	3/22/2018	< 4	< 4	< 4	< 4	< 4	< 4	< 4	0.232*	N/A
	7/11/2018	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	N/A
	5/29/2019	< 4	N/A	N/A	N/A	N/A	N/A	N/A	< 4	< 4
	9/2/2020	< 4	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A
	3/3/2021	< 4	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A
	6/15/2022	< 4	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A
	5/24/2023	< 4	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A
Carbon Disulfide, ug/L (CAS NO - 75-15-0)	5/28/2014	N/A	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	7/23/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	11/19/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	4/7/2016	< 1	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A
	10/25/2016	< 1	0.165*	N/A	< 1	< 1	< 1	< 1	< 1	N/A
	3/24/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/20/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	3/22/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/11/2018	< 1	< 1	< 1	< 1	1.14	< 1	0.783*	< 1	N/A
	5/29/2019	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1
	9/2/2020	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	3/3/2021	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	6/15/2022	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A

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Summary of Groundwater Chemistry

Louisa County Sanitary Landfill (Closed) - 58-SDP-01-74C

Appendix I VOC Constituents	Sample Date	MW-14 UPG	MW-18 UPG	MW-5 DNG	MW-7 DNG	MW-13 DNG	MW-15 DNG	MW-17 DNG	MW-19 DNG	SW-2 DNG
Carbon Tetrachloride, ug/L (CAS NO - 56-23-5)	5/28/2014	N/A	N/A	< 2	< 2	< 2	< 2	N/A	N/A	N/A
	7/23/2015	< 2	N/A	< 2	< 2	< 2	< 2	N/A	N/A	N/A
	11/19/2015	< 2	N/A	< 2	< 2	< 2	< 2	N/A	N/A	N/A
	4/7/2016	< 2	N/A	N/A	< 2	< 2	< 2	N/A	N/A	N/A
	10/25/2016	< 2	< 2	N/A	< 2	< 2	< 2	< 2	< 2	N/A
	3/24/2017	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	N/A
	7/20/2017	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	N/A
	3/22/2018	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	N/A
	7/11/2018	< 2	< 2	< 2	< 2	< 2	< 2	< 2	< 2	N/A
	5/29/2019	< 2	N/A	N/A	N/A	N/A	N/A	N/A	< 2	< 2
	9/2/2020	< 2	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A
	3/3/2021	< 2	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A
	6/15/2022	< 2	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A
	5/24/2023	< 2	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 2	N/A
Chlorobenzene, ug/L (CAS NO - 108-90-7)	5/28/2014	N/A	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	7/23/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	11/19/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	4/7/2016	< 1	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A
	10/25/2016	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A
	3/24/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/20/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	3/22/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/11/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	5/29/2019	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1
	9/2/2020	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	3/3/2021	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	6/15/2022	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
Chlorodibromomethane, ug/L (CAS NO - 124-48-1)	5/28/2014	N/A	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A
	7/23/2015	< 5	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A
	11/19/2015	< 5	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A
	4/7/2016	< 5	N/A	N/A	< 5	< 5	< 5	N/A	N/A	N/A
	10/25/2016	< 5	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A
	3/24/2017	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	7/20/2017	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	3/22/2018	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	7/11/2018	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	5/29/2019	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	< 5
	9/2/2020	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	3/3/2021	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	6/15/2022	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	5/24/2023	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
Chloroethane, ug/L (CAS NO - 75-00-3)	5/28/2014	N/A	N/A	< 4	< 4	< 4	< 4	N/A	N/A	N/A
	7/23/2015	< 4	N/A	< 4	< 4	< 4	< 4	N/A	N/A	N/A
	11/19/2015	< 4	N/A	< 4	< 4	< 4	< 4	N/A	N/A	N/A
	4/7/2016	< 4	N/A	N/A	< 4	< 4	< 4	N/A	N/A	N/A
	10/25/2016	< 4	< 4	N/A	< 4	< 4	< 4	< 4	< 4	N/A
	3/24/2017	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	N/A
	7/20/2017	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	N/A
	3/22/2018	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	N/A
	7/11/2018	< 4	< 4	< 4	< 4	< 4	< 4	< 4	< 4	N/A
	5/29/2019	< 4	N/A	N/A	N/A	N/A	N/A	N/A	< 4	< 4
	9/2/2020	< 4	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A
	3/3/2021	< 4	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A
	6/15/2022	< 4	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A
	5/24/2023	< 4	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A
Chloroform, ug/L (CAS NO - 67-66-3)	5/28/2014	N/A	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	7/23/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	11/19/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	4/7/2016	< 1	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A
	10/25/2016	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A
	3/24/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/20/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	3/22/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/11/2018	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	N/A
	5/29/2019	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	< 3
	9/2/2020	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A
	3/3/2021	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A
	6/15/2022	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A
	5/24/2023	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A

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Summary of Groundwater Chemistry

Louisa County Sanitary Landfill (Closed) - 58-SDP-01-74C

Appendix I VOC Constituents	Sample Date	MW-14 UPG	MW-18 UPG	MW-5 DNG	MW-7 DNG	MW-13 DNG	MW-15 DNG	MW-17 DNG	MW-19 DNG	SW-2 DNG
Chloromethane, ug/L (CAS NO - 74-87-3)	5/28/2014	N/A	N/A	< 3	< 3	< 3	< 3	N/A	N/A	N/A
	7/23/2015	< 3	N/A	< 3	< 3	< 3	< 3	N/A	N/A	N/A
	11/19/2015	< 3	N/A	< 3	< 3	< 3	< 3	N/A	N/A	N/A
	4/7/2016	< 3	N/A	N/A	< 3	< 3	< 3	N/A	N/A	N/A
	10/25/2016	< 3	< 3	N/A	< 3	< 3	< 3	< 3	< 3	N/A
	3/24/2017	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	N/A
	7/20/2017	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	N/A
	3/22/2018	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	N/A
	7/11/2018	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	N/A
	5/29/2019	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	< 3
	9/2/2020	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A
	3/3/2021	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A
	6/15/2022	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A
	5/24/2023	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A
cis-1,2-Dichloroethene, ug/L (CAS NO - 156-59-2)	5/28/2014	N/A	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	7/23/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	11/19/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	4/7/2016	< 1	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A
	10/25/2016	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A
	3/24/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/20/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	3/22/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/11/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	5/29/2019	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1
	9/2/2020	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	3/3/2021	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	6/15/2022	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
cis-1,3-Dichloropropene, ug/L (CAS NO - 10061-01-5)	5/28/2014	N/A	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A
	7/23/2015	< 5	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A
	11/19/2015	< 5	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A
	4/7/2016	< 5	N/A	N/A	< 5	< 5	< 5	N/A	N/A	N/A
	10/25/2016	< 5	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A
	3/24/2017	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	7/20/2017	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	3/22/2018	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	7/11/2018	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	5/29/2019	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	< 5
	9/2/2020	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	3/3/2021	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	6/15/2022	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	5/24/2023	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
Ethylbenzene, ug/L (CAS NO - 100-41-4)	5/28/2014	N/A	N/A	0.219*	< 1	< 1	< 1	N/A	N/A	N/A
	7/23/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	11/19/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	4/7/2016	< 1	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A
	10/25/2016	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A
	3/24/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/20/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	3/22/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/11/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	5/29/2019	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1
	9/2/2020	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	3/3/2021	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	6/15/2022	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
Iodomethane, ug/L (CAS NO - 74-88-4)	5/28/2014	N/A	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	7/23/2015	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	11/19/2015	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	4/7/2016	< 10	N/A	N/A	< 10	< 10	< 10	N/A	N/A	N/A
	10/25/2016	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A
	3/24/2017	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	7/20/2017	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	3/22/2018	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	7/11/2018	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	5/29/2019	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10
	9/2/2020	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	3/3/2021	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	6/15/2022	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A

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Summary of Groundwater Chemistry

Louisa County Sanitary Landfill (Closed) - 58-SDP-01-74C

Appendix I VOC Constituents	Sample Date	MW-14 UPG	MW-18 UPG	MW-5 DNG	MW-7 DNG	MW-13 DNG	MW-15 DNG	MW-17 DNG	MW-19 DNG	SW-2 DNG
Methylene Bromide, ug/L (CAS NO - 74-95-3)	5/28/2014	N/A	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	7/23/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	11/19/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	4/7/2016	<1	N/A	N/A	<1	<1	<1	N/A	N/A	N/A
	10/25/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A
	3/24/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/20/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	3/22/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/11/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	5/29/2019	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1
	9/2/2020	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	3/3/2021	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	6/15/2022	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
Methylene Chloride, ug/L (CAS NO - 75-09-2)	5/28/2014	N/A	N/A	<5	<5	<5	<5	N/A	N/A	N/A
	7/23/2015	<5	N/A	<5	<5	<5	<5	N/A	N/A	N/A
	11/19/2015	0.561*	N/A	<5	0.695*	<5	0.309*	N/A	N/A	N/A
	4/7/2016	0.378*	N/A	N/A	<5	0.617*	<5	N/A	N/A	N/A
	10/25/2016	0.265*	0.328*	N/A	0.208*	<5	<5	<5	0.252*	N/A
	3/24/2017	<5	<5	<5	<5	<5	<5	<5	<5	N/A
	7/20/2017	0.294*	0.18*	<5	<5	<5	0.207*	<5	0.232*	N/A
	3/22/2018	<5	<5	<5	<5	<5	<5	<5	<5	N/A
	7/11/2018	<5	<5	<5	<5	<5	<5	<5	<5	N/A
	5/29/2019	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5	<5
	9/2/2020	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A
	3/3/2021	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A
	6/15/2022	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A
	5/24/2023	<5	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<5	N/A
Styrene, ug/L (CAS NO - 100-42-5)	5/28/2014	N/A	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	7/23/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	11/19/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	4/7/2016	<1	N/A	N/A	<1	<1	<1	N/A	N/A	N/A
	10/25/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A
	3/24/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/20/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	3/22/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/11/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	5/29/2019	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1
	9/2/2020	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	3/3/2021	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	6/15/2022	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
Tetrachloroethene, ug/L (CAS NO - 127-18-4)	5/28/2014	N/A	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	7/23/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	11/19/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	4/7/2016	<1	N/A	N/A	<1	<1	<1	N/A	N/A	N/A
	10/25/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A
	3/24/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/20/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	3/22/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/11/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	5/29/2019	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1
	9/2/2020	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	3/3/2021	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	6/15/2022	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
Toluene, ug/L (CAS NO - 108-88-3)	5/28/2014	N/A	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	7/23/2015	<1	N/A	0.454*	<1	0.4*	<1	N/A	N/A	N/A
	11/19/2015	<1	N/A	<1	<1	<1	<1	N/A	N/A	N/A
	4/7/2016	<1	N/A	N/A	0.192*	<1	<1	N/A	N/A	N/A
	10/25/2016	<1	<1	N/A	<1	<1	<1	<1	<1	N/A
	3/24/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/20/2017	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	3/22/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	7/11/2018	<1	<1	<1	<1	<1	<1	<1	<1	N/A
	5/29/2019	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	<1
	9/2/2020	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	3/3/2021	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	6/15/2022	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	<1	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	<1	N/A

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Summary of Groundwater Chemistry

Louisa County Sanitary Landfill (Closed) - 58-SDP-01-74C

Appendix I VOC Constituents	Sample Date	MW-14 UPG	MW-18 UPG	MW-5 DNG	MW-7 DNG	MW-13 DNG	MW-15 DNG	MW-17 DNG	MW-19 DNG	SW-2 DNG
trans-1,2-Dichloroethene, ug/L (CAS NO - 156-60-5)	5/28/2014	N/A	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	7/23/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	11/19/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	4/7/2016	< 1	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A
	10/25/2016	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A
	3/24/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/20/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	3/22/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/11/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	5/29/2019	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1
	9/2/2020	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	3/3/2021	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	6/15/2022	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
trans-1,3-Dichloropropene, ug/L (CAS NO - 10061-02-6)	5/28/2014	N/A	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A
	7/23/2015	< 5	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A
	11/19/2015	< 5	N/A	< 5	< 5	< 5	< 5	N/A	N/A	N/A
	4/7/2016	< 5	N/A	N/A	< 5	< 5	< 5	N/A	N/A	N/A
	10/25/2016	< 5	< 5	N/A	< 5	< 5	< 5	< 5	< 5	N/A
	3/24/2017	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	7/20/2017	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	3/22/2018	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	7/11/2018	< 5	< 5	< 5	< 5	< 5	< 5	< 5	< 5	N/A
	5/29/2019	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	< 5
	9/2/2020	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	3/3/2021	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	6/15/2022	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	5/24/2023	< 5	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 5	N/A
trans-1,4-Dichloro-2-Butene, ug/L (CAS NO - 110-57-6)	5/28/2014	N/A	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	7/23/2015	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	11/19/2015	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	4/7/2016	< 10	N/A	N/A	< 10	< 10	< 10	N/A	N/A	N/A
	10/25/2016	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A
	3/24/2017	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	7/20/2017	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	3/22/2018	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	7/11/2018	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	5/29/2019	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10
	9/2/2020	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	3/3/2021	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	6/15/2022	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
Trichloroethene, ug/L (CAS NO - 79-01-6)	5/28/2014	N/A	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	7/23/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	11/19/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	4/7/2016	< 1	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A
	10/25/2016	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A
	3/24/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/20/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	3/22/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/11/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	5/29/2019	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1
	9/2/2020	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	3/3/2021	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	6/15/2022	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
Trichlorofluoromethane, ug/L (CAS NO - 75-69-4)	5/28/2014	N/A	N/A	< 4	< 4	< 4	< 4	N/A	N/A	N/A
	7/23/2015	1.32*	N/A	< 4	< 4	< 4	< 4	N/A	N/A	N/A
	11/19/2015	1.07*	N/A	< 4	< 4	< 4	< 4	N/A	N/A	N/A
	4/7/2016	5.17	N/A	N/A	< 4	< 4	< 4	N/A	N/A	N/A
	10/25/2016	4.52	< 4	N/A	< 4	< 4	< 4	< 4	< 4	N/A
	3/24/2017	2.13*	< 4	< 4	< 4	< 4	< 4	< 4	< 4	N/A
	7/20/2017	1.81*	< 4	< 4	< 4	< 4	< 4	< 4	< 4	N/A
	3/22/2018	2.21*	< 4	< 4	< 4	< 4	< 4	< 4	< 4	N/A
	7/11/2018	1.49*	< 4	< 4	< 4	< 4	< 4	< 4	< 4	N/A
	5/29/2019	6.07	N/A	N/A	N/A	N/A	N/A	N/A	< 4	< 4
	9/2/2020	3.95*	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A
	3/3/2021	3.34*	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A
	6/15/2022	8.08	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A
	5/24/2023	3.71*	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 4	N/A

SCS ENGINEERS

Summary of Groundwater Chemistry

Louisa County Sanitary Landfill (Closed) - 58-SDP-01-74C

Appendix I VOC Constituents	Sample Date	MW-14 UPG	MW-18 UPG	MW-5 DNG	MW-7 DNG	MW-13 DNG	MW-15 DNG	MW-17 DNG	MW-19 DNG	SW-2 DNG
Vinyl Acetate, ug/L (CAS NO - 108-05-4)	5/28/2014	N/A	N/A	< 2	< 2	< 2	< 2	N/A	N/A	N/A
	7/23/2015	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	11/19/2015	< 10	N/A	< 10	< 10	< 10	< 10	N/A	N/A	N/A
	4/7/2016	< 10	N/A	N/A	< 10	< 10	< 10	N/A	N/A	N/A
	10/25/2016	< 10	< 10	N/A	< 10	< 10	< 10	< 10	< 10	N/A
	3/24/2017	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	7/20/2017	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	3/22/2018	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	7/11/2018	< 10	< 10	< 10	< 10	< 10	< 10	< 10	< 10	N/A
	5/29/2019	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	< 10
	9/2/2020	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	3/3/2021	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	6/15/2022	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	< 10	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 10	N/A
Vinyl Chloride, ug/L (CAS NO - 75-01-4)	5/28/2014	N/A	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	7/23/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	11/19/2015	< 1	N/A	< 1	< 1	< 1	< 1	N/A	N/A	N/A
	4/7/2016	< 1	N/A	N/A	< 1	< 1	< 1	N/A	N/A	N/A
	10/25/2016	< 1	< 1	N/A	< 1	< 1	< 1	< 1	< 1	N/A
	3/24/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/20/2017	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	3/22/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	7/11/2018	< 1	< 1	< 1	< 1	< 1	< 1	< 1	< 1	N/A
	5/29/2019	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	< 1
	9/2/2020	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	3/3/2021	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	6/15/2022	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	< 1	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 1	N/A
Xylenes, total, ug/L (CAS NO - 1330-20-7)	5/28/2014	N/A	N/A	< 3	< 3	< 3	< 3	N/A	N/A	N/A
	7/23/2015	< 3	N/A	0.351*	< 3	0.393*	< 3	N/A	N/A	N/A
	11/19/2015	< 3	N/A	< 3	< 3	< 3	< 3	N/A	N/A	N/A
	4/7/2016	< 3	N/A	N/A	< 3	< 3	< 3	N/A	N/A	N/A
	10/25/2016	< 3	< 3	N/A	< 3	< 3	< 3	< 3	< 3	N/A
	3/24/2017	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	N/A
	7/20/2017	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	N/A
	3/22/2018	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	N/A
	7/11/2018	< 3	< 3	< 3	< 3	< 3	< 3	< 3	< 3	N/A
	5/29/2019	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	< 3
	9/2/2020	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A
	3/3/2021	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A
	6/15/2022	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A
	5/24/2023	< 3	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A
	5/24/2023	N/A	N/A	N/A	N/A	N/A	N/A	N/A	< 3	N/A

Note: * indicates 'J flag'. Detection is below the reporting limit, but greater than the MDL (Method Detection Limit). The concentration is estimated.

Denotes Detection.

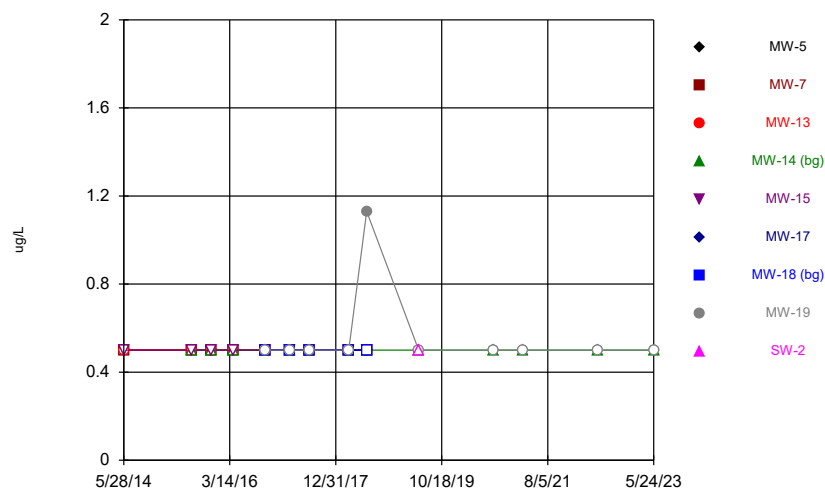
Denotes Confirmed Outlier. Statistically Excluded.

Sampling performed over multiple dates is recorded on the first date sampled. Refer to field forms for exact sample date.

Appendix D
2023 Statistical Output

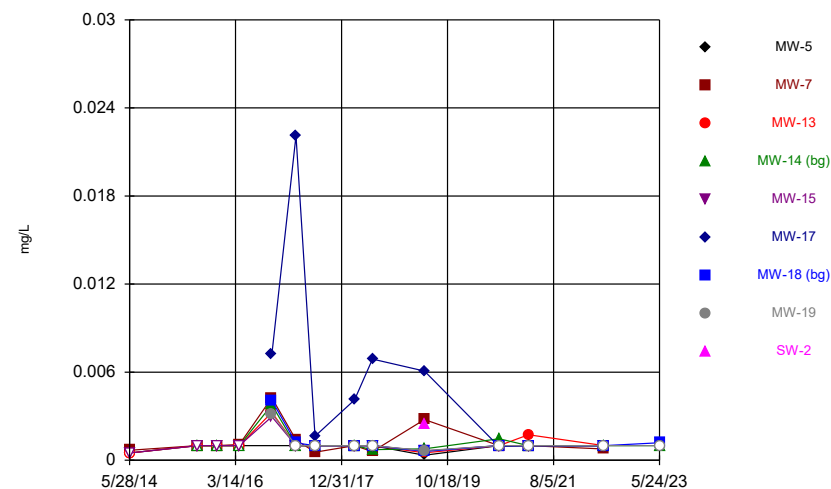
Time Series Plots

Time Series



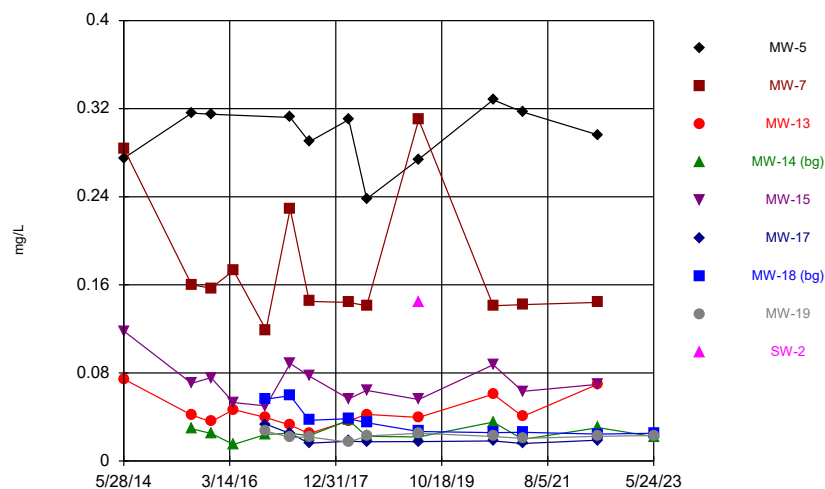
Constituent: 1,2-Dichloroethane Analysis Run 11/21/2023 11:08 PM View: 2023 AWQR Timeseries
Louisa County Sanitary Landfill Client: SCS Engineers Data: LCRSW Sanitas

Time Series



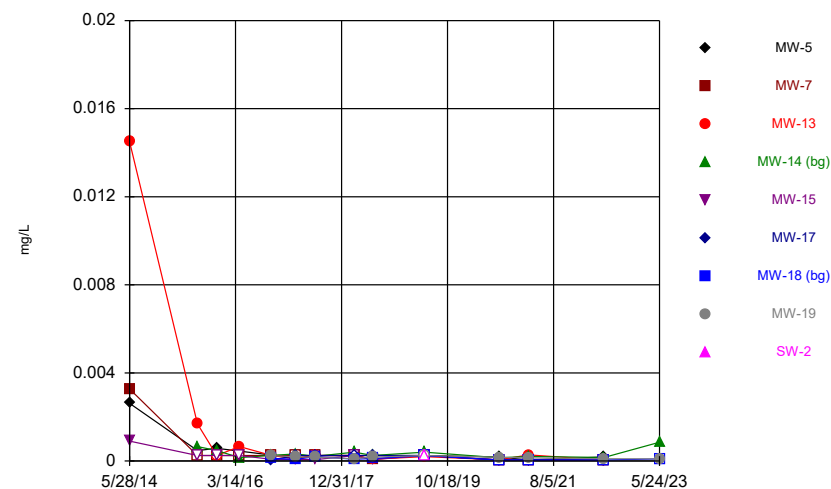
Constituent: Arsenic Analysis Run 11/21/2023 11:08 PM View: 2023 AWQR Timeseries
Louisa County Sanitary Landfill Client: SCS Engineers Data: LCRSW Sanitas

Time Series



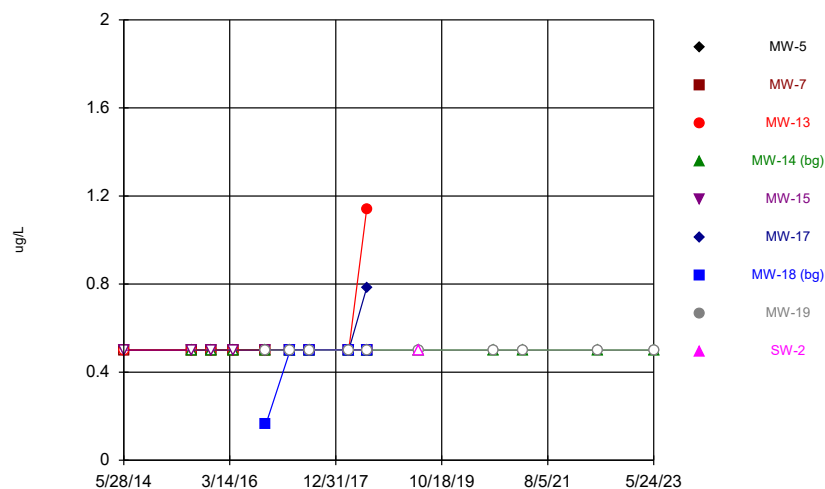
Constituent: Barium Analysis Run 11/21/2023 11:08 PM View: 2023 AWQR Timeseries
Louisa County Sanitary Landfill Client: SCS Engineers Data: LCRSW Sanitas

Time Series



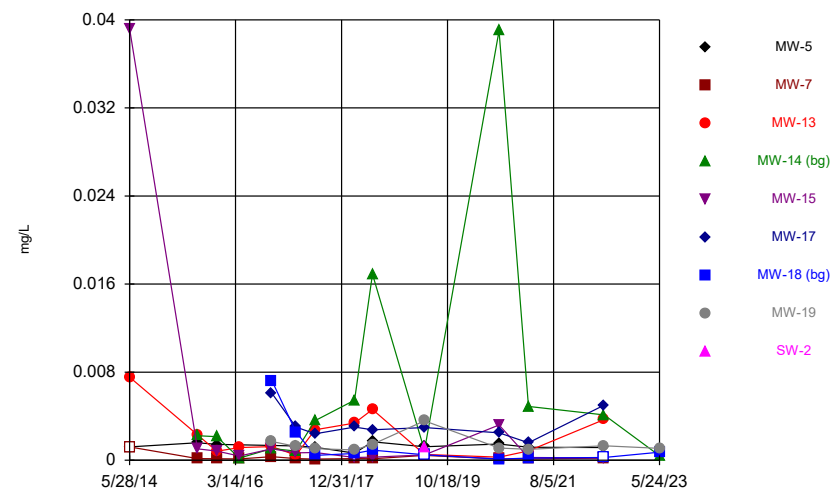
Constituent: Cadmium Analysis Run 11/21/2023 11:08 PM View: 2023 AWQR Timeseries
Louisa County Sanitary Landfill Client: SCS Engineers Data: LCRSW Sanitas

Time Series



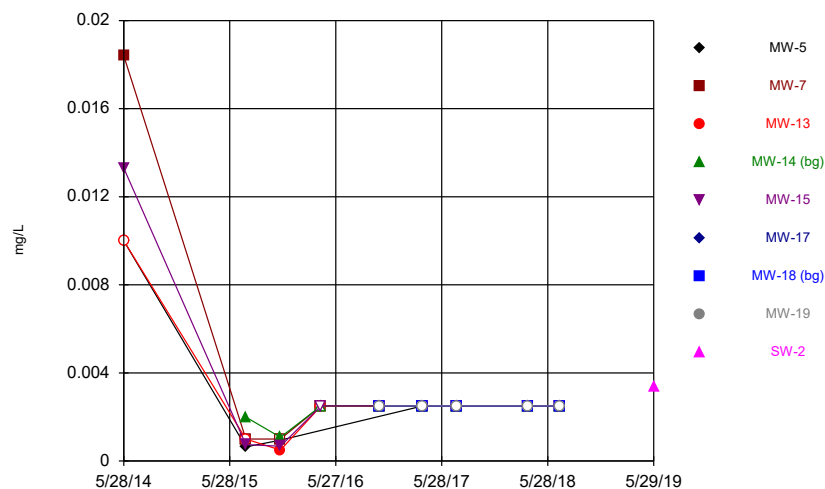
Constituent: Carbon Disulfide Analysis Run 11/21/2023 11:08 PM View: 2023 AWQR Timeseries
Louisa County Sanitary Landfill Client: SCS Engineers Data: LCRSW Sanitas

Time Series



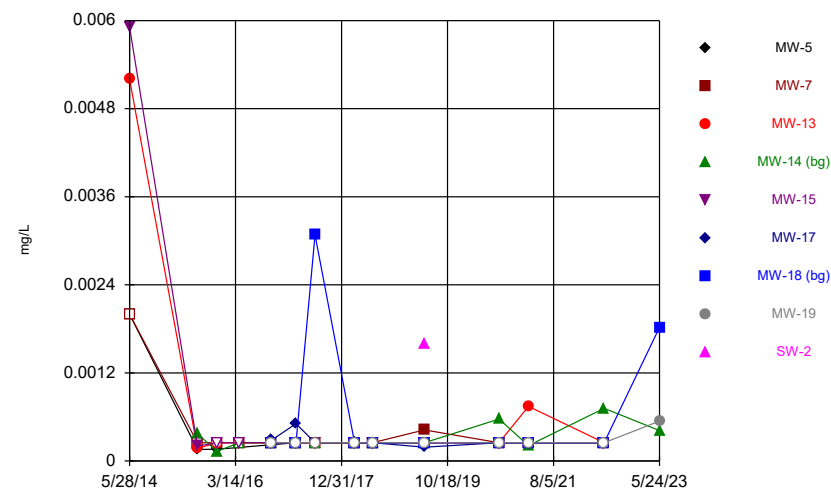
Constituent: Cobalt Analysis Run 11/21/2023 11:08 PM View: 2023 AWQR Timeseries
Louisa County Sanitary Landfill Client: SCS Engineers Data: LCRSW Sanitas

Time Series



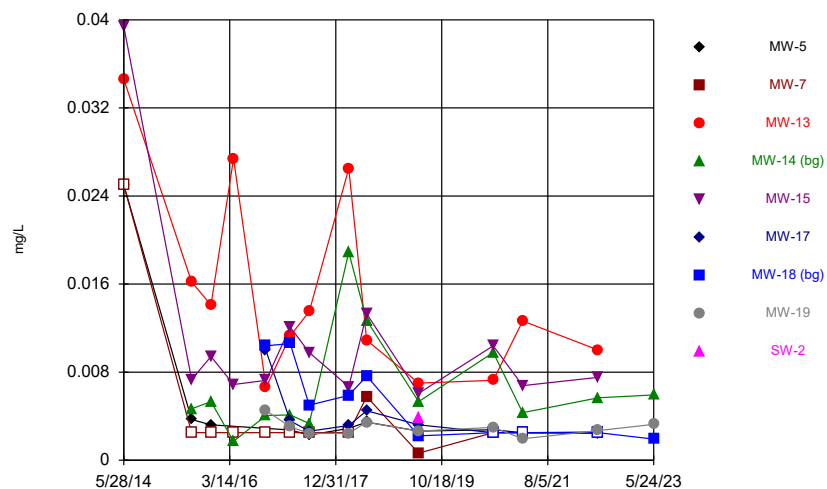
Constituent: Copper Analysis Run 11/21/2023 11:09 PM View: 2023 AWQR Timeseries
Louisa County Sanitary Landfill Client: SCS Engineers Data: LCRSW Sanitas

Time Series



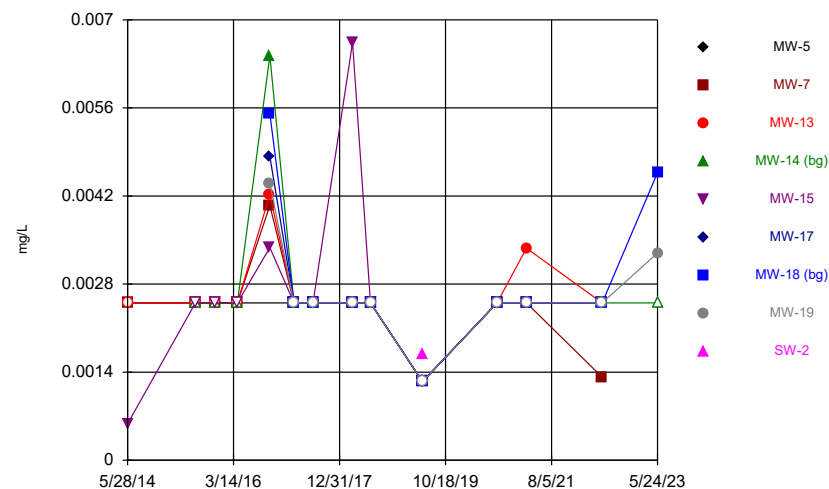
Constituent: Lead Analysis Run 11/21/2023 11:09 PM View: 2023 AWQR Timeseries
Louisa County Sanitary Landfill Client: SCS Engineers Data: LCRSW Sanitas

Time Series



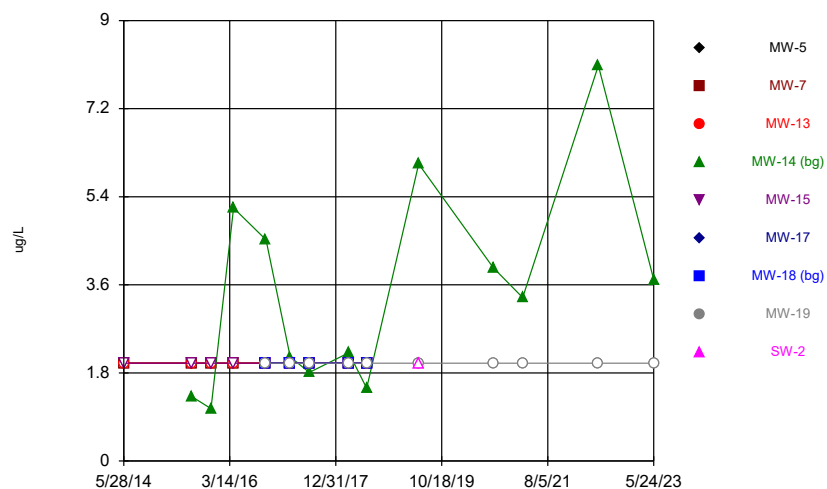
Constituent: Nickel Analysis Run 11/21/2023 11:09 PM View: 2023 AWQR Timeseries
Louisa County Sanitary Landfill Client: SCS Engineers Data: LCRSW Sanitas

Time Series



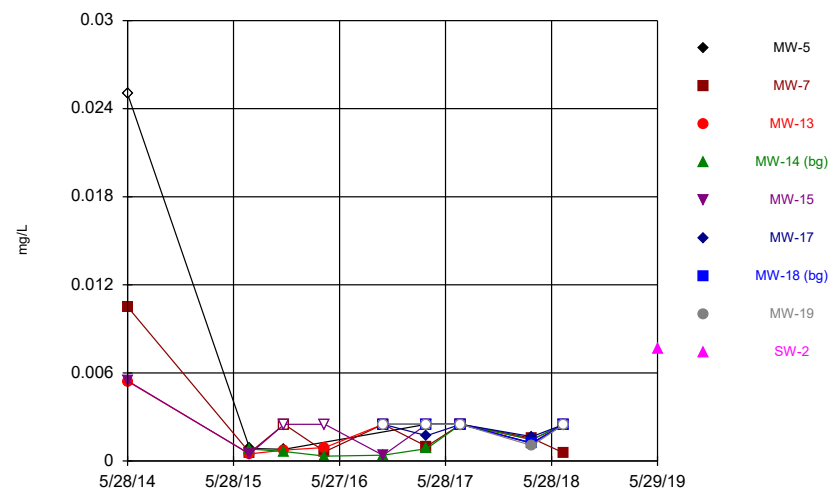
Constituent: Selenium Analysis Run 11/21/2023 11:09 PM View: 2023 AWQR Timeseries
Louisa County Sanitary Landfill Client: SCS Engineers Data: LCRSW Sanitas

Time Series



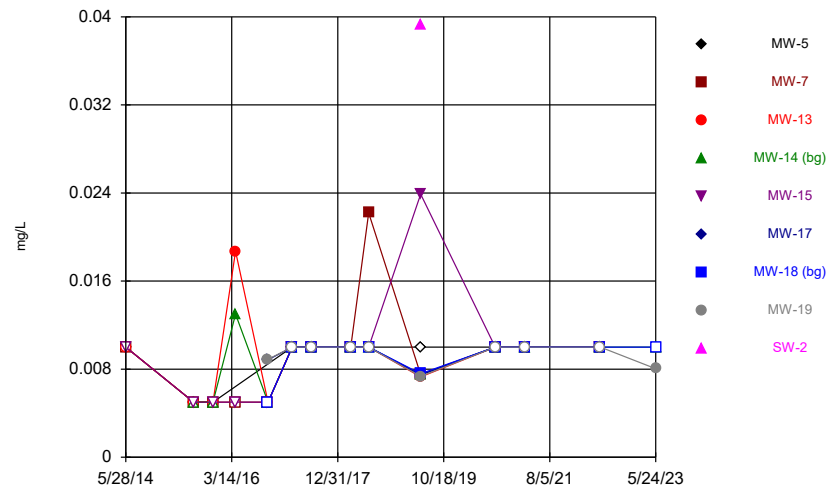
Constituent: Trichlorofluoromethane Analysis Run 11/21/2023 11:09 PM View: 2023 AWQR Timeseries
Louisa County Sanitary Landfill Client: SCS Engineers Data: LCRSW Sanitas

Time Series



Constituent: Vanadium Analysis Run 11/21/2023 11:09 PM View: 2023 AWQR Timeseries
Louisa County Sanitary Landfill Client: SCS Engineers Data: LCRSW Sanitas

Time Series



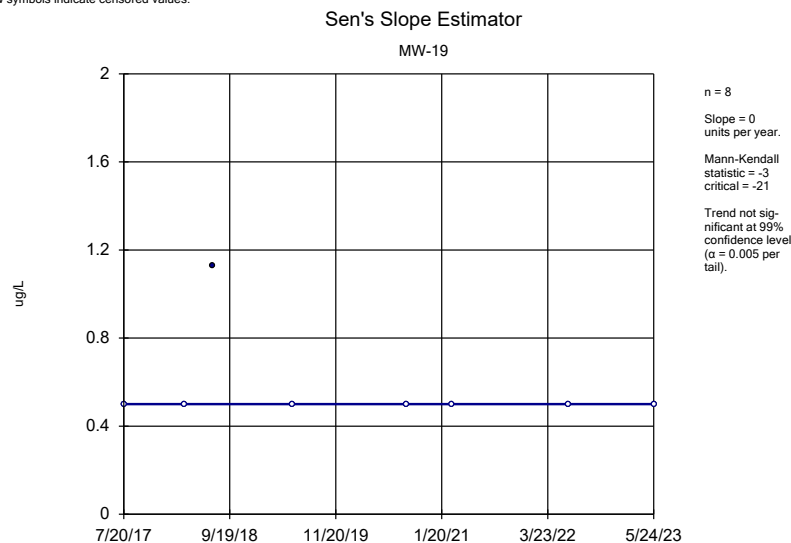
Constituent: Zinc Analysis Run 11/21/2023 11:09 PM View: 2023 AWQR Timeseries
Louisiana County Sanitary Landfill Client: SCS Engineers Data: LCRSW Sanitas

Mann-Kendall Trend Table and Graphs

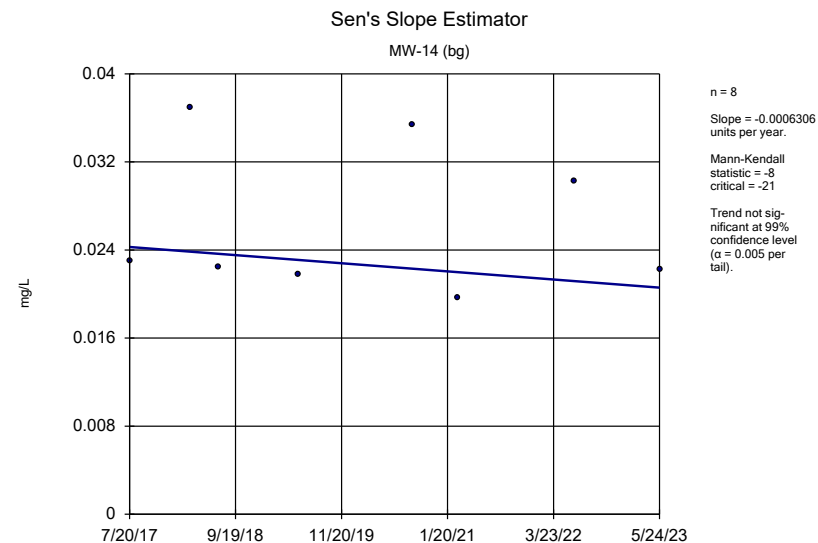
Trend Test

Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM Printed 11/22/2023, 12:22 AM

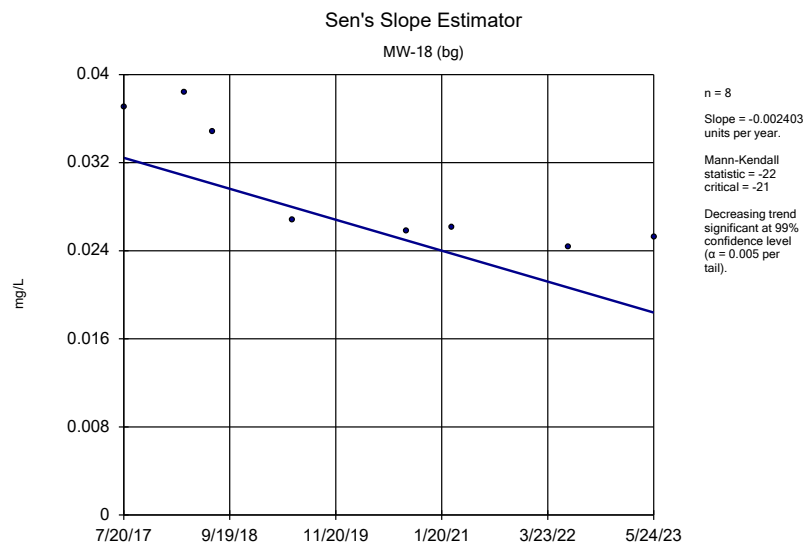
<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
1,2-Dichloroethane (ug/L)	MW-19	0	-3	-21	No	8	87.5	0.01	NP
Barium (mg/L)	MW-14 (bg)	-0.0006306	-8	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-18 (bg)	-0.002403	-22	-21	Yes	8	0	0.01	NP
Barium (mg/L)	MW-19	0.0001752	8	21	No	8	0	0.01	NP
Cadmium (mg/L)	MW-14 (bg)	7.1e-7	0	21	No	8	12.5	0.01	NP
Cadmium (mg/L)	MW-19	-0.00001232	-12	-21	No	8	12.5	0.01	NP
Cobalt (mg/L)	MW-14 (bg)	-0.0004296	-6	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-18 (bg)	-0.00003958	-2	-21	No	8	25	0.01	NP
Cobalt (mg/L)	MW-19	0.00001174	2	21	No	8	0	0.01	NP
Lead (mg/L)	MW-14 (bg)	0.00003005	8	21	No	8	50	0.01	NP
Lead (mg/L)	MW-18 (bg)	0	-1	-21	No	8	75	0.01	NP
Lead (mg/L)	MW-19	0	7	21	No	8	87.5	0.01	NP
Nickel (mg/L)	MW-14 (bg)	-0.0009631	-2	-21	No	8	0	0.01	NP
Nickel (mg/L)	MW-18 (bg)	-0.0005667	-13	-21	No	8	37.5	0.01	NP
Nickel (mg/L)	MW-19	0.00008243	8	21	No	8	0	0.01	NP
Trichlorofluoromethane (ug/L)	MW-14 (bg)	0.5258	12	21	No	8	0	0.01	NP



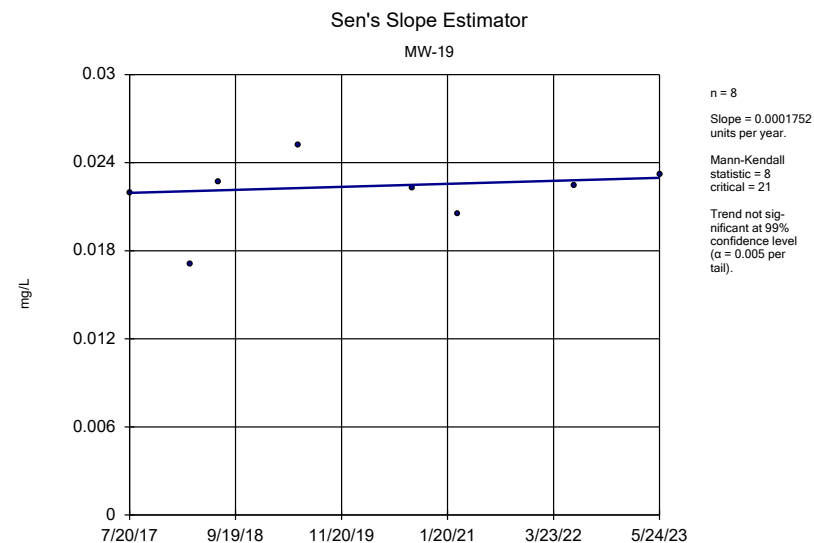
Constituent: 1,2-Dichloroethane Analysis Run 11/22/2023 12:20 AM View: 2023AWQR - Mann Kendall
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM



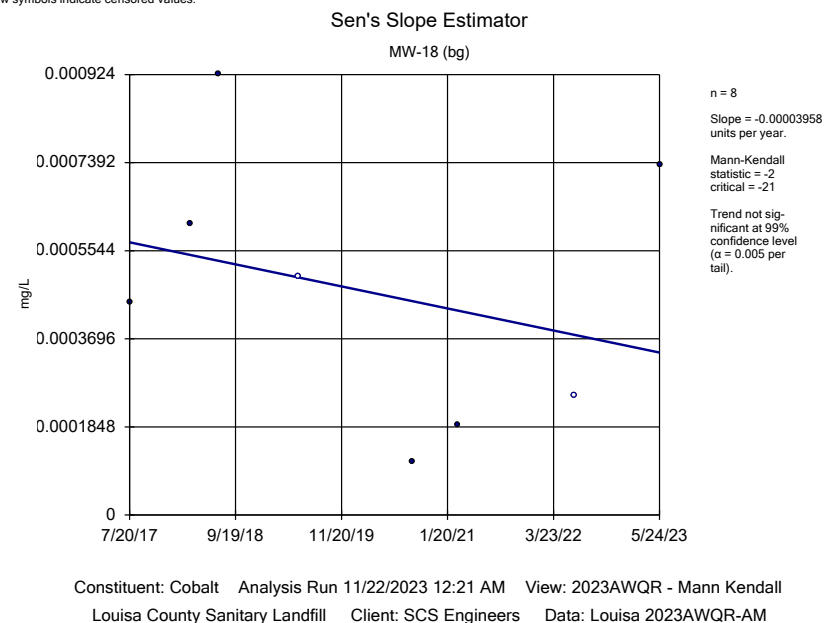
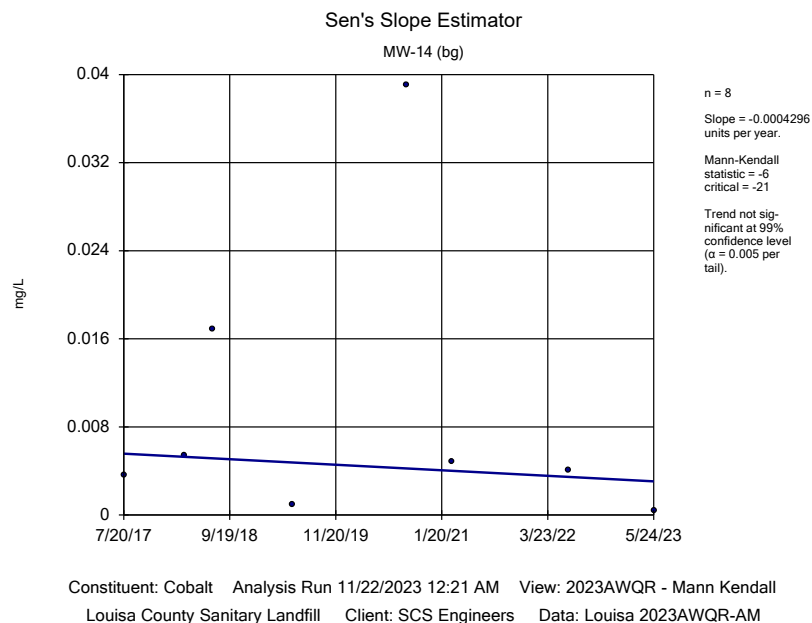
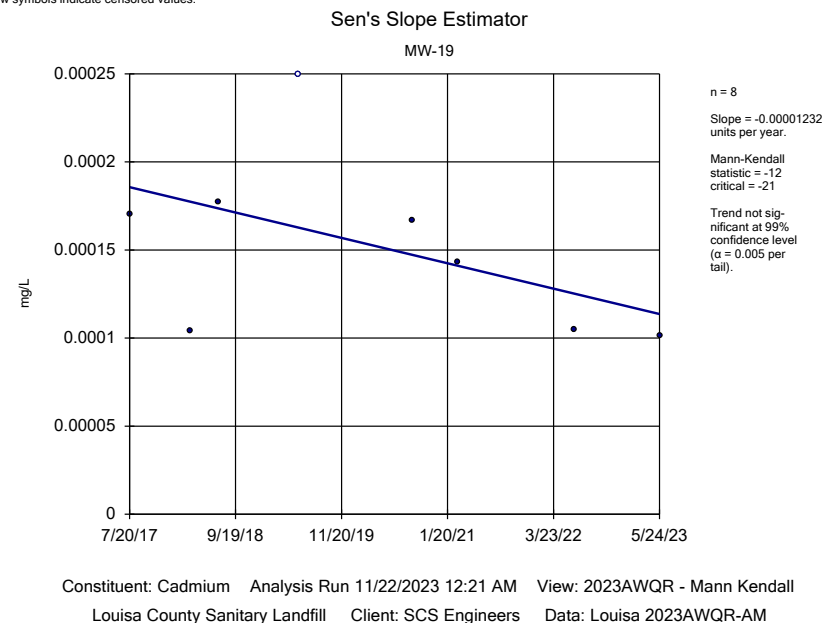
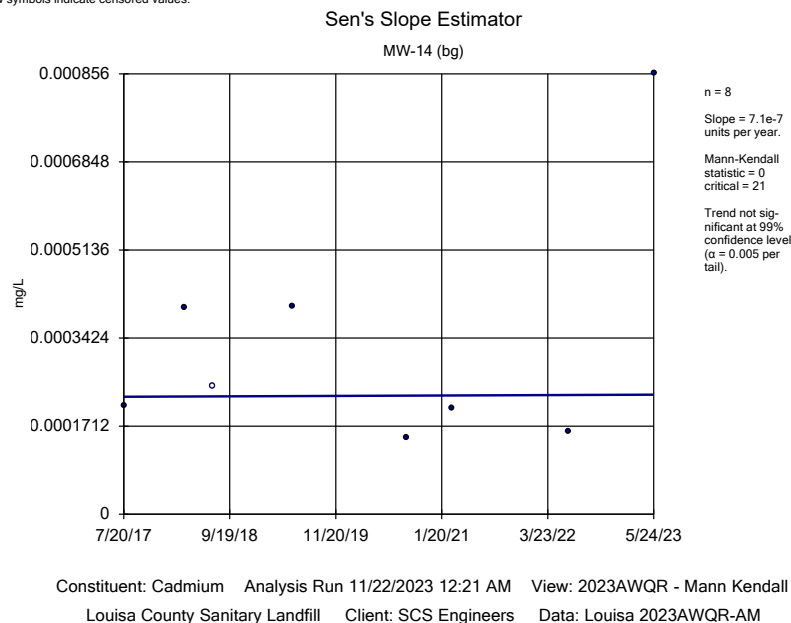
Constituent: Barium Analysis Run 11/22/2023 12:20 AM View: 2023AWQR - Mann Kendall
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM

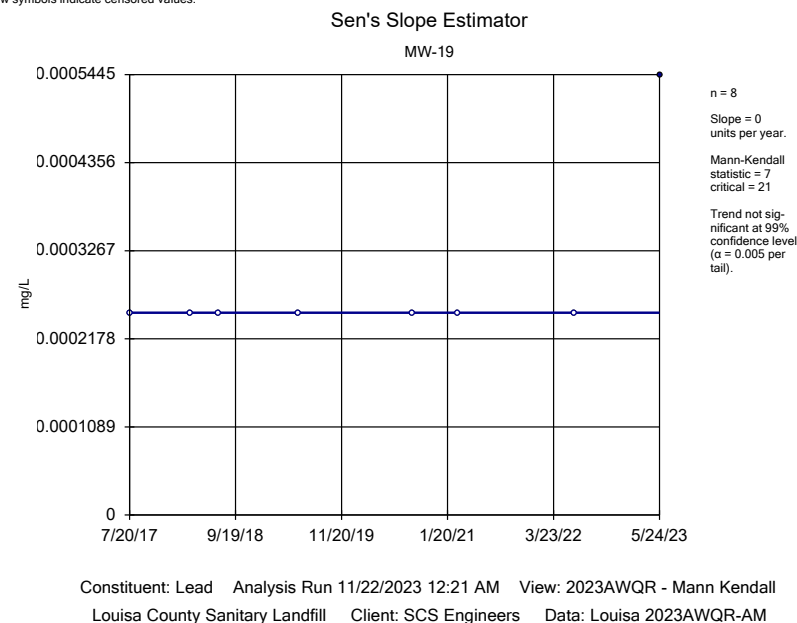
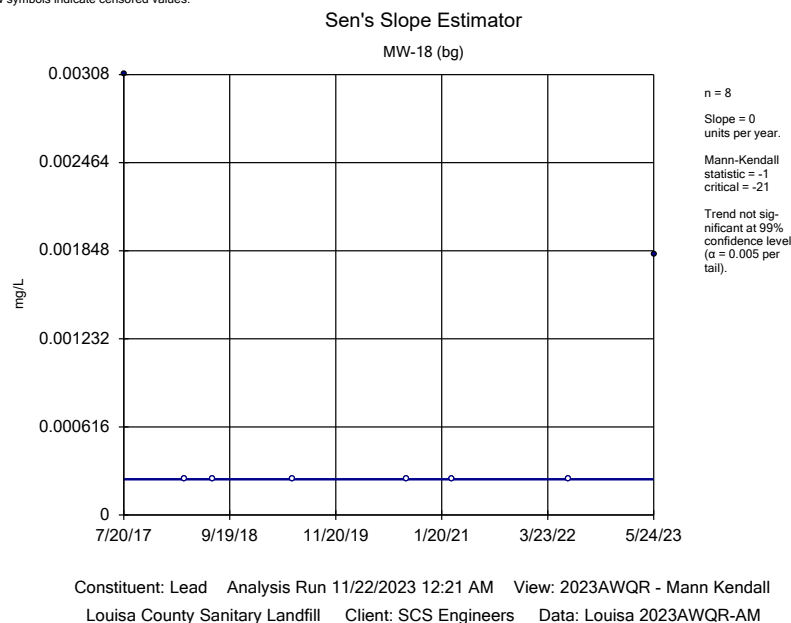
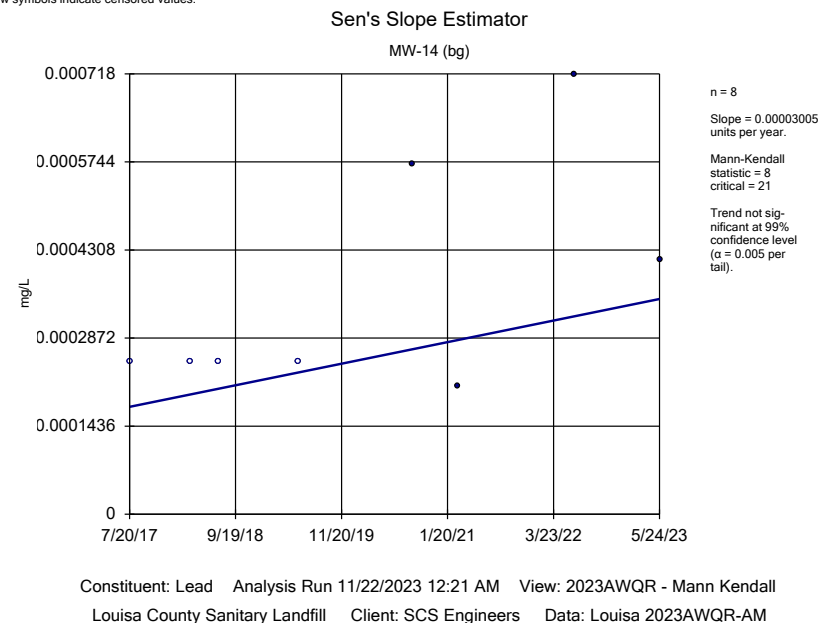
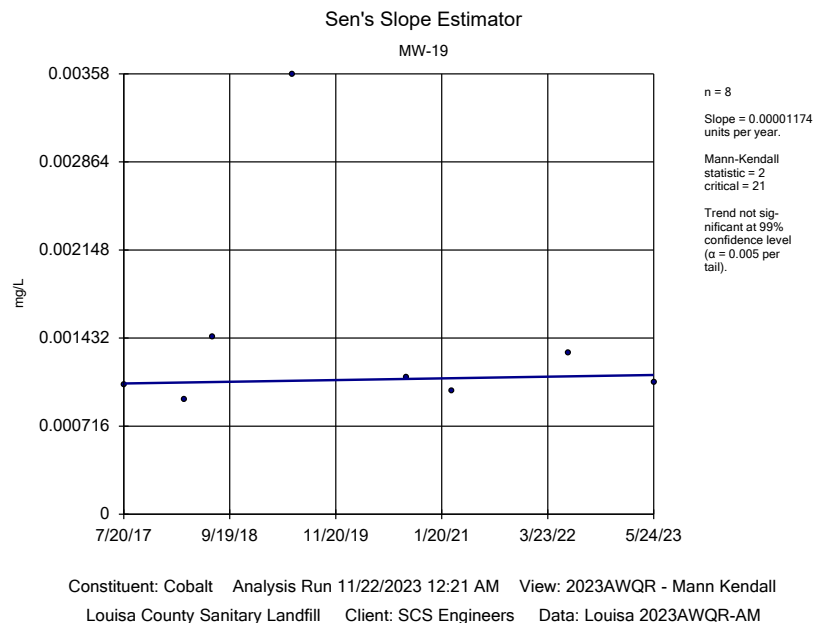


Constituent: Barium Analysis Run 11/22/2023 12:21 AM View: 2023AWQR - Mann Kendall
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM



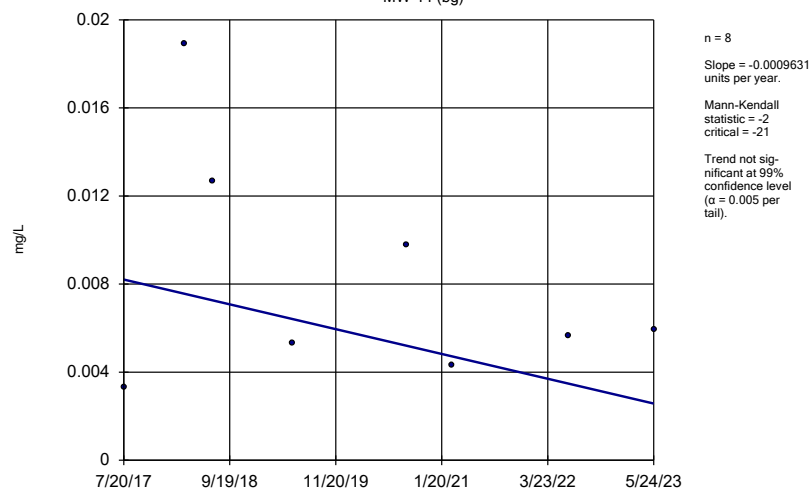
Constituent: Barium Analysis Run 11/22/2023 12:21 AM View: 2023AWQR - Mann Kendall
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM





Sen's Slope Estimator

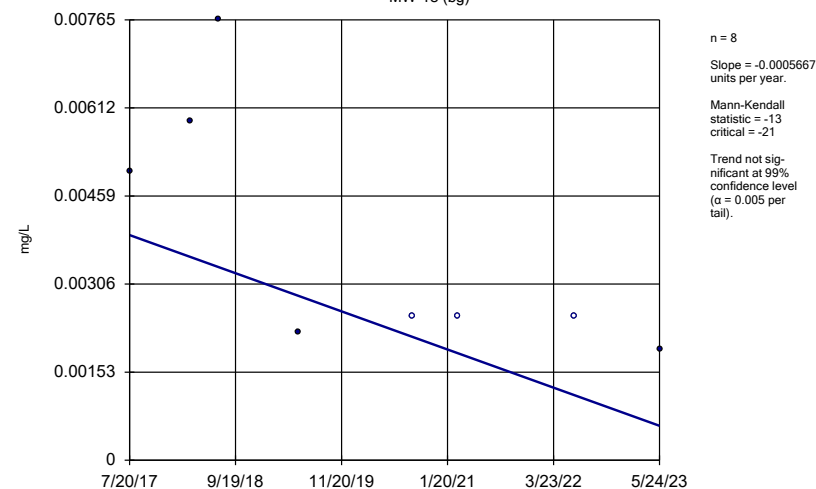
MW-14 (bg)



Constituent: Nickel Analysis Run 11/22/2023 12:21 AM View: 2023AWQR - Mann Kendall
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM

Sen's Slope Estimator

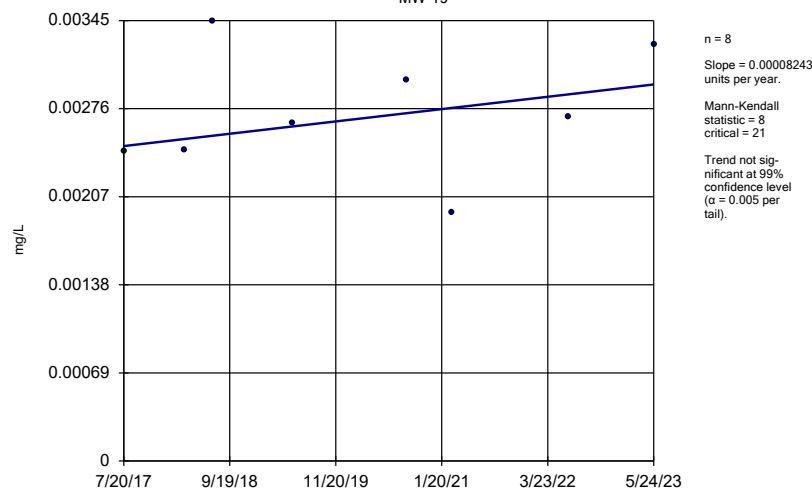
MW-18 (bg)



Constituent: Nickel Analysis Run 11/22/2023 12:21 AM View: 2023AWQR - Mann Kendall
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM

Sen's Slope Estimator

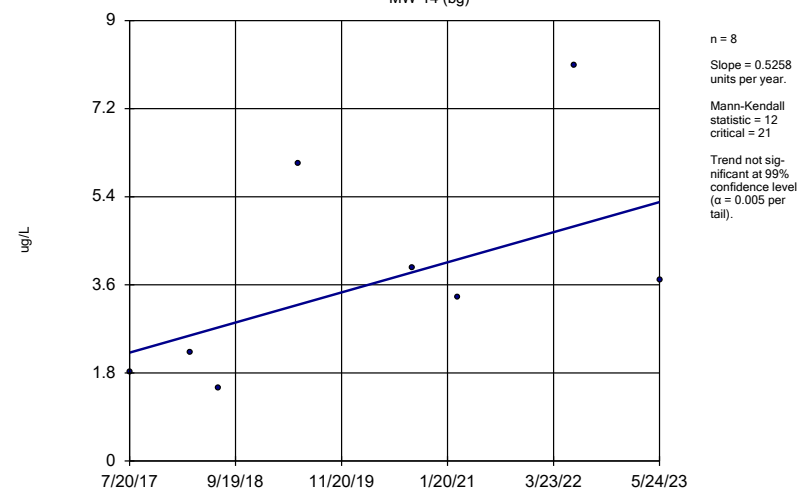
MW-19



Constituent: Nickel Analysis Run 11/22/2023 12:21 AM View: 2023AWQR - Mann Kendall
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM

Sen's Slope Estimator

MW-14 (bg)



Constituent: Trichlorofluoromethane Analysis Run 11/22/2023 12:21 AM View: 2023AWQR - Mann Kendall
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM

Confidence Intervals Table and Graphs

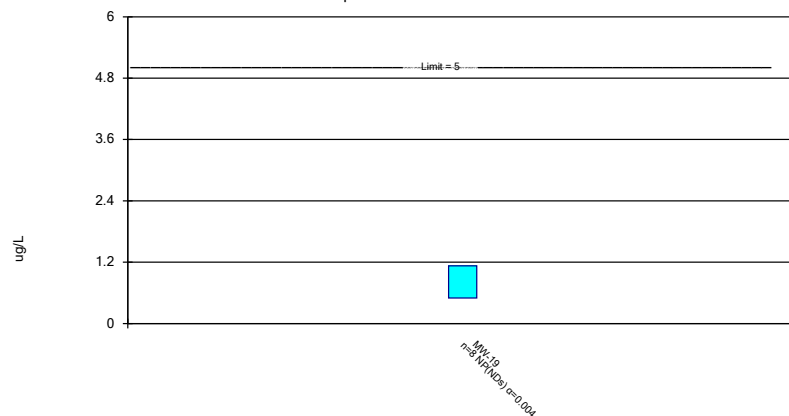
Confidence Interval

Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM Printed 11/22/2023, 12:34 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>
1,2-Dichloroethane (ug/L)	MW-19	1.13	0.5	5	No	8	87.5	No	0.004	NP (NDs)
Barium (mg/L)	MW-14 (bg)	0.0336	0.01932	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-19	0.02441	0.01943	2	No	8	0	No	0.01	Param.
Cadmium (mg/L)	MW-14 (bg)	0.0005781	0.00008139	0.005	No	8	12.5	No	0.01	Param.
Cadmium (mg/L)	MW-19	0.0002058	0.00009828	0.005	No	8	12.5	No	0.01	Param.
Cobalt (mg/L)	MW-14 (bg)	0.039	0.000413	0.0021	No	8	0	No	0.004	NP (normality)
Cobalt (mg/L)	MW-18 (bg)	0.0007698	0.0001627	0.0021	No	8	25	No	0.01	Param.
Cobalt (mg/L)	MW-19	0.00358	0.000935	0.0021	No	8	0	No	0.004	NP (normality)
Lead (mg/L)	MW-14 (bg)	0.0005788	0.0002122	0.015	No	8	50	No	0.01	Param.
Lead (mg/L)	MW-18 (bg)	0.00308	0.00025	0.015	No	8	75	No	0.004	NP (NDs)
Lead (mg/L)	MW-19	0.0005445	0.00025	0.015	No	8	87.5	No	0.004	NP (NDs)
Nickel (mg/L)	MW-14 (bg)	0.01385	0.002639	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-18 (bg)	0.005844	0.001387	0.1	No	8	37.5	No	0.01	Param.
Nickel (mg/L)	MW-19	0.003248	0.002217	0.1	No	8	0	No	0.01	Param.
Trichlorofluoromethane (ug/L)	MW-14 (bg)	6.22	1.445	2000	No	8	0	No	0.01	Param.

Non-Parametric Confidence Interval

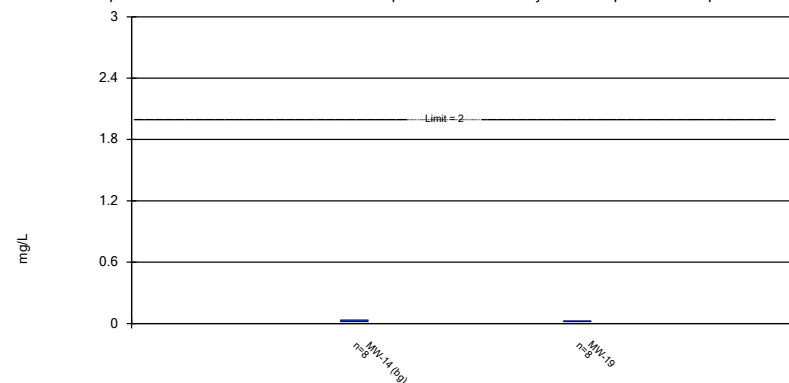
Compliance Limit is not exceeded.



Constituent: 1,2-Dichloroethane Analysis Run 11/22/2023 12:32 AM View: 2023AWQR - Confidence Inter
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM

Parametric Confidence Interval

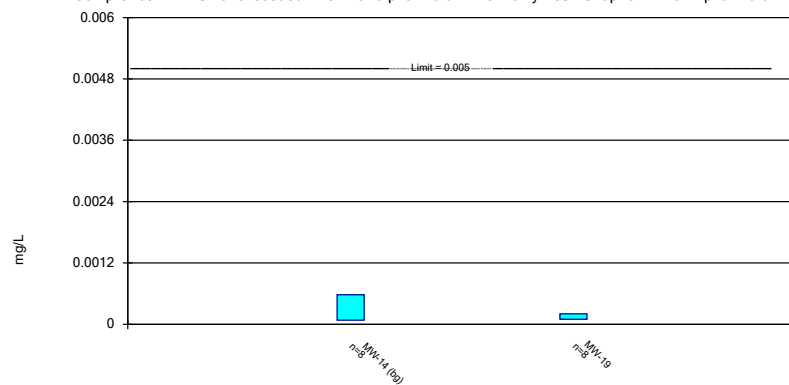
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 11/22/2023 12:32 AM View: 2023AWQR - Confidence Interval
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM

Parametric Confidence Interval

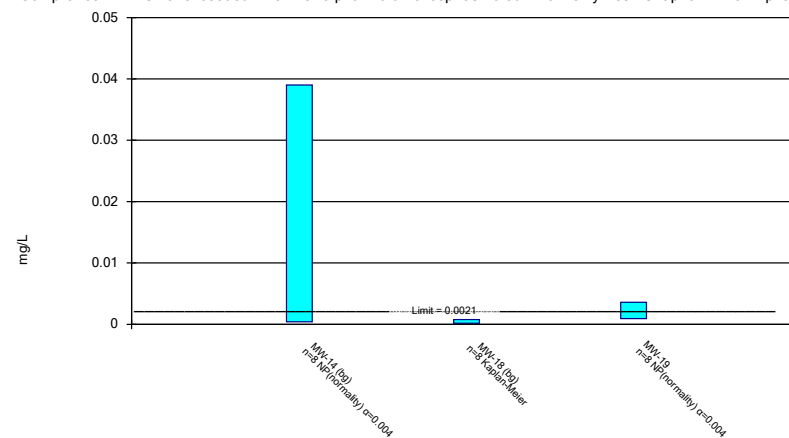
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cadmium Analysis Run 11/22/2023 12:32 AM View: 2023AWQR - Confidence Interval
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM

Parametric and Non-Parametric (NP) Confidence Interval

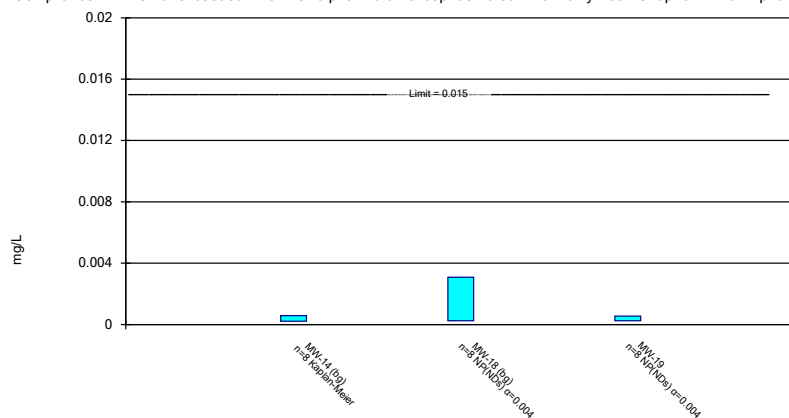
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cobalt Analysis Run 11/22/2023 12:32 AM View: 2023AWQR - Confidence Interval
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM

Parametric and Non-Parametric (NP) Confidence Interval

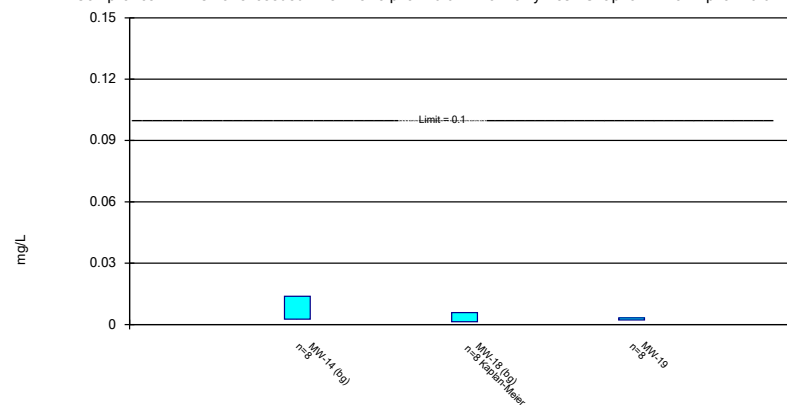
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lead Analysis Run 11/22/2023 12:32 AM View: 2023AWQR - Confidence Interval
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM

Parametric Confidence Interval

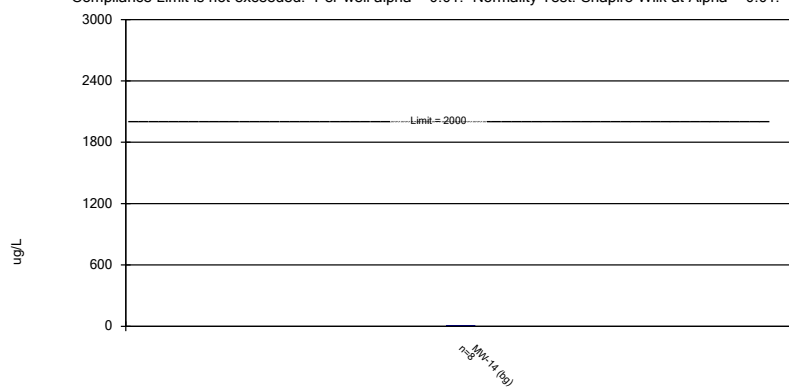
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Nickel Analysis Run 11/22/2023 12:32 AM View: 2023AWQR - Confidence Interval
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM

Parametric Confidence Interval

Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



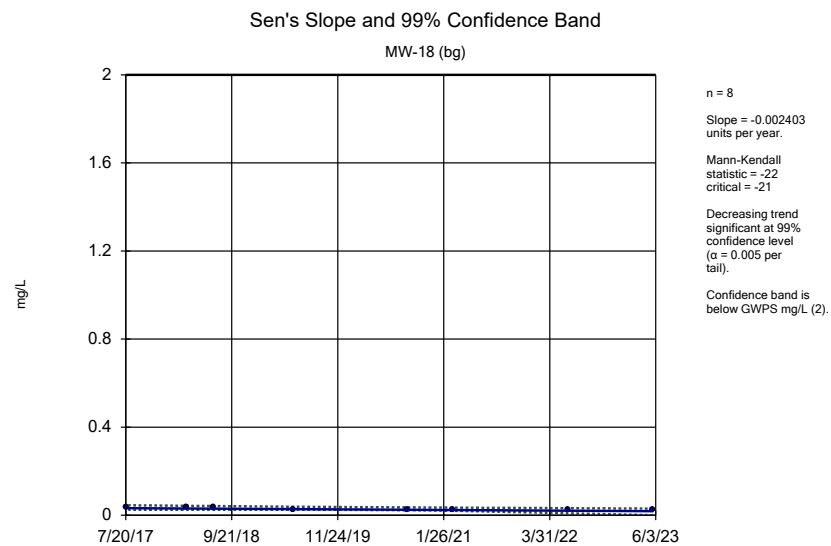
Constituent: Trichlorofluoromethane Analysis Run 11/22/2023 12:32 AM View: 2023AWQR - Confidence Interval
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM

Theil-Sen Table and Graph

Theil Sen/Trend Test

Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM Printed 11/22/2023, 12:39 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>
Barium (mg/L)	MW-18 (bg)	-0.002403	-22	-21	Yes	8	0	0.01	NP



Constituent: Barium Analysis Run 11/22/2023 12:38 AM View: 2023AWQR - Theil Sen
Louisa County Sanitary Landfill Client: SCS Engineers Data: Louisa 2023AWQR-AM