

West Des Moines, IA

PROJECT: Sioux City, FY26 Env Comp & On-Call, IA
27225426.00

DATE: 12/18/2025

SUBJECT: Sioux City Sanitary Landfill - 97-SDP-01-73C - 2025 Annual Water Quality Report, Leachate Control System Performance Evaluation Report, and Landfill Gas Annual Report

TRANSMITTAL ID: 00002

PURPOSE: For your approval

VIA: Info Exchange

FROM

NAME	COMPANY	EMAIL	PHONE
Nathan Ohrt West Des Moines, IA	SCS Engineers	NOhrt@scsengineers.com	+1-515-415-9220

TO

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

REMARKS: Good morning Mike-

SCS Engineers, on behalf of the City of Sioux City, is submitting for download the 2025 Annual Water Quality Report, Leachate Control System Performance Evaluation Report, and Landfill Gas Annual Report for the Sioux City Sanitary Landfill. If you have any questions or comments regarding these reports, please contact me at the number below. Thank you.

Nathan Ohrt
Senior Project Professional
SCS Engineers
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Transmittal

DATE: 12/18/2025
TRANSMITTAL ID: 00002

DESCRIPTION OF CONTENTS

QTY	DATED	TITLE	NOTES
1	12/18/2025	Sioux City Sanitary Landfill - 97-SDP-01-73C - 2025 Annual Water Quality Report, Leachate Control System Performance Evaluation Report, and Landfill Gas Annual Report.pdf	

COPIES:

Arah Montagne	(City of Sioux City, Iowa)
Nathan Ohrt	(SCS Engineers)
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Becky Jolly	

December 18, 2025
File No. 27225426.00

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

Subject: 2025 Annual Water Quality Report, Leachate Control System Performance Evaluation Report, and Landfill Gas Annual Report
Sioux City Sanitary Landfill
Permit No. 97-SDP-03-81C

Dear Mike:

SCS Engineers, on behalf of the City of Sioux City, has completed the required groundwater monitoring and statistical analyses for the closed Sioux City Sanitary Landfill for the year 2025. Services were performed in general accordance with Iowa Administrative Code (IAC) 567-113.10(6) and the current requirements for implementation of the Hydrologic Monitoring System Plan for the site. Please find enclosed a copy of the 2025 Annual Water Quality Report.

Additionally, the 2025 Leachate Control System Performance Evaluation Report for the facility, in accordance with 2002 IAC 567-113.26(2)"I", and the 2025 Landfill Gas Annual Report, in accordance with 2002 IAC 567-113.26(15), are included as appendices to the Annual Water Quality Report.

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

Sincerely,



Nathan Ohrt
Senior Project Professional
SCS Engineers



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

NPO/TCB

Copies: Arah Montagne, City of Sioux City
Thomas Pingel, City of Sioux City





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

Sioux City Sanitary Landfill
Sioux City, Iowa
Solid Waste Permit No. 97-SDP-03-81C

SCS ENGINEERS

27225426.00 | December 2025

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CERTIFICATION

Prepared by: Nathan Ohrt Date: 12/18/2025

Typed: Nathan Ohrt

Reviewed by: Timothy C. Buelow Date: 12/18/2025

Typed: Timothy C. Buelow, P.E.

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

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

	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. <u>Timothy C. Buelow</u> Date: <u>12/18/2025</u> Timothy C. Buelow, P.E. License No. 14445 My license renewal date is December 31, 2025. Pages or sheets covered by this seal: All except Appendix B-1.
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EXECUTIVE SUMMARY

ES.1 Period of Report Coverage

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

ES.2 Report Priority

The following summarizes report priorities associated with groundwater compliance at the closed Sioux City Sanitary Landfill (Landfill):

- Department review urgency: It is recommended that the requirements of 567 Iowa Administrative Code (IAC) 113.2(5) be replaced with the requirements of 113.10(4-5). This change would unlikely affect the statistical conclusions, but the more robust statistics of 113.10 would align the Landfill with the rules governing active landfills.
- Department review impact on rules schedule: None.
- Actions or activities on hold pending Department review or comment: None.
- Actions and/or permit amendments needed: None.

ES.3 Site Status and Applicable Rules

- Landfill Status: Closed.
- Types of waste accepted: Previously Municipal Solid Waste (MSW).
- Applicable Iowa Administrative Code (IAC) rules: 567-113.2(5), 113.10(6-9).

ES.4 Comments

The City of Sioux City established a permanent easement south of the Landfill to further delineate groundwater impact and establish attenuation zone points of compliance; a signed easement and proposed monitoring well locations were submitted on April 29, 2025 (Doc #112932) and approved on May 14, 2025 (Doc #113070). In addition, passive gas vents will be installed in the waste mass north of monitoring wells MW-3R, MW-4R3, and MW-9 to provide source control. The monitoring points and gas vents will be installed July 1, 2026 – June 30, 2027, as approved by the Iowa Department of Natural Resources (DNR) on July 16, 2025 (Doc #113457), pending City approval.

The statistically significant levels (SSLs) above the groundwater protection standards (GWPSs) in monitoring wells MW-3R (cobalt), MW-4R3 (cobalt, trichloroethene, vinyl chloride), and MW-9 (cobalt) were previously reported.

Monitoring well MW-2R went dry when sampling was attempted during the June 2025 sampling event. The dedicated submersible pump tubing fell 6-7 feet below the top of the casing following the sampling attempt. An attempt to retrieve the tubing in November 2025 was not successful. An attempt to resolve the issue to allow sampling will be performed before the 1st 2026 semi-annual sampling event.

ACRONYMS/ABBREVIATIONS

ACM = Assessment of Corrective Measures
AWQR = Annual Water Quality Report
CAMP = Corrective Action Groundwater Monitoring Program
CL = Control Limit - Mean plus Two Standard Deviations
GWPS = Groundwater Protection Standard
HMSP = Hydrologic Monitoring System Plan
IAC = Iowa Administrative Code
IGS = Iowa Geologic Survey
MSW = Municipal Solid Waste
MW = Monitoring Well
PL = Prediction Limit
QA = Quality Assurance
QC = Quality Control
SCS = SCS Engineers
SSI = Statistically Significant Increase above background
SSL = Statistically Significant Level
TSS = Total Suspended Solids
VOC = Volatile Organic Compound

1.0 SITE BACKGROUND

1.1 SITE LOCATION

The Landfill property is depicted in **Figure 1**, Approved Monitoring Network. The Landfill is in Sioux City, Iowa in the NE $\frac{1}{4}$ of the NW $\frac{1}{4}$ and a fraction of the NW $\frac{1}{4}$ of the NW $\frac{1}{4}$ of Section 19, T89N, R46W, Woodbury County, Iowa.

1.2 FACILITY

The Landfill was initially permitted in July 1981 and ceased accepting waste in September 2007. The closure permit was issued October 1, 2008.

1.3 HYDROGEOLOGY

The *Hydrogeologic Assessment Report*, dated July 13, 1992, (Doc # 31419), prepared by Terracon Environmental, provided the following hydrogeological description:

The Iowa Geologic Survey (IGS) Water Supply Bulletin No. 13 (Munter, J. A., et al, 1983) was reviewed to evaluate the geohydrology of the landfill region. The landfill is situated in the loess hills region of western Iowa which is characterized by a mantle of wind derived silts and clays (loess) overlying glacial drift deposits. The landscape is well-drained. Accumulative thicknesses of loess and glacial drift in the landfill area are reported to be on the order of less than 50 to greater than 200 feet.

Loess was typically encountered as the uppermost lithologic unit. Loess was generally described in the field as brown, silty lean clay. Trace amounts of sand grains were observed in some of the loess samples. It is suspected that some loess horizons have been reworked or redeposited (colluvium). Glacial till was observed to underlie the loess deposits.

Glacial till was generally described as brown and gray, lean to fat clay containing varying amounts of sand and gravel. Sand and gravel seams were not observed in soil samples obtained from within glacial till. However, this does not necessarily imply that such glacio-fluvial deposits do not exist within glacial till.

Based on IGS test borings near the landfill, the Woodbury Member of the Cretaceous-aged Dakota Formation appears to be the uppermost bedrock unit underlying glacial drift in the landfill vicinity. The Woodbury Member is characterized as containing interbedded shale, sandstone, and lignite coal, all of variable thicknesses. The Woodbury can locally be considered as a minor aquifer. The Nishnabotna Member of the Dakota Formation underlies the Woodbury Member. The Nishnabotna is a massive sandstone with minor shale interbeds and is considered a regional aquifer of northwest Iowa.

Bedrock underlying unconsolidated Quaternary deposits was observed to be shale. The shale was observed in boring B-1 where the ground surface elevation was lowest at the site. The shale consisted of relatively unweathered blue gray and dark gray fissile shale beds directly underlying loess. Glacial till was not observed in the B-1 boring.

The water surface contour map generally depicts horizontal flow direction being controlled by regional surface topography. The exception to this is that groundwater flow does not converge at the lowest elevation along the perimeter of the landfill (MW, PZ-2). Instead,

groundwater flow appears to be directed toward a ravine outside and to the northeast of city property which contains the landfill area. Ponding of surface water in the ravine near the MW, PZ-2 cluster may be contributing to a water table doming effect. This phenomenon would consequently cause a localized increase in the water table at the pond area. Doming may not be present during dry periods.

2.0 FIGURES DISCUSSION

The following figures are attached.

2.1 FIGURE 1 – APPROVED MONITORING NETWORK

The Landfill property and hydrologic monitoring system plan (HMSP) monitoring well network is depicted in **Figure 1**. **Figure 1** indicates the locations of each monitoring well and its respective monitoring program.

2.2 FIGURE 2 – GROUNDWATER CONTOURS

A groundwater contour map based on water levels measured during the November 2025 sampling event is included as **Figure 2**. **Figure 2** shows a generally easterly flow direction in the west half of the Landfill, becoming more northeasterly in the east, with flow directions influenced by ravines around the perimeter of the Landfill.

Leachate elevations are included in Figure 2 to visually compare with groundwater elevations. Perched leachate is potentially present within the waste boundary. It is not known whether the leachate elevations measured in the leachate piezometers are the result of intersection of perched leachate zones within the waste mass or a fully saturated waste mass in the vicinity of the monitoring point. It is also not known whether the leachate is in direct hydraulic communication with the water table or is perched above the water table within the waste mass.

3.0 STANDARDS HISTORY GRAPHS

Standards history graphs are included in **Appendix G**. Standards history graphs are included for the Appendix I metals.

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

The control limit was below the state-wide standard GWPSs for the above parameters with the exception of selenium. Selenium is consistently detected in background monitoring well MW-7, but the constituent has been detected only twice in the rest of the monitoring network. The prediction limit for selenium was used as the GWPS for this report

4.0 QA/QC SUMMARY

The quality assurance/quality control (QA/QC) program for the Landfill followed similar protocols as included in the HMSP. Data validation procedures were performed on analytical results for laboratory quality control samples, and a quality assurance assessment of the data was conducted as the data

were generated. The QA review procedure provided documentation of the accuracy and precision of the analytical data and confirmed that the analyses, when possible based on the methods utilized, were sufficiently sensitive to detect constituents at levels below regulatory standards, where such standards exist. SCS then conducted QA/QC data validation of the data, which included review of sample handling, analytical sensitivity, blanks, accuracy, and precision. A summary of the laboratory QA/QC and data validation can be found in **Appendices B-1**, Laboratory Data, and **B-2**, Data Validation, respectively. The QA/QC review indicated that the data was acceptable.

5.0 ANALYTICAL DATA EVALUATION

Assessment/corrective action monitoring statistical evaluation in accordance with the requirements of IAC 567-113.10(6) was conducted for the groundwater analytical data collected during the 2025 reporting period. A description of the statistical evaluation process utilized during this reporting period is located in **Appendix D**, Statistical Method and Output, of this report.

5.1 DATA EVALUATION

The groundwater monitoring network for the Landfill consists of monitoring wells located along the downgradient perimeters of the waste boundary. Upgradient monitoring well MW-7 is located on the west side of the Landfill.

Monitoring wells MW-9, MW-10, and MW-12 had insufficient water to produce a sample during the June 2025 sampling event, and monitoring well MW-12 did not produce a sample during the November 2025 sampling event.

Monitoring well MW-2R went dry when sampling was attempted during the June 2025 sampling event. The dedicated submersible pump tubing fell 6-7 feet below the top of the casing following the sampling attempt. An attempt to retrieve the tubing in November 2025 was not successful. An attempt to resolve the issue to allow sampling will be performed before the 1st 2026 semi-annual sampling event.

Constituents above the GWPS in HMSP monitoring wells include cobalt in monitoring wells MW-3R, MW-4R3, MW-9, and MW-10, selenium in background monitoring well MW-7, and volatile organic compounds (VOCs) tetrachloroethene and vinyl chloride in monitoring well MW-4R3. Cobalt, trichloroethene, and vinyl chloride concentrations exceeded the GWPS in one or more of the delineation monitoring wells. It should be noted that high TSS concentrations very likely influenced the cobalt concentrations, most prominently in the delineation monitoring wells.

Confidence intervals were calculated during this reporting period for the HMSP monitoring network. Lower confidence intervals were below the GWPSs, except for cobalt in monitoring well MW-9 and cobalt and vinyl chloride in monitoring well MW-4R3. Confidence interval summary tables and graphs are included in **Appendix D**, Statistical Method and Output.

5.2 TRENDING IN ASSESSMENT/CORRECTIVE ACTION MONITORING WELLS

Mann-Kendall trend testing was performed at 99% confidence ($\alpha = 0.1$) for the HMSP monitoring wells. Statistically significant increasing trends were identified for 1,1-dichloroethane in monitoring well MW-12, cis-1,2-dichloroethene in monitoring well MW-9, and dichlorodifluoromethane in monitoring well MW-10.

The monitoring well/constituent pairs with SSLs were evaluated for trends using the Mann-Kendall method during the 2nd 2025 semi-annual statistical evaluation. The trend evaluation for the reporting period is included in **Appendix D**. The trends of the SSL constituents are included in the table below.

Monitoring Point	Constituent	Trend
MW-3R	Cobalt	Increasing
MW-4R3	Cobalt	Decreasing
	Trichloroethene	Decreasing
	Vinyl Chloride	Decreasing
MW-9	Cobalt	Stable

6.0 RECOMMENDATIONS

6.1 SITE IMPACT ON GROUNDWATER

A majority of the groundwater impacts noted at the Landfill are located along the south boundary, near monitoring wells MW-3R, MW-4R3, and MW-9, which are in the corrective action monitoring program.

6.2 PROPOSED MONITORING

Proposed monitoring for the 2026 calendar year is summarized in **Table 2**. Monitoring associated with a revised corrective action groundwater monitoring program (CAMP) will likely occur during the upcoming reporting period, but the details of the sampling are unknown at this time and so are not included in Table 2.

6.3 PROPOSED MONITORING WELL CHANGES

Impact delineation monitoring wells and attenuation zone point of compliance monitoring wells are anticipated to be installed in the easement south of the Landfill during the upcoming reporting period.

Table 1
Monitoring Program Summary Table
2025 Annual Water Quality Report
Sioux City Sanitary Landfill
Permit No. 97-SDP-03-81C

Monitoring Well	Formation ⁽¹⁾	Current Monitoring Program	Change for Next Sampling Event	Control Limit Exceedances for the 2025 Reporting Period ⁽²⁾	Constituents with SSLs	Total Number of Samples in Each Monitoring Program (Inorganic/Organic)		
						Detection	Assessment	Corrective Action
HMSP Monitoring Points								
MW-7	Silty Lean Clay	Background	No Change	Not Applicable	Not Applicable	20/28	-	-
MW-2R	Silty Clay	Assessment	No Change	None Not sampled due to well damage.	None	-	17/29	-
MW-3R	Silty Clay	Corrective Action	No Change	Barium, Cobalt, Nickel, 1,1-Dichloroethane, Benzene, Chloroethane, cis-1,2-Dichloroethene	Cobalt	-	-	21/36
MW-4R3	Silty Clay	Corrective Action	No Change	Barium, Cobalt, Nickel, 1,1-Dichloroethane, 1,2-Dichloropropane, Benzene, cis-1,2-Dichloroethene, Tetrachloroethene, trans-1,2-Dichloroethene, Trichloroethene, Vinyl Chloride	Cobalt, Trichloroethene, Vinyl Chloride	-	-	19/34
MW-9	Silty Lean Clay	Corrective Action	No Change	Arsenic, Barium, Cobalt, Nickel, 1,1-Dichloroethane, Chloroethane	Cobalt	-	-	18/29
MW-10	Silty Lean Clay	Assessment	No Change	Barium, Cadmium, Cobalt, Copper, Lead, Nickel, Dichlorodifluoromethane	None	-	20/28	-
MW-11	Silty Lean Clay	Assessment	No Change	Cobalt	None	-	20/28	-
MW-12	Silty Clay	Assessment	No Change	None Not sampled due to insufficient water.	None	-	16/26	-
Other Monitoring Points								
MW-13	Loess	Bracketing for south of Landfill						
MW-14	Loess	Bracketing for south of Landfill						
MW-15	Loess	Bracketing for south of Landfill						
MW-301	Loess	Bracketing for south of Landfill						
MW-401	Loess	Bracketing for south of Landfill						

Notes:

⁽¹⁾ Obtained from screened interval on boring logs.

⁽²⁾ A single detection of a VOC in the reporting period is recorded above as a control limit exceedance.

SSL = Statistically Significant Level above groundwater protection standard.

Table 2
Monitoring Program Implementation Schedule
2025 Annual Water Quality Report
Sioux City Sanitary Landfill
Permit No. 97-SDP-03-81C

Monitoring Well	Recent Sampling Dates and Consituents		Upcoming Sampling Dates and Constituents		Full Appendix II Sample Dates	
	June 2025	November 2025	1 st 2026 Semi-Annual	2 nd 2026 Semi-Annual	Previously Collected	Next Event
MW-7	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	NA	NA
MW-2R	Not sampled (insufficient water)	Not sampled (pump issue)	Appendix I, TSS	Appendix I, TSS	9/26/2017, 5/4/2022	2027
MW-3R	Appendix I, TSS, Dichlorodifluoromethane	Appendix I, TSS, Dichlorodifluoromethane	Appendix I, TSS, Dichlorodifluoromethane	Appendix I, TSS, Dichlorodifluoromethane	9/26/2017, 5/4/2022	2027
MW-4R3	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	9/26/2017, 5/4/2022	2027
MW-9	Not sampled (insufficient water)	Appendix I, TSS, Dichlorodifluoromethane	Appendix I, TSS, Dichlorodifluoromethane	Appendix I, TSS, Dichlorodifluoromethane	9/26/2017, 5/4/2022	2027
MW-10	Not sampled (insufficient water)	Appendix I, TSS, Dichlorodifluoromethane	Appendix I, TSS, Dichlorodifluoromethane	Appendix I, TSS, Dichlorodifluoromethane	9/26/2017, 5/4/2022	2027
MW-11	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	Appendix I, TSS	9/26/2017, 5/4/2022	2027
MW-12	Not sampled (insufficient water)	Not sampled (insufficient water)	Appendix I, TSS, Dichlorodifluoromethane	Appendix I, TSS, Dichlorodifluoromethane	9/26/2017, 5/4/2022	2027
MW-13	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Not applicable	Not applicable
MW-14	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Not applicable	Not applicable
MW-15	Not sampled (insufficient water)	Cobalt, TSS	Cobalt, TSS	Cobalt, TSS	Not applicable	Not applicable
MW-301	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Not applicable	Not applicable
MW-401	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Cobalt, TSS, Trichloroethene, Vinyl Chloride	Not applicable	Not applicable

Notes:

TSS - Total Suspended Solids

Table 3
Monitoring Well Maintenance and Performance Revaluation Schedule
2025 Annual Water Quality Report
Sioux City Sanitary Landfill
Permit No. 97-SDP-03-81C

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

Notes:

⁽¹⁾ See Section 2.2 of this report.

⁽²⁾ See Table 4.

NA - Not Applicable; There is no underdrain at the Landfill.

Table 4
Monitoring Well Performance and Maintenance Summary
2025 Annual Water Quality Report
Sioux City Sanitary Landfill
Permit No. 97-SDP-03-81C

Well	Top of Casing	Top of Screen	Total Depth	Datum	Date of Measurements		Maximum Depth Discrepancy (ft)
					6/16/2025	11/11/2025	
MW-7	1357.92	1301.4	66.5	Groundwater Level (ft)	57.16	57.96	1.3
				Groundwater Elevation (Ft MSL)	1300.76	1299.96	
				Measured Well Depth (ft)	65.2	NM	
				Submerged screen	N	N	
MW-2R	1302.18	1278.6	33.6	Groundwater Level (ft)	28.68	29.73	-0.8
				Groundwater Elevation (Ft MSL)	1273.50	1272.45	
				Measured Well Depth (ft)	34.1	34.4	
				Submerged screen	N	N	
MW-3R	1348.99	1288.5	68.8	Groundwater Level (ft)	63.75	64.28	-0.8
				Groundwater Elevation (Ft MSL)	1285.24	1284.71	
				Measured Well Depth (ft)	69.6	NM	
				Submerged screen	N	N	
MW-4R3	1349.64	1291.5	73.2	Groundwater Level (ft)	65.87	66.16	-0.2
				Groundwater Elevation (Ft MSL)	1283.77	1283.48	
				Measured Well Depth (ft)	73.4	NM	
				Submerged screen	N	N	
MW-9	1358.99	1289.7	79.3	Groundwater Level (ft)	70.98	71.22	1.6
				Groundwater Elevation (Ft MSL)	1288.01	1287.77	
				Measured Well Depth (ft)	73.9*	77.7	
				Submerged screen	N	N	
MW-10	1334.91	1266.9	78.0	Groundwater Level (ft)	58.31	58.57	1.6
				Groundwater Elevation (Ft MSL)	1276.60	1276.34	
				Measured Well Depth (ft)	76.5	76.4	
				Submerged screen	Y	Y	
MW-11	1333.18	1272.2	71.0	Groundwater Level (ft)	53.60	53.85	-0.3
				Groundwater Elevation (Ft MSL)	1279.58	1279.33	
				Measured Well Depth (ft)	71.3	NM	
				Submerged screen	Y	Y	
MW-12	1348.83	1288.4	75.0	Groundwater Level (ft)	71.46	72.38	-0.6
				Groundwater Elevation (Ft MSL)	1277.37	1276.45	
				Measured Well Depth (ft)	75.6	75.5	
				Submerged screen	N	N	

Notes:

*- Likely anomalous and not confirmed.

- 1) NM - Not Measured - Monitoring wells with dedicated sampling pumps are required to be measured every 5 years. Monitoring wells were measured during this reporting period and will be measured next during the 2030 reporting period.
- 2) Measured well depths were within 1.6 foot of the installed depths. It appears that siltation is not affecting the ability of the wells to produce samples.

Table 5
Background and GWPS Summary Tables
2025 Annual Water Quality Report
Sioux City Sanitary Landfill
Permit No. 097-SDP-03-81C

Interwell Background/GWPS (MW-7)										
Constituent	Units	Samples	Detections	Min	Max	Mean	Background Level	Statistical Test	GWPS	Source
Antimony (Sb)	mg/L	20	8	0.000295*	0.00435	0.0009835	0.00274	Control Limit	0.006	MCL
Arsenic (As)	mg/L	19	17	0.000696*	0.001100	0.0009237	0.00117	Control Limit	0.01	MCL
Barium (Ba)	mg/L	20	20	0.0993	0.1700	0.1390150	0.18110	Control Limit	2.0	MCL
Beryllium (Be)	mg/L	19	1	0.000055*	0.0005 (1/2 RL)	0.0004766	0.00068	Control Limit	0.004	MCL
Cadmium (Cd)	mg/L	19	3	0.000049*	0.00025 (1/2 RL)	0.0001343	0.00031	Control Limit	0.005	MCL
Chromium (Cr)	mg/L	20	20	0.0135	0.0192	0.0163125	0.01919	Control Limit	0.1	MCL
Cobalt (Co)	mg/L	20	4	0.000103*	0.00075 (1/2 RL)	0.0002772	0.00055	Control Limit	0.0021	SWS
Copper (Cu)	mg/L	20	12	0.00122*	0.0075 (1/2 RL)	0.0026963	0.00528	Control Limit	1.3	MCL
Lead (Pb)	mg/L	19	4	0.000114*	0.000775	0.0002901	0.00060	Control Limit	0.015	MCL
Nickel (Ni)	mg/L	19	1	0.001 (1/2 RL)	0.0025 (1/2 RL)	0.0023437	0.00328	Control Limit	0.1	SWS
Selenium (Se)	mg/L	20	20	0.041	0.105	0.0762675	0.11090	Control Limit	0.1109	SSS
Silver (Ag)	mg/L	19	1	0.000137*	0.0005 (1/2 RL)	0.0004677	0.00066	Control Limit	0.1	SWS
Thallium (Tl)	mg/L	20	0	0.0005 (1/2 RL)	0.001 (1/2 RL)	0.0005250	< 0.002	DQR	0.002	MCL
Vanadium (V)	mg/L	20	11	0.000542*	0.0075 (1/2 RL)	0.0019603	0.00497	Control Limit	0.035	SWS
Zinc (Zn)	mg/L	19	2	0.005 (1/2 RL)	0.0109	0.0098263	0.01222	Control Limit	2.0	SWS

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

Acronyms/Abbreviations:

RL = Reporting Limit

GWPS = Groundwater Protection Standard (mg/L)

DQR = Double Quantification Rule

SSS = Site-Specific GWPS

SWS = Statewide Standard

PL = Prediction Limit

MCL = EPA Maximum Contaminant Level

NP = Non-Parametric

P = Parametric

Comments:

- 1) Water quality results and effectiveness of the statistical data evaluation criteria:** Statistical evaluations consist of control limits and confidence intervals/confidence bands, as appropriate. Data from the background wells is not used for development of confidence intervals or confidence bands.
- 2) Changes to the previous statistical method during reporting period:** There were no changes to the statistical method during the 2025 reporting period.
- 3) Re-sampling strategy:** There is no retesting strategy for this site. The statistical evaluation of the analytical results from the downgradient monitoring wells consists of a comparison to control limits of two standard deviations above (or below for pH) the means of the parameters listed in IAC 113.2(5)"d"(1) and (2) in a corresponding upgradient groundwater monitoring well. If the concentrations of the applicable parameters measured in the downgradient monitoring points are above (above or below for pH) the control limit, then the monitoring point is required to progress to assessment monitoring.
- 4) Justification for data exclusion:** Data obtained prior to the implementation of low-flow sampling during the 2nd 2015 semi-annual sampling event was removed from statistical consideration beginning with the 2nd 2019 semi-annual statistical analysis due to the effect of elevated TSS concentrations on inorganic concentrations. Sulfide data obtained during the October 2020 and both 2021 sampling events was removed from statistical consideration. Sulfide samples were analyzed using a different method. This data did not correspond with previous sulfide sampling results and therefore was removed from statistical consideration.

Table 6
Summary of Well/Detected Constituent Pairs With No Previous Control Limit Exceedances
2025 Annual Water Quality Report
Sioux City Sanitary Landfill
Permit No. 97-SDP-03-81C

Well	Constituent	Units	Most Recent Result	Background Standard
MW-10	Copper	mg/L	0.006345	0.00528

Notes:

- 1) Criteria for inclusion in this table is a well/constituent pair with a control limit exceedance during the 2025 reporting period and no control limit exceedance during the 2024 reporting period.

Comments:

- 1) **Problems with the current detection network:** Not applicable.
- 2) **Schedule to implement remedies:** Not applicable.
- 3) **Alternative constituent or sample frequency changes:** None.
- 4) **Significant changes to calculated prediction limits:** Not applicable.
- 5) **Resampling strategy:** There is currently no retesting strategy for the Landfill.

Table 7
Summary Table of Ongoing and Newly Identified Control Limit Exceedances
2025 Annual Water Quality Report
Sioux City Sanitary Landfill
Permit No. 97-SDP-03-81C

Well	Constituent	Units	Most Recent Result	Background Standard	Lower Confidence Limit	GWPS	Sample Dates		
							Initial Exceedance	Resample(s)	5 th background sample
MW-2R**	None (not sampled)								
MW-3R	Barium	mg/L	0.686	0.18110	0.596	2	6/16/2025	NM	5/4/2011
	Cobalt	mg/L	0.0035	0.00055	0.001234	0.0021	6/16/2025	NM	10/16/2013
	Nickel	mg/L	0.0202	0.00328	0.0123	0.1	6/16/2025	NM	5/4/2011
	1,1-Dichloroethane	µg/L	60.7	<1	51.15	140	5/3/2007	NM	6/3/2009
	Benzene	µg/L	<0.5	<0.5	0.5284	5	10/6/2011	NM	6/3/2009
	Chloroethane	µg/L	7.41	<4	4.494	2800	6/3/2009	NM	12/15/2010
MW-4R3	cis-1,2-Dichloroethene	µg/L	1.63	<1	0.9437	70	5/22/2019	NM	12/15/2010
	Barium	mg/L	1.17	0.18110	1.188	2	6/16/2025	NM	5/4/2011
	Cobalt	mg/L	0.00574	0.00055	0.006074	0.0021	6/16/2025	NM	10/16/2013
	Nickel	mg/L	0.0235	0.00328	0.02111	0.1	6/16/2025	NM	5/4/2011
	1,1-Dichloroethane	µg/L	77.4	<1	72.3	140	5/3/2007	NM	6/3/2009
	1,2-Dichloropropane	µg/L	1.3	<1	0.7825	5	8/23/2016	NM	10/16/2013
	Benzene	µg/L	0.274*	<0.5	0.2654	5	5/3/2007	NM	6/3/2009
	cis-1,2-Dichloroethene	µg/L	31	<1	27.45	70	5/3/2007	NM	6/3/2009
	Tetrachloroethene	µg/L	5.04	<1	3.209	5	5/3/2007	NM	6/3/2009
MW-9	trans-1,2-Dichloroethene	µg/L	1.88	<1	1.466	100	12/8/2008	NM	12/15/2010
	Trichloroethene	µg/L	2.8	<1	2.813	5	12/20/2006	NM	12/8/2008
	Vinyl Chloride	µg/L	4.05	<1	4.073	2	12/20/2006	NM	12/8/2008
	Arsenic	mg/L	0.00424	0.00117	0.00106	0.01	11/11/2025	NM	6/26/2013
	Barium	mg/L	0.605	0.18110	0.5451	2	11/11/2025	NM	6/26/2013
	Cobalt	mg/L	0.00478	0.00055	0.003208	0.0021	11/11/2025	NM	3/5/2014
MW-10	Nickel	mg/L	0.0104	0.00328	0.007638	0.1	11/11/2025	NM	6/26/2013
	1,1-Dichloroethane	µg/L	28.6	<1	18.43	140	6/26/2013	NM	6/7/2012
	Chloroethane	µg/L	4.19	<4	4.669	2800	6/26/2013	NM	6/7/2012
	Barium	mg/L	0.266	0.18110	0.2403	2	11/11/2025	NM	10/16/2013
	Cadmium	mg/L	0.000439	0.00031	0.00005	0.005	11/11/2025	NM	10/16/2013
	Cobalt	mg/L	0.00299	0.00055	0.001245	0.0021	11/11/2025	NM	3/5/2014
MW-11	Copper	mg/L	0.006345	0.00528	0.00223	1.3	11/11/2025	NM	10/16/2013
	Lead	mg/L	0.002965	0.00060	0	0.015	11/11/2025	NM	10/16/2013
	Nickel	mg/L	0.00613	0.00328	0.001718	0.1	11/11/2025	NM	10/16/2013
	Dichlorodifluoromethane	µg/L	11.1	<3	TS	1000	5/4/2022	NM	10/4/2023
MW-12**	Cobalt	mg/L	0.00149	0.00055	0.00142	0.0021	6/16/2025	NM	3/5/2014
MW-12**	None (not sampled)								

Notes:

1) Ongoing control limit exceedance is defined as control limit exceedances for a monitoring well/constituent pair in both the 2024 and 2025 reporting periods.

2) Shaded cells indicate control limit exceedances present in this reporting period that were not present in the 2024 reporting period.

NM - Not Measured; retesting of constituents with indicated control limit exceedances was not part of the statistical methodology performed.

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

** - Not sampled during this reporting period. MW-2R was damaged. MW-12 had insufficient water for sampling.

TS - Theil-Sen. Confidence limits are not calculated when a statistically significant trend is present.

Comments:

1) **Problems with the current assessment network:** None.

2) **Proposed remedies:** None.

3) **Alternative constituent or sample frequency changes:** None.

4) **Plume delineation strategies:** None.

5) **Property owner notifications:** Not applicable.

Table 8
Summary Table of Ongoing and Newly Identified SSLs
2025 Annual Water Quality Report
Sioux City Sanitary Landfill
Permit No. 97-SDP-03-81C

Well	Constituent	Units	Most Recent Result	Upper Confidence Limit	GWPS	Initial Exceedance	Upper Confidence Limit Below GWPS					
							1 st Year	2 nd Year	3 rd Year			
MW-3R	Cobalt	mg/L	0.0035	0.005501	0.0021	2023	NA	NA	NA	NA	NA	NA
MW-4R3	Cobalt	mg/L	0.000574	0.009156	0.0021	2020	NA	NA	NA	NA	NA	NA
	Trichloroethene	µg/L	2.8	7.912	5	2021	NA	NA	NA	NA	NA	NA
	Vinyl Chloride	µg/L	4.05	6.012	2	2020	NA	NA	NA	NA	NA	NA
MW-9	Cobalt	mg/L	0.00478	0.004667	0.0021	2020	NA	NA	NA	NA	NA	NA

Notes:

NA - Indicates that the constituent-monitoring point dataset has not satisfied the statistical requirements of IAC 567-113.10(9)"e"(2), which is identified by the entire confidence interval or any portion of the upper confidence band, as appropriate, being below the GWPS.

1) The SSLs in this table were previously reported.

Table 9
Summary of Groundwater Chemistry
2025 Annual Water Quality Report
Sioux City Sanitary Landfill
Permit No. 97-SDP-03-81C

The Reporting Period Summary of Groundwater Chemistry is located in Appendix C.

Analytical data prior to 2025 is available in the 2024 Annual Water Quality Report, dated November 26, 2024 (Doc #111376).

Table 10
Historical Control Limit Exceedances and SSLs
2025 Annual Water Quality Report
Sioux City Sanitary Landfill
Permit No. 97-SDP-03-81C

Key

Control Limit Exceedance
SSL - Statistically Significant Level above the GWPS

Well	Constituent	Fall 2019	Spring 2020	Fall 2020	Spring 2021	Fall 2021	Spring 2022	Fall 2022	Spring 2023	Fall 2023	Spring 2024	Fall 2024	Spring 2025	Fall 2025
MW-2R	Barium												NS	NS
	Cadmium												NS	NS
	Cobalt												NS	NS
	Nickel												NS	NS
	Vanadium												NS	NS
	1,1-Dichloroethane												NS	NS
	Chloroethane												NS	NS
	cis-1,2-Dichloroethene												NS	NS
MW-3R	Arsenic													
	Barium													
	Beryllium													
	Cadmium													
	Chromium													
	Cobalt													
	Copper													
	Lead													
	Nickel													
	Silver													
	Vanadium													
	Zinc													
	1,1-Dichloroethane													
	Acetone													
	Benzene													
	Chloroethane													
	Chloromethane													
	cis-1,2-Dichloroethene													
	Trichloroethene													
	Vinyl Chloride													
	Dichlorodifluoromethane													
MW-4R3	Arsenic													
	Barium													
	Cadmium													
	Cobalt													
	Copper													
	Lead													
	Nickel													
	Zinc													
	1,1-Dichloroethane													
	1,2-Dichloropropane													
	Acetone													
	Benzene													
	Chloroethane													
	cis-1,2-Dichloroethene													
	Tetrachloroethene													
	trans-1,2-Dichloroethene													
	Trichloroethene													
	Vinyl Chloride													
MW-9	Arsenic												NS	
	Barium												NS	
	Beryllium												NS	
	Cadmium												NS	
	Cobalt													
	Copper												NS	
	Lead												NS	
	Nickel												NS	
	Zinc												NS	
	1,1-Dichloroethane												NS	
	Acetone												NS	
	Benzene												NS	
	Chloroethane												NS	
	cis-1,2-Dichloroethene												NS	
	Dichlorodifluoromethane												NS	
	Barium												NS	
	Cadmium												NS	
MW-10	Cobalt												NS	
	Copper												NS	
	Lead												NS	
	Nickel												NS	
	Vanadium												NS	
	Zinc												NS	
	Dichlorodifluoromethane												NS	
	Cadmium												NS	
MW-11	Cobalt												NS	
	Lead												NS	
	Arsenic												NS	NS
MW-12	Barium												NS	NS
	Cobalt												NS	NS
	Lead												NS	NS
	Zinc												NS	NS
	1,1-Dichloroethane												NS	NS
	Chloroethane												NS	NS
	Dichlorodifluoromethane												NS	NS
	Sulfide												NS	NS

Notes:

- 1) Inorganic data obtained prior to the implementation of low-flow sampling was removed from the background dataset beginning with the 2nd 2019 semi-annual statistical evaluation due to the effect that elevated TSS concentrations could have had on concentrations of inorganics. Therefore, control limit exceedances and/or SSLs measured prior to the 2nd 2019 semi-annual statistical evaluation are no longer considered.
- 2) Detections of VOCs are considered control limit exceedances for the purpose of this table.
- 3) NS - Not sampled due to insufficient water or well damage.

Table 11
Corrective Action Trend Analysis
2025 Annual Water Quality Report
Sioux City Sanitary Landfill
Permit No. 97-SDP-03-81C

Well	Current SSL	Trend	Calculated S	Critical S	Total N	Projected Date to Completion*
MW-3R	Cobalt	Increasing	4	21	8	NA
MW-4R3	Cobalt	Decreasing	-14	-21	8	2036
	Trichloroethene	Decreasing	-12	-21	8	2030
	Vinyl Chloride	Decreasing	-2	-21	8	2053
MW-9	Cobalt	Stable	0	21	8	NA

Notes:

N - Number of Samples

NA - Projected date to completion unable to be calculated due to a non-decreasing trend.

S- Mann-Kendall Statistic

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



Path: C:\Users\hmadson\OneDrive - SCS Engineers\Desktop\GIS\Map\Iowa Office\Site Maps\Sioux City 2024\AMON\Sioux City 2024\AMON.aprx
User: hmadson
Date Saved: 4/22/2025 9:51 AM

Monitoring Well	Monitoring Program
MW-7	Background
MW-2R	Assessment
MW-3R	Corrective Action
MW-4R3	Corrective Action
MW-9	Corrective Action
MW-10	Assessment
MW-11	Assessment
MW-12	Assessment

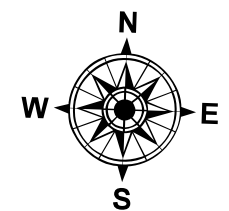


Approved Monitoring Network

Legend

- | | | |
|------------------------|-------------------------------|------------------------------------|
| HNSP Monitoring Well | Leachate Piezometer | Located Waste Boundary |
| Monitoring Well | Leachate Manhole | Interpolated Waste Boundary |
| Groundwater Piezometer | Landfill Gas Monitoring Point | Approximate Waste Boundary |
| Gas Relief Well | Approximate Property Boundary | Approximate Easement Area Boundary |

City of Sioux City Sanitary
Landfill
Sioux City, Iowa
Project No: 27225426.00
Drawing Date: December
2025



0 140 280 560
Feet

Figure 1

Appendix A

Field Sampling Forms

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill							
Monitoring Well/Piezometer ID: MW-2R				Date: 6/17/2025			
Gradient: Down				Sampler: Garrett Horak			
A. MW/PIEZOMETER CONDITIONS							
Well/Piezometer Capped?		Yes					
Litter/Standing Water?		No					
B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)							
Measured Well Total Depth (feet):				34.1			
Initial Static Water Level (feet):				28.68			
Initial Groundwater Elevation (ft-amsl):				1273.50			
Equipment Used:				Non-Dedicated Submersible			
C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
5:56 PM	Purging start time.						
6:02 PM	13.5	1.0	1134.0	6.77	192.6	35.3	
6:05 AM	13.8	0.8	1136.0	6.77	201.1	22.4	
	Parameters stabilized, sample collected.						
Quantity of Water Removed from Well (liters): 2.1							
Was well pumped/bailed dry?				Yes			
Total Amount of Time Purged (minutes:seconds):				10:00			
Average Purge Rate (mL/min):				210.00			
D. WELL MAINTENANCE							
Does the well require any future maintenance?				Yes			
If yes, explain:	Sub tubing stuck; unable to retrieve.						
Additional Comments:	Color-Clearish/Brown Odor-None Well went dry during sample collection.						

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-3R	Date: 6/16/2025
Gradient: Down	Sampler: Garrett Horak

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	69.6
Initial Static Water Level (feet):	63.75
Initial Groundwater Elevation (ft-amsl):	1285.24
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 (NTU)	
3:59 PM	Purging start time.						
4:02 PM	15.7	0.7	1782.3	6.42	49.7	8.3	
4:05 PM	15.9	0.4	1801.3	6.42	31.6	5.1	
4:08 PM	16.3	0.2	1811.9	6.42	28.1	5.1	
4:11 PM	16.5	0.2	1799.4	6.44	20.3	3.7	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.7
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	225.00

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Color-Clear with Black Particles Odor-Plastic/Vinyl

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-4R3	Date: 6/18/2025
Gradient: Down	Sampler: Garrett Horak

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	73.4
Initial Static Water Level (feet):	65.87
Initial Groundwater Elevation (ft-amsl):	1283.77
Equipment Used:	Dedicated Submersible

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
9:39 AM	Purging start time.						
9:42 AM	15.4	0.6	1866.6	6.67	25.6	7.0	
9:45 AM	15.6	0.3	1870.7	6.66	10.1	5.6	
9:48 AM	16.3	0.3	1868.7	6.67	7.5	5.1	
9:51 AM	16.8	0.2	1874.5	6.64	8.5	5.0	
Parameters stabilized, sample collected.							

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

D. WELL MAINTENANCE	
Does the well require any future maintenance? No	
If yes, explain:	
Additional Comments:	Color-Clear Odor-Sulfur

FORM FOR GROUNDWATER SAMPLING

Project:								
Sioux City Sanitary Landfill								
Monitoring Well/Piezometer ID:						MW-7	Date:	6/16/2025
Gradient: Up				Sampler:	Garrett Horak			
A. MW/PIEZOMETER CONDITIONS								
Well/Piezometer Capped?				Yes				
Litter/Standing Water?				No				
B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)								
Measured Well Total Depth (feet):				65.2				
Initial Static Water Level (feet):				57.16				
Initial Groundwater Elevation (ft-amsl):				1300.72				
Equipment Used:				Dedicated Submersible				
C. WELL PURGING								
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES								
	Temperature °C	Dissolved Oxygen mg/L	Specific Conductivity µS/cm	pH (S.U.)	ORP (mV)	Turbidity (NTU)		
Time	10%		+/- 10%	+/- 0.1				
3:13 PM	Purging start time.							
3:16 PM	14.9	5.0	1004.1	7.42	259.9	8.8		
3:19 PM	15.5	5.2	1000.2	7.38	264.5	6.3		
3:22 PM	15.4	5.3	1013.9	7.37	268.6	5.1		
3:25 PM	14.9	5.4	1022.2	7.37	272.8	5.4		
	Parameters stabilized, sample collected.							
Quantity of Water Removed from Well (liters):				2.2				
Was well pumped/bailed dry?				No				
Total Amount of Time Purged (minutes:seconds):				12:00				
Average Purge Rate (mL/min):				183.33				
D. WELL MAINTENANCE								
Does the well require any future maintenance?						No		
If yes, explain:								
Additional Comments:	Color-Clear Odor-None							

FORM FOR GROUNDWATER SAMPLING

[illegible]

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-10	Date: 6/17/2025
Gradient: Down	Sampler: Garrett Horak

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	76.5
Initial Static Water Level (feet):	58.31
Initial Groundwater Elevation (ft-amsl):	1276.60
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 (NTU)	
10:17 AM	Purging start time.						
10:23 AM	16.5	0.9	588.0	7.24	52.0	21.9	
10:26 AM	17.2	0.8	586.0	7.22	59.7	17.6	
10:29 AM	18.9	1.1	585.0	7.23	77.4	24.6	
10:32 AM	18.8	1.6	592.0	7.23	82.2	20.5	
10:35 AM	17.5	1.5	590.0	7.23	94.2	18.1	
10:38 AM	16.9	1.2	587.0	7.21	105.6	14.5	
10:41 AM	17.8	1.0	589.0	7.19	115.6	13.7	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	1.5
Was well pumped/bailed dry?	Yes
Total Amount of Time Purged (minutes:seconds):	0:00
Average Purge Rate (mL/min):	62.50

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Well ran dry before parameter stabilization.

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-11	Date: 6/17/2025
Gradient: Down	Sampler: Garrett Horak

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	71.3
Initial Static Water Level (feet):	53.60
Initial Groundwater Elevation (ft-amsl):	1279.56
Equipment Used:	Dedicated Submersible

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
9:35 AM	Purging start time.						
9:38 AM	14.2	0.6	749.5	7.14	30.8	5.0	
9:41 AM	14.3	0.4	748.4	7.11	59.3	4.7	
9:44 AM	14.6	0.3	751.1	7.10	74.0	4.6	
9:47 AM	14.6	0.2	748.0	7.10	46.0	4.8	
9:50 AM	15.2	0.2	5.4	7.09	0.9	9.9	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.5
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	208.33

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Color-Clear Odor-Sulfur

FORM FOR GROUNDWATER SAMPLING

[illegible]

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-13	Date: 6/17/2025
Gradient: Down	Sampler: Garrett Horak

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	53.3
Initial Static Water Level (feet):	45.53
Initial Groundwater Elevation (ft-amsl):	1282.02
Equipment Used:	Dedicated Submersible

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
3:37 PM	Purging start time.						
3:40 PM	15.4	0.9	1606.9	6.67	237.3	137.5	
3:43 PM	14.5	0.7	1613.4	6.65	246.5	120.6	
3:46 PM	14.5	0.5	1623.7	6.65	249.7	62.3	
3:49 PM	14.2	0.4	1637.8	6.66	251.7	50.5	
Parameters stabilized, sample collected.							

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

D. WELL MAINTENANCE	
Does the well require any future maintenance? No	
If yes, explain:	
Additional Comments:	Color- Cloudy, Brownish/gray Odor-None

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-14	Date: 6/17/2025
Gradient: Down	Sampler: Garrett Horak

A. MW/PIEZOMETER CONDITIONS

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

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

Measured Well Total Depth (feet):	52.8
Initial Static Water Level (feet):	43.05
Initial Groundwater Elevation (ft-amsl):	1282.21
Equipment Used:	Dedicated Submersible

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
4:34 PM	Purging start time.						
4:37 PM	13.7	0.7	1625.9	6.74	209.2	309.1	
4:40 PM	13.7	0.4	1618.2	6.71	213.6	248.6	
4:43 PM	13.5	0.4	1610.9	6.71	217.8	187.7	
4:46 PM	13.5	1.2	1591.1	6.78	221.5	124.7	
Parameters stabilized, sample collected.							

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

D. WELL MAINTENANCE

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

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-15	Date: 6/16/2025
Gradient: Down	Sampler: Garrett Horak

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	72.9
Initial Static Water Level (feet):	69.02
Initial Groundwater Elevation (ft-amsl):	1286.92
Equipment Used:	Dedicated Submersible

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

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

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Insufficient water to sample.

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-301	Date: 6/17/2025
Gradient: Down	Sampler: Garrett Horak

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	63.7
Initial Static Water Level (feet):	53.69
Initial Groundwater Elevation (ft-amsl):	1287.75
Equipment Used:	Non-Dedicated Submersible

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
7:33 PM	Purging start time.						
7:36 PM	13.3	0.8	1793.3	6.54	183.9	478.5	
7:39 PM	13.5	0.5	1799.9	6.54	194.7	358.6	
7:42 PM	13.7	0.3	1798.0	6.55	202.8	304.0	
7:45 PM	13.7	0.2	1791.0	6.54	209.1	176.0	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.7
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	225.00

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

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-401	Date: 6/17/2025
Gradient: Down	Sampler: Garrett Horak

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	69.5
Initial Static Water Level (feet):	57.75
Initial Groundwater Elevation (ft-amsl):	1283.69
Equipment Used:	Non-Dedicated Submersible

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
12:09 PM	Purging start time.						
12:12 PM	14.7	0.9	1502.3	6.73	163.5	426.4	
12:15 PM	14.6	0.4	1514.2	6.71	33.3	473.3	
12:18 PM	14.8	0.2	1503.3	6.71	-45.4	781.5	
12:21 PM	14.9	0.1	1492.9	6.71	-69.6	1231.6	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.5
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	208.33

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

Additional Comments:	Color-Cloudy/Brown Odor-Plastic/Vinyl Waited until water was as clear as possible before collecting sample, submersible malfunction during collection, water still very turbid.
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FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-2R	Date: 11/12/2025
Gradient: Down	Sampler: Michael Morgan

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):	34.4
Initial Static Water Level (feet):	29.73
Initial Groundwater Elevation (ft-amsl):	1272.41
Equipment Used:	Dedicated Submersible

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

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

D. WELL MAINTENANCE	
Does the well require any future maintenance?	Yes
If yes, explain:	Tubing needs to be removed from the well and reattached to the dedicated submersible pump.
Additional Comments:	1/2" tubing stuck at ~5ft down well, unable to retrieve. Dedicated submersible pump brought back to office for the winter.

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-3R	Date: 11/12/2025
Gradient: Down	Sampler: Michael Morgan

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	NM
Initial Static Water Level (feet):	64.28
Initial Groundwater Elevation (ft-amsl):	1284.71
Equipment Used:	Dedicated Submersible

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
3:31 PM	Purging start time.						
3:34 PM	14.5	2.2	1769.7	6.52	-59.3	42.8	
3:37 PM	14.1	1.8	1773.2	6.51	-52.6	9.5	
3:40 PM	14.5	1.7	1781.0	6.51	-51.7	5.1	
3:43 PM	14.8	0.7	1783.3	6.49	-50.0	6.8	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	4.8
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	400.00

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Color-clear Odor-slight seaweed

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-4R3	Date: 11/13/2025
Gradient: Down	Sampler: Michael Morgan

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet): NM	
Initial Static Water Level (feet): 66.16	
Initial Groundwater Elevation (ft-amsl): 1283.48	
Equipment Used: Dedicated Submersible	

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
9:02 AM	Purging start time.						
9:05 AM	13.8	1.9	1895.9	6.55	-46.6	17.1	
9:08 AM	14.4	0.9	1895.7	6.54	-45.2	6.9	
9:11 AM	14.5	0.6	1895.0	6.54	-45.8	5.2	
9:14 AM	15.2	0.5	1896.4	6.54	-45.8	5.3	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.9
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	241.67

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Color-clear Odor-slight sulfur

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-7	Date: 11/11/2025
Gradient: Up	Sampler: Michael Morgan

A. MW/PIEZOMETER CONDITIONS	
Well/Piezometer Capped? Yes	
Litter/Standing Water? Yes	Litter around well

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	NM
Initial Static Water Level (feet):	57.96
Initial Groundwater Elevation (ft-amsl):	1299.92
Equipment Used:	Dedicated Submersible

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
1:48 PM	Purging start time.						
1:51 PM	11.5	5.5	980.7	7.19	132.3	9.2	
1:54 PM	11.9	5.6	991.6	7.16	136.7	7.1	
1:57 PM	12.0	5.5	996.4	7.16	139.2	5.3	
2:00 PM	12.3	5.4	994.5	7.18	139.2	4.9	
Parameters stabilized, sample collected.							

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

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

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-9	Date: 11/13/2025
Gradient: Down	Sampler: Michael Morgan

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):	77.7
Initial Static Water Level (feet):	71.22
Initial Groundwater Elevation (ft-amsl):	1287.40
Equipment Used:	Non-Dedicated Stainless Steel 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 (NTU)	
8:04 AM	Purging start time.						
8:07 AM	12.8	2.6	1874.7	6.52	-61.6	106.9	
8:10 AM	13.2	2.0	1921.3	6.54	-64.9	81.8	
8:13 AM	13.6	2.4	1933.1	6.56	-65.7	56.4	
8:16 AM	13.8	2.7	1941.1	6.58	-64.5	40.9	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	4.1
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	341.67

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Color-Gray tint with large red/purple gelatinous clumps Odor-Iodine

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-10	Date: 11/12/2025
Gradient: Down	Sampler: Michael Morgan

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):	76.4
Initial Static Water Level (feet):	58.57
Initial Groundwater Elevation (ft-amsl):	1276.42
Equipment Used:	Non-Dedicated Stainless Steel 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 (NTU)	
9:50 AM	Purging start time.						
9:53 AM	13.4	2.4	591.6	7.28	-32.6	287.8	
9:56 AM	13.4	1.4	591.7	7.24	-43.1	282.6	
9:59 AM	13.9	1.0	589.2	7.23	-47.3	281.9	
10:02 AM	14.2	0.7	589.2	7.22	-47.2	254.5	
10:05 AM	14.6	3.0	590.7	7.25	-46.9	253.8	
10:08 AM	14.6	0.7	591.0	7.21	-45.3	186.3	
10:11 AM	14.6	0.5	591.4	7.21	-44.8	148.4	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	4.3
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	21:00
Average Purge Rate (mL/min):	204.76

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

Additional Comments:	Color: gray/brown Odor: none Dedicated submersible pump unable to establish flow. Non-dedicated submersible pump used. Continued purge after stabilization parameters met due to high turbidity.
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FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-11	Date: 11/12/2025
Gradient: Down	Sampler: Michael Morgan

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet): NM	
Initial Static Water Level (feet): 53.85	
Initial Groundwater Elevation (ft-amsl): 1279.31	
Equipment Used: Dedicated Submersible	

C. WELL PURGING							
FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES							
Time	Temperature (°C) 10%	Dissolved Oxygen (mg/L)	Specific Conductivity (µS/cm) +/- 10%	pH (S.U.) +/- 0.1	ORP (mV)	Turbidity (NTU)	
8:45 AM	Purging start time.						
8:48 AM	12.4	3.2	772.0	7.16	-91.3	47.0	
8:51 AM	12.7	1.4	760.0	7.11	-66.4	11.4	
8:54 AM	12.7	2.4	748.7	7.12	-60.9	7.3	
8:57 AM	13.1	1.8	747.4	7.10	-68.4	5.9	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	5.3
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	441.67

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Color-clear Odor-Sulfur

FORM FOR GROUNDWATER SAMPLING

[illegible]

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-13	Date: 11/12/2025
Gradient: Down	Sampler: Michael Morgan

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	53.3
Initial Static Water Level (feet):	45.66
Initial Groundwater Elevation (ft-amsl):	1281.89
Equipment Used:	Non-Dedicated Stainless Steel 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 (NTU)	
2:39 PM	Purging start time.						
2:42 PM	16.4	4.2	1695.8	6.51	89.5	129.2	
2:45 PM	13.8	3.1	1684.1	6.44	76.1	147.9	
2:48 PM	14.1	2.5	1682.1	6.44	70.2	99.7	
2:51 PM	14.4	2.2	1677.8	6.45	70.5	81.4	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	2.5
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	208.33

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Color-yellow tint Odor-plastic

FORM FOR GROUNDWATER SAMPLING

Project:	Sioux City Sanitary Landfill		
Monitoring Well/Piezometer ID:	MW-14	Date:	11/12/2025
Gradient:	Down	Sampler:	Michael Morgan

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)			
Measured Well Total Depth (feet):	53.0		
Initial Static Water Level (feet):	43.54		
Initial Groundwater Elevation (ft-amsl):	1281.72		
Equipment Used:	Non-Dedicated Stainless Steel 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 (NTU)	
1:50 PM	Purging start time.						
1:53 PM	13.6	2.5	1599.1	6.53	120.5	332.5	
1:56 PM	13.9	1.7	1610.2	6.52	121.8	240.7	
1:59 PM	13.6	1.4	1614.7	6.52	123.4	220.3	
2:02 PM	13.8	1.2	1611.0	6.52	124.7	163.4	
2:05 PM	13.9	1.1	1599.2	6.53	125.5	115.1	
2:08 PM	13.7	1.1	1589.0	6.53	126.8	59.6	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	5.3
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	18:00
Average Purge Rate (mL/min):	294.44

D. WELL MAINTENANCE

Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Color-cloudy/orange Odor:plastic Purge continued after stabilization parameters met due to high turbidity.

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-15	Date: 11/12/2025
Gradient: Down	Sampler: Michael Morgan

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):	72.9
Initial Static Water Level (feet):	69.33
Initial Groundwater Elevation (ft-amsl):	1286.61
Equipment Used:	Non-Dedicated Stainless Steel 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 (NTU)	
7:58 AM	Purging start time.						
8:01 AM	10.9	2.2	1849.4	6.49	-45.7	54.3	
8:04 AM	11.3	1.1	1891.7	6.49	-51.7	67.5	
8:07 AM	12.7	0.7	1906.0	6.50	-55.1	54.7	
8:10 AM	12.6	0.6	1920.2	6.51	-56.2	34.0	
8:13 AM	12.7	0.5	1921.8	6.51	-56.8	22.2	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	3.3
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	15:00
Average Purge Rate (mL/min):	220.00

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Color-gray tint Odor-sulfur

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-301	Date: 11/11/2025
Gradient: Down	Sampler: Michael Morgan

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):	63.7
Initial Static Water Level (feet):	54.40
Initial Groundwater Elevation (ft-amsl):	1287.04
Equipment Used:	Non-Dedicated Stainless Steel 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 (NTU)	
2:45 PM	Purging start time.						
2:48 PM	13.6	1.7	1822.2	6.45	104.7	259.7	
2:51 PM	13.7	0.9	1839.3	6.46	67.1	290.3	
2:54 PM	13.8	0.7	1843.0	6.46	54.4	285.7	
2:57 PM	14.6	2.4	1850.5	6.52	48.7	263.8	
3:00 PM	14.6	0.8	1859.2	6.46	49.8	286.1	
3:03 PM	14.2	0.5	1851.9	6.46	53.7	327.0	
3:06 PM	14.3	0.4	1845.5	6.45	62.5	239.5	
3:09 PM	14.8	0.4	1847.5	6.45	69.3	191.1	
3:12 PM	14.9	0.3	1853.5	6.45	74.7	145.1	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	4.7
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	27:00
Average Purge Rate (mL/min):	174.07

D. WELL MAINTENANCE	
Does the well require any future maintenance?	No
If yes, explain:	
Additional Comments:	Color-cloudy/light brown Odor:permanent marker Purge continued after stabilization parameters met due to high turbidity.

FORM FOR GROUNDWATER SAMPLING

Project: Sioux City Sanitary Landfill	
Monitoring Well/Piezometer ID: MW-401	Date: 11/11/2025
Gradient: Down	Sampler: Michael Morgan

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):	69.2
Initial Static Water Level (feet):	58.99
Initial Groundwater Elevation (ft-amsl):	1282.45
Equipment Used:	Non-Dedicated Stainless Steel 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 (NTU)	
3:46 PM	Purging start time.						
3:49 PM	13.1	2.4	1572.0	6.68	143.7	580.9	
3:52 PM	12.9	1.1	1557.8	6.66	143.2	534.6	
3:55 PM	13.3	0.8	1554.3	6.65	142.3	451.9	
3:58 PM	13.6	1.4	1559.4	6.65	141.8	313.4	
4:01 PM	13.8	0.6	1559.6	6.65	140.6	240.5	
4:04 PM	13.8	0.5	1561.0	6.65	139.7	195.9	
4:07 PM	13.8	0.4	1561.6	6.65	139.4	127.6	
Parameters stabilized, sample collected.							

Quantity of Water Removed from Well (liters):	5.7
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	24:00
Average Purge Rate (mL/min):	237.50

D. WELL MAINTENANCE	
Does the well require any future maintenance? No	
If yes, explain:	
Additional Comments:	Color-orange/brown Odor-none Purge continued after stabilization parameters met due to high turbidity.

Appendix B-1

Laboratory Analytical Data Sheets

ANALYTICAL REPORT

PREPARED FOR

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

Generated 6/30/2025 12:58:56 AM

JOB DESCRIPTION

1st 2025 Semi-Annual Groundwater Sampling
Sioux City Sanitary Landfill (Bracketing)

JOB NUMBER

310-309159-1

Eurofins Cedar Falls

Job Notes

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

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

Authorization



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Case Narrative

Client: SCS Engineers
Project: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1

Job ID: 310-309159-1

Eurofins Cedar Falls

Job Narrative 310-309159-1

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

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

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

Receipt

The samples were received on 6/19/2025 4:10 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 3 coolers at receipt time were -0.9°C, 0.1°C and 0.7°C.

GC/MS VOA

Method 8260D: The preservative used in the sample containers provided is not compatible with one of the Method 8260 analytes requested. The following sample(s) was received preserved with hydrochloric acid. Vial preservation was pH <2 rather than pH 4-5. : Trip Blank 2 (310-309159-10). The requested target analyte list includes Acrylonitrile.

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-458497 recovered above the upper control limit for Trichlorofluoromethane (22.5%D) and Dichlorodifluoromethane (28.6%D). The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. The associated sample is:(CCV 310-458497/4).

Method 8260D: The method requirement for no headspace was not met. The following volatile sample analyzed with headspace in the sample container: Trip Blank 2 (310-309159-10) and Trip Blank 3 (310-309159-11).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-458338 recovered outside control limits for Vinyl chloride (-67.4%D). The LCS associated with this CCV passes CCV criteria for the affected analytes; therefore, the data have been reported. The associated sample is:(CCV 310-458338/4).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-458256 recovered outside of the control limits for trans-1,2-Dichloropropene (-21.3%D). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-458256/3).

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

Metals

Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following sample(s) was received with insufficient preservation at a pH of >2. The sample(s) was preserved to the appropriate pH in the laboratory.

Method 6020B: The method blank for preparation batch 310-458501 and analytical batch 310-458911 contained vanadium above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

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

General Chemistry

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

Eurofins Cedar Falls

Sample Summary

Client: SCS Engineers

Job ID: 310-309159-1

Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

SDG: Sioux City Sanitary Landfill (Bracketing)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-309159-1	MW-3R	Ground Water	06/16/25 16:24	06/19/25 16:10
310-309159-2	MW-4R3	Ground Water	06/18/25 09:59	06/19/25 16:10
310-309159-3	MW-7	Ground Water	06/16/25 15:36	06/19/25 16:10
310-309159-4	MW-11	Ground Water	06/17/25 10:00	06/19/25 16:10
310-309159-5	MW-13	Ground Water	06/17/25 15:58	06/19/25 16:10
310-309159-6	MW-14	Ground Water	06/17/25 16:54	06/19/25 16:10
310-309159-7	MW-301	Ground Water	06/17/25 20:01	06/19/25 16:10
310-309159-8	MW-401	Ground Water	06/17/25 12:55	06/19/25 16:10
310-309159-9	Trip Blank 1	Water	06/17/25 00:00	06/19/25 16:10
310-309159-10	Trip Blank 2	Water	06/17/25 00:00	06/19/25 16:10
310-309159-11	Trip Blank 3	Water	06/17/25 00:00	06/19/25 16:10

Detection Summary

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-3R

Lab Sample ID: 310-309159-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	68.8		1.00	0.220	ug/L	1		8260D	Total/NA
Benzene	0.584		0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	6.99		4.00	0.790	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	2.15		1.00	0.210	ug/L	1		8260D	Total/NA
Dichlorodifluoromethane	0.303	J	3.00	0.250	ug/L	1		8260D	Total/NA
Vinyl chloride	0.295	J	1.00	0.180	ug/L	1		8260D	Total/NA
Arsenic	0.00128	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.591		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00294		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0186		0.00500	0.00230	mg/L	1		6020B	Total/NA
Total Suspended Solids	6.38		1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-4R3

Lab Sample ID: 310-309159-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	84.9		1.00	0.220	ug/L	1		8260D	Total/NA
1,2-Dichloropropane	0.949	J	1.00	0.270	ug/L	1		8260D	Total/NA
Benzene	0.541		0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	2.63	J	4.00	0.790	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	36.5		1.00	0.210	ug/L	1		8260D	Total/NA
Tetrachloroethene	4.46		1.00	0.480	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	1.76		1.00	0.270	ug/L	1		8260D	Total/NA
Trichloroethene	2.91		1.00	0.430	ug/L	1		8260D	Total/NA
Vinyl chloride	4.03		1.00	0.180	ug/L	1		8260D	Total/NA
Arsenic	0.00146	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	1.15		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00653		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0250		0.00500	0.00230	mg/L	1		6020B	Total/NA
Total Suspended Solids	2.75		1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-7

Lab Sample ID: 310-309159-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Arsenic	0.000974	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.160		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000194	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Chromium	0.0147		0.00500	0.00180	mg/L	1		6020B	Total/NA
Selenium	0.0408		0.00500	0.00140	mg/L	1		6020B	Total/NA
Vanadium	0.00171	J B	0.00500	0.00170	mg/L	1		6020B	Total/NA
Total Suspended Solids	4.88		1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-11

Lab Sample ID: 310-309159-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0900		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00137		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00233	J	0.00500	0.00230	mg/L	1		6020B	Total/NA

Client Sample ID: MW-13

Lab Sample ID: 310-309159-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	1.30		1.00	0.430	ug/L	1		8260D	Total/NA
Vinyl chloride	1.39		1.00	0.180	ug/L	1		8260D	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: SCS Engineers

Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1

SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-13 (Continued)

Lab Sample ID: 310-309159-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.000293	J	0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	29.9		1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-14

Lab Sample ID: 310-309159-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	1.64		1.00	0.430	ug/L	1		8260D	Total/NA
Cobalt	0.000825		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	100		15.0	10.5	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-301

Lab Sample ID: 310-309159-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	4.92		1.00	0.430	ug/L	1		8260D	Total/NA
Vinyl chloride	2.68		1.00	0.180	ug/L	1		8260D	Total/NA
Cobalt	0.00612		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	291		15.0	10.5	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-401

Lab Sample ID: 310-309159-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.0148		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	3260		60.0	42.0	mg/L	1		I-3765-85	Total/NA

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-309159-9

No Detections.

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-309159-10

No Detections.

Client Sample ID: Trip Blank 3

Lab Sample ID: 310-309159-11

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-3R

Lab Sample ID: 310-309159-1

Date Collected: 06/16/25 16:24

Matrix: Ground Water

Date Received: 06/19/25 16:10

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			06/20/25 16:49	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			06/20/25 16:49	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			06/20/25 16:49	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			06/20/25 16:49	1
1,1-Dichloroethane	68.8		1.00	0.220	ug/L			06/20/25 16:49	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			06/20/25 16:49	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			06/20/25 16:49	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			06/20/25 16:49	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			06/20/25 16:49	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			06/20/25 16:49	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			06/20/25 16:49	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			06/20/25 16:49	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			06/20/25 16:49	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			06/20/25 16:49	1
2-Hexanone	<10.0		10.0	2.00	ug/L			06/20/25 16:49	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			06/20/25 16:49	1
Acetone	<10.0		10.0	3.10	ug/L			06/20/25 16:49	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			06/20/25 16:49	1
Benzene	0.584		0.500	0.220	ug/L			06/20/25 16:49	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			06/20/25 16:49	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			06/20/25 16:49	1
Bromoform	<5.00		5.00	0.780	ug/L			06/20/25 16:49	1
Bromomethane	<4.00		4.00	1.10	ug/L			06/20/25 16:49	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			06/20/25 16:49	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			06/20/25 16:49	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			06/20/25 16:49	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			06/20/25 16:49	1
Chloroethane	6.99		4.00	0.790	ug/L			06/20/25 16:49	1
Chloroform	<3.00		3.00	1.30	ug/L			06/20/25 16:49	1
Chloromethane	<3.00		3.00	0.610	ug/L			06/20/25 16:49	1
cis-1,2-Dichloroethene	2.15		1.00	0.210	ug/L			06/20/25 16:49	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			06/20/25 16:49	1
Dibromomethane	<1.00		1.00	0.330	ug/L			06/20/25 16:49	1
Dichlorodifluoromethane	0.303 J		3.00	0.250	ug/L			06/20/25 16:49	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			06/20/25 16:49	1
Iodomethane	<10.0		10.0	7.00	ug/L			06/20/25 16:49	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			06/20/25 16:49	1
Styrene	<1.00		1.00	0.370	ug/L			06/20/25 16:49	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			06/20/25 16:49	1
Toluene	<1.00		1.00	0.430	ug/L			06/20/25 16:49	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			06/20/25 16:49	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			06/20/25 16:49	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			06/20/25 16:49	1
Trichloroethene	<1.00		1.00	0.430	ug/L			06/20/25 16:49	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			06/20/25 16:49	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			06/20/25 16:49	1
Vinyl chloride	0.295 J		1.00	0.180	ug/L			06/20/25 16:49	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			06/20/25 16:49	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-3R

Lab Sample ID: 310-309159-1

Date Collected: 06/16/25 16:24

Matrix: Ground Water

Date Received: 06/19/25 16:10

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	111		76 - 130		06/20/25 16:49	1
Toluene-d8 (Surr)	90		80 - 120		06/20/25 16:49	1
4-Bromofluorobenzene (Surr)	104		80 - 120		06/20/25 16:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		06/24/25 08:40	06/26/25 14:08	1
Arsenic	0.00128	J	0.00200	0.000530	mg/L		06/24/25 08:40	06/26/25 14:08	1
Barium	0.591		0.00200	0.000660	mg/L		06/24/25 08:40	06/26/25 14:08	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		06/24/25 08:40	06/26/25 14:08	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		06/24/25 08:40	06/26/25 14:08	1
Chromium	<0.00500		0.00500	0.00180	mg/L		06/24/25 08:40	06/26/25 14:08	1
Cobalt	0.00294		0.000500	0.000170	mg/L		06/24/25 08:40	06/26/25 14:08	1
Copper	<0.00500		0.00500	0.00320	mg/L		06/24/25 08:40	06/26/25 14:08	1
Lead	<0.000500		0.000500	0.000330	mg/L		06/24/25 08:40	06/26/25 14:08	1
Nickel	0.0186		0.00500	0.00230	mg/L		06/24/25 08:40	06/26/25 14:08	1
Selenium	<0.00500		0.00500	0.00140	mg/L		06/24/25 08:40	06/26/25 14:08	1
Silver	<0.00100		0.00100	0.000500	mg/L		06/24/25 08:40	06/26/25 14:08	1
Thallium	<0.00100		0.00100	0.000570	mg/L		06/24/25 08:40	06/26/25 14:08	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		06/24/25 08:40	06/26/25 14:08	1
Zinc	<0.0200		0.0200	0.0130	mg/L		06/24/25 08:40	06/26/25 14:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	6.38		1.88	1.31	mg/L			06/20/25 14:26	1

Client Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-4R3

Lab Sample ID: 310-309159-2

Date Collected: 06/18/25 09:59

Matrix: Ground Water

Date Received: 06/19/25 16:10

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			06/20/25 17:12	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			06/20/25 17:12	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			06/20/25 17:12	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			06/20/25 17:12	1
1,1-Dichloroethane	84.9		1.00	0.220	ug/L			06/20/25 17:12	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			06/20/25 17:12	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			06/20/25 17:12	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			06/20/25 17:12	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			06/20/25 17:12	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			06/20/25 17:12	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			06/20/25 17:12	1
1,2-Dichloropropane	0.949	J	1.00	0.270	ug/L			06/20/25 17:12	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			06/20/25 17:12	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			06/20/25 17:12	1
2-Hexanone	<10.0		10.0	2.00	ug/L			06/20/25 17:12	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			06/20/25 17:12	1
Acetone	<10.0		10.0	3.10	ug/L			06/20/25 17:12	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			06/20/25 17:12	1
Benzene	0.541		0.500	0.220	ug/L			06/20/25 17:12	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			06/20/25 17:12	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			06/20/25 17:12	1
Bromoform	<5.00		5.00	0.780	ug/L			06/20/25 17:12	1
Bromomethane	<4.00		4.00	1.10	ug/L			06/20/25 17:12	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			06/20/25 17:12	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			06/20/25 17:12	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			06/20/25 17:12	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			06/20/25 17:12	1
Chloroethane	2.63	J	4.00	0.790	ug/L			06/20/25 17:12	1
Chloroform	<3.00		3.00	1.30	ug/L			06/20/25 17:12	1
Chloromethane	<3.00		3.00	0.610	ug/L			06/20/25 17:12	1
cis-1,2-Dichloroethene	36.5		1.00	0.210	ug/L			06/20/25 17:12	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			06/20/25 17:12	1
Dibromomethane	<1.00		1.00	0.330	ug/L			06/20/25 17:12	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			06/20/25 17:12	1
Iodomethane	<10.0		10.0	7.00	ug/L			06/20/25 17:12	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			06/20/25 17:12	1
Styrene	<1.00		1.00	0.370	ug/L			06/20/25 17:12	1
Tetrachloroethene	4.46		1.00	0.480	ug/L			06/20/25 17:12	1
Toluene	<1.00		1.00	0.430	ug/L			06/20/25 17:12	1
trans-1,2-Dichloroethene	1.76		1.00	0.270	ug/L			06/20/25 17:12	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			06/20/25 17:12	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			06/20/25 17:12	1
Trichloroethene	2.91		1.00	0.430	ug/L			06/20/25 17:12	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			06/20/25 17:12	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			06/20/25 17:12	1
Vinyl chloride	4.03		1.00	0.180	ug/L			06/20/25 17:12	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			06/20/25 17:12	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	111		76 - 130		06/20/25 17:12	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-4R3

Lab Sample ID: 310-309159-2

Date Collected: 06/18/25 09:59

Matrix: Ground Water

Date Received: 06/19/25 16:10

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	91		80 - 120		06/20/25 17:12	1
4-Bromofluorobenzene (Surr)	106		80 - 120		06/20/25 17:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		06/24/25 08:40	06/26/25 14:17	1
Arsenic	0.00146	J	0.00200	0.000530	mg/L		06/24/25 08:40	06/26/25 14:17	1
Barium	1.15		0.00200	0.000660	mg/L		06/24/25 08:40	06/26/25 14:17	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		06/24/25 08:40	06/26/25 14:17	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		06/24/25 08:40	06/26/25 14:17	1
Chromium	<0.00500		0.00500	0.00180	mg/L		06/24/25 08:40	06/26/25 14:17	1
Cobalt	0.00653		0.000500	0.000170	mg/L		06/24/25 08:40	06/26/25 14:17	1
Copper	<0.00500		0.00500	0.00320	mg/L		06/24/25 08:40	06/26/25 14:17	1
Lead	<0.000500		0.000500	0.000330	mg/L		06/24/25 08:40	06/26/25 14:17	1
Nickel	0.0250		0.00500	0.00230	mg/L		06/24/25 08:40	06/26/25 14:17	1
Selenium	<0.00500		0.00500	0.00140	mg/L		06/24/25 08:40	06/26/25 14:17	1
Silver	<0.00100		0.00100	0.000500	mg/L		06/24/25 08:40	06/26/25 14:17	1
Thallium	<0.00100		0.00100	0.000570	mg/L		06/24/25 08:40	06/26/25 14:17	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		06/24/25 08:40	06/26/25 14:17	1
Zinc	<0.0200		0.0200	0.0130	mg/L		06/24/25 08:40	06/26/25 14:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	2.75		1.88	1.31	mg/L			06/20/25 14:59	1

Client Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-7

Lab Sample ID: 310-309159-3

Date Collected: 06/16/25 15:36

Matrix: Ground Water

Date Received: 06/19/25 16:10

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			06/20/25 17:34	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			06/20/25 17:34	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			06/20/25 17:34	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			06/20/25 17:34	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			06/20/25 17:34	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			06/20/25 17:34	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			06/20/25 17:34	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			06/20/25 17:34	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			06/20/25 17:34	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			06/20/25 17:34	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			06/20/25 17:34	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			06/20/25 17:34	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			06/20/25 17:34	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			06/20/25 17:34	1
2-Hexanone	<10.0		10.0	2.00	ug/L			06/20/25 17:34	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			06/20/25 17:34	1
Acetone	<10.0		10.0	3.10	ug/L			06/20/25 17:34	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			06/20/25 17:34	1
Benzene	<0.500		0.500	0.220	ug/L			06/20/25 17:34	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			06/20/25 17:34	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			06/20/25 17:34	1
Bromoform	<5.00		5.00	0.780	ug/L			06/20/25 17:34	1
Bromomethane	<4.00		4.00	1.10	ug/L			06/20/25 17:34	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			06/20/25 17:34	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			06/20/25 17:34	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			06/20/25 17:34	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			06/20/25 17:34	1
Chloroethane	<4.00		4.00	0.790	ug/L			06/20/25 17:34	1
Chloroform	<3.00		3.00	1.30	ug/L			06/20/25 17:34	1
Chloromethane	<3.00		3.00	0.610	ug/L			06/20/25 17:34	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			06/20/25 17:34	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			06/20/25 17:34	1
Dibromomethane	<1.00		1.00	0.330	ug/L			06/20/25 17:34	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			06/20/25 17:34	1
Iodomethane	<10.0		10.0	7.00	ug/L			06/20/25 17:34	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			06/20/25 17:34	1
Styrene	<1.00		1.00	0.370	ug/L			06/20/25 17:34	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			06/20/25 17:34	1
Toluene	<1.00		1.00	0.430	ug/L			06/20/25 17:34	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			06/20/25 17:34	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			06/20/25 17:34	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			06/20/25 17:34	1
Trichloroethene	<1.00		1.00	0.430	ug/L			06/20/25 17:34	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			06/20/25 17:34	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			06/20/25 17:34	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/20/25 17:34	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			06/20/25 17:34	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	109		76 - 130		06/20/25 17:34	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-7

Lab Sample ID: 310-309159-3

Date Collected: 06/16/25 15:36

Matrix: Ground Water

Date Received: 06/19/25 16:10

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	93		80 - 120		06/20/25 17:34	1
4-Bromofluorobenzene (Surr)	105		80 - 120		06/20/25 17:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		06/24/25 08:40	06/26/25 14:20	1
Arsenic	0.000974	J	0.00200	0.000530	mg/L		06/24/25 08:40	06/26/25 14:20	1
Barium	0.160		0.00200	0.000660	mg/L		06/24/25 08:40	06/26/25 14:20	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		06/24/25 08:40	06/26/25 14:20	1
Cadmium	0.000194	J	0.000200	0.000100	mg/L		06/24/25 08:40	06/26/25 14:20	1
Chromium	0.0147		0.00500	0.00180	mg/L		06/24/25 08:40	06/26/25 14:20	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		06/24/25 08:40	06/26/25 14:20	1
Copper	<0.00500		0.00500	0.00320	mg/L		06/24/25 08:40	06/26/25 14:20	1
Lead	<0.000500		0.000500	0.000330	mg/L		06/24/25 08:40	06/26/25 14:20	1
Nickel	<0.00500		0.00500	0.00230	mg/L		06/24/25 08:40	06/26/25 14:20	1
Selenium	0.0408		0.00500	0.00140	mg/L		06/24/25 08:40	06/26/25 14:20	1
Silver	<0.00100		0.00100	0.000500	mg/L		06/24/25 08:40	06/26/25 14:20	1
Thallium	<0.00100		0.00100	0.000570	mg/L		06/24/25 08:40	06/26/25 14:20	1
Vanadium	0.00171	J B	0.00500	0.00170	mg/L		06/24/25 08:40	06/26/25 14:20	1
Zinc	<0.0200		0.0200	0.0130	mg/L		06/24/25 08:40	06/26/25 14:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	4.88		1.88	1.31	mg/L			06/20/25 14:26	1

Client Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-11

Lab Sample ID: 310-309159-4

Date Collected: 06/17/25 10:00

Matrix: Ground Water

Date Received: 06/19/25 16:10

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			06/20/25 17:57	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			06/20/25 17:57	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			06/20/25 17:57	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			06/20/25 17:57	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			06/20/25 17:57	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			06/20/25 17:57	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			06/20/25 17:57	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			06/20/25 17:57	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			06/20/25 17:57	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			06/20/25 17:57	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			06/20/25 17:57	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			06/20/25 17:57	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			06/20/25 17:57	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			06/20/25 17:57	1
2-Hexanone	<10.0		10.0	2.00	ug/L			06/20/25 17:57	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			06/20/25 17:57	1
Acetone	<10.0		10.0	3.10	ug/L			06/20/25 17:57	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			06/20/25 17:57	1
Benzene	<0.500		0.500	0.220	ug/L			06/20/25 17:57	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			06/20/25 17:57	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			06/20/25 17:57	1
Bromoform	<5.00		5.00	0.780	ug/L			06/20/25 17:57	1
Bromomethane	<4.00		4.00	1.10	ug/L			06/20/25 17:57	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			06/20/25 17:57	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			06/20/25 17:57	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			06/20/25 17:57	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			06/20/25 17:57	1
Chloroethane	<4.00		4.00	0.790	ug/L			06/20/25 17:57	1
Chloroform	<3.00		3.00	1.30	ug/L			06/20/25 17:57	1
Chloromethane	<3.00		3.00	0.610	ug/L			06/20/25 17:57	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			06/20/25 17:57	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			06/20/25 17:57	1
Dibromomethane	<1.00		1.00	0.330	ug/L			06/20/25 17:57	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			06/20/25 17:57	1
Iodomethane	<10.0		10.0	7.00	ug/L			06/20/25 17:57	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			06/20/25 17:57	1
Styrene	<1.00		1.00	0.370	ug/L			06/20/25 17:57	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			06/20/25 17:57	1
Toluene	<1.00		1.00	0.430	ug/L			06/20/25 17:57	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			06/20/25 17:57	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			06/20/25 17:57	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			06/20/25 17:57	1
Trichloroethene	<1.00		1.00	0.430	ug/L			06/20/25 17:57	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			06/20/25 17:57	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			06/20/25 17:57	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/20/25 17:57	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			06/20/25 17:57	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	108		76 - 130		06/20/25 17:57	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-11

Lab Sample ID: 310-309159-4

Date Collected: 06/17/25 10:00

Matrix: Ground Water

Date Received: 06/19/25 16:10

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	89		80 - 120		06/20/25 17:57	1
4-Bromofluorobenzene (Surr)	106		80 - 120		06/20/25 17:57	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		06/24/25 08:40	06/26/25 14:23	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		06/24/25 08:40	06/26/25 14:23	1
Barium	0.0900		0.00200	0.000660	mg/L		06/24/25 08:40	06/26/25 14:23	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		06/24/25 08:40	06/26/25 14:23	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		06/24/25 08:40	06/26/25 14:23	1
Chromium	<0.00500		0.00500	0.00180	mg/L		06/24/25 08:40	06/26/25 14:23	1
Cobalt	0.00137		0.000500	0.000170	mg/L		06/24/25 08:40	06/26/25 14:23	1
Copper	<0.00500		0.00500	0.00320	mg/L		06/24/25 08:40	06/26/25 14:23	1
Lead	<0.000500		0.000500	0.000330	mg/L		06/24/25 08:40	06/26/25 14:23	1
Nickel	0.00233	J	0.00500	0.00230	mg/L		06/24/25 08:40	06/26/25 14:23	1
Selenium	<0.00500		0.00500	0.00140	mg/L		06/24/25 08:40	06/26/25 14:23	1
Silver	<0.00100		0.00100	0.000500	mg/L		06/24/25 08:40	06/26/25 14:23	1
Thallium	<0.00100		0.00100	0.000570	mg/L		06/24/25 08:40	06/26/25 14:23	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		06/24/25 08:40	06/26/25 14:23	1
Zinc	<0.0200		0.0200	0.0130	mg/L		06/24/25 08:40	06/26/25 14:23	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	<1.88		1.88	1.31	mg/L			06/20/25 14:59	1

Client Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-13

Lab Sample ID: 310-309159-5

Date Collected: 06/17/25 15:58

Matrix: Ground Water

Date Received: 06/19/25 16:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.30		1.00	0.430	ug/L			06/21/25 17:58	1
Vinyl chloride	1.39		1.00	0.180	ug/L			06/21/25 17:58	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		80 - 120					06/21/25 17:58	1
Dibromofluoromethane (Surr)	111		76 - 130					06/21/25 17:58	1
Toluene-d8 (Surr)	95		80 - 120					06/21/25 17:58	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.000293	J	0.000500	0.000170	mg/L		06/24/25 08:40	06/26/25 14:38	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	29.9		1.88	1.31	mg/L			06/20/25 14:26	1

Client Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-14

Lab Sample ID: 310-309159-6

Date Collected: 06/17/25 16:54

Matrix: Ground Water

Date Received: 06/19/25 16:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.64		1.00	0.430	ug/L			06/21/25 18:20	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/21/25 18:20	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	97		80 - 120					06/21/25 18:20	1
Dibromofluoromethane (Surr)	103		76 - 130					06/21/25 18:20	1
Toluene-d8 (Surr)	97		80 - 120					06/21/25 18:20	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.000825		0.000500	0.000170	mg/L		06/24/25 08:40	06/26/25 14:32	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	100		15.0	10.5	mg/L			06/20/25 14:26	1

Client Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-301

Lab Sample ID: 310-309159-7

Date Collected: 06/17/25 20:01

Matrix: Ground Water

Date Received: 06/19/25 16:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	4.92		1.00	0.430	ug/L			06/21/25 18:42	1
Vinyl chloride	2.68		1.00	0.180	ug/L			06/21/25 18:42	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120					06/21/25 18:42	1
Dibromofluoromethane (Surr)	103		76 - 130					06/21/25 18:42	1
Toluene-d8 (Surr)	96		80 - 120					06/21/25 18:42	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00612		0.000500	0.000170	mg/L		06/24/25 08:40	06/26/25 14:35	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	291		15.0	10.5	mg/L			06/20/25 14:26	1

Client Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-401

Lab Sample ID: 310-309159-8

Date Collected: 06/17/25 12:55

Matrix: Ground Water

Date Received: 06/19/25 16:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	<1.00		1.00	0.430	ug/L			06/23/25 17:49	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/23/25 17:49	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	118		80 - 120					06/23/25 17:49	1
Dibromofluoromethane (Surr)	110		76 - 130					06/23/25 17:49	1
Toluene-d8 (Surr)	96		80 - 120					06/23/25 17:49	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.0148		0.000500	0.000170	mg/L		06/24/25 08:40	06/26/25 14:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	3260		60.0	42.0	mg/L			06/20/25 14:26	1

Client Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-309159-9

Date Collected: 06/17/25 00:00

Matrix: Water

Date Received: 06/19/25 16:10

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			06/20/25 14:11	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			06/20/25 14:11	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			06/20/25 14:11	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			06/20/25 14:11	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			06/20/25 14:11	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			06/20/25 14:11	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			06/20/25 14:11	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			06/20/25 14:11	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			06/20/25 14:11	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			06/20/25 14:11	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			06/20/25 14:11	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			06/20/25 14:11	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			06/20/25 14:11	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			06/20/25 14:11	1
2-Hexanone	<10.0		10.0	2.00	ug/L			06/20/25 14:11	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			06/20/25 14:11	1
Acetone	<10.0		10.0	3.10	ug/L			06/20/25 14:11	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			06/20/25 14:11	1
Benzene	<0.500		0.500	0.220	ug/L			06/20/25 14:11	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			06/20/25 14:11	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			06/20/25 14:11	1
Bromoform	<5.00		5.00	0.780	ug/L			06/20/25 14:11	1
Bromomethane	<4.00		4.00	1.10	ug/L			06/20/25 14:11	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			06/20/25 14:11	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			06/20/25 14:11	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			06/20/25 14:11	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			06/20/25 14:11	1
Chloroethane	<4.00		4.00	0.790	ug/L			06/20/25 14:11	1
Chloroform	<3.00		3.00	1.30	ug/L			06/20/25 14:11	1
Chloromethane	<3.00		3.00	0.610	ug/L			06/20/25 14:11	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			06/20/25 14:11	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			06/20/25 14:11	1
Dibromomethane	<1.00		1.00	0.330	ug/L			06/20/25 14:11	1
Dichlorodifluoromethane	<3.00		3.00	0.250	ug/L			06/20/25 14:11	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			06/20/25 14:11	1
Iodomethane	<10.0		10.0	7.00	ug/L			06/20/25 14:11	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			06/20/25 14:11	1
Styrene	<1.00		1.00	0.370	ug/L			06/20/25 14:11	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			06/20/25 14:11	1
Toluene	<1.00		1.00	0.430	ug/L			06/20/25 14:11	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			06/20/25 14:11	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			06/20/25 14:11	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			06/20/25 14:11	1
Trichloroethene	<1.00		1.00	0.430	ug/L			06/20/25 14:11	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			06/20/25 14:11	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			06/20/25 14:11	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/20/25 14:11	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			06/20/25 14:11	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers

Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1

SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-309159-9

Date Collected: 06/17/25 00:00

Matrix: Water

Date Received: 06/19/25 16:10

<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>	107		76 - 130		06/20/25 14:11	1
<i>Toluene-d8 (Surr)</i>	90		80 - 120		06/20/25 14:11	1
<i>4-Bromofluorobenzene (Surr)</i>	105		80 - 120		06/20/25 14:11	1

Client Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-309159-10

Date Collected: 06/17/25 00:00

Matrix: Water

Date Received: 06/19/25 16:10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			06/23/25 18:32	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			06/23/25 18:32	1
Benzene	<0.500		0.500	0.220	ug/L			06/23/25 18:32	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			06/23/25 18:32	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			06/23/25 18:32	1
Bromoform	<5.00		5.00	0.780	ug/L			06/23/25 18:32	1
Bromomethane	<4.00		4.00	1.10	ug/L			06/23/25 18:32	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			06/23/25 18:32	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			06/23/25 18:32	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			06/23/25 18:32	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			06/23/25 18:32	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			06/23/25 18:32	1
Chloroethane	<4.00		4.00	0.790	ug/L			06/23/25 18:32	1
Chloroform	<3.00		3.00	1.30	ug/L			06/23/25 18:32	1
Chloromethane	<3.00		3.00	0.610	ug/L			06/23/25 18:32	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			06/27/25 11:45	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			06/23/25 18:32	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			06/23/25 18:32	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			06/23/25 18:32	1
Dibromomethane	<1.00		1.00	0.330	ug/L			06/23/25 18:32	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			06/23/25 18:32	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			06/23/25 18:32	1
Dichlorodifluoromethane	<3.00		3.00	0.250	ug/L			06/23/25 18:32	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			06/23/25 18:32	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			06/23/25 18:32	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			06/23/25 18:32	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			06/23/25 18:32	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			06/23/25 18:32	1
2-Hexanone	<10.0		10.0	2.00	ug/L			06/23/25 18:32	1
Iodomethane	<10.0		10.0	7.00	ug/L			06/23/25 18:32	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			06/23/25 18:32	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			06/23/25 18:32	1
Styrene	<1.00		1.00	0.370	ug/L			06/23/25 18:32	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			06/23/25 18:32	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			06/23/25 18:32	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			06/23/25 18:32	1
Toluene	<1.00		1.00	0.430	ug/L			06/23/25 18:32	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			06/23/25 18:32	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			06/23/25 18:32	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			06/23/25 18:32	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			06/23/25 18:32	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			06/23/25 18:32	1
Trichloroethene	<1.00		1.00	0.430	ug/L			06/23/25 18:32	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			06/23/25 18:32	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			06/23/25 18:32	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			06/23/25 18:32	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/23/25 18:32	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			06/23/25 18:32	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers

Job ID: 310-309159-1

Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-309159-10

Date Collected: 06/17/25 00:00

Matrix: Water

Date Received: 06/19/25 16:10

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
4-Bromofluorobenzene (Surr)	104		80 - 120		06/23/25 18:32	1
4-Bromofluorobenzene (Surr)	103		80 - 120		06/27/25 11:45	1
Dibromofluoromethane (Surr)	110		76 - 130		06/23/25 18:32	1
Dibromofluoromethane (Surr)	108		76 - 130		06/27/25 11:45	1
Toluene-d8 (Surr)	90		80 - 120		06/23/25 18:32	1
Toluene-d8 (Surr)	101		80 - 120		06/27/25 11:45	1

Client Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: Trip Blank 3

Lab Sample ID: 310-309159-11

Date Collected: 06/17/25 00:00

Matrix: Water

Date Received: 06/19/25 16:10

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			06/23/25 18:54	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			06/23/25 18:54	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			06/23/25 18:54	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			06/23/25 18:54	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			06/23/25 18:54	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			06/23/25 18:54	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			06/23/25 18:54	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			06/23/25 18:54	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			06/23/25 18:54	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			06/23/25 18:54	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			06/23/25 18:54	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			06/23/25 18:54	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			06/23/25 18:54	1
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			06/23/25 18:54	1
2-Hexanone	<10.0		10.0	2.00	ug/L			06/23/25 18:54	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			06/23/25 18:54	1
Acetone	<10.0		10.0	3.10	ug/L			06/23/25 18:54	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			06/27/25 12:07	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			06/23/25 18:54	1
Benzene	<0.500		0.500	0.220	ug/L			06/23/25 18:54	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			06/23/25 18:54	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			06/23/25 18:54	1
Bromoform	<5.00		5.00	0.780	ug/L			06/23/25 18:54	1
Bromomethane	<4.00		4.00	1.10	ug/L			06/23/25 18:54	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			06/23/25 18:54	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			06/23/25 18:54	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			06/23/25 18:54	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			06/23/25 18:54	1
Chloroethane	<4.00		4.00	0.790	ug/L			06/23/25 18:54	1
Chloroform	<3.00		3.00	1.30	ug/L			06/23/25 18:54	1
Chloromethane	<3.00		3.00	0.610	ug/L			06/23/25 18:54	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			06/23/25 18:54	1
Dibromomethane	<1.00		1.00	0.330	ug/L			06/23/25 18:54	1
Dichlorodifluoromethane	<3.00		3.00	0.250	ug/L			06/23/25 18:54	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			06/23/25 18:54	1
Iodomethane	<10.0		10.0	7.00	ug/L			06/23/25 18:54	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			06/23/25 18:54	1
Styrene	<1.00		1.00	0.370	ug/L			06/23/25 18:54	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			06/23/25 18:54	1
Toluene	<1.00		1.00	0.430	ug/L			06/23/25 18:54	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			06/23/25 18:54	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			06/23/25 18:54	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			06/23/25 18:54	1
Trichloroethene	<1.00		1.00	0.430	ug/L			06/23/25 18:54	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			06/23/25 18:54	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			06/23/25 18:54	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/23/25 18:54	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			06/23/25 18:54	1

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Client Sample Results

Client: SCS Engineers

Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1

SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: Trip Blank 3

Lab Sample ID: 310-309159-11

Date Collected: 06/17/25 00:00

Matrix: Water

Date Received: 06/19/25 16:10

<i>Surrogate</i>	<i>%Recovery</i>	<i>Qualifier</i>	<i>Limits</i>	<i>Prepared</i>	<i>Analyzed</i>	<i>Dil Fac</i>
4-Bromofluorobenzene (Surr)	101		80 - 120		06/27/25 12:07	1
Dibromofluoromethane (Surr)	116		76 - 130		06/27/25 12:07	1
Toluene-d8 (Surr)	98		80 - 120		06/27/25 12:07	1
Dibromofluoromethane (Surr)	113		76 - 130		06/23/25 18:54	1
Toluene-d8 (Surr)	89		80 - 120		06/23/25 18:54	1
4-Bromofluorobenzene (Surr)	103		80 - 120		06/23/25 18:54	1

Definitions/Glossary

Client: SCS Engineers

Job ID: 310-309159-1

Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

SDG: Sioux City Sanitary Landfill (Bracketing)

Qualifiers

GC/MS VOA

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

Metals

Qualifier	Qualifier Description
B	Compound was found in the blank and sample.
F5	Duplicate RPD exceeds limit, and one or both sample results are less than 5 times RL, and the absolute difference between results is < the upper reporting limits for both.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

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

Matrix: Ground Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (76-130)	TOL (80-120)	BFB (80-120)
310-309159-1	MW-3R	111	90	104
310-309159-2	MW-4R3	111	91	106
310-309159-3	MW-7	109	93	105
310-309159-4	MW-11	108	89	106
310-309159-5	MW-13	111	95	97
310-309159-6	MW-14	103	97	97
310-309159-7	MW-301	103	96	102
310-309159-8	MW-401	110	96	118
Surrogate Legend				
DBFM = Dibromofluoromethane (Surr)				
TOL = Toluene-d8 (Surr)				
BFB = 4-Bromofluorobenzene (Surr)				

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		BFB (80-120)	DBFM (76-130)	TOL (80-120)
310-309159-9	Trip Blank 1	105	107	90
310-309159-10	Trip Blank 2	104	110	90
310-309159-10	Trip Blank 2	103	108	101
310-309159-11	Trip Blank 3	103	113	89
310-309159-11	Trip Blank 3	101	116	98
LCS 310-458256/7	Lab Control Sample	105	98	96
LCS 310-458256/8	Lab Control Sample	106	112	92
LCS 310-458338/6	Lab Control Sample	97	97	103
LCS 310-458338/7	Lab Control Sample	103	104	98
LCS 310-458443/6	Lab Control Sample	100	98	99
LCS 310-458443/7	Lab Control Sample	106	102	95
LCS 310-458497/7	Lab Control Sample	101	98	93
LCS 310-458497/8	Lab Control Sample	108	110	89
LCS 310-458995/6	Lab Control Sample	98	95	101
LCS 310-458995/7	Lab Control Sample	99	107	103
MB 310-458256/6	Method Blank	107	107	90
MB 310-458338/5	Method Blank	99	103	95
MB 310-458443/5	Method Blank	111	103	95
MB 310-458497/6	Method Blank	104	110	91
MB 310-458995/5	Method Blank	101	104	100
Surrogate Legend				
BFB = 4-Bromofluorobenzene (Surr)				
DBFM = Dibromofluoromethane (Surr)				
TOL = Toluene-d8 (Surr)				

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QC Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

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

Lab Sample ID: MB 310-458256/6

Matrix: Water

Analysis Batch: 458256

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			06/20/25 11:55	1
Acetone	<10.0		10.0	3.10	ug/L			06/20/25 11:55	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			06/20/25 11:55	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			06/20/25 11:55	1
Benzene	<0.500		0.500	0.220	ug/L			06/20/25 11:55	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			06/20/25 11:55	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			06/20/25 11:55	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			06/20/25 11:55	1
Bromoform	<5.00		5.00	0.780	ug/L			06/20/25 11:55	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			06/20/25 11:55	1
Bromomethane	<4.00		4.00	1.10	ug/L			06/20/25 11:55	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			06/20/25 11:55	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			06/20/25 11:55	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			06/20/25 11:55	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			06/20/25 11:55	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			06/20/25 11:55	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			06/20/25 11:55	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			06/20/25 11:55	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			06/20/25 11:55	1
Chloroethane	<4.00		4.00	0.790	ug/L			06/20/25 11:55	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			06/20/25 11:55	1
Chloroform	<3.00		3.00	1.30	ug/L			06/20/25 11:55	1
Chloromethane	<3.00		3.00	0.610	ug/L			06/20/25 11:55	1
2-Hexanone	<10.0		10.0	2.00	ug/L			06/20/25 11:55	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			06/20/25 11:55	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			06/20/25 11:55	1
Dibromomethane	<1.00		1.00	0.330	ug/L			06/20/25 11:55	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			06/20/25 11:55	1
Dichlorodifluoromethane	<3.00		3.00	0.250	ug/L			06/20/25 11:55	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			06/20/25 11:55	1
Iodomethane	<10.0		10.0	7.00	ug/L			06/20/25 11:55	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			06/20/25 11:55	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			06/20/25 11:55	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			06/20/25 11:55	1
Styrene	<1.00		1.00	0.370	ug/L			06/20/25 11:55	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			06/20/25 11:55	1
Toluene	<1.00		1.00	0.430	ug/L			06/20/25 11:55	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			06/20/25 11:55	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			06/20/25 11:55	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			06/20/25 11:55	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			06/20/25 11:55	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			06/20/25 11:55	1
Trichloroethene	<1.00		1.00	0.430	ug/L			06/20/25 11:55	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			06/20/25 11:55	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			06/20/25 11:55	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			06/20/25 11:55	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/20/25 11:55	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			06/20/25 11:55	1

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

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

Lab Sample ID: MB 310-458256/6

Matrix: Water

Analysis Batch: 458256

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	107		76 - 130		06/20/25 11:55	1
Toluene-d8 (Surr)	90		80 - 120		06/20/25 11:55	1
4-Bromofluorobenzene (Surr)	107		80 - 120		06/20/25 11:55	1

Lab Sample ID: LCS 310-458256/7

Matrix: Water

Analysis Batch: 458256

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butanone (MEK)	40.0	35.08		ug/L		88	60 - 134
Acetone	40.0	34.71		ug/L		87	59 - 136
Acrylonitrile	200	186.3		ug/L		93	50 - 150
1,2-Dibromo-3-Chloropropane	20.0	17.79		ug/L		89	62 - 132
Benzene	20.0	19.21		ug/L		96	71 - 125
1,2-Dibromoethane (EDB)	20.0	18.69		ug/L		93	74 - 122
Bromochloromethane	20.0	19.87		ug/L		99	69 - 131
Bromodichloromethane	20.0	17.34		ug/L		87	70 - 122
Bromoform	20.0	16.50		ug/L		83	62 - 122
1,2-Dichlorobenzene	20.0	18.51		ug/L		93	74 - 120
1,4-Dichlorobenzene	20.0	17.98		ug/L		90	72 - 120
Carbon disulfide	20.0	17.85		ug/L		89	58 - 137
Carbon tetrachloride	20.0	19.25		ug/L		96	63 - 136
1,1-Dichloroethane	20.0	18.15		ug/L		91	69 - 127
Chlorobenzene	20.0	17.95		ug/L		90	74 - 120
1,2-Dichloroethane	20.0	16.69		ug/L		83	68 - 125
Chlorodibromomethane	20.0	16.01		ug/L		80	69 - 121
1,1-Dichloroethene	20.0	19.80		ug/L		99	64 - 134
1,2-Dichloropropane	20.0	19.38		ug/L		97	72 - 128
Chloroform	20.0	17.20		ug/L		86	72 - 122
2-Hexanone	40.0	37.27		ug/L		93	62 - 139
cis-1,2-Dichloroethene	20.0	19.31		ug/L		97	72 - 123
cis-1,3-Dichloropropene	20.0	16.15		ug/L		81	72 - 123
Dibromomethane	20.0	17.71		ug/L		89	72 - 122
4-Methyl-2-pentanone (MIBK)	40.0	34.94		ug/L		87	62 - 136
Ethylbenzene	20.0	18.62		ug/L		93	75 - 120
Iodomethane	20.0	15.19		ug/L		76	18 - 150
1,1,1,2-Tetrachloroethane	20.0	17.84		ug/L		89	70 - 121
Methylene Chloride	20.0	20.51		ug/L		103	72 - 128
1,1,2,2-Tetrachloroethane	20.0	17.85		ug/L		89	70 - 122
Styrene	20.0	19.35		ug/L		97	74 - 122
Tetrachloroethene	20.0	20.54		ug/L		103	70 - 128
Toluene	20.0	18.33		ug/L		92	74 - 120
trans-1,2-Dichloroethene	20.0	19.25		ug/L		96	67 - 127
trans-1,3-Dichloropropene	20.0	15.49		ug/L		77	67 - 123
trans-1,4-Dichloro-2-butene	20.0	16.20		ug/L		81	50 - 150
1,1,1-Trichloroethane	20.0	19.53		ug/L		98	69 - 130
1,1,2-Trichloroethane	20.0	17.49		ug/L		87	75 - 121
Trichloroethene	20.0	19.74		ug/L		99	70 - 128

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QC Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

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

Lab Sample ID: LCS 310-458256/7

Matrix: Water

Analysis Batch: 458256

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2,3-Trichloropropane	20.0	17.32		ug/L		87	70 - 122
Vinyl acetate	40.0	36.04		ug/L		90	50 - 150
Xylenes, Total	40.0	38.60		ug/L		97	74 - 121

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	98		76 - 130
Toluene-d8 (Surr)	96		80 - 120
4-Bromofluorobenzene (Surr)	105		80 - 120

Lab Sample ID: LCS 310-458256/8

Matrix: Water

Analysis Batch: 458256

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	15.78		ug/L		79	33 - 138
Chloroethane	20.0	16.43		ug/L		82	59 - 139
Chloromethane	20.0	16.63		ug/L		83	52 - 146
Dichlorodifluoromethane	20.0	17.00		ug/L		85	45 - 150
Trichlorofluoromethane	20.0	16.65		ug/L		83	55 - 150
Vinyl chloride	20.0	16.20		ug/L		81	60 - 142

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	112		76 - 130
Toluene-d8 (Surr)	92		80 - 120
4-Bromofluorobenzene (Surr)	106		80 - 120

Lab Sample ID: MB 310-458338/5

Matrix: Water

Analysis Batch: 458338

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	<1.00		1.00	0.430	ug/L			06/21/25 11:16	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/21/25 11:16	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	103		76 - 130		06/21/25 11:16	1
Toluene-d8 (Surr)	95		80 - 120		06/21/25 11:16	1
4-Bromofluorobenzene (Surr)	99		80 - 120		06/21/25 11:16	1

Lab Sample ID: LCS 310-458338/6

Matrix: Water

Analysis Batch: 458338

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	20.35		ug/L		102	70 - 128

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QC Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

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

Lab Sample ID: LCS 310-458338/6

Matrix: Water

Analysis Batch: 458338

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	97		76 - 130
Toluene-d8 (Surr)	103		80 - 120
4-Bromofluorobenzene (Surr)	97		80 - 120

Lab Sample ID: LCS 310-458338/7

Matrix: Water

Analysis Batch: 458338

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	20.0	23.13		ug/L		116	60 - 142

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	104		76 - 130
Toluene-d8 (Surr)	98		80 - 120
4-Bromofluorobenzene (Surr)	103		80 - 120

Lab Sample ID: MB 310-458443/5

Matrix: Water

Analysis Batch: 458443

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	<1.00		1.00	0.430	ug/L			06/23/25 14:08	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/23/25 14:08	1

	MB	MB							
Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac			
Dibromofluoromethane (Surr)	103		76 - 130		06/23/25 14:08	1			
Toluene-d8 (Surr)	95		80 - 120		06/23/25 14:08	1			
4-Bromofluorobenzene (Surr)	111		80 - 120		06/23/25 14:08	1			

Lab Sample ID: LCS 310-458443/6

Matrix: Water

Analysis Batch: 458443

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	20.04		ug/L		100	70 - 128

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	98		76 - 130
Toluene-d8 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	100		80 - 120

Lab Sample ID: LCS 310-458443/7

Matrix: Water

Analysis Batch: 458443

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	20.0	16.19		ug/L		81	60 - 142

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QC Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

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

Lab Sample ID: LCS 310-458443/7

Matrix: Water

Analysis Batch: 458443

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

	LCS	LCS	
Surrogate	%Recovery	Qualifier	Limits
Dibromofluoromethane (Surr)	102		76 - 130
Toluene-d8 (Surr)	95		80 - 120
4-Bromofluorobenzene (Surr)	106		80 - 120

Lab Sample ID: MB 310-458497/6

Matrix: Water

Analysis Batch: 458497

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Butanone (MEK)	<10.0		10.0	2.10	ug/L			06/23/25 17:24	1
Acetone	<10.0		10.0	3.10	ug/L			06/23/25 17:24	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			06/23/25 17:24	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			06/23/25 17:24	1
Benzene	<0.500		0.500	0.220	ug/L			06/23/25 17:24	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			06/23/25 17:24	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			06/23/25 17:24	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			06/23/25 17:24	1
Bromoform	<5.00		5.00	0.780	ug/L			06/23/25 17:24	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			06/23/25 17:24	1
Bromomethane	<4.00		4.00	1.10	ug/L			06/23/25 17:24	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			06/23/25 17:24	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			06/23/25 17:24	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			06/23/25 17:24	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			06/23/25 17:24	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			06/23/25 17:24	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			06/23/25 17:24	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			06/23/25 17:24	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			06/23/25 17:24	1
Chloroethane	<4.00		4.00	0.790	ug/L			06/23/25 17:24	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			06/23/25 17:24	1
Chloroform	<3.00		3.00	1.30	ug/L			06/23/25 17:24	1
Chloromethane	<3.00		3.00	0.610	ug/L			06/23/25 17:24	1
2-Hexanone	<10.0		10.0	2.00	ug/L			06/23/25 17:24	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			06/23/25 17:24	1
Dibromomethane	<1.00		1.00	0.330	ug/L			06/23/25 17:24	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			06/23/25 17:24	1
Dichlorodifluoromethane	<3.00		3.00	0.250	ug/L			06/23/25 17:24	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			06/23/25 17:24	1
Iodomethane	<10.0		10.0	7.00	ug/L			06/23/25 17:24	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			06/23/25 17:24	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			06/23/25 17:24	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			06/23/25 17:24	1
Styrene	<1.00		1.00	0.370	ug/L			06/23/25 17:24	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			06/23/25 17:24	1
Toluene	<1.00		1.00	0.430	ug/L			06/23/25 17:24	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			06/23/25 17:24	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			06/23/25 17:24	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			06/23/25 17:24	1

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

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

Lab Sample ID: MB 310-458497/6

Matrix: Water

Analysis Batch: 458497

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-Trichloroethane	<1.00		1.00	0.190	ug/L			06/23/25 17:24	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			06/23/25 17:24	1
Trichloroethene	<1.00		1.00	0.430	ug/L			06/23/25 17:24	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			06/23/25 17:24	1
1,2,3-Trichloropropane	<1.00		1.00	0.590	ug/L			06/23/25 17:24	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			06/23/25 17:24	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/23/25 17:24	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			06/23/25 17:24	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	110		76 - 130		06/23/25 17:24	1
Toluene-d8 (Surr)	91		80 - 120		06/23/25 17:24	1
4-Bromofluorobenzene (Surr)	104		80 - 120		06/23/25 17:24	1

Lab Sample ID: LCS 310-458497/7

Matrix: Water

Analysis Batch: 458497

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
2-Butanone (MEK)	40.0	40.98		ug/L		102	60 - 134
Acetone	40.0	38.99		ug/L		97	59 - 136
Acrylonitrile	200	202.4		ug/L		101	50 - 150
1,2-Dibromo-3-Chloropropane	20.0	19.84		ug/L		99	62 - 132
Benzene	20.0	20.63		ug/L		103	71 - 125
1,2-Dibromoethane (EDB)	20.0	20.41		ug/L		102	74 - 122
Bromochloromethane	20.0	22.17		ug/L		111	69 - 131
Bromodichloromethane	20.0	19.44		ug/L		97	70 - 122
Bromoform	20.0	17.70		ug/L		88	62 - 122
1,2-Dichlorobenzene	20.0	18.66		ug/L		93	74 - 120
1,4-Dichlorobenzene	20.0	17.98		ug/L		90	72 - 120
Carbon disulfide	20.0	19.85		ug/L		99	58 - 137
Carbon tetrachloride	20.0	21.41		ug/L		107	63 - 136
1,1-Dichloroethane	20.0	19.15		ug/L		96	69 - 127
Chlorobenzene	20.0	18.75		ug/L		94	74 - 120
1,2-Dichloroethane	20.0	18.69		ug/L		93	68 - 125
Chlorodibromomethane	20.0	17.09		ug/L		85	69 - 121
1,1-Dichloroethene	20.0	20.68		ug/L		103	64 - 134
1,2-Dichloropropane	20.0	21.06		ug/L		105	72 - 128
Chloroform	20.0	18.92		ug/L		95	72 - 122
2-Hexanone	40.0	39.19		ug/L		98	62 - 139
cis-1,2-Dichloroethene	20.0	21.17		ug/L		106	72 - 123
cis-1,3-Dichloropropene	20.0	17.03		ug/L		85	72 - 123
Dibromomethane	20.0	20.49		ug/L		102	72 - 122
4-Methyl-2-pentanone (MIBK)	40.0	36.89		ug/L		92	62 - 136
Ethylbenzene	20.0	19.13		ug/L		96	75 - 120
Iodomethane	20.0	14.03		ug/L		70	18 - 150
1,1,1,2-Tetrachloroethane	20.0	19.09		ug/L		95	70 - 121
Methylene Chloride	20.0	21.88		ug/L		109	72 - 128

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

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

Lab Sample ID: LCS 310-458497/7

Matrix: Water

Analysis Batch: 458497

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,2,2-Tetrachloroethane	20.0	18.78		ug/L		94	70 - 122
Styrene	20.0	19.83		ug/L		99	74 - 122
Tetrachloroethene	20.0	20.82		ug/L		104	70 - 128
Toluene	20.0	19.23		ug/L		96	74 - 120
trans-1,2-Dichloroethene	20.0	21.09		ug/L		105	67 - 127
trans-1,3-Dichloropropene	20.0	16.31		ug/L		82	67 - 123
trans-1,4-Dichloro-2-butene	20.0	16.59		ug/L		83	50 - 150
1,1,1-Trichloroethane	20.0	21.13		ug/L		106	69 - 130
1,1,2-Trichloroethane	20.0	19.83		ug/L		99	75 - 121
Trichloroethene	20.0	21.21		ug/L		106	70 - 128
1,2,3-Trichloropropane	20.0	18.45		ug/L		92	70 - 122
Vinyl acetate	40.0	39.46		ug/L		99	50 - 150
Xylenes, Total	40.0	39.91		ug/L		100	74 - 121

	LCS %Recovery	LCS Qualifier	Limits
Surrogate			
Dibromofluoromethane (Surr)	98		76 - 130
Toluene-d8 (Surr)	93		80 - 120
4-Bromofluorobenzene (Surr)	101		80 - 120

Lab Sample ID: LCS 310-458497/8

Matrix: Water

Analysis Batch: 458497

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	25.71		ug/L		129	33 - 138
Chloroethane	20.0	25.06		ug/L		125	59 - 139
Chloromethane	20.0	25.94		ug/L		130	52 - 146
Dichlorodifluoromethane	20.0	24.22		ug/L		121	45 - 150
Trichlorofluoromethane	20.0	24.62		ug/L		123	55 - 150
Vinyl chloride	20.0	25.20		ug/L		126	60 - 142

	LCS %Recovery	LCS Qualifier	Limits
Surrogate			
Dibromofluoromethane (Surr)	110		76 - 130
Toluene-d8 (Surr)	89		80 - 120
4-Bromofluorobenzene (Surr)	108		80 - 120

Lab Sample ID: MB 310-458995/5

Matrix: Water

Analysis Batch: 458995

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	<10.0		10.0	3.10	ug/L			06/27/25 10:40	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			06/27/25 10:40	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			06/27/25 10:40	1
Benzene	<0.500		0.500	0.220	ug/L			06/27/25 10:40	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			06/27/25 10:40	1
Bromochloromethane	<5.00		5.00	0.540	ug/L			06/27/25 10:40	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			06/27/25 10:40	1

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

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

Lab Sample ID: MB 310-458995/5

Matrix: Water

Analysis Batch: 458995

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromoform	<5.00		5.00	0.780	ug/L			06/27/25 10:40	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			06/27/25 10:40	1
Bromomethane	<4.00		4.00	1.10	ug/L			06/27/25 10:40	1
1,4-Dichlorobenzene	<1.00		1.00	0.230	ug/L			06/27/25 10:40	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			06/27/25 10:40	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			06/27/25 10:40	1
1,1-Dichloroethane	<1.00		1.00	0.220	ug/L			06/27/25 10:40	1
Chlorobenzene	<1.00		1.00	0.400	ug/L			06/27/25 10:40	1
1,2-Dichloroethane	<1.00		1.00	0.390	ug/L			06/27/25 10:40	1
Chlorodibromomethane	<5.00		5.00	0.750	ug/L			06/27/25 10:40	1
1,1-Dichloroethene	<2.00		2.00	0.560	ug/L			06/27/25 10:40	1
Chloroethane	<4.00		4.00	0.790	ug/L			06/27/25 10:40	1
1,2-Dichloropropane	<1.00		1.00	0.270	ug/L			06/27/25 10:40	1
Chloroform	<3.00		3.00	1.30	ug/L			06/27/25 10:40	1
Chloromethane	<3.00		3.00	0.610	ug/L			06/27/25 10:40	1
2-Hexanone	<10.0		10.0	2.00	ug/L			06/27/25 10:40	1
cis-1,2-Dichloroethene	<1.00		1.00	0.210	ug/L			06/27/25 10:40	1
cis-1,3-Dichloropropene	<5.00		5.00	0.250	ug/L			06/27/25 10:40	1
Dibromomethane	<1.00		1.00	0.330	ug/L			06/27/25 10:40	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	2.10	ug/L			06/27/25 10:40	1
Dichlorodifluoromethane	<3.00		3.00	0.250	ug/L			06/27/25 10:40	1
Ethylbenzene	<1.00		1.00	0.310	ug/L			06/27/25 10:40	1
Iodomethane	<10.0		10.0	7.00	ug/L			06/27/25 10:40	1
1,1,1,2-Tetrachloroethane	<1.00		1.00	0.380	ug/L			06/27/25 10:40	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			06/27/25 10:40	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.470	ug/L			06/27/25 10:40	1
Styrene	<1.00		1.00	0.370	ug/L			06/27/25 10:40	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			06/27/25 10:40	1
Toluene	<1.00		1.00	0.430	ug/L			06/27/25 10:40	1
trans-1,2-Dichloroethene	<1.00		1.00	0.270	ug/L			06/27/25 10:40	1
trans-1,3-Dichloropropene	<5.00		5.00	0.560	ug/L			06/27/25 10:40	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	1.10	ug/L			06/27/25 10:40	1
1,1,1-Trichloroethane	<1.00		1.00	0.190	ug/L			06/27/25 10:40	1
1,1,2-Trichloroethane	<1.00		1.00	0.450	ug/L			06/27/25 10:40	1
Trichloroethene	<1.00		1.00	0.430	ug/L			06/27/25 10:40	1
Trichlorofluoromethane	<4.00		4.00	0.380	ug/L			06/27/25 10:40	1
Vinyl acetate	<10.0		10.0	2.50	ug/L			06/27/25 10:40	1
Vinyl chloride	<1.00		1.00	0.180	ug/L			06/27/25 10:40	1
Xylenes, Total	<3.00		3.00	0.400	ug/L			06/27/25 10:40	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	104		76 - 130		06/27/25 10:40	1
Toluene-d8 (Surr)	100		80 - 120		06/27/25 10:40	1
4-Bromofluorobenzene (Surr)	101		80 - 120		06/27/25 10:40	1

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

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

Lab Sample ID: LCS 310-458995/6

Matrix: Water

Analysis Batch: 458995

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Acetone	20.0	20.33		ug/L		102	59 - 136
Acrylonitrile	100	88.51		ug/L		89	50 - 150
1,2-Dibromo-3-Chloropropane	10.0	9.115		ug/L		91	62 - 132
Benzene	10.0	8.840		ug/L		88	71 - 125
1,2-Dibromoethane (EDB)	10.0	8.774		ug/L		88	74 - 122
Bromochloromethane	10.0	9.198		ug/L		92	69 - 131
Bromodichloromethane	10.0	8.910		ug/L		89	70 - 122
Bromoform	10.0	9.164		ug/L		92	62 - 122
1,2-Dichlorobenzene	10.0	9.237		ug/L		92	74 - 120
1,4-Dichlorobenzene	10.0	8.770		ug/L		88	72 - 120
Carbon disulfide	10.0	9.218		ug/L		92	58 - 137
Carbon tetrachloride	10.0	8.567		ug/L		86	63 - 136
1,1-Dichloroethane	10.0	9.447		ug/L		94	69 - 127
Chlorobenzene	10.0	8.989		ug/L		90	74 - 120
1,2-Dichloroethane	10.0	9.865		ug/L		99	68 - 125
Chlorodibromomethane	10.0	8.846		ug/L		88	69 - 121
1,1-Dichloroethene	10.0	9.210		ug/L		92	64 - 134
1,2-Dichloropropane	10.0	9.593		ug/L		96	72 - 128
Chloroform	10.0	9.504		ug/L		95	72 - 122
2-Hexanone	20.0	18.21		ug/L		91	62 - 139
cis-1,2-Dichloroethene	10.0	9.204		ug/L		92	72 - 123
cis-1,3-Dichloropropene	10.0	9.620		ug/L		96	72 - 123
Dibromomethane	10.0	9.306		ug/L		93	72 - 122
4-Methyl-2-pentanone (MIBK)	20.0	17.53		ug/L		88	62 - 136
Ethylbenzene	10.0	8.882		ug/L		89	75 - 120
Iodomethane	10.0	7.383	J	ug/L		74	18 - 150
1,1,1,2-Tetrachloroethane	10.0	8.909		ug/L		89	70 - 121
Methylene Chloride	10.0	9.327		ug/L		93	72 - 128
1,1,2,2-Tetrachloroethane	10.0	9.921		ug/L		99	70 - 122
Styrene	10.0	8.390		ug/L		84	74 - 122
Tetrachloroethene	10.0	9.155		ug/L		92	70 - 128
Toluene	10.0	9.175		ug/L		92	74 - 120
trans-1,2-Dichloroethene	10.0	9.294		ug/L		93	67 - 127
trans-1,3-Dichloropropene	10.0	9.244		ug/L		92	67 - 123
trans-1,4-Dichloro-2-butene	10.0	9.458	J	ug/L		95	50 - 150
1,1,1-Trichloroethane	10.0	9.305		ug/L		93	69 - 130
1,1,2-Trichloroethane	10.0	9.394		ug/L		94	75 - 121
Trichloroethene	10.0	8.538		ug/L		85	70 - 128
Vinyl acetate	20.0	19.94		ug/L		100	50 - 150
Xylenes, Total	20.0	17.55		ug/L		88	74 - 121

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	95		76 - 130
Toluene-d8 (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	98		80 - 120

QC Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

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

Lab Sample ID: LCS 310-458995/7

Matrix: Water

Analysis Batch: 458995

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	15.82		ug/L		79	33 - 138
Chloroethane	20.0	16.72		ug/L		84	59 - 139
Chloromethane	20.0	16.48		ug/L		82	52 - 146
Dichlorodifluoromethane	20.0	13.11		ug/L		66	45 - 150
Trichlorofluoromethane	20.0	15.66		ug/L		78	55 - 150
Vinyl chloride	20.0	16.27		ug/L		81	60 - 142

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
Dibromofluoromethane (Surr)	107		76 - 130
Toluene-d8 (Surr)	103		80 - 120
4-Bromofluorobenzene (Surr)	99		80 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-458501/1-A

Matrix: Water

Analysis Batch: 458911

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 458501

Analyte	MB MB		RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Antimony	<0.00200		0.00200	0.00100	mg/L		06/24/25 08:40	06/26/25 13:30	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		06/24/25 08:40	06/26/25 13:30	1
Barium	<0.00200		0.00200	0.000660	mg/L		06/24/25 08:40	06/26/25 13:30	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		06/24/25 08:40	06/26/25 13:30	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		06/24/25 08:40	06/26/25 13:30	1
Chromium	<0.00500		0.00500	0.00180	mg/L		06/24/25 08:40	06/26/25 13:30	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		06/24/25 08:40	06/26/25 13:30	1
Copper	<0.00500		0.00500	0.00320	mg/L		06/24/25 08:40	06/26/25 13:30	1
Lead	<0.000500		0.000500	0.000330	mg/L		06/24/25 08:40	06/26/25 13:30	1
Nickel	<0.00500		0.00500	0.00230	mg/L		06/24/25 08:40	06/26/25 13:30	1
Selenium	<0.00500		0.00500	0.00140	mg/L		06/24/25 08:40	06/26/25 13:30	1
Silver	<0.00100		0.00100	0.000500	mg/L		06/24/25 08:40	06/26/25 13:30	1
Thallium	<0.00100		0.00100	0.000570	mg/L		06/24/25 08:40	06/26/25 13:30	1
Vanadium	0.001769	J	0.00500	0.00170	mg/L		06/24/25 08:40	06/26/25 13:30	1
Zinc	<0.0200		0.0200	0.0130	mg/L		06/24/25 08:40	06/26/25 13:30	1

Lab Sample ID: LCS 310-458501/2-A

Matrix: Water

Analysis Batch: 458911

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 458501

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.1988		mg/L		99	80 - 120
Arsenic	0.200	0.1870		mg/L		93	80 - 120
Barium	0.100	0.09048		mg/L		90	80 - 120
Beryllium	0.100	0.09489		mg/L		95	80 - 120
Cadmium	0.100	0.09361		mg/L		94	80 - 120
Chromium	0.100	0.09902		mg/L		99	80 - 120
Cobalt	0.100	0.09851		mg/L		99	80 - 120
Copper	0.200	0.1921		mg/L		96	80 - 120
Lead	0.200	0.1910		mg/L		96	80 - 120

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

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

Lab Sample ID: LCS 310-458501/2-A

Matrix: Water

Analysis Batch: 458911

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 458501

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Nickel	0.200	0.2004		mg/L		100	80 - 120
Selenium	0.400	0.3678		mg/L		92	80 - 120
Silver	0.100	0.1066		mg/L		107	80 - 120
Thallium	0.100	0.08747		mg/L		87	80 - 120
Vanadium	0.100	0.09727		mg/L		97	80 - 120
Zinc	0.200	0.1827		mg/L		91	80 - 120

Lab Sample ID: 310-309159-8 DU

Matrix: Ground Water

Analysis Batch: 458911

Client Sample ID: MW-401

Prep Type: Total/NA

Prep Batch: 458501

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	<0.00200		<0.00200		mg/L		NC	20
Arsenic	0.00509		0.004779		mg/L		6	20
Beryllium	0.00204		0.001165	F5	mg/L		54	20
Cadmium	0.00243		0.002260		mg/L		7	20
Chromium	0.0105		0.01034		mg/L		2	20
Cobalt	0.0148		0.01428		mg/L		3	20
Copper	0.0349		0.03252		mg/L		7	20
Lead	0.0159		0.01501		mg/L		6	20
Nickel	0.0405		0.03833		mg/L		5	20
Selenium	0.00517		0.004112	J F5	mg/L		23	20
Silver	<0.00100		<0.00100		mg/L		NC	20
Thallium	<0.00100		<0.00100		mg/L		NC	20
Vanadium	0.0161	B	0.01592		mg/L		1	20
Zinc	0.0783		0.07286		mg/L		7	20

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

Lab Sample ID: MB 310-458329/1

Matrix: Water

Analysis Batch: 458329

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			06/20/25 14:26	1

Lab Sample ID: LCS 310-458329/2

Matrix: Water

Analysis Batch: 458329

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	98.00		mg/L		98	82 - 117

Lab Sample ID: 310-309159-7 DU

Matrix: Ground Water

Analysis Batch: 458329

Client Sample ID: MW-301

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Suspended Solids	291		286.0		mg/L		2	35

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers

Job ID: 310-309159-1

Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

SDG: Sioux City Sanitary Landfill (Bracketing)

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

Lab Sample ID: MB 310-458341/1

Client Sample ID: Method Blank

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 458341

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			06/20/25 14:59	1

Lab Sample ID: LCS 310-458341/2

Client Sample ID: Lab Control Sample

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 458341

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	99.00		mg/L		99	82 - 117

QC Association Summary

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

GC/MS VOA

Analysis Batch: 458256

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-309159-1	MW-3R	Total/NA	Ground Water	8260D	
310-309159-2	MW-4R3	Total/NA	Ground Water	8260D	
310-309159-3	MW-7	Total/NA	Ground Water	8260D	
310-309159-4	MW-11	Total/NA	Ground Water	8260D	
310-309159-9	Trip Blank 1	Total/NA	Water	8260D	
MB 310-458256/6	Method Blank	Total/NA	Water	8260D	
LCS 310-458256/7	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-458256/8	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 458338

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-309159-5	MW-13	Total/NA	Ground Water	8260D	
310-309159-6	MW-14	Total/NA	Ground Water	8260D	
310-309159-7	MW-301	Total/NA	Ground Water	8260D	
MB 310-458338/5	Method Blank	Total/NA	Water	8260D	
LCS 310-458338/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-458338/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 458443

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-309159-8	MW-401	Total/NA	Ground Water	8260D	
MB 310-458443/5	Method Blank	Total/NA	Water	8260D	
LCS 310-458443/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-458443/7	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 458497

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-309159-10	Trip Blank 2	Total/NA	Water	8260D	
310-309159-11	Trip Blank 3	Total/NA	Water	8260D	
MB 310-458497/6	Method Blank	Total/NA	Water	8260D	
LCS 310-458497/7	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-458497/8	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 458995

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-309159-10	Trip Blank 2	Total/NA	Water	8260D	
310-309159-11	Trip Blank 3	Total/NA	Water	8260D	
MB 310-458995/5	Method Blank	Total/NA	Water	8260D	
LCS 310-458995/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-458995/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 458501

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-309159-1	MW-3R	Total/NA	Ground Water	3005A	
310-309159-2	MW-4R3	Total/NA	Ground Water	3005A	
310-309159-3	MW-7	Total/NA	Ground Water	3005A	
310-309159-4	MW-11	Total/NA	Ground Water	3005A	
310-309159-5	MW-13	Total/NA	Ground Water	3005A	
310-309159-6	MW-14	Total/NA	Ground Water	3005A	

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QC Association Summary

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Metals (Continued)

Prep Batch: 458501 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-309159-7	MW-301	Total/NA	Ground Water	3005A	
310-309159-8	MW-401	Total/NA	Ground Water	3005A	
MB 310-458501/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-458501/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-309159-8 DU	MW-401	Total/NA	Ground Water	3005A	

Analysis Batch: 458911

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-309159-1	MW-3R	Total/NA	Ground Water	6020B	458501
310-309159-2	MW-4R3	Total/NA	Ground Water	6020B	458501
310-309159-3	MW-7	Total/NA	Ground Water	6020B	458501
310-309159-4	MW-11	Total/NA	Ground Water	6020B	458501
310-309159-5	MW-13	Total/NA	Ground Water	6020B	458501
310-309159-6	MW-14	Total/NA	Ground Water	6020B	458501
310-309159-7	MW-301	Total/NA	Ground Water	6020B	458501
310-309159-8	MW-401	Total/NA	Ground Water	6020B	458501
MB 310-458501/1-A	Method Blank	Total/NA	Water	6020B	458501
LCS 310-458501/2-A	Lab Control Sample	Total/NA	Water	6020B	458501
310-309159-8 DU	MW-401	Total/NA	Ground Water	6020B	458501

General Chemistry

Analysis Batch: 458329

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-309159-1	MW-3R	Total/NA	Ground Water	I-3765-85	
310-309159-3	MW-7	Total/NA	Ground Water	I-3765-85	
310-309159-5	MW-13	Total/NA	Ground Water	I-3765-85	
310-309159-6	MW-14	Total/NA	Ground Water	I-3765-85	
310-309159-7	MW-301	Total/NA	Ground Water	I-3765-85	
310-309159-8	MW-401	Total/NA	Ground Water	I-3765-85	
MB 310-458329/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-458329/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-309159-7 DU	MW-301	Total/NA	Ground Water	I-3765-85	

Analysis Batch: 458341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-309159-2	MW-4R3	Total/NA	Ground Water	I-3765-85	
310-309159-4	MW-11	Total/NA	Ground Water	I-3765-85	
MB 310-458341/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-458341/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Lab Chronicle

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-3R

Date Collected: 06/16/25 16:24

Date Received: 06/19/25 16:10

Lab Sample ID: 310-309159-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	458256	WSE8	EET CF	06/20/25 16:49
Total/NA	Prep	3005A			458501	WK2X	EET CF	06/24/25 08:40
Total/NA	Analysis	6020B		1	458911	NFT2	EET CF	06/26/25 14:08
Total/NA	Analysis	I-3765-85		1	458329	E6KR	EET CF	06/20/25 14:26

Client Sample ID: MW-4R3

Date Collected: 06/18/25 09:59

Date Received: 06/19/25 16:10

Lab Sample ID: 310-309159-2

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	458256	WSE8	EET CF	06/20/25 17:12
Total/NA	Prep	3005A			458501	WK2X	EET CF	06/24/25 08:40
Total/NA	Analysis	6020B		1	458911	NFT2	EET CF	06/26/25 14:17
Total/NA	Analysis	I-3765-85		1	458341	E6KR	EET CF	06/20/25 14:59

Client Sample ID: MW-7

Date Collected: 06/16/25 15:36

Date Received: 06/19/25 16:10

Lab Sample ID: 310-309159-3

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	458256	WSE8	EET CF	06/20/25 17:34
Total/NA	Prep	3005A			458501	WK2X	EET CF	06/24/25 08:40
Total/NA	Analysis	6020B		1	458911	NFT2	EET CF	06/26/25 14:20
Total/NA	Analysis	I-3765-85		1	458329	E6KR	EET CF	06/20/25 14:26

Client Sample ID: MW-11

Date Collected: 06/17/25 10:00

Date Received: 06/19/25 16:10

Lab Sample ID: 310-309159-4

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	458256	WSE8	EET CF	06/20/25 17:57
Total/NA	Prep	3005A			458501	WK2X	EET CF	06/24/25 08:40
Total/NA	Analysis	6020B		1	458911	NFT2	EET CF	06/26/25 14:23
Total/NA	Analysis	I-3765-85		1	458341	E6KR	EET CF	06/20/25 14:59

Client Sample ID: MW-13

Date Collected: 06/17/25 15:58

Date Received: 06/19/25 16:10

Lab Sample ID: 310-309159-5

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	458338	FE5V	EET CF	06/21/25 17:58
Total/NA	Prep	3005A			458501	WK2X	EET CF	06/24/25 08:40
Total/NA	Analysis	6020B		1	458911	NFT2	EET CF	06/26/25 14:38
Total/NA	Analysis	I-3765-85		1	458329	E6KR	EET CF	06/20/25 14:26

Eurofins Cedar Falls

Lab Chronicle

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: MW-14

Lab Sample ID: 310-309159-6

Date Collected: 06/17/25 16:54

Matrix: Ground Water

Date Received: 06/19/25 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	458338	FE5V	EET CF	06/21/25 18:20
Total/NA	Prep	3005A			458501	WK2X	EET CF	06/24/25 08:40
Total/NA	Analysis	6020B		1	458911	NFT2	EET CF	06/26/25 14:32
Total/NA	Analysis	I-3765-85		1	458329	E6KR	EET CF	06/20/25 14:26

Client Sample ID: MW-301

Lab Sample ID: 310-309159-7

Date Collected: 06/17/25 20:01

Matrix: Ground Water

Date Received: 06/19/25 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	458338	FE5V	EET CF	06/21/25 18:42
Total/NA	Prep	3005A			458501	WK2X	EET CF	06/24/25 08:40
Total/NA	Analysis	6020B		1	458911	NFT2	EET CF	06/26/25 14:35
Total/NA	Analysis	I-3765-85		1	458329	E6KR	EET CF	06/20/25 14:26

Client Sample ID: MW-401

Lab Sample ID: 310-309159-8

Date Collected: 06/17/25 12:55

Matrix: Ground Water

Date Received: 06/19/25 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	458443	FE5V	EET CF	06/23/25 17:49
Total/NA	Prep	3005A			458501	WK2X	EET CF	06/24/25 08:40
Total/NA	Analysis	6020B		1	458911	NFT2	EET CF	06/26/25 14:26
Total/NA	Analysis	I-3765-85		1	458329	E6KR	EET CF	06/20/25 14:26

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-309159-9

Date Collected: 06/17/25 00:00

Matrix: Water

Date Received: 06/19/25 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	458256	WSE8	EET CF	06/20/25 14:11

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-309159-10

Date Collected: 06/17/25 00:00

Matrix: Water

Date Received: 06/19/25 16:10

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	458995	WSE8	EET CF	06/27/25 11:45
Total/NA	Analysis	8260D		1	458497	WSE8	EET CF	06/23/25 18:32

Lab Chronicle

Client: SCS Engineers
Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

Job ID: 310-309159-1
SDG: Sioux City Sanitary Landfill (Bracketing)

Client Sample ID: Trip Blank 3
Date Collected: 06/17/25 00:00
Date Received: 06/19/25 16:10

Lab Sample ID: 310-309159-11
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	458995	WSE8	EET CF	06/27/25 12:07
Total/NA	Analysis	8260D		1	458497	WSE8	EET CF	06/23/25 18:54

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

Accreditation/Certification Summary

Client: SCS Engineers

Job ID: 310-309159-1

Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

SDG: Sioux City Sanitary Landfill (Bracketing)

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25

1
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Method Summary

Client: SCS Engineers

Job ID: 310-309159-1

Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

SDG: Sioux City Sanitary Landfill (Bracketing)

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

Protocol References:

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

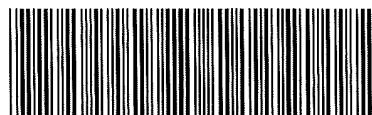
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

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



Environment Testing
America



310-309159 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client <u>ScS</u>			
City/State:	CITY <u>W. Des Moines</u>	STATE <u>IA</u>	Project.
Receipt Information			
Date/Time Received	DATE <u>6.14.25</u>	TIME <u>1610</u>	Received By. <u>PH</u>
Delivery Type ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No	If yes Cooler ID
Multiple Coolers?		☒ Yes ☐ No	If yes: Cooler # <u>1</u> of <u>3</u>
Cooler Custody Seals Present?		☐ Yes ☒ No	If yes Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?		☐ Yes ☒ No	If yes Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?		☒ Yes ☐ No	If yes: Which VOA samples are in cooler? ↓
<u>MW-3R, 7, 4R</u>			
Temperature Record			
Coolant. ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID. <u>AA</u>		Correction Factor (°C). <u>0</u>	
• Temp Blank Temperature -- If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C) <u>0.1</u>		Corrected Temp (°C): <u>0.1</u>	
• Sample Container Temperature			
Container(s) used:	<u>CONTAINER 1</u>		<u>CONTAINER 2</u>
Uncorrected Temp (°C).			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No			
a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			



Environment Testing
America

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>ScS</u>			
City/State	CITY <u>W. Des Moines</u>	STATE <u>IA</u>	Project. <u> </u>
Receipt Information			
Date/Time Received	DATE <u>6-19-25</u>	TIME <u>1610</u>	Received By <u>PH</u>
Delivery Type ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: <u> </u>			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No	If yes: Cooler ID <u> </u>
Multiple Coolers?		☒ Yes ☐ No	If yes: Cooler # <u>2</u> of <u>3</u>
Cooler Custody Seals Present?		☐ Yes ☒ No	If yes: Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?		☐ Yes ☒ No	If yes: Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?		☒ Yes ☐ No	If yes: Which VOA samples are in cooler? <u>↓</u>
<u>MW-401, 301, 13, 14</u>			
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: <u> </u> ☐ NONE			
Thermometer ID: <u>AA</u>		Correction Factor (°C) <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>-0.9</u>		Corrected Temp (°C): <u>-0.9</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1		CONTAINER 2
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No			
a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☒ No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			



Environment Testing
America

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client <u>SCS</u>			
City/State	CITY <u>W. Des Moines</u>	STATE <u>IA</u>	Project:
Receipt Information			
Date/Time Received	DATE <u>6.14.25</u>	TIME <u>1610</u>	Received By <u>PH</u>
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No	If yes Cooler ID
Multiple Coolers?		☒ Yes ☐ No	If yes: Cooler # <u>3</u> of <u>3</u>
Cooler Custody Seals Present?		☐ Yes ☒ No	If yes: Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?		☐ Yes ☒ No	If yes. Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?		☒ Yes ☐ No	If yes Which VOA samples are in cooler? ↓ <u>MW-11</u>
Temperature Record			
Coolant ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other _____ ☐ NONE			
Thermometer ID. <u>AA</u>		Correction Factor (°C). <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C) <u>0.7</u>		Corrected Temp (°C): <u>0.7</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1		CONTAINER 2
Uncorrected Temp (°C):			
Corrected Temp (°C)			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No			
a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			

Chain of Custody Record



TestAmerica Laboratories, Inc. db/a Eurofins TestAmerica

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

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

Client Contact	Site Contact: Ben Madson	Date:	COC No
SCS Engineers	Lab Contact: Samuel Miller	Carrier:	1 of 2 COCs
1690 All-State Court, Suite 100			
West Des Moines, IA 50265			
515-631-6160			
Project Name: 1st 2025 Semi-Annual Groundwater Sampling			
Site: Sioux City Sanitary Landfill (HMSF)			
P.O. # 27223205 24			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Analysis Turnaround Time									
						CALENDAR DAYS	WORKING DAYS	Other:	2 weeks	1 week	2 days	1 day	Appendix I	TSS	Dichlorodifluoromethane
MW-2R	6-16	10:24	G	GW									X	X	
MW-3R	6-16	15:36	G	GW									X	X	
MW-4R3	6-16	9:59	G	GW									X	X	
MW-7	6-16	15:36	G	GW									X	X	
MW-9	6-16	15:36	G	GW									X	X	
MW-10	6-16	15:36	G	GW									X	X	
MW-11	6-17	10:00	G	GW									X	X	
MW-12	6-17	10:00	G	GW									X	X	
MW-D	6-17	10:00	G	GW									X	X	
Trip Blank															

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

Possible Hazard Identification: Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments

Custody Seal No	Company	Date/Time	Received by	Company	Corr'd	Therm ID No
SCS	Garrett Hargah	6-19 16:40	SCS	Garrett Hargah		0700
Relinquished by	Company	Date/Time	Received by	Company		
Relinquished by	Company	Date/Time	Received in Laboratory by	Company		
Relinquished by	Company	Date/Time	Received in Laboratory by	Company		

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-309159-1

SDG Number: Sioux City Sanitary Landfill (Bracketing)

Login Number: 309159

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Hirsch, Preston

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

Quantitation Limit Exceptions Summary

Client: SCS Engineers

Job ID: 310-309159-1

Project/Site: 1st 2025 Semi-Annual Groundwater Sampling

SDG: Sioux City Sanitary Landfill (Bracketing)

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	Ground Water	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromo-3-Chloropropane	Water	Total/NA	ug/L	1.20	5
8260D	1,2-Dibromoethane (EDB)	Ground Water	Total/NA	ug/L	0.340	1
8260D	1,2-Dibromoethane (EDB)	Water	Total/NA	ug/L	0.340	1

ANALYTICAL REPORT

PREPARED FOR

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

Generated 12/3/2025 10:03:53 AM

JOB DESCRIPTION

Sioux City 2nd 2025 HMSP (Bracketing)
Sioux City Sanitary Landfill

JOB NUMBER

310-320682-1

Eurofins Cedar Falls

Job Notes

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

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

Authorization



Generated
12/3/2025 10:03:53 AM

Authorized for release by
Samuel Miller, Project Management Assistant I
Samuel.Miller@et.eurofinsus.com
(319)595-2008

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Case Narrative

Client: SCS Engineers
Project: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1

Job ID: 310-320682-1

Eurofins Cedar Falls

Job Narrative 310-320682-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt

The samples were received on 11/14/2025 5:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.8°C.

GC/MS VOA

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

Metals

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

General Chemistry

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

Eurofins Cedar Falls

Sample Summary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
310-320682-1	MW-13	Ground Water	11/12/25 14:51	11/14/25 17:05	Iowa
310-320682-2	MW-14	Ground Water	11/12/25 14:08	11/14/25 17:05	Iowa
310-320682-3	MW-15	Ground Water	11/12/25 08:13	11/14/25 17:05	Iowa
310-320682-4	MW-301	Ground Water	11/11/25 15:12	11/14/25 17:05	Iowa
310-320682-5	MW-401	Ground Water	11/11/25 16:07	11/14/25 17:05	Iowa
310-320682-6	Trip Blank	Water	11/11/25 00:00	11/14/25 17:05	Iowa

Detection Summary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

Client Sample ID: MW-13

Lab Sample ID: 310-320682-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	0.799	J	1.00	0.350	ug/L	1		8260D	Total/NA
Vinyl chloride	2.39		1.00	0.430	ug/L	1		8260D	Total/NA
Cobalt	0.00100		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	105		5.00	3.50	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-14

Lab Sample ID: 310-320682-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	1.46		1.00	0.350	ug/L	1		8260D	Total/NA
Cobalt	0.000656		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	89.0		5.00	3.50	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-15

Lab Sample ID: 310-320682-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.000941		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	33.7		2.50	1.75	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-301

Lab Sample ID: 310-320682-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Trichloroethene	5.11		1.00	0.350	ug/L	1		8260D	Total/NA
Vinyl chloride	3.13		1.00	0.430	ug/L	1		8260D	Total/NA
Cobalt	0.00425		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	157		15.0	10.5	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-401

Lab Sample ID: 310-320682-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Cobalt	0.00178		0.000500	0.000170	mg/L	1		6020B	Total/NA
Total Suspended Solids	281		15.0	10.5	mg/L	1		I-3765-85	Total/NA

Client Sample ID: Trip Blank

Lab Sample ID: 310-320682-6

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

Client Sample ID: MW-13

Lab Sample ID: 310-320682-1

Date Collected: 11/12/25 14:51

Matrix: Ground Water

Date Received: 11/14/25 17:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	0.799	J	1.00	0.350	ug/L			11/19/25 14:12	1
Vinyl chloride	2.39		1.00	0.430	ug/L			11/19/25 14:12	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120					11/19/25 14:12	1
Dibromofluoromethane (Surr)	100		76 - 130					11/19/25 14:12	1
Toluene-d8 (Surr)	93		80 - 120					11/19/25 14:12	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00100		0.000500	0.000170	mg/L		11/19/25 08:30	12/02/25 18:06	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	105		5.00	3.50	mg/L			11/17/25 11:50	1

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

Client Sample ID: MW-14

Lab Sample ID: 310-320682-2

Date Collected: 11/12/25 14:08

Matrix: Ground Water

Date Received: 11/14/25 17:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	1.46		1.00	0.350	ug/L			11/19/25 14:34	1
Vinyl chloride	<1.00		1.00	0.430	ug/L			11/19/25 14:34	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120					11/19/25 14:34	1
Dibromofluoromethane (Surr)	100		76 - 130					11/19/25 14:34	1
Toluene-d8 (Surr)	93		80 - 120					11/19/25 14:34	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.000656		0.000500	0.000170	mg/L		11/19/25 08:30	12/02/25 18:09	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	89.0		5.00	3.50	mg/L			11/17/25 11:50	1

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

Client Sample ID: MW-15

Lab Sample ID: 310-320682-3

Date Collected: 11/12/25 08:13

Matrix: Ground Water

Date Received: 11/14/25 17:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.000941		0.000500	0.000170	mg/L		11/19/25 08:30	12/02/25 18:12	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	33.7		2.50	1.75	mg/L			11/17/25 11:50	1

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

Client Sample ID: MW-301

Lab Sample ID: 310-320682-4

Date Collected: 11/11/25 15:12

Matrix: Ground Water

Date Received: 11/14/25 17:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	5.11		1.00	0.350	ug/L			11/19/25 14:56	1
Vinyl chloride	3.13		1.00	0.430	ug/L			11/19/25 14:56	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120					11/19/25 14:56	1
Dibromofluoromethane (Surr)	101		76 - 130					11/19/25 14:56	1
Toluene-d8 (Surr)	95		80 - 120					11/19/25 14:56	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00425		0.000500	0.000170	mg/L		11/19/25 08:30	12/02/25 18:15	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	157		15.0	10.5	mg/L			11/17/25 10:49	1

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

Client Sample ID: MW-401

Lab Sample ID: 310-320682-5

Date Collected: 11/11/25 16:07

Matrix: Ground Water

Date Received: 11/14/25 17:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	<1.00		1.00	0.350	ug/L			11/19/25 15:19	1
Vinyl chloride	<1.00		1.00	0.430	ug/L			11/19/25 15:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		80 - 120					11/19/25 15:19	1
Dibromofluoromethane (Surr)	96		76 - 130					11/19/25 15:19	1
Toluene-d8 (Surr)	94		80 - 120					11/19/25 15:19	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	0.00178		0.000500	0.000170	mg/L		11/19/25 08:30	12/02/25 18:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	281		15.0	10.5	mg/L			11/17/25 10:49	1

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

Client Sample ID: Trip Blank

Lab Sample ID: 310-320682-6

Date Collected: 11/11/25 00:00

Matrix: Water

Date Received: 11/14/25 17:05

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	<1.00		1.00	0.350	ug/L			11/19/25 10:25	1
Vinyl chloride	<1.00		1.00	0.430	ug/L			11/19/25 10:25	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	101		80 - 120					11/19/25 10:25	1
Dibromofluoromethane (Surr)	96		76 - 130					11/19/25 10:25	1
Toluene-d8 (Surr)	94		80 - 120					11/19/25 10:25	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

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.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

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

Matrix: Ground Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (80-120)	DBFM (76-130)	TOL (80-120)
310-320682-1	MW-13	101	100	93
310-320682-2	MW-14	101	100	93
310-320682-4	MW-301	101	101	95
310-320682-5	MW-401	102	96	94

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

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

Matrix: Water

Prep Type: Total/NA

Percent Surrogate Recovery (Acceptance Limits)

Lab Sample ID	Client Sample ID	BFB (80-120)	DBFM (76-130)	TOL (80-120)
310-320682-6	Trip Blank	101	96	94
LCS 310-473938/6	Lab Control Sample	99	101	95
LCS 310-473938/7	Lab Control Sample	102	97	93
MB 310-473938/5	Method Blank	100	97	93

Surrogate Legend

BFB = 4-Bromofluorobenzene (Surr)

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

QC Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

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

Lab Sample ID: MB 310-473938/5

Matrix: Water

Analysis Batch: 473938

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Trichloroethene	<1.00		1.00	0.350	ug/L			11/19/25 08:11	1
Vinyl chloride	<1.00		1.00	0.430	ug/L			11/19/25 08:11	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	100		80 - 120					11/19/25 08:11	1
Dibromofluoromethane (Surr)	97		76 - 130					11/19/25 08:11	1
Toluene-d8 (Surr)	93		80 - 120					11/19/25 08:11	1

Lab Sample ID: LCS 310-473938/6

Matrix: Water

Analysis Batch: 473938

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	20.61		ug/L		103	70 - 128
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	99		80 - 120				
Dibromofluoromethane (Surr)	101		76 - 130				
Toluene-d8 (Surr)	95		80 - 120				

Lab Sample ID: LCS 310-473938/7

Matrix: Water

Analysis Batch: 473938

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Vinyl chloride	20.0	20.46		ug/L		102	60 - 142
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
4-Bromofluorobenzene (Surr)	102		80 - 120				
Dibromofluoromethane (Surr)	97		76 - 130				
Toluene-d8 (Surr)	93		80 - 120				

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-473972/1-A

Matrix: Water

Analysis Batch: 475370

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 473972

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.000500		0.000500	0.000170	mg/L		11/19/25 08:30	12/02/25 17:03	1

Lab Sample ID: LCS 310-473972/2-A

Matrix: Water

Analysis Batch: 475370

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 473972

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Cobalt	0.100	0.1014		mg/L		101	80 - 120

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QC Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

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

Lab Sample ID: MB 310-473757/1
Matrix: Water
Analysis Batch: 473757

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			11/17/25 10:49	1

Lab Sample ID: LCS 310-473757/2
Matrix: Water
Analysis Batch: 473757

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	98.00		mg/L		98	82 - 117

Lab Sample ID: MB 310-473774/1
Matrix: Water
Analysis Batch: 473774

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			11/17/25 11:50	1

Lab Sample ID: LCS 310-473774/2
Matrix: Water
Analysis Batch: 473774

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	99.00		mg/L		99	82 - 117

QC Association Summary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

GC/MS VOA

Analysis Batch: 473938

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-320682-1	MW-13	Total/NA	Ground Water	8260D	
310-320682-2	MW-14	Total/NA	Ground Water	8260D	
310-320682-4	MW-301	Total/NA	Ground Water	8260D	
310-320682-5	MW-401	Total/NA	Ground Water	8260D	
310-320682-6	Trip Blank	Total/NA	Water	8260D	
MB 310-473938/5	Method Blank	Total/NA	Water	8260D	
LCS 310-473938/6	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-473938/7	Lab Control Sample	Total/NA	Water	8260D	

Metals

Prep Batch: 473972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-320682-1	MW-13	Total/NA	Ground Water	3005A	
310-320682-2	MW-14	Total/NA	Ground Water	3005A	
310-320682-3	MW-15	Total/NA	Ground Water	3005A	
310-320682-4	MW-301	Total/NA	Ground Water	3005A	
310-320682-5	MW-401	Total/NA	Ground Water	3005A	
MB 310-473972/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-473972/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 475370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-320682-1	MW-13	Total/NA	Ground Water	6020B	473972
310-320682-2	MW-14	Total/NA	Ground Water	6020B	473972
310-320682-3	MW-15	Total/NA	Ground Water	6020B	473972
310-320682-4	MW-301	Total/NA	Ground Water	6020B	473972
310-320682-5	MW-401	Total/NA	Ground Water	6020B	473972
MB 310-473972/1-A	Method Blank	Total/NA	Water	6020B	473972
LCS 310-473972/2-A	Lab Control Sample	Total/NA	Water	6020B	473972

General Chemistry

Analysis Batch: 473757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-320682-4	MW-301	Total/NA	Ground Water	I-3765-85	
310-320682-5	MW-401	Total/NA	Ground Water	I-3765-85	
MB 310-473757/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-473757/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 473774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-320682-1	MW-13	Total/NA	Ground Water	I-3765-85	
310-320682-2	MW-14	Total/NA	Ground Water	I-3765-85	
310-320682-3	MW-15	Total/NA	Ground Water	I-3765-85	
MB 310-473774/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-473774/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Lab Chronicle

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

Client Sample ID: MW-13

Lab Sample ID: 310-320682-1

Date Collected: 11/12/25 14:51

Matrix: Ground Water

Date Received: 11/14/25 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	473938	FE5V	EET CF	11/19/25 14:12
Total/NA	Prep	3005A			473972	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475370	NFT2	EET CF	12/02/25 18:06
Total/NA	Analysis	I-3765-85		1	473774	DGU1	EET CF	11/17/25 11:50

Client Sample ID: MW-14

Lab Sample ID: 310-320682-2

Date Collected: 11/12/25 14:08

Matrix: Ground Water

Date Received: 11/14/25 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	473938	FE5V	EET CF	11/19/25 14:34
Total/NA	Prep	3005A			473972	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475370	NFT2	EET CF	12/02/25 18:09
Total/NA	Analysis	I-3765-85		1	473774	DGU1	EET CF	11/17/25 11:50

Client Sample ID: MW-15

Lab Sample ID: 310-320682-3

Date Collected: 11/12/25 08:13

Matrix: Ground Water

Date Received: 11/14/25 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			473972	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475370	NFT2	EET CF	12/02/25 18:12
Total/NA	Analysis	I-3765-85		1	473774	DGU1	EET CF	11/17/25 11:50

Client Sample ID: MW-301

Lab Sample ID: 310-320682-4

Date Collected: 11/11/25 15:12

Matrix: Ground Water

Date Received: 11/14/25 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	473938	FE5V	EET CF	11/19/25 14:56
Total/NA	Prep	3005A			473972	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475370	NFT2	EET CF	12/02/25 18:15
Total/NA	Analysis	I-3765-85		1	473757	DGU1	EET CF	11/17/25 10:49

Client Sample ID: MW-401

Lab Sample ID: 310-320682-5

Date Collected: 11/11/25 16:07

Matrix: Ground Water

Date Received: 11/14/25 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	473938	FE5V	EET CF	11/19/25 15:19
Total/NA	Prep	3005A			473972	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475370	NFT2	EET CF	12/02/25 18:17
Total/NA	Analysis	I-3765-85		1	473757	DGU1	EET CF	11/17/25 10:49

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Lab Chronicle

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

Client Sample ID: Trip Blank
Date Collected: 11/11/25 00:00
Date Received: 11/14/25 17:05

Lab Sample ID: 310-320682-6
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	473938	FE5V	EET CF	11/19/25 10:25

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: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP (Bracketing)

Job ID: 310-320682-1
SDG: Sioux City Sanitary Landfill

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



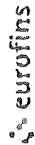
Environment Testing
America



310-320682 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SOS</u>			
City/State:	CITY	STATE	Project:
Receipt Information			
Date/Time Received:	DATE <u>6/14/22</u>	TIME <u>1705</u>	Received By <u>J</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>SM</u>			
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>143</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>0.8</u>		Corrected Temp (°C): <u>0.8</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1		CONTAINER 2
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ 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			



TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Regulatory Program: ☐ DW ☐ NPDES ☒ RCRA ☐ Other

Project Manager: Nathan Ohrt
Email: nohrt@scsengineers.com
Cell: 319-331-9613

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

Site Contact: Arah Montagne
Lab Contact: Sam Miller

Date: _____
Carrier: _____

COC No: 2 of 2 COCs

Sampler: _____
For Lab Use Only:
Walk-in Client
Lab Sampling

Job / SDG No: _____

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

Project Name: Sioux 2nd 2025 HNSP
Site: Sioux City Sanitary Landfill (Bracketing)
P O # 27225426 00

Sample Identification	Sample Date	Sample Time	Sample Type (C-Comp, G-Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	TSS	Cobalt	Trichloroethene	Vinyl Chloride	Trip Blank	Sample Specific Notes:
MW-13	11/12/25	14 51	G	GW				X	X	X	X		
MW-14	11/12/25	14 08	G	GW				X	X	X	X		
MW-15	11/12/25	8 13	G	GW				X	X	X	X		
MW-301	11/11/25	15 12	G	GW				X	X	X	X		
MW-401	11/11/25	16 07	G	GW				X	X	X	X		
Trip Blank												X	include trip blanks in every cooler containing VOC sample containers

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

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Special Instructions/QC Requirements & Comments:

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Custody Seals Intact: ☐ Yes ☐ No
Relinquished by: Michael Morgan
Relinquished by: _____
Relinquished by: _____

Custody Seal No: _____
Company: SCS Engineers
Date/Time: 11/14/25 10:00
Received by: _____
Company: _____
Date/Time: _____
Received in Laboratory by: _____
Company: _____
Date/Time: 11/14/25 17:05

Therm ID No: _____
Date/Time: _____
Company: _____
Date/Time: _____
Company: _____
Date/Time: _____

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-320682-1
SDG Number: Sioux City Sanitary Landfill

Login Number: 320682

List Number: 1

Creator: Schaufenbuel, Erin

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	

ANALYTICAL REPORT

PREPARED FOR

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

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JOB DESCRIPTION

Sioux City 2nd 2025 HMSP
Sioux City Sanitary Landfill (HMSP)

JOB NUMBER

310-320686-1

Eurofins Cedar Falls

Job Notes

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

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

Authorization



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Authorized for release by
Samuel Miller, Project Management Assistant I
Samuel.Miller@et.eurofinsus.com
(319)595-2008

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Case Narrative

Client: SCS Engineers
Project: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1

Job ID: 310-320686-1

Eurofins Cedar Falls

Job Narrative 310-320686-1

The analytical test results presented in this report meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page, unless otherwise noted. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable. Regulated compliance samples (e.g. SDWA, NPDES) must comply with associated agency requirements/permits.

- Matrix-specific batch QC (e.g., MS, MSD, SD) may not be reported when insufficient sample volume is available or when site-specific QC samples are not submitted. In such cases, a Laboratory Control Sample Duplicate (LCSD) may be analyzed to provide precision data for the batch.
- For samples analyzed using surrogate and/or isotope dilution analytes, any recoveries falling outside of established acceptance criteria are re-prepared and/or re-analyzed to confirm results, unless the deviation is due to sample dilution or otherwise explained in the case narrative.

Receipt

The samples were received on 11/14/2025 5:05 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperatures of the 2 coolers at receipt time were 0.3°C and 0.7°C.

GC/MS VOA

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-473879 recovered outside of the control limits for Bromomethane (-43%D). A CCV standard at or below the reporting limit (RL) was analyzed with the affected samples and found to be acceptable. The samples associated with this CCV were non-detects for the affected analyte; therefore, the data have been reported. The associated sample is impacted: (CCV 310-473879/4).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-473879 recovered outside of the control limits for Vinyl chloride (-22%D), Chloroethane (-25%D), Chloromethane (-25%D), and Trichlorofluoromethane (-23%D). The LCS associated with this CCV passed CCV criteria for the affected analytes; therefore, the data have been reported. The associated sample is: (CCV 310-473879/4).

Method 8260D: The continuing calibration verification (CCV) associated with batch 310-473879 recovered outside of the control limits for Carbon disulfide (-24%D), Carbon tetrachloride (-25%D), Dichlorobromomethane (-23%D), Tetrachloroethene (-21%D), 1,1,1-Trichloroethane (-21%D), Bromoform (-23%D), 1,2-Dichloropropane (-22%D), 1,1,1,2-Tetrachloroethane (-21%D), and 1,1-Dichloroethane (-23%D). The LCS associated with this CCV passed CCV criteria for the affected analytes; therefore, the data have been reported. The associated sample is: (CCV 310-473879/3).

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

Metals

Method 6020B: The initial calibration verification (ICV) result for batch 310-475370 was above the upper control limit. The affected analytes are: thallium. Sample results were non-detects, and have been reported as qualified data.

Method 6020B: The method blank for preparation batch 310-473972 and analytical batch 310-475370 contained barium above the method detection limit (MDL). Associated sample(s) were not re-extracted and/or re-analyzed because results were greater than 10X the value found in the method blank.

Method 6020B: The initial calibration verification (ICV) result for batch 310-475370 was above the upper control limit. The affected analytes are: thallium. Sample results were non-detects, and have been reported as qualified data.

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

General Chemistry

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

Eurofins Cedar Falls

Sample Summary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Sample Origin
310-320686-1	MW-3R	Ground Water	11/12/25 15:43	11/14/25 17:05	Iowa
310-320686-2	MW-4R3	Ground Water	11/13/25 09:14	11/14/25 17:05	Iowa
310-320686-3	MW-7	Ground Water	11/11/25 14:00	11/14/25 17:05	Iowa
310-320686-4	MW-9	Ground Water	11/13/25 08:16	11/14/25 17:05	Iowa
310-320686-5	MW-10	Ground Water	11/12/25 10:11	11/14/25 17:05	Iowa
310-320686-6	MW-11	Ground Water	11/12/25 08:57	11/14/25 17:05	Iowa
310-320686-7	MW-D	Ground Water	11/12/25 10:11	11/14/25 17:05	Iowa
310-320686-8	Trip Blank 1	Ground Water	11/13/25 00:00	11/14/25 17:05	Iowa
310-320686-9	Trip Blank 2	Ground Water	11/13/25 00:00	11/14/25 17:05	Iowa

Detection Summary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-3R

Lab Sample ID: 310-320686-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	60.7	F1	1.00	0.400	ug/L	1		8260D	Total/NA
Chloroethane	7.41		4.00	0.900	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	1.63		1.00	0.550	ug/L	1		8260D	Total/NA
Trichlorofluoromethane	2.04	J	4.00	0.470	ug/L	1		8260D	Total/NA
Arsenic	0.00158	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.686	B	0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00350		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0202		0.00500	0.00230	mg/L	1		6020B	Total/NA
Total Suspended Solids	6.63		1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-4R3

Lab Sample ID: 310-320686-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	77.4		1.00	0.400	ug/L	1		8260D	Total/NA
1,2-Dichloropropane	1.30		1.00	0.380	ug/L	1		8260D	Total/NA
Benzene	0.274	J	0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	2.83	J	4.00	0.900	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	31.0		1.00	0.550	ug/L	1		8260D	Total/NA
Tetrachloroethene	5.07		1.00	0.480	ug/L	1		8260D	Total/NA
trans-1,2-Dichloroethene	1.88		1.00	0.410	ug/L	1		8260D	Total/NA
Trichloroethene	2.80		1.00	0.350	ug/L	1		8260D	Total/NA
Trichlorofluoromethane	1.43	J	4.00	0.470	ug/L	1		8260D	Total/NA
Vinyl chloride	4.05		1.00	0.430	ug/L	1		8260D	Total/NA
Arsenic	0.00146	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	1.17		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.00574		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.0235		0.00500	0.00230	mg/L	1		6020B	Total/NA
Total Suspended Solids	7.25		1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-7

Lab Sample ID: 310-320686-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Antimony	0.00171	J	0.00200	0.00100	mg/L	1		6020B	Total/NA
Arsenic	0.000969	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.169		0.00200	0.000660	mg/L	1		6020B	Total/NA
Chromium	0.0142		0.00500	0.00180	mg/L	1		6020B	Total/NA
Selenium	0.0505		0.00500	0.00140	mg/L	1		6020B	Total/NA
Total Suspended Solids	2.75		1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-9

Lab Sample ID: 310-320686-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
1,1-Dichloroethane	28.6		1.00	0.400	ug/L	1		8260D	Total/NA
Benzene	0.389	J	0.500	0.220	ug/L	1		8260D	Total/NA
Chloroethane	4.19		4.00	0.900	ug/L	1		8260D	Total/NA
cis-1,2-Dichloroethene	0.960	J	1.00	0.550	ug/L	1		8260D	Total/NA
Trichlorofluoromethane	1.54	J	4.00	0.470	ug/L	1		8260D	Total/NA
Arsenic	0.00424		0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.605		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000109	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.00478		0.000500	0.000170	mg/L	1		6020B	Total/NA
Lead	0.000503		0.000500	0.000330	mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Detection Summary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-9 (Continued)

Lab Sample ID: 310-320686-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Nickel	0.0104		0.00500	0.00230	mg/L	1		6020B	Total/NA
Total Suspended Solids	29.3		3.75	2.63	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-10

Lab Sample ID: 310-320686-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dichlorodifluoromethane	11.3		3.00	0.850	ug/L	1		8260D	Total/NA
Arsenic	0.000776	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.273		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000472		0.000200	0.000100	mg/L	1		6020B	Total/NA
Chromium	0.00241	J	0.00500	0.00180	mg/L	1		6020B	Total/NA
Cobalt	0.00323		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.00683		0.00500	0.00320	mg/L	1		6020B	Total/NA
Lead	0.00325		0.000500	0.000330	mg/L	1		6020B	Total/NA
Nickel	0.00684		0.00500	0.00230	mg/L	1		6020B	Total/NA
Vanadium	0.00520		0.00500	0.00170	mg/L	1		6020B	Total/NA
Zinc	0.0160	J	0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	102		3.75	2.63	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-11

Lab Sample ID: 310-320686-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.0899		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000114	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.00149		0.000500	0.000170	mg/L	1		6020B	Total/NA
Nickel	0.00242	J	0.00500	0.00230	mg/L	1		6020B	Total/NA
Total Suspended Solids	2.88		1.88	1.31	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-D

Lab Sample ID: 310-320686-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Dichlorodifluoromethane	10.9		3.00	0.850	ug/L	1		8260D	Total/NA
Arsenic	0.000641	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Barium	0.259		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cadmium	0.000406		0.000200	0.000100	mg/L	1		6020B	Total/NA
Cobalt	0.00275		0.000500	0.000170	mg/L	1		6020B	Total/NA
Copper	0.00586		0.00500	0.00320	mg/L	1		6020B	Total/NA
Lead	0.00268		0.000500	0.000330	mg/L	1		6020B	Total/NA
Nickel	0.00542		0.00500	0.00230	mg/L	1		6020B	Total/NA
Vanadium	0.00415	J	0.00500	0.00170	mg/L	1		6020B	Total/NA
Zinc	0.0138	J	0.0200	0.0130	mg/L	1		6020B	Total/NA
Total Suspended Solids	116		3.75	2.63	mg/L	1		I-3765-85	Total/NA

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-320686-8

No Detections.

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-320686-9

No Detections.

This Detection Summary does not include radiochemical test results.

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-3R

Lab Sample ID: 310-320686-1

Date Collected: 11/12/25 15:43

Matrix: Ground Water

Date Received: 11/14/25 17:05

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			11/18/25 12:18	1
1,1,1-Trichloroethane	<1.00		1.00	0.420	ug/L			11/18/25 12:18	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.350	ug/L			11/18/25 12:18	1
1,1,2-Trichloroethane	<1.00		1.00	0.330	ug/L			11/18/25 12:18	1
1,1-Dichloroethane	60.7	F1	1.00	0.400	ug/L			11/18/25 12:18	1
1,1-Dichloroethene	<2.00		2.00	0.460	ug/L			11/18/25 12:18	1
1,2,3-Trichloropropane	<1.00		1.00	0.430	ug/L			11/18/25 12:18	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			11/18/25 12:18	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			11/18/25 12:18	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			11/18/25 12:18	1
1,2-Dichloroethane	<1.00		1.00	0.890	ug/L			11/18/25 12:18	1
1,2-Dichloropropane	<1.00		1.00	0.380	ug/L			11/18/25 12:18	1
1,4-Dichlorobenzene	<1.00		1.00	0.490	ug/L			11/18/25 12:18	1
2-Butanone (MEK)	<10.0		10.0	3.40	ug/L			11/18/25 12:18	1
2-Hexanone	<10.0		10.0	3.80	ug/L			11/18/25 12:18	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	3.50	ug/L			11/18/25 12:18	1
Acetone	<10.0		10.0	3.80	ug/L			11/18/25 12:18	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			11/18/25 12:18	1
Benzene	<0.500		0.500	0.220	ug/L			11/18/25 12:18	1
Bromochloromethane	<5.00		5.00	1.70	ug/L			11/18/25 12:18	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			11/18/25 12:18	1
Bromoform	<5.00		5.00	2.60	ug/L			11/18/25 12:18	1
Bromomethane	<4.00		4.00	1.10	ug/L			11/18/25 12:18	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			11/18/25 12:18	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			11/18/25 12:18	1
Chlorobenzene	<1.00		1.00	0.350	ug/L			11/18/25 12:18	1
Chlorodibromomethane	<5.00		5.00	1.50	ug/L			11/18/25 12:18	1
Chloroethane	7.41		4.00	0.900	ug/L			11/18/25 12:18	1
Chloroform	<3.00		3.00	1.30	ug/L			11/18/25 12:18	1
Chloromethane	<3.00		3.00	0.610	ug/L			11/18/25 12:18	1
cis-1,2-Dichloroethene	1.63		1.00	0.550	ug/L			11/18/25 12:18	1
cis-1,3-Dichloropropene	<5.00		5.00	1.20	ug/L			11/18/25 12:18	1
Dibromomethane	<1.00		1.00	0.330	ug/L			11/18/25 12:18	1
Dichlorodifluoromethane	<3.00		3.00	0.850	ug/L			11/18/25 12:18	1
Ethylbenzene	<1.00		1.00	0.420	ug/L			11/18/25 12:18	1
Iodomethane	<10.0		10.0	2.60	ug/L			11/18/25 12:18	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			11/18/25 12:18	1
Styrene	<1.00		1.00	0.370	ug/L			11/18/25 12:18	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			11/18/25 12:18	1
Toluene	<1.00		1.00	0.430	ug/L			11/18/25 12:18	1
trans-1,2-Dichloroethene	<1.00		1.00	0.410	ug/L			11/18/25 12:18	1
trans-1,3-Dichloropropene	<5.00		5.00	2.30	ug/L			11/18/25 12:18	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	2.40	ug/L			11/18/25 12:18	1
Trichloroethene	<1.00		1.00	0.350	ug/L			11/18/25 12:18	1
Trichlorofluoromethane	2.04	J	4.00	0.470	ug/L			11/18/25 12:18	1
Vinyl acetate	<10.0		10.0	7.10	ug/L			11/18/25 12:18	1
Vinyl chloride	<1.00		1.00	0.430	ug/L			11/18/25 12:18	1
Xylenes, Total	<3.00		3.00	1.10	ug/L			11/18/25 12:18	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-3R

Lab Sample ID: 310-320686-1

Date Collected: 11/12/25 15:43

Matrix: Ground Water

Date Received: 11/14/25 17:05

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	110		76 - 130		11/18/25 12:18	1
Toluene-d8 (Surr)	97		80 - 120		11/18/25 12:18	1
4-Bromofluorobenzene (Surr)	104		80 - 120		11/18/25 12:18	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		11/19/25 08:30	12/02/25 18:20	1
Arsenic	0.00158	J	0.00200	0.000530	mg/L		11/19/25 08:30	12/02/25 18:20	1
Barium	0.686	B	0.00200	0.000660	mg/L		11/19/25 08:30	12/02/25 18:20	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		11/19/25 08:30	12/02/25 18:20	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		11/19/25 08:30	12/02/25 18:20	1
Chromium	<0.00500		0.00500	0.00180	mg/L		11/19/25 08:30	12/02/25 18:20	1
Cobalt	0.00350		0.000500	0.000170	mg/L		11/19/25 08:30	12/02/25 18:20	1
Copper	<0.00500		0.00500	0.00320	mg/L		11/19/25 08:30	12/02/25 18:20	1
Lead	<0.000500		0.000500	0.000330	mg/L		11/19/25 08:30	12/02/25 18:20	1
Nickel	0.0202		0.00500	0.00230	mg/L		11/19/25 08:30	12/02/25 18:20	1
Selenium	<0.00500		0.00500	0.00140	mg/L		11/19/25 08:30	12/02/25 18:20	1
Silver	<0.00100		0.00100	0.000500	mg/L		11/19/25 08:30	12/02/25 18:20	1
Thallium	<0.00100	^1+	0.00100	0.000570	mg/L		11/19/25 08:30	12/02/25 18:20	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		11/19/25 08:30	12/02/25 18:20	1
Zinc	<0.0200		0.0200	0.0130	mg/L		11/19/25 08:30	12/02/25 18:20	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	6.63		1.88	1.31	mg/L			11/17/25 11:50	1

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-4R3

Lab Sample ID: 310-320686-2

Date Collected: 11/13/25 09:14

Matrix: Ground Water

Date Received: 11/14/25 17:05

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			11/18/25 12:40	1
1,1,1-Trichloroethane	<1.00		1.00	0.420	ug/L			11/18/25 12:40	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.350	ug/L			11/18/25 12:40	1
1,1,2-Trichloroethane	<1.00		1.00	0.330	ug/L			11/18/25 12:40	1
1,1-Dichloroethane	77.4		1.00	0.400	ug/L			11/18/25 12:40	1
1,1-Dichloroethene	<2.00		2.00	0.460	ug/L			11/18/25 12:40	1
1,2,3-Trichloropropane	<1.00		1.00	0.430	ug/L			11/18/25 12:40	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			11/18/25 12:40	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			11/18/25 12:40	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			11/18/25 12:40	1
1,2-Dichloroethane	<1.00		1.00	0.890	ug/L			11/18/25 12:40	1
1,2-Dichloropropane	1.30		1.00	0.380	ug/L			11/18/25 12:40	1
1,4-Dichlorobenzene	<1.00		1.00	0.490	ug/L			11/18/25 12:40	1
2-Butanone (MEK)	<10.0		10.0	3.40	ug/L			11/18/25 12:40	1
2-Hexanone	<10.0		10.0	3.80	ug/L			11/18/25 12:40	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	3.50	ug/L			11/18/25 12:40	1
Acetone	<10.0		10.0	3.80	ug/L			11/18/25 12:40	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			11/18/25 12:40	1
Benzene	0.274 J		0.500	0.220	ug/L			11/18/25 12:40	1
Bromochloromethane	<5.00		5.00	1.70	ug/L			11/18/25 12:40	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			11/18/25 12:40	1
Bromoform	<5.00		5.00	2.60	ug/L			11/18/25 12:40	1
Bromomethane	<4.00		4.00	1.10	ug/L			11/18/25 12:40	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			11/18/25 12:40	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			11/18/25 12:40	1
Chlorobenzene	<1.00		1.00	0.350	ug/L			11/18/25 12:40	1
Chlorodibromomethane	<5.00		5.00	1.50	ug/L			11/18/25 12:40	1
Chloroethane	2.83 J		4.00	0.900	ug/L			11/18/25 12:40	1
Chloroform	<3.00		3.00	1.30	ug/L			11/18/25 12:40	1
Chloromethane	<3.00		3.00	0.610	ug/L			11/18/25 12:40	1
cis-1,2-Dichloroethene	31.0		1.00	0.550	ug/L			11/18/25 12:40	1
cis-1,3-Dichloropropene	<5.00		5.00	1.20	ug/L			11/18/25 12:40	1
Dibromomethane	<1.00		1.00	0.330	ug/L			11/18/25 12:40	1
Ethylbenzene	<1.00		1.00	0.420	ug/L			11/18/25 12:40	1
Iodomethane	<10.0		10.0	2.60	ug/L			11/18/25 12:40	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			11/18/25 12:40	1
Styrene	<1.00		1.00	0.370	ug/L			11/18/25 12:40	1
Tetrachloroethene	5.07		1.00	0.480	ug/L			11/18/25 12:40	1
Toluene	<1.00		1.00	0.430	ug/L			11/18/25 12:40	1
trans-1,2-Dichloroethene	1.88		1.00	0.410	ug/L			11/18/25 12:40	1
trans-1,3-Dichloropropene	<5.00		5.00	2.30	ug/L			11/18/25 12:40	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	2.40	ug/L			11/18/25 12:40	1
Trichloroethene	2.80		1.00	0.350	ug/L			11/18/25 12:40	1
Trichlorofluoromethane	1.43 J		4.00	0.470	ug/L			11/18/25 12:40	1
Vinyl acetate	<10.0		10.0	7.10	ug/L			11/18/25 12:40	1
Vinyl chloride	4.05		1.00	0.430	ug/L			11/18/25 12:40	1
Xylenes, Total	<3.00		3.00	1.10	ug/L			11/18/25 12:40	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	109		76 - 130		11/18/25 12:40	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-4R3

Lab Sample ID: 310-320686-2

Date Collected: 11/13/25 09:14

Matrix: Ground Water

Date Received: 11/14/25 17:05

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	97		80 - 120		11/18/25 12:40	1
4-Bromofluorobenzene (Surr)	102		80 - 120		11/18/25 12:40	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		11/19/25 08:30	12/02/25 20:40	1
Arsenic	0.00146	J	0.00200	0.000530	mg/L		11/19/25 08:30	12/02/25 20:40	1
Barium	1.17		0.00200	0.000660	mg/L		11/19/25 08:30	12/02/25 20:40	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		11/19/25 08:30	12/02/25 20:40	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		11/19/25 08:30	12/02/25 20:40	1
Chromium	<0.00500		0.00500	0.00180	mg/L		11/19/25 08:30	12/02/25 20:40	1
Cobalt	0.00574		0.000500	0.000170	mg/L		11/19/25 08:30	12/02/25 20:40	1
Copper	<0.00500		0.00500	0.00320	mg/L		11/19/25 08:30	12/02/25 20:40	1
Lead	<0.000500		0.000500	0.000330	mg/L		11/19/25 08:30	12/02/25 20:40	1
Nickel	0.0235		0.00500	0.00230	mg/L		11/19/25 08:30	12/02/25 20:40	1
Selenium	<0.00500		0.00500	0.00140	mg/L		11/19/25 08:30	12/02/25 20:40	1
Silver	<0.00100		0.00100	0.000500	mg/L		11/19/25 08:30	12/02/25 20:40	1
Thallium	<0.00100	^1+	0.00100	0.000570	mg/L		11/19/25 08:30	12/02/25 20:40	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		11/19/25 08:30	12/02/25 20:40	1
Zinc	<0.0200		0.0200	0.0130	mg/L		11/19/25 08:30	12/03/25 13:08	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	7.25		1.88	1.31	mg/L			11/17/25 11:50	1

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-7

Lab Sample ID: 310-320686-3

Date Collected: 11/11/25 14:00

Matrix: Ground Water

Date Received: 11/14/25 17:05

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			11/18/25 13:02	1
1,1,1-Trichloroethane	<1.00		1.00	0.420	ug/L			11/18/25 13:02	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.350	ug/L			11/18/25 13:02	1
1,1,2-Trichloroethane	<1.00		1.00	0.330	ug/L			11/18/25 13:02	1
1,1-Dichloroethane	<1.00		1.00	0.400	ug/L			11/18/25 13:02	1
1,1-Dichloroethene	<2.00		2.00	0.460	ug/L			11/18/25 13:02	1
1,2,3-Trichloropropane	<1.00		1.00	0.430	ug/L			11/18/25 13:02	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			11/18/25 13:02	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			11/18/25 13:02	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			11/18/25 13:02	1
1,2-Dichloroethane	<1.00		1.00	0.890	ug/L			11/18/25 13:02	1
1,2-Dichloropropane	<1.00		1.00	0.380	ug/L			11/18/25 13:02	1
1,4-Dichlorobenzene	<1.00		1.00	0.490	ug/L			11/18/25 13:02	1
2-Butanone (MEK)	<10.0		10.0	3.40	ug/L			11/18/25 13:02	1
2-Hexanone	<10.0		10.0	3.80	ug/L			11/18/25 13:02	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	3.50	ug/L			11/18/25 13:02	1
Acetone	<10.0		10.0	3.80	ug/L			11/18/25 13:02	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			11/18/25 13:02	1
Benzene	<0.500		0.500	0.220	ug/L			11/18/25 13:02	1
Bromochloromethane	<5.00		5.00	1.70	ug/L			11/18/25 13:02	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			11/18/25 13:02	1
Bromoform	<5.00		5.00	2.60	ug/L			11/18/25 13:02	1
Bromomethane	<4.00		4.00	1.10	ug/L			11/18/25 13:02	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			11/18/25 13:02	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			11/18/25 13:02	1
Chlorobenzene	<1.00		1.00	0.350	ug/L			11/18/25 13:02	1
Chlorodibromomethane	<5.00		5.00	1.50	ug/L			11/18/25 13:02	1
Chloroethane	<4.00		4.00	0.900	ug/L			11/18/25 13:02	1
Chloroform	<3.00		3.00	1.30	ug/L			11/18/25 13:02	1
Chloromethane	<3.00		3.00	0.610	ug/L			11/18/25 13:02	1
cis-1,2-Dichloroethene	<1.00		1.00	0.550	ug/L			11/18/25 13:02	1
cis-1,3-Dichloropropene	<5.00		5.00	1.20	ug/L			11/18/25 13:02	1
Dibromomethane	<1.00		1.00	0.330	ug/L			11/18/25 13:02	1
Ethylbenzene	<1.00		1.00	0.420	ug/L			11/18/25 13:02	1
Iodomethane	<10.0		10.0	2.60	ug/L			11/18/25 13:02	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			11/18/25 13:02	1
Styrene	<1.00		1.00	0.370	ug/L			11/18/25 13:02	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			11/18/25 13:02	1
Toluene	<1.00		1.00	0.430	ug/L			11/18/25 13:02	1
trans-1,2-Dichloroethene	<1.00		1.00	0.410	ug/L			11/18/25 13:02	1
trans-1,3-Dichloropropene	<5.00		5.00	2.30	ug/L			11/18/25 13:02	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	2.40	ug/L			11/18/25 13:02	1
Trichloroethene	<1.00		1.00	0.350	ug/L			11/18/25 13:02	1
Trichlorofluoromethane	<4.00		4.00	0.470	ug/L			11/18/25 13:02	1
Vinyl acetate	<10.0		10.0	7.10	ug/L			11/18/25 13:02	1
Vinyl chloride	<1.00		1.00	0.430	ug/L			11/18/25 13:02	1
Xylenes, Total	<3.00		3.00	1.10	ug/L			11/18/25 13:02	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	108		76 - 130		11/18/25 13:02	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-7

Lab Sample ID: 310-320686-3

Date Collected: 11/11/25 14:00

Matrix: Ground Water

Date Received: 11/14/25 17:05

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		11/18/25 13:02	1
4-Bromofluorobenzene (Surr)	104		80 - 120		11/18/25 13:02	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	0.00171	J	0.00200	0.00100	mg/L		11/19/25 08:30	12/02/25 20:48	1
Arsenic	0.000969	J	0.00200	0.000530	mg/L		11/19/25 08:30	12/02/25 20:48	1
Barium	0.169		0.00200	0.000660	mg/L		11/19/25 08:30	12/02/25 20:48	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		11/19/25 08:30	12/02/25 20:48	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		11/19/25 08:30	12/02/25 20:48	1
Chromium	0.0142		0.00500	0.00180	mg/L		11/19/25 08:30	12/02/25 20:48	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		11/19/25 08:30	12/02/25 20:48	1
Copper	<0.00500		0.00500	0.00320	mg/L		11/19/25 08:30	12/02/25 20:48	1
Lead	<0.000500		0.000500	0.000330	mg/L		11/19/25 08:30	12/02/25 20:48	1
Nickel	<0.00500		0.00500	0.00230	mg/L		11/19/25 08:30	12/02/25 20:48	1
Selenium	0.0505		0.00500	0.00140	mg/L		11/19/25 08:30	12/02/25 20:48	1
Silver	<0.00100		0.00100	0.000500	mg/L		11/19/25 08:30	12/02/25 20:48	1
Thallium	<0.00100	^1+	0.00100	0.000570	mg/L		11/19/25 08:30	12/02/25 20:48	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		11/19/25 08:30	12/02/25 20:48	1
Zinc	<0.0200		0.0200	0.0130	mg/L		11/19/25 08:30	12/03/25 13:11	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	2.75		1.88	1.31	mg/L			11/17/25 10:49	1

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-9

Lab Sample ID: 310-320686-4

Date Collected: 11/13/25 08:16

Matrix: Ground Water

Date Received: 11/14/25 17:05

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			11/18/25 13:24	1
1,1,1-Trichloroethane	<1.00		1.00	0.420	ug/L			11/18/25 13:24	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.350	ug/L			11/18/25 13:24	1
1,1,2-Trichloroethane	<1.00		1.00	0.330	ug/L			11/18/25 13:24	1
1,1-Dichloroethane	28.6		1.00	0.400	ug/L			11/18/25 13:24	1
1,1-Dichloroethene	<2.00		2.00	0.460	ug/L			11/18/25 13:24	1
1,2,3-Trichloropropane	<1.00		1.00	0.430	ug/L			11/18/25 13:24	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			11/18/25 13:24	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			11/18/25 13:24	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			11/18/25 13:24	1
1,2-Dichloroethane	<1.00		1.00	0.890	ug/L			11/18/25 13:24	1
1,2-Dichloropropane	<1.00		1.00	0.380	ug/L			11/18/25 13:24	1
1,4-Dichlorobenzene	<1.00		1.00	0.490	ug/L			11/18/25 13:24	1
2-Butanone (MEK)	<10.0		10.0	3.40	ug/L			11/18/25 13:24	1
2-Hexanone	<10.0		10.0	3.80	ug/L			11/18/25 13:24	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	3.50	ug/L			11/18/25 13:24	1
Acetone	<10.0		10.0	3.80	ug/L			11/18/25 13:24	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			11/18/25 13:24	1
Benzene	0.389	J	0.500	0.220	ug/L			11/18/25 13:24	1
Bromochloromethane	<5.00		5.00	1.70	ug/L			11/18/25 13:24	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			11/18/25 13:24	1
Bromoform	<5.00		5.00	2.60	ug/L			11/18/25 13:24	1
Bromomethane	<4.00		4.00	1.10	ug/L			11/18/25 13:24	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			11/18/25 13:24	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			11/18/25 13:24	1
Chlorobenzene	<1.00		1.00	0.350	ug/L			11/18/25 13:24	1
Chlorodibromomethane	<5.00		5.00	1.50	ug/L			11/18/25 13:24	1
Chloroethane	4.19		4.00	0.900	ug/L			11/18/25 13:24	1
Chloroform	<3.00		3.00	1.30	ug/L			11/18/25 13:24	1
Chloromethane	<3.00		3.00	0.610	ug/L			11/18/25 13:24	1
cis-1,2-Dichloroethene	0.960	J	1.00	0.550	ug/L			11/18/25 13:24	1
cis-1,3-Dichloropropene	<5.00		5.00	1.20	ug/L			11/18/25 13:24	1
Dibromomethane	<1.00		1.00	0.330	ug/L			11/18/25 13:24	1
Dichlorodifluoromethane	<3.00		3.00	0.850	ug/L			11/18/25 13:24	1
Ethylbenzene	<1.00		1.00	0.420	ug/L			11/18/25 13:24	1
Iodomethane	<10.0		10.0	2.60	ug/L			11/18/25 13:24	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			11/18/25 13:24	1
Styrene	<1.00		1.00	0.370	ug/L			11/18/25 13:24	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			11/18/25 13:24	1
Toluene	<1.00		1.00	0.430	ug/L			11/18/25 13:24	1
trans-1,2-Dichloroethene	<1.00		1.00	0.410	ug/L			11/18/25 13:24	1
trans-1,3-Dichloropropene	<5.00		5.00	2.30	ug/L			11/18/25 13:24	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	2.40	ug/L			11/18/25 13:24	1
Trichloroethene	<1.00		1.00	0.350	ug/L			11/18/25 13:24	1
Trichlorofluoromethane	1.54	J	4.00	0.470	ug/L			11/18/25 13:24	1
Vinyl acetate	<10.0		10.0	7.10	ug/L			11/18/25 13:24	1
Vinyl chloride	<1.00		1.00	0.430	ug/L			11/18/25 13:24	1
Xylenes, Total	<3.00		3.00	1.10	ug/L			11/18/25 13:24	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-9

Lab Sample ID: 310-320686-4

Date Collected: 11/13/25 08:16

Matrix: Ground Water

Date Received: 11/14/25 17:05

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	113		76 - 130		11/18/25 13:24	1
Toluene-d8 (Surr)	97		80 - 120		11/18/25 13:24	1
4-Bromofluorobenzene (Surr)	102		80 - 120		11/18/25 13:24	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		11/19/25 08:30	12/02/25 20:53	1
Arsenic	0.00424		0.00200	0.000530	mg/L		11/19/25 08:30	12/02/25 20:53	1
Barium	0.605		0.00200	0.000660	mg/L		11/19/25 08:30	12/02/25 20:53	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		11/19/25 08:30	12/02/25 20:53	1
Cadmium	0.000109 J		0.000200	0.000100	mg/L		11/19/25 08:30	12/02/25 20:53	1
Chromium	<0.00500		0.00500	0.00180	mg/L		11/19/25 08:30	12/02/25 20:53	1
Cobalt	0.00478		0.000500	0.000170	mg/L		11/19/25 08:30	12/02/25 20:53	1
Copper	<0.00500		0.00500	0.00320	mg/L		11/19/25 08:30	12/02/25 20:53	1
Lead	0.000503		0.000500	0.000330	mg/L		11/19/25 08:30	12/02/25 20:53	1
Nickel	0.0104		0.00500	0.00230	mg/L		11/19/25 08:30	12/02/25 20:53	1
Selenium	<0.00500		0.00500	0.00140	mg/L		11/19/25 08:30	12/02/25 20:53	1
Silver	<0.00100		0.00100	0.000500	mg/L		11/19/25 08:30	12/02/25 20:53	1
Thallium	<0.00100 ^1+		0.00100	0.000570	mg/L		11/19/25 08:30	12/02/25 20:53	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		11/19/25 08:30	12/02/25 20:53	1
Zinc	<0.0200		0.0200	0.0130	mg/L		11/19/25 08:30	12/03/25 13:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	29.3		3.75	2.63	mg/L			11/18/25 10:10	1

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-10

Lab Sample ID: 310-320686-5

Date Collected: 11/12/25 10:11

Matrix: Ground Water

Date Received: 11/14/25 17:05

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			11/18/25 13:46	1
1,1,1-Trichloroethane	<1.00		1.00	0.420	ug/L			11/18/25 13:46	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.350	ug/L			11/18/25 13:46	1
1,1,2-Trichloroethane	<1.00		1.00	0.330	ug/L			11/18/25 13:46	1
1,1-Dichloroethane	<1.00		1.00	0.400	ug/L			11/18/25 13:46	1
1,1-Dichloroethene	<2.00		2.00	0.460	ug/L			11/18/25 13:46	1
1,2,3-Trichloropropane	<1.00		1.00	0.430	ug/L			11/18/25 13:46	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			11/18/25 13:46	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			11/18/25 13:46	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			11/18/25 13:46	1
1,2-Dichloroethane	<1.00		1.00	0.890	ug/L			11/18/25 13:46	1
1,2-Dichloropropane	<1.00		1.00	0.380	ug/L			11/18/25 13:46	1
1,4-Dichlorobenzene	<1.00		1.00	0.490	ug/L			11/18/25 13:46	1
2-Butanone (MEK)	<10.0		10.0	3.40	ug/L			11/18/25 13:46	1
2-Hexanone	<10.0		10.0	3.80	ug/L			11/18/25 13:46	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	3.50	ug/L			11/18/25 13:46	1
Acetone	<10.0		10.0	3.80	ug/L			11/18/25 13:46	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			11/18/25 13:46	1
Benzene	<0.500		0.500	0.220	ug/L			11/18/25 13:46	1
Bromochloromethane	<5.00		5.00	1.70	ug/L			11/18/25 13:46	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			11/18/25 13:46	1
Bromoform	<5.00		5.00	2.60	ug/L			11/18/25 13:46	1
Bromomethane	<4.00		4.00	1.10	ug/L			11/18/25 13:46	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			11/18/25 13:46	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			11/18/25 13:46	1
Chlorobenzene	<1.00		1.00	0.350	ug/L			11/18/25 13:46	1
Chlorodibromomethane	<5.00		5.00	1.50	ug/L			11/18/25 13:46	1
Chloroethane	<4.00		4.00	0.900	ug/L			11/18/25 13:46	1
Chloroform	<3.00		3.00	1.30	ug/L			11/18/25 13:46	1
Chloromethane	<3.00		3.00	0.610	ug/L			11/18/25 13:46	1
cis-1,2-Dichloroethene	<1.00		1.00	0.550	ug/L			11/18/25 13:46	1
cis-1,3-Dichloropropene	<5.00		5.00	1.20	ug/L			11/18/25 13:46	1
Dibromomethane	<1.00		1.00	0.330	ug/L			11/18/25 13:46	1
Dichlorodifluoromethane	11.3		3.00	0.850	ug/L			11/18/25 13:46	1
Ethylbenzene	<1.00		1.00	0.420	ug/L			11/18/25 13:46	1
Iodomethane	<10.0		10.0	2.60	ug/L			11/18/25 13:46	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			11/18/25 13:46	1
Styrene	<1.00		1.00	0.370	ug/L			11/18/25 13:46	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			11/18/25 13:46	1
Toluene	<1.00		1.00	0.430	ug/L			11/18/25 13:46	1
trans-1,2-Dichloroethene	<1.00		1.00	0.410	ug/L			11/18/25 13:46	1
trans-1,3-Dichloropropene	<5.00		5.00	2.30	ug/L			11/18/25 13:46	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	2.40	ug/L			11/18/25 13:46	1
Trichloroethene	<1.00		1.00	0.350	ug/L			11/18/25 13:46	1
Trichlorofluoromethane	<4.00		4.00	0.470	ug/L			11/18/25 13:46	1
Vinyl acetate	<10.0		10.0	7.10	ug/L			11/18/25 13:46	1
Vinyl chloride	<1.00		1.00	0.430	ug/L			11/18/25 13:46	1
Xylenes, Total	<3.00		3.00	1.10	ug/L			11/18/25 13:46	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-10

Lab Sample ID: 310-320686-5

Date Collected: 11/12/25 10:11

Matrix: Ground Water

Date Received: 11/14/25 17:05

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	115		76 - 130		11/18/25 13:46	1
Toluene-d8 (Surr)	97		80 - 120		11/18/25 13:46	1
4-Bromofluorobenzene (Surr)	98		80 - 120		11/18/25 13:46	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		11/19/25 08:30	12/02/25 20:56	1
Arsenic	0.000776	J	0.00200	0.000530	mg/L		11/19/25 08:30	12/02/25 20:56	1
Barium	0.273		0.00200	0.000660	mg/L		11/19/25 08:30	12/02/25 20:56	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		11/19/25 08:30	12/02/25 20:56	1
Cadmium	0.000472		0.000200	0.000100	mg/L		11/19/25 08:30	12/02/25 20:56	1
Chromium	0.00241	J	0.00500	0.00180	mg/L		11/19/25 08:30	12/02/25 20:56	1
Cobalt	0.00323		0.000500	0.000170	mg/L		11/19/25 08:30	12/02/25 20:56	1
Copper	0.00683		0.00500	0.00320	mg/L		11/19/25 08:30	12/02/25 20:56	1
Lead	0.00325		0.000500	0.000330	mg/L		11/19/25 08:30	12/02/25 20:56	1
Nickel	0.00684		0.00500	0.00230	mg/L		11/19/25 08:30	12/02/25 20:56	1
Selenium	<0.00500		0.00500	0.00140	mg/L		11/19/25 08:30	12/02/25 20:56	1
Silver	<0.00100		0.00100	0.000500	mg/L		11/19/25 08:30	12/02/25 20:56	1
Thallium	<0.00100	^1+	0.00100	0.000570	mg/L		11/19/25 08:30	12/02/25 20:56	1
Vanadium	0.00520		0.00500	0.00170	mg/L		11/19/25 08:30	12/02/25 20:56	1
Zinc	0.0160	J	0.0200	0.0130	mg/L		11/19/25 08:30	12/03/25 13:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	102		3.75	2.63	mg/L			11/17/25 11:50	1

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-11

Lab Sample ID: 310-320686-6

Date Collected: 11/12/25 08:57

Matrix: Ground Water

Date Received: 11/14/25 17:05

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			11/18/25 14:08	1
1,1,1-Trichloroethane	<1.00		1.00	0.420	ug/L			11/18/25 14:08	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.350	ug/L			11/18/25 14:08	1
1,1,2-Trichloroethane	<1.00		1.00	0.330	ug/L			11/18/25 14:08	1
1,1-Dichloroethane	<1.00		1.00	0.400	ug/L			11/18/25 14:08	1
1,1-Dichloroethene	<2.00		2.00	0.460	ug/L			11/18/25 14:08	1
1,2,3-Trichloropropane	<1.00		1.00	0.430	ug/L			11/18/25 14:08	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			11/18/25 14:08	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			11/18/25 14:08	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			11/18/25 14:08	1
1,2-Dichloroethane	<1.00		1.00	0.890	ug/L			11/18/25 14:08	1
1,2-Dichloropropane	<1.00		1.00	0.380	ug/L			11/18/25 14:08	1
1,4-Dichlorobenzene	<1.00		1.00	0.490	ug/L			11/18/25 14:08	1
2-Butanone (MEK)	<10.0		10.0	3.40	ug/L			11/18/25 14:08	1
2-Hexanone	<10.0		10.0	3.80	ug/L			11/18/25 14:08	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	3.50	ug/L			11/18/25 14:08	1
Acetone	<10.0		10.0	3.80	ug/L			11/18/25 14:08	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			11/18/25 14:08	1
Benzene	<0.500		0.500	0.220	ug/L			11/18/25 14:08	1
Bromochloromethane	<5.00		5.00	1.70	ug/L			11/18/25 14:08	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			11/18/25 14:08	1
Bromoform	<5.00		5.00	2.60	ug/L			11/18/25 14:08	1
Bromomethane	<4.00		4.00	1.10	ug/L			11/18/25 14:08	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			11/18/25 14:08	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			11/18/25 14:08	1
Chlorobenzene	<1.00		1.00	0.350	ug/L			11/18/25 14:08	1
Chlorodibromomethane	<5.00		5.00	1.50	ug/L			11/18/25 14:08	1
Chloroethane	<4.00		4.00	0.900	ug/L			11/18/25 14:08	1
Chloroform	<3.00		3.00	1.30	ug/L			11/18/25 14:08	1
Chloromethane	<3.00		3.00	0.610	ug/L			11/18/25 14:08	1
cis-1,2-Dichloroethene	<1.00		1.00	0.550	ug/L			11/18/25 14:08	1
cis-1,3-Dichloropropene	<5.00		5.00	1.20	ug/L			11/18/25 14:08	1
Dibromomethane	<1.00		1.00	0.330	ug/L			11/18/25 14:08	1
Ethylbenzene	<1.00		1.00	0.420	ug/L			11/18/25 14:08	1
Iodomethane	<10.0		10.0	2.60	ug/L			11/18/25 14:08	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			11/18/25 14:08	1
Styrene	<1.00		1.00	0.370	ug/L			11/18/25 14:08	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			11/18/25 14:08	1
Toluene	<1.00		1.00	0.430	ug/L			11/18/25 14:08	1
trans-1,2-Dichloroethene	<1.00		1.00	0.410	ug/L			11/18/25 14:08	1
trans-1,3-Dichloropropene	<5.00		5.00	2.30	ug/L			11/18/25 14:08	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	2.40	ug/L			11/18/25 14:08	1
Trichloroethene	<1.00		1.00	0.350	ug/L			11/18/25 14:08	1
Trichlorofluoromethane	<4.00		4.00	0.470	ug/L			11/18/25 14:08	1
Vinyl acetate	<10.0		10.0	7.10	ug/L			11/18/25 14:08	1
Vinyl chloride	<1.00		1.00	0.430	ug/L			11/18/25 14:08	1
Xylenes, Total	<3.00		3.00	1.10	ug/L			11/18/25 14:08	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	116		76 - 130		11/18/25 14:08	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-11

Lab Sample ID: 310-320686-6

Date Collected: 11/12/25 08:57

Matrix: Ground Water

Date Received: 11/14/25 17:05

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

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	98		80 - 120		11/18/25 14:08	1
4-Bromofluorobenzene (Surr)	104		80 - 120		11/18/25 14:08	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		11/19/25 08:30	12/02/25 20:59	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		11/19/25 08:30	12/02/25 20:59	1
Barium	0.0899		0.00200	0.000660	mg/L		11/19/25 08:30	12/02/25 20:59	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		11/19/25 08:30	12/02/25 20:59	1
Cadmium	0.000114	J	0.000200	0.000100	mg/L		11/19/25 08:30	12/02/25 20:59	1
Chromium	<0.00500		0.00500	0.00180	mg/L		11/19/25 08:30	12/02/25 20:59	1
Cobalt	0.00149		0.000500	0.000170	mg/L		11/19/25 08:30	12/02/25 20:59	1
Copper	<0.00500		0.00500	0.00320	mg/L		11/19/25 08:30	12/02/25 20:59	1
Lead	<0.000500		0.000500	0.000330	mg/L		11/19/25 08:30	12/02/25 20:59	1
Nickel	0.00242	J	0.00500	0.00230	mg/L		11/19/25 08:30	12/02/25 20:59	1
Selenium	<0.00500		0.00500	0.00140	mg/L		11/19/25 08:30	12/02/25 20:59	1
Silver	<0.00100		0.00100	0.000500	mg/L		11/19/25 08:30	12/02/25 20:59	1
Thallium	<0.00100	^1+	0.00100	0.000570	mg/L		11/19/25 08:30	12/02/25 20:59	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		11/19/25 08:30	12/02/25 20:59	1
Zinc	<0.0200		0.0200	0.0130	mg/L		11/19/25 08:30	12/03/25 13:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	2.88		1.88	1.31	mg/L			11/17/25 11:50	1

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-D

Lab Sample ID: 310-320686-7

Date Collected: 11/12/25 10:11

Matrix: Ground Water

Date Received: 11/14/25 17:05

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			11/18/25 14:30	1
1,1,1-Trichloroethane	<1.00		1.00	0.420	ug/L			11/18/25 14:30	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.350	ug/L			11/18/25 14:30	1
1,1,2-Trichloroethane	<1.00		1.00	0.330	ug/L			11/18/25 14:30	1
1,1-Dichloroethane	<1.00		1.00	0.400	ug/L			11/18/25 14:30	1
1,1-Dichloroethene	<2.00		2.00	0.460	ug/L			11/18/25 14:30	1
1,2,3-Trichloropropane	<1.00		1.00	0.430	ug/L			11/18/25 14:30	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			11/18/25 14:30	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			11/18/25 14:30	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			11/18/25 14:30	1
1,2-Dichloroethane	<1.00		1.00	0.890	ug/L			11/18/25 14:30	1
1,2-Dichloropropane	<1.00		1.00	0.380	ug/L			11/18/25 14:30	1
1,4-Dichlorobenzene	<1.00		1.00	0.490	ug/L			11/18/25 14:30	1
2-Butanone (MEK)	<10.0		10.0	3.40	ug/L			11/18/25 14:30	1
2-Hexanone	<10.0		10.0	3.80	ug/L			11/18/25 14:30	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	3.50	ug/L			11/18/25 14:30	1
Acetone	<10.0		10.0	3.80	ug/L			11/18/25 14:30	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			11/18/25 14:30	1
Benzene	<0.500		0.500	0.220	ug/L			11/18/25 14:30	1
Bromochloromethane	<5.00		5.00	1.70	ug/L			11/18/25 14:30	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			11/18/25 14:30	1
Bromoform	<5.00		5.00	2.60	ug/L			11/18/25 14:30	1
Bromomethane	<4.00		4.00	1.10	ug/L			11/18/25 14:30	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			11/18/25 14:30	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			11/18/25 14:30	1
Chlorobenzene	<1.00		1.00	0.350	ug/L			11/18/25 14:30	1
Chlorodibromomethane	<5.00		5.00	1.50	ug/L			11/18/25 14:30	1
Chloroethane	<4.00		4.00	0.900	ug/L			11/18/25 14:30	1
Chloroform	<3.00		3.00	1.30	ug/L			11/18/25 14:30	1
Chloromethane	<3.00		3.00	0.610	ug/L			11/18/25 14:30	1
cis-1,2-Dichloroethene	<1.00		1.00	0.550	ug/L			11/18/25 14:30	1
cis-1,3-Dichloropropene	<5.00		5.00	1.20	ug/L			11/18/25 14:30	1
Dibromomethane	<1.00		1.00	0.330	ug/L			11/18/25 14:30	1
Dichlorodifluoromethane	10.9		3.00	0.850	ug/L			11/18/25 14:30	1
Ethylbenzene	<1.00		1.00	0.420	ug/L			11/18/25 14:30	1
Iodomethane	<10.0		10.0	2.60	ug/L			11/18/25 14:30	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			11/18/25 14:30	1
Styrene	<1.00		1.00	0.370	ug/L			11/18/25 14:30	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			11/18/25 14:30	1
Toluene	<1.00		1.00	0.430	ug/L			11/18/25 14:30	1
trans-1,2-Dichloroethene	<1.00		1.00	0.410	ug/L			11/18/25 14:30	1
trans-1,3-Dichloropropene	<5.00		5.00	2.30	ug/L			11/18/25 14:30	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	2.40	ug/L			11/18/25 14:30	1
Trichloroethene	<1.00		1.00	0.350	ug/L			11/18/25 14:30	1
Trichlorofluoromethane	<4.00		4.00	0.470	ug/L			11/18/25 14:30	1
Vinyl acetate	<10.0		10.0	7.10	ug/L			11/18/25 14:30	1
Vinyl chloride	<1.00		1.00	0.430	ug/L			11/18/25 14:30	1
Xylenes, Total	<3.00		3.00	1.10	ug/L			11/18/25 14:30	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-D

Lab Sample ID: 310-320686-7

Date Collected: 11/12/25 10:11

Matrix: Ground Water

Date Received: 11/14/25 17:05

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	116		76 - 130		11/18/25 14:30	1
Toluene-d8 (Surr)	96		80 - 120		11/18/25 14:30	1
4-Bromofluorobenzene (Surr)	100		80 - 120		11/18/25 14:30	1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		11/19/25 08:30	12/02/25 21:02	1
Arsenic	0.000641	J	0.00200	0.000530	mg/L		11/19/25 08:30	12/02/25 21:02	1
Barium	0.259		0.00200	0.000660	mg/L		11/19/25 08:30	12/02/25 21:02	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		11/19/25 08:30	12/02/25 21:02	1
Cadmium	0.000406		0.000200	0.000100	mg/L		11/19/25 08:30	12/02/25 21:02	1
Chromium	<0.00500		0.00500	0.00180	mg/L		11/19/25 08:30	12/02/25 21:02	1
Cobalt	0.00275		0.000500	0.000170	mg/L		11/19/25 08:30	12/02/25 21:02	1
Copper	0.00586		0.00500	0.00320	mg/L		11/19/25 08:30	12/02/25 21:02	1
Lead	0.00268		0.000500	0.000330	mg/L		11/19/25 08:30	12/02/25 21:02	1
Nickel	0.00542		0.00500	0.00230	mg/L		11/19/25 08:30	12/02/25 21:02	1
Selenium	<0.00500		0.00500	0.00140	mg/L		11/19/25 08:30	12/02/25 21:02	1
Silver	<0.00100		0.00100	0.000500	mg/L		11/19/25 08:30	12/02/25 21:02	1
Thallium	<0.00100	^1+	0.00100	0.000570	mg/L		11/19/25 08:30	12/02/25 21:02	1
Vanadium	0.00415	J	0.00500	0.00170	mg/L		11/19/25 08:30	12/02/25 21:02	1
Zinc	0.0138	J	0.0200	0.0130	mg/L		11/19/25 08:30	12/03/25 13:25	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	116		3.75	2.63	mg/L			11/17/25 11:50	1

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-320686-8

Date Collected: 11/13/25 00:00

Matrix: Ground Water

Date Received: 11/14/25 17:05

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			11/18/25 11:34	1
1,1,1-Trichloroethane	<1.00		1.00	0.420	ug/L			11/18/25 11:34	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.350	ug/L			11/18/25 11:34	1
1,1,2-Trichloroethane	<1.00		1.00	0.330	ug/L			11/18/25 11:34	1
1,1-Dichloroethane	<1.00		1.00	0.400	ug/L			11/18/25 11:34	1
1,1-Dichloroethene	<2.00		2.00	0.460	ug/L			11/18/25 11:34	1
1,2,3-Trichloropropane	<1.00		1.00	0.430	ug/L			11/18/25 11:34	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			11/18/25 11:34	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			11/18/25 11:34	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			11/18/25 11:34	1
1,2-Dichloroethane	<1.00		1.00	0.890	ug/L			11/18/25 11:34	1
1,2-Dichloropropane	<1.00		1.00	0.380	ug/L			11/18/25 11:34	1
1,4-Dichlorobenzene	<1.00		1.00	0.490	ug/L			11/18/25 11:34	1
2-Butanone (MEK)	<10.0		10.0	3.40	ug/L			11/18/25 11:34	1
2-Hexanone	<10.0		10.0	3.80	ug/L			11/18/25 11:34	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	3.50	ug/L			11/18/25 11:34	1
Acetone	<10.0		10.0	3.80	ug/L			11/18/25 11:34	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			11/18/25 11:34	1
Benzene	<0.500		0.500	0.220	ug/L			11/18/25 11:34	1
Bromochloromethane	<5.00		5.00	1.70	ug/L			11/18/25 11:34	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			11/18/25 11:34	1
Bromoform	<5.00		5.00	2.60	ug/L			11/18/25 11:34	1
Bromomethane	<4.00		4.00	1.10	ug/L			11/18/25 11:34	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			11/18/25 11:34	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			11/18/25 11:34	1
Chlorobenzene	<1.00		1.00	0.350	ug/L			11/18/25 11:34	1
Chlorodibromomethane	<5.00		5.00	1.50	ug/L			11/18/25 11:34	1
Chloroethane	<4.00		4.00	0.900	ug/L			11/18/25 11:34	1
Chloroform	<3.00		3.00	1.30	ug/L			11/18/25 11:34	1
Chloromethane	<3.00		3.00	0.610	ug/L			11/18/25 11:34	1
cis-1,2-Dichloroethene	<1.00		1.00	0.550	ug/L			11/18/25 11:34	1
cis-1,3-Dichloropropene	<5.00		5.00	1.20	ug/L			11/18/25 11:34	1
Dibromomethane	<1.00		1.00	0.330	ug/L			11/18/25 11:34	1
Dichlorodifluoromethane	<3.00		3.00	0.850	ug/L			11/18/25 11:34	1
Ethylbenzene	<1.00		1.00	0.420	ug/L			11/18/25 11:34	1
Iodomethane	<10.0		10.0	2.60	ug/L			11/18/25 11:34	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			11/18/25 11:34	1
Styrene	<1.00		1.00	0.370	ug/L			11/18/25 11:34	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			11/18/25 11:34	1
Toluene	<1.00		1.00	0.430	ug/L			11/18/25 11:34	1
trans-1,2-Dichloroethene	<1.00		1.00	0.410	ug/L			11/18/25 11:34	1
trans-1,3-Dichloropropene	<5.00		5.00	2.30	ug/L			11/18/25 11:34	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	2.40	ug/L			11/18/25 11:34	1
Trichloroethene	<1.00		1.00	0.350	ug/L			11/18/25 11:34	1
Trichlorofluoromethane	<4.00		4.00	0.470	ug/L			11/18/25 11:34	1
Vinyl acetate	<10.0		10.0	7.10	ug/L			11/18/25 11:34	1
Vinyl chloride	<1.00		1.00	0.430	ug/L			11/18/25 11:34	1
Xylenes, Total	<3.00		3.00	1.10	ug/L			11/18/25 11:34	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-320686-8

Date Collected: 11/13/25 00:00

Matrix: Ground Water

Date Received: 11/14/25 17:05

<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>	107		76 - 130		11/18/25 11:34	1
<i>Toluene-d8 (Surr)</i>	97		80 - 120		11/18/25 11:34	1
<i>4-Bromofluorobenzene (Surr)</i>	104		80 - 120		11/18/25 11:34	1

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-320686-9

Date Collected: 11/13/25 00:00

Matrix: Ground Water

Date Received: 11/14/25 17:05

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			11/18/25 11:56	1
1,1,1-Trichloroethane	<1.00		1.00	0.420	ug/L			11/18/25 11:56	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.350	ug/L			11/18/25 11:56	1
1,1,2-Trichloroethane	<1.00		1.00	0.330	ug/L			11/18/25 11:56	1
1,1-Dichloroethane	<1.00		1.00	0.400	ug/L			11/18/25 11:56	1
1,1-Dichloroethene	<2.00		2.00	0.460	ug/L			11/18/25 11:56	1
1,2,3-Trichloropropane	<1.00		1.00	0.430	ug/L			11/18/25 11:56	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			11/18/25 11:56	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			11/18/25 11:56	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			11/18/25 11:56	1
1,2-Dichloroethane	<1.00		1.00	0.890	ug/L			11/18/25 11:56	1
1,2-Dichloropropane	<1.00		1.00	0.380	ug/L			11/18/25 11:56	1
1,4-Dichlorobenzene	<1.00		1.00	0.490	ug/L			11/18/25 11:56	1
2-Butanone (MEK)	<10.0		10.0	3.40	ug/L			11/18/25 11:56	1
2-Hexanone	<10.0		10.0	3.80	ug/L			11/18/25 11:56	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	3.50	ug/L			11/18/25 11:56	1
Acetone	<10.0		10.0	3.80	ug/L			11/18/25 11:56	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			11/18/25 11:56	1
Benzene	<0.500		0.500	0.220	ug/L			11/18/25 11:56	1
Bromochloromethane	<5.00		5.00	1.70	ug/L			11/18/25 11:56	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			11/18/25 11:56	1
Bromoform	<5.00		5.00	2.60	ug/L			11/18/25 11:56	1
Bromomethane	<4.00		4.00	1.10	ug/L			11/18/25 11:56	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			11/18/25 11:56	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			11/18/25 11:56	1
Chlorobenzene	<1.00		1.00	0.350	ug/L			11/18/25 11:56	1
Chlorodibromomethane	<5.00		5.00	1.50	ug/L			11/18/25 11:56	1
Chloroethane	<4.00		4.00	0.900	ug/L			11/18/25 11:56	1
Chloroform	<3.00		3.00	1.30	ug/L			11/18/25 11:56	1
Chloromethane	<3.00		3.00	0.610	ug/L			11/18/25 11:56	1
cis-1,2-Dichloroethene	<1.00		1.00	0.550	ug/L			11/18/25 11:56	1
cis-1,3-Dichloropropene	<5.00		5.00	1.20	ug/L			11/18/25 11:56	1
Dibromomethane	<1.00		1.00	0.330	ug/L			11/18/25 11:56	1
Dichlorodifluoromethane	<3.00		3.00	0.850	ug/L			11/18/25 11:56	1
Ethylbenzene	<1.00		1.00	0.420	ug/L			11/18/25 11:56	1
Iodomethane	<10.0		10.0	2.60	ug/L			11/18/25 11:56	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			11/18/25 11:56	1
Styrene	<1.00		1.00	0.370	ug/L			11/18/25 11:56	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			11/18/25 11:56	1
Toluene	<1.00		1.00	0.430	ug/L			11/18/25 11:56	1
trans-1,2-Dichloroethene	<1.00		1.00	0.410	ug/L			11/18/25 11:56	1
trans-1,3-Dichloropropene	<5.00		5.00	2.30	ug/L			11/18/25 11:56	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	2.40	ug/L			11/18/25 11:56	1
Trichloroethene	<1.00		1.00	0.350	ug/L			11/18/25 11:56	1
Trichlorofluoromethane	<4.00		4.00	0.470	ug/L			11/18/25 11:56	1
Vinyl acetate	<10.0		10.0	7.10	ug/L			11/18/25 11:56	1
Vinyl chloride	<1.00		1.00	0.430	ug/L			11/18/25 11:56	1
Xylenes, Total	<3.00		3.00	1.10	ug/L			11/18/25 11:56	1

Eurofins Cedar Falls

Client Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-320686-9

Date Collected: 11/13/25 00:00

Matrix: Ground Water

Date Received: 11/14/25 17:05

<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>	110		76 - 130		11/18/25 11:56	1
<i>Toluene-d8 (Surr)</i>	95		80 - 120		11/18/25 11:56	1
<i>4-Bromofluorobenzene (Surr)</i>	104		80 - 120		11/18/25 11:56	1

Definitions/Glossary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
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.

Metals

Qualifier	Qualifier Description
^1+	Initial Calibration Verification (ICV) is outside acceptance limits, high biased.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Surrogate Summary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

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

Matrix: Ground Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (76-130)	TOL (80-120)	BFB (80-120)
310-320686-1	MW-3R	110	97	104
310-320686-1 MS	MW-3R	97	99	100
310-320686-1 MSD	MW-3R	97	100	97
310-320686-2	MW-4R3	109	97	102
310-320686-3	MW-7	108	98	104
310-320686-4	MW-9	113	97	102
310-320686-5	MW-10	115	97	98
310-320686-6	MW-11	116	98	104
310-320686-7	MW-D	116	96	100
310-320686-8	Trip Blank 1	107	97	104
310-320686-9	Trip Blank 2	110	95	104

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

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

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (76-130)	TOL (80-120)	BFB (80-120)
LCS 310-473879/7	Lab Control Sample	95	101	103
LCS 310-473879/8	Lab Control Sample	105	97	102
MB 310-473879/6	Method Blank	107	97	104

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

QC Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

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

Lab Sample ID: MB 310-473879/6

Matrix: Water

Analysis Batch: 473879

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			11/18/25 10:28	1
1,1,1-Trichloroethane	<1.00		1.00	0.420	ug/L			11/18/25 10:28	1
1,1,2,2-Tetrachloroethane	<1.00		1.00	0.350	ug/L			11/18/25 10:28	1
1,1,2-Trichloroethane	<1.00		1.00	0.330	ug/L			11/18/25 10:28	1
1,1-Dichloroethane	<1.00		1.00	0.400	ug/L			11/18/25 10:28	1
1,1-Dichloroethene	<2.00		2.00	0.460	ug/L			11/18/25 10:28	1
1,2,3-Trichloropropane	<1.00		1.00	0.430	ug/L			11/18/25 10:28	1
1,2-Dibromo-3-Chloropropane	<1.20		1.20	1.20	ug/L			11/18/25 10:28	1
1,2-Dibromoethane (EDB)	<0.340		0.340	0.340	ug/L			11/18/25 10:28	1
1,2-Dichlorobenzene	<1.00		1.00	0.370	ug/L			11/18/25 10:28	1
1,2-Dichloroethane	<1.00		1.00	0.890	ug/L			11/18/25 10:28	1
1,2-Dichloropropane	<1.00		1.00	0.380	ug/L			11/18/25 10:28	1
1,4-Dichlorobenzene	<1.00		1.00	0.490	ug/L			11/18/25 10:28	1
2-Butanone (MEK)	<10.0		10.0	3.40	ug/L			11/18/25 10:28	1
2-Hexanone	<10.0		10.0	3.80	ug/L			11/18/25 10:28	1
4-Methyl-2-pentanone (MIBK)	<10.0		10.0	3.50	ug/L			11/18/25 10:28	1
Acetone	<10.0		10.0	3.80	ug/L			11/18/25 10:28	1
Acrylonitrile	<10.0		10.0	2.20	ug/L			11/18/25 10:28	1
Benzene	<0.500		0.500	0.220	ug/L			11/18/25 10:28	1
Bromochloromethane	<5.00		5.00	1.70	ug/L			11/18/25 10:28	1
Bromodichloromethane	<1.00		1.00	0.390	ug/L			11/18/25 10:28	1
Bromoform	<5.00		5.00	2.60	ug/L			11/18/25 10:28	1
Bromomethane	<4.00		4.00	1.10	ug/L			11/18/25 10:28	1
Carbon disulfide	<1.00		1.00	0.450	ug/L			11/18/25 10:28	1
Carbon tetrachloride	<2.00		2.00	0.650	ug/L			11/18/25 10:28	1
Chlorobenzene	<1.00		1.00	0.350	ug/L			11/18/25 10:28	1
Chlorodibromomethane	<5.00		5.00	1.50	ug/L			11/18/25 10:28	1
Chloroethane	<4.00		4.00	0.900	ug/L			11/18/25 10:28	1
Chloroform	<3.00		3.00	1.30	ug/L			11/18/25 10:28	1
Chloromethane	<3.00		3.00	0.610	ug/L			11/18/25 10:28	1
cis-1,2-Dichloroethene	<1.00		1.00	0.550	ug/L			11/18/25 10:28	1
cis-1,3-Dichloropropene	<5.00		5.00	1.20	ug/L			11/18/25 10:28	1
Dibromomethane	<1.00		1.00	0.330	ug/L			11/18/25 10:28	1
Dichlorodifluoromethane	<3.00		3.00	0.850	ug/L			11/18/25 10:28	1
Ethylbenzene	<1.00		1.00	0.420	ug/L			11/18/25 10:28	1
Iodomethane	<10.0		10.0	2.60	ug/L			11/18/25 10:28	1
Methylene Chloride	<5.00		5.00	1.70	ug/L			11/18/25 10:28	1
Styrene	<1.00		1.00	0.370	ug/L			11/18/25 10:28	1
Tetrachloroethene	<1.00		1.00	0.480	ug/L			11/18/25 10:28	1
Toluene	<1.00		1.00	0.430	ug/L			11/18/25 10:28	1
trans-1,2-Dichloroethene	<1.00		1.00	0.410	ug/L			11/18/25 10:28	1
trans-1,3-Dichloropropene	<5.00		5.00	2.30	ug/L			11/18/25 10:28	1
trans-1,4-Dichloro-2-butene	<10.0		10.0	2.40	ug/L			11/18/25 10:28	1
Trichloroethene	<1.00		1.00	0.350	ug/L			11/18/25 10:28	1
Trichlorofluoromethane	<4.00		4.00	0.470	ug/L			11/18/25 10:28	1
Vinyl acetate	<10.0		10.0	7.10	ug/L			11/18/25 10:28	1
Vinyl chloride	<1.00		1.00	0.430	ug/L			11/18/25 10:28	1
Xylenes, Total	<3.00		3.00	1.10	ug/L			11/18/25 10:28	1

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

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

Lab Sample ID: MB 310-473879/6

Matrix: Water

Analysis Batch: 473879

Client Sample ID: Method Blank

Prep Type: Total/NA

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	107		76 - 130		11/18/25 10:28	1
Toluene-d8 (Surr)	97		80 - 120		11/18/25 10:28	1
4-Bromofluorobenzene (Surr)	104		80 - 120		11/18/25 10:28	1

Lab Sample ID: LCS 310-473879/7

Matrix: Water

Analysis Batch: 473879

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	17.14		ug/L		86	70 - 121
1,1,1-Trichloroethane	20.0	17.26		ug/L		86	69 - 130
1,1,2,2-Tetrachloroethane	20.0	18.31		ug/L		92	70 - 122
1,1,2-Trichloroethane	20.0	18.64		ug/L		93	75 - 121
1,1-Dichloroethane	20.0	16.87		ug/L		84	69 - 127
1,1-Dichloroethene	20.0	17.92		ug/L		90	64 - 134
1,2,3-Trichloropropane	20.0	18.97		ug/L		95	70 - 122
1,2-Dibromo-3-Chloropropane	20.0	15.76		ug/L		79	62 - 132
1,2-Dibromoethane (EDB)	20.0	17.39		ug/L		87	74 - 122
1,2-Dichlorobenzene	20.0	18.75		ug/L		94	74 - 120
1,2-Dichloroethane	20.0	17.25		ug/L		86	68 - 125
1,2-Dichloropropane	20.0	16.92		ug/L		85	72 - 128
1,4-Dichlorobenzene	20.0	19.30		ug/L		97	72 - 120
2-Butanone (MEK)	40.0	41.51		ug/L		104	60 - 134
2-Hexanone	40.0	34.76		ug/L		87	62 - 139
4-Methyl-2-pentanone (MIBK)	40.0	37.30		ug/L		93	62 - 136
Acetone	40.0	35.02		ug/L		88	59 - 136
Acrylonitrile	200	186.2		ug/L		93	50 - 150
Benzene	20.0	18.78		ug/L		94	71 - 125
Bromochloromethane	20.0	19.05		ug/L		95	69 - 131
Bromodichloromethane	20.0	16.52		ug/L		83	70 - 122
Bromoform	20.0	16.13		ug/L		81	62 - 122
Carbon disulfide	20.0	16.89		ug/L		84	58 - 137
Carbon tetrachloride	20.0	17.08		ug/L		85	63 - 136
Chlorobenzene	20.0	17.81		ug/L		89	74 - 120
Chlorodibromomethane	20.0	17.76		ug/L		89	69 - 121
Chloroform	20.0	19.64		ug/L		98	72 - 122
cis-1,2-Dichloroethene	20.0	18.23		ug/L		91	72 - 123
cis-1,3-Dichloropropene	20.0	18.31		ug/L		92	72 - 123
Dibromomethane	20.0	18.75		ug/L		94	72 - 122
Ethylbenzene	20.0	19.93		ug/L		100	75 - 120
Iodomethane	20.0	19.50		ug/L		98	18 - 150
Methylene Chloride	20.0	18.25		ug/L		91	72 - 128
Styrene	20.0	20.10		ug/L		100	74 - 122
Tetrachloroethene	20.0	18.18		ug/L		91	70 - 128
Toluene	20.0	18.21		ug/L		91	74 - 120
trans-1,2-Dichloroethene	20.0	17.73		ug/L		89	67 - 127
trans-1,3-Dichloropropene	20.0	17.46		ug/L		87	67 - 123
trans-1,4-Dichloro-2-butene	20.0	18.45		ug/L		92	50 - 150

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

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

Lab Sample ID: LCS 310-473879/7

Matrix: Water

Analysis Batch: 473879

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Trichloroethene	20.0	17.39		ug/L		87	70 - 128
Vinyl acetate	40.0	41.74		ug/L		104	50 - 150
Xylenes, Total	40.0	39.98		ug/L		100	74 - 121

Surrogate	%Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	95		76 - 130
Toluene-d8 (Surr)	101		80 - 120
4-Bromofluorobenzene (Surr)	103		80 - 120

Lab Sample ID: LCS 310-473879/8

Matrix: Water

Analysis Batch: 473879

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromomethane	20.0	13.25		ug/L		66	33 - 138
Chloroethane	20.0	16.79		ug/L		84	59 - 139
Chloromethane	20.0	16.74		ug/L		84	52 - 146
Dichlorodifluoromethane	20.0	16.99		ug/L		85	45 - 150
Trichlorofluoromethane	20.0	17.13		ug/L		86	55 - 150
Vinyl chloride	20.0	17.14		ug/L		86	60 - 142

Surrogate	%Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	105		76 - 130
Toluene-d8 (Surr)	97		80 - 120
4-Bromofluorobenzene (Surr)	102		80 - 120

Lab Sample ID: 310-320686-1 MS

Matrix: Ground Water

Analysis Batch: 473879

Client Sample ID: MW-3R

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1,1,2-Tetrachloroethane	<1.00		25.0	19.03		ug/L		76	55 - 121
1,1,1,1-Trichloroethane	<1.00		25.0	19.66		ug/L		79	53 - 130
1,1,2,2-Tetrachloroethane	<1.00		25.0	20.40		ug/L		82	55 - 123
1,1,2-Trichloroethane	<1.00		25.0	20.14		ug/L		81	60 - 121
1,1-Dichloroethane	60.7	F1	25.0	67.76	F1	ug/L		28	53 - 127
1,1-Dichloroethene	<2.00		25.0	19.96		ug/L		80	51 - 134
1,2,3-Trichloropropane	<1.00		25.0	20.69		ug/L		83	56 - 122
1,2-Dibromo-3-Chloropropane	<1.20		25.0	17.89		ug/L		72	44 - 138
1,2-Dibromoethane (EDB)	<0.340		25.0	20.33		ug/L		81	60 - 122
1,2-Dichlorobenzene	<1.00		25.0	21.95		ug/L		88	60 - 120
1,2-Dichloroethane	<1.00		25.0	20.63		ug/L		83	48 - 128
1,2-Dichloropropane	<1.00		25.0	19.23		ug/L		77	59 - 128
1,4-Dichlorobenzene	<1.00		25.0	22.59		ug/L		90	58 - 120
2-Butanone (MEK)	<10.0		50.0	42.15		ug/L		84	46 - 134
2-Hexanone	<10.0		50.0	36.50		ug/L		73	46 - 141
4-Methyl-2-pentanone (MIBK)	<10.0		50.0	38.65		ug/L		77	49 - 138
Acetone	<10.0		50.0	42.02		ug/L		84	39 - 141

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

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

Lab Sample ID: 310-320686-1 MS

Matrix: Ground Water

Analysis Batch: 473879

Client Sample ID: MW-3R

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Acrylonitrile	<10.0		250	208.7		ug/L		83	41 - 150
Benzene	<0.500		25.0	22.40		ug/L		90	48 - 125
Bromochloromethane	<5.00		25.0	22.36		ug/L		89	55 - 131
Bromodichloromethane	<1.00		25.0	19.01		ug/L		76	53 - 122
Bromoform	<5.00		25.0	18.11		ug/L		72	47 - 122
Carbon disulfide	<1.00		25.0	20.15		ug/L		81	45 - 137
Carbon tetrachloride	<2.00		25.0	19.51		ug/L		78	45 - 136
Chlorobenzene	<1.00		25.0	19.94		ug/L		80	59 - 120
Chlorodibromomethane	<5.00		25.0	19.59		ug/L		78	53 - 121
Chloroform	<3.00		25.0	23.02		ug/L		92	52 - 122
cis-1,2-Dichloroethene	1.63		25.0	21.56		ug/L		80	51 - 123
cis-1,3-Dichloropropene	<5.00		25.0	19.44		ug/L		78	55 - 123
Dibromomethane	<1.00		25.0	22.60		ug/L		90	57 - 122
Ethylbenzene	<1.00		25.0	21.60		ug/L		86	53 - 120
Iodomethane	<10.0		25.0	20.70		ug/L		83	18 - 150
Methylene Chloride	<5.00		25.0	22.85		ug/L		91	59 - 128
Styrene	<1.00		25.0	21.93		ug/L		88	50 - 125
Tetrachloroethene	<1.00		25.0	20.49		ug/L		82	51 - 128
Toluene	<1.00		25.0	19.70		ug/L		79	52 - 120
trans-1,2-Dichloroethene	<1.00		25.0	19.90		ug/L		80	53 - 127
trans-1,3-Dichloropropene	<5.00		25.0	19.25		ug/L		77	50 - 123
trans-1,4-Dichloro-2-butene	<10.0		25.0	18.97		ug/L		76	28 - 150
Trichloroethene	<1.00		25.0	19.80		ug/L		79	50 - 128
Vinyl acetate	<10.0		50.0	47.05		ug/L		94	31 - 150
Xylenes, Total	<3.00		50.0	43.14		ug/L		86	50 - 122

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	97		76 - 130
Toluene-d8 (Surr)	99		80 - 120
4-Bromofluorobenzene (Surr)	100		80 - 120

Lab Sample ID: 310-320686-1 MSD

Matrix: Ground Water

Analysis Batch: 473879

Client Sample ID: MW-3R

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,1,2-Tetrachloroethane	<1.00		25.0	18.00		ug/L		72	55 - 121	6	20
1,1,1-Trichloroethane	<1.00		25.0	18.03		ug/L		72	53 - 130	9	20
1,1,1,2,2-Tetrachloroethane	<1.00		25.0	19.55		ug/L		78	55 - 123	4	20
1,1,2-Trichloroethane	<1.00		25.0	18.77		ug/L		75	60 - 121	7	20
1,1-Dichloroethane	60.7	F1	25.0	63.42	F1	ug/L		11	53 - 127	7	20
1,1-Dichloroethene	<2.00		25.0	18.29		ug/L		73	51 - 134	9	20
1,2,3-Trichloropropane	<1.00		25.0	19.89		ug/L		80	56 - 122	4	21
1,2-Dibromo-3-Chloropropane	<1.20		25.0	15.76		ug/L		63	44 - 138	13	24
1,2-Dibromoethane (EDB)	<0.340		25.0	18.17		ug/L		73	60 - 122	11	20
1,2-Dichlorobenzene	<1.00		25.0	19.36		ug/L		77	60 - 120	13	20
1,2-Dichloroethane	<1.00		25.0	18.67		ug/L		75	48 - 128	10	20
1,2-Dichloropropane	<1.00		25.0	17.85		ug/L		71	59 - 128	7	20

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

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

Lab Sample ID: 310-320686-1 MSD

Matrix: Ground Water

Analysis Batch: 473879

Client Sample ID: MW-3R

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,4-Dichlorobenzene	<1.00		25.0	20.32		ug/L		81	58 - 120	11	20
2-Butanone (MEK)	<10.0		50.0	42.16		ug/L		84	46 - 134	0	23
2-Hexanone	<10.0		50.0	35.74		ug/L		71	46 - 141	2	20
4-Methyl-2-pentanone (MIBK)	<10.0		50.0	36.70		ug/L		73	49 - 138	5	20
Acetone	<10.0		50.0	40.04		ug/L		80	39 - 141	5	23
Acrylonitrile	<10.0		250	199.5		ug/L		80	41 - 150	5	20
Benzene	<0.500		25.0	20.64		ug/L		83	48 - 125	8	20
Bromochloromethane	<5.00		25.0	20.21		ug/L		81	55 - 131	10	21
Bromodichloromethane	<1.00		25.0	17.53		ug/L		70	53 - 122	8	20
Bromoform	<5.00		25.0	16.99		ug/L		68	47 - 122	6	20
Carbon disulfide	<1.00		25.0	17.98		ug/L		72	45 - 137	11	24
Carbon tetrachloride	<2.00		25.0	18.29		ug/L		73	45 - 136	6	20
Chlorobenzene	<1.00		25.0	18.43		ug/L		74	59 - 120	8	20
Chlorodibromomethane	<5.00		25.0	18.63		ug/L		75	53 - 121	5	20
Chloroform	<3.00		25.0	20.78		ug/L		83	52 - 122	10	20
cis-1,2-Dichloroethene	1.63		25.0	19.81		ug/L		73	51 - 123	8	20
cis-1,3-Dichloropropene	<5.00		25.0	17.92		ug/L		72	55 - 123	8	20
Dibromomethane	<1.00		25.0	20.40		ug/L		82	57 - 122	10	20
Ethylbenzene	<1.00		25.0	20.00		ug/L		80	53 - 120	8	20
Iodomethane	<10.0		25.0	20.71		ug/L		83	18 - 150	0	32
Methylene Chloride	<5.00		25.0	20.72		ug/L		83	59 - 128	10	20
Styrene	<1.00		25.0	20.22		ug/L		81	50 - 125	8	20
Tetrachloroethene	<1.00		25.0	19.46		ug/L		78	51 - 128	5	20
Toluene	<1.00		25.0	18.10		ug/L		72	52 - 120	8	20
trans-1,2-Dichloroethene	<1.00		25.0	18.14		ug/L		73	53 - 127	9	20
trans-1,3-Dichloropropene	<5.00		25.0	17.74		ug/L		71	50 - 123	8	20
trans-1,4-Dichloro-2-butene	<10.0		25.0	18.02		ug/L		72	28 - 150	5	24
Trichloroethene	<1.00		25.0	18.31		ug/L		73	50 - 128	8	20
Vinyl acetate	<10.0		50.0	44.03		ug/L		88	31 - 150	7	25
Xylenes, Total	<3.00		50.0	40.54		ug/L		81	50 - 122	6	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Dibromofluoromethane (Surr)	97		76 - 130
Toluene-d8 (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	97		80 - 120

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-473972/1-A

Matrix: Water

Analysis Batch: 475370

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 473972

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		11/19/25 08:30	12/02/25 17:03	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		11/19/25 08:30	12/02/25 17:03	1
Barium	0.001066	J	0.00200	0.000660	mg/L		11/19/25 08:30	12/02/25 17:03	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		11/19/25 08:30	12/02/25 17:03	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		11/19/25 08:30	12/02/25 17:03	1
Chromium	<0.00500		0.00500	0.00180	mg/L		11/19/25 08:30	12/02/25 17:03	1

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

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

Lab Sample ID: MB 310-473972/1-A

Matrix: Water

Analysis Batch: 475370

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 473972

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cobalt	<0.000500		0.000500	0.000170	mg/L		11/19/25 08:30	12/02/25 17:03	1
Copper	<0.00500		0.00500	0.00320	mg/L		11/19/25 08:30	12/02/25 17:03	1
Lead	<0.000500		0.000500	0.000330	mg/L		11/19/25 08:30	12/02/25 17:03	1
Nickel	<0.00500		0.00500	0.00230	mg/L		11/19/25 08:30	12/02/25 17:03	1
Selenium	<0.00500		0.00500	0.00140	mg/L		11/19/25 08:30	12/02/25 17:03	1
Silver	<0.00100		0.00100	0.000500	mg/L		11/19/25 08:30	12/02/25 17:03	1
Thallium	<0.00100	^1+	0.00100	0.000570	mg/L		11/19/25 08:30	12/02/25 17:03	1
Vanadium	<0.00500		0.00500	0.00170	mg/L		11/19/25 08:30	12/02/25 17:03	1
Zinc	<0.0200		0.0200	0.0130	mg/L		11/19/25 08:30	12/02/25 17:03	1

Lab Sample ID: LCS 310-473972/2-A

Matrix: Water

Analysis Batch: 475370

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 473972

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2230		mg/L		111	80 - 120
Arsenic	0.200	0.1858		mg/L		93	80 - 120
Barium	0.100	0.09362		mg/L		94	80 - 120
Beryllium	0.100	0.09768		mg/L		98	80 - 120
Cadmium	0.100	0.09280		mg/L		93	80 - 120
Chromium	0.100	0.09297		mg/L		93	80 - 120
Cobalt	0.100	0.1014		mg/L		101	80 - 120
Copper	0.200	0.1934		mg/L		97	80 - 120
Lead	0.200	0.1952		mg/L		98	80 - 120
Nickel	0.200	0.1923		mg/L		96	80 - 120
Selenium	0.400	0.3556		mg/L		89	80 - 120
Silver	0.100	0.1192		mg/L		119	80 - 120
Thallium	0.100	0.09580	^1+	mg/L		96	80 - 120
Vanadium	0.100	0.09241		mg/L		92	80 - 120
Zinc	0.200	0.1739		mg/L		87	80 - 120

Lab Sample ID: MB 310-473973/1-A

Matrix: Water

Analysis Batch: 475370

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 473973

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		11/19/25 08:30	12/02/25 19:55	1
Arsenic	<0.00200		0.00200	0.000530	mg/L		11/19/25 08:30	12/02/25 19:55	1
Barium	<0.00200		0.00200	0.000660	mg/L		11/19/25 08:30	12/02/25 19:55	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		11/19/25 08:30	12/02/25 19:55	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		11/19/25 08:30	12/02/25 19:55	1
Chromium	<0.00500		0.00500	0.00180	mg/L		11/19/25 08:30	12/02/25 19:55	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		11/19/25 08:30	12/02/25 19:55	1
Copper	<0.00500		0.00500	0.00320	mg/L		11/19/25 08:30	12/02/25 19:55	1
Lead	<0.000500		0.000500	0.000330	mg/L		11/19/25 08:30	12/02/25 19:55	1
Nickel	<0.00500		0.00500	0.00230	mg/L		11/19/25 08:30	12/02/25 19:55	1
Selenium	<0.00500		0.00500	0.00140	mg/L		11/19/25 08:30	12/02/25 19:55	1
Silver	<0.00100		0.00100	0.000500	mg/L		11/19/25 08:30	12/02/25 19:55	1
Thallium	<0.00100	^1+	0.00100	0.000570	mg/L		11/19/25 08:30	12/02/25 19:55	1

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

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

Lab Sample ID: MB 310-473973/1-A

Matrix: Water

Analysis Batch: 475370

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 473973

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vanadium	<0.00500		0.00500	0.00170	mg/L		11/19/25 08:30	12/02/25 19:55	1

Lab Sample ID: MB 310-473973/1-A

Matrix: Water

Analysis Batch: 475450

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 473973

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	<0.0200		0.0200	0.0130	mg/L		11/19/25 08:30	12/03/25 12:32	1

Lab Sample ID: LCS 310-473973/2-A

Matrix: Water

Analysis Batch: 475370

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 473973

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.2113		mg/L		106	80 - 120
Arsenic	0.200	0.1746		mg/L		87	80 - 120
Barium	0.100	0.08968		mg/L		90	80 - 120
Beryllium	0.100	0.09144		mg/L		91	80 - 120
Cadmium	0.100	0.08630		mg/L		86	80 - 120
Chromium	0.100	0.08522		mg/L		85	80 - 120
Cobalt	0.100	0.09261		mg/L		93	80 - 120
Copper	0.200	0.1777		mg/L		89	80 - 120
Lead	0.200	0.1855		mg/L		93	80 - 120
Nickel	0.200	0.1758		mg/L		88	80 - 120
Selenium	0.400	0.3442		mg/L		86	80 - 120
Silver	0.100	0.1157		mg/L		116	80 - 120
Thallium	0.100	0.08945	^1+	mg/L		89	80 - 120
Vanadium	0.100	0.08585		mg/L		86	80 - 120

Lab Sample ID: LCS 310-473973/2-A

Matrix: Water

Analysis Batch: 475450

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 473973

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Zinc	0.200	0.1852		mg/L		93	80 - 120

Lab Sample ID: 310-320686-3 DU

Matrix: Ground Water

Analysis Batch: 475370

Client Sample ID: MW-7

Prep Type: Total/NA

Prep Batch: 473973

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Antimony	0.00171	J	<0.00200		mg/L		NC	20
Arsenic	0.000969	J	0.0009300	J	mg/L		4	20
Barium	0.169		0.1689		mg/L		0.2	20
Beryllium	<0.00100		<0.00100		mg/L		NC	20
Cadmium	<0.000200		<0.000200		mg/L		NC	20
Chromium	0.0142		0.01449		mg/L		2	20
Cobalt	<0.000500		<0.000500		mg/L		NC	20
Copper	<0.00500		<0.00500		mg/L		NC	20
Lead	<0.000500		<0.000500		mg/L		NC	20

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

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

Lab Sample ID: 310-320686-3 DU

Matrix: Ground Water

Analysis Batch: 475370

Client Sample ID: MW-7

Prep Type: Total/NA

Prep Batch: 473973

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Nickel	<0.00500		<0.00500		mg/L		NC	20
Selenium	0.0505		0.05049		mg/L		0.1	20
Silver	<0.00100		<0.00100		mg/L		NC	20
Vanadium	<0.00500		<0.00500		mg/L		NC	20

Lab Sample ID: 310-320686-3 DU

Matrix: Ground Water

Analysis Batch: 475450

Client Sample ID: MW-7

Prep Type: Total/NA

Prep Batch: 473973

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	Limit
Zinc	<0.0200		<0.0200		mg/L		NC	20

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

Lab Sample ID: MB 310-473757/1

Matrix: Water

Analysis Batch: 473757

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			11/17/25 10:49	1

Lab Sample ID: LCS 310-473757/2

Matrix: Water

Analysis Batch: 473757

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	98.00		mg/L		98	82 - 117

Lab Sample ID: MB 310-473774/1

Matrix: Water

Analysis Batch: 473774

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			11/17/25 11:50	1

Lab Sample ID: LCS 310-473774/2

Matrix: Water

Analysis Batch: 473774

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	99.00		mg/L		99	82 - 117

Lab Sample ID: MB 310-473903/1

Matrix: Water

Analysis Batch: 473903

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00	3.50	mg/L			11/18/25 10:10	1

Eurofins Cedar Falls

QC Sample Results

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

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

Lab Sample ID: LCS 310-473903/2				Client Sample ID: Lab Control Sample			
Matrix: Water				Prep Type: Total/NA			
Analysis Batch: 473903							
Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	99.00		mg/L		99	82 - 117

QC Association Summary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

GC/MS VOA

Analysis Batch: 473879

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-320686-1	MW-3R	Total/NA	Ground Water	8260D	
310-320686-2	MW-4R3	Total/NA	Ground Water	8260D	
310-320686-3	MW-7	Total/NA	Ground Water	8260D	
310-320686-4	MW-9	Total/NA	Ground Water	8260D	
310-320686-5	MW-10	Total/NA	Ground Water	8260D	
310-320686-6	MW-11	Total/NA	Ground Water	8260D	
310-320686-7	MW-D	Total/NA	Ground Water	8260D	
310-320686-8	Trip Blank 1	Total/NA	Ground Water	8260D	
310-320686-9	Trip Blank 2	Total/NA	Ground Water	8260D	
MB 310-473879/6	Method Blank	Total/NA	Water	8260D	
LCS 310-473879/7	Lab Control Sample	Total/NA	Water	8260D	
LCS 310-473879/8	Lab Control Sample	Total/NA	Water	8260D	
310-320686-1 MS	MW-3R	Total/NA	Ground Water	8260D	
310-320686-1 MSD	MW-3R	Total/NA	Ground Water	8260D	

Metals

Prep Batch: 473972

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-320686-1	MW-3R	Total/NA	Ground Water	3005A	
MB 310-473972/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-473972/2-A	Lab Control Sample	Total/NA	Water	3005A	

Prep Batch: 473973

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-320686-2	MW-4R3	Total/NA	Ground Water	3005A	
310-320686-3	MW-7	Total/NA	Ground Water	3005A	
310-320686-4	MW-9	Total/NA	Ground Water	3005A	
310-320686-5	MW-10	Total/NA	Ground Water	3005A	
310-320686-6	MW-11	Total/NA	Ground Water	3005A	
310-320686-7	MW-D	Total/NA	Ground Water	3005A	
MB 310-473973/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-473973/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-320686-3 DU	MW-7	Total/NA	Ground Water	3005A	

Analysis Batch: 475370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-320686-1	MW-3R	Total/NA	Ground Water	6020B	473972
310-320686-2	MW-4R3	Total/NA	Ground Water	6020B	473973
310-320686-3	MW-7	Total/NA	Ground Water	6020B	473973
310-320686-4	MW-9	Total/NA	Ground Water	6020B	473973
310-320686-5	MW-10	Total/NA	Ground Water	6020B	473973
310-320686-6	MW-11	Total/NA	Ground Water	6020B	473973
310-320686-7	MW-D	Total/NA	Ground Water	6020B	473973
MB 310-473972/1-A	Method Blank	Total/NA	Water	6020B	473972
MB 310-473973/1-A	Method Blank	Total/NA	Water	6020B	473973
LCS 310-473972/2-A	Lab Control Sample	Total/NA	Water	6020B	473972
LCS 310-473973/2-A	Lab Control Sample	Total/NA	Water	6020B	473973
310-320686-3 DU	MW-7	Total/NA	Ground Water	6020B	473973

Eurofins Cedar Falls

QC Association Summary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Metals

Analysis Batch: 475450

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-320686-2	MW-4R3	Total/NA	Ground Water	6020B	473973
310-320686-3	MW-7	Total/NA	Ground Water	6020B	473973
310-320686-4	MW-9	Total/NA	Ground Water	6020B	473973
310-320686-5	MW-10	Total/NA	Ground Water	6020B	473973
310-320686-6	MW-11	Total/NA	Ground Water	6020B	473973
310-320686-7	MW-D	Total/NA	Ground Water	6020B	473973
MB 310-473973/1-A	Method Blank	Total/NA	Water	6020B	473973
LCS 310-473973/2-A	Lab Control Sample	Total/NA	Water	6020B	473973
310-320686-3 DU	MW-7	Total/NA	Ground Water	6020B	473973

General Chemistry

Analysis Batch: 473757

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-320686-3	MW-7	Total/NA	Ground Water	I-3765-85	
MB 310-473757/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-473757/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 473774

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-320686-1	MW-3R	Total/NA	Ground Water	I-3765-85	
310-320686-2	MW-4R3	Total/NA	Ground Water	I-3765-85	
310-320686-5	MW-10	Total/NA	Ground Water	I-3765-85	
310-320686-6	MW-11	Total/NA	Ground Water	I-3765-85	
310-320686-7	MW-D	Total/NA	Ground Water	I-3765-85	
MB 310-473774/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-473774/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 473903

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-320686-4	MW-9	Total/NA	Ground Water	I-3765-85	
MB 310-473903/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-473903/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Lab Chronicle

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-3R

Date Collected: 11/12/25 15:43

Date Received: 11/14/25 17:05

Lab Sample ID: 310-320686-1

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	473879	WSE8	EET CF	11/18/25 12:18
Total/NA	Prep	3005A			473972	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475370	NFT2	EET CF	12/02/25 18:20
Total/NA	Analysis	I-3765-85		1	473774	DGU1	EET CF	11/17/25 11:50

Client Sample ID: MW-4R3

Date Collected: 11/13/25 09:14

Date Received: 11/14/25 17:05

Lab Sample ID: 310-320686-2

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	473879	WSE8	EET CF	11/18/25 12:40
Total/NA	Prep	3005A			473973	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475370	NFT2	EET CF	12/02/25 20:40
Total/NA	Prep	3005A			473973	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475450	NFT2	EET CF	12/03/25 13:08
Total/NA	Analysis	I-3765-85		1	473774	DGU1	EET CF	11/17/25 11:50

Client Sample ID: MW-7

Date Collected: 11/11/25 14:00

Date Received: 11/14/25 17:05

Lab Sample ID: 310-320686-3

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	473879	WSE8	EET CF	11/18/25 13:02
Total/NA	Prep	3005A			473973	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475370	NFT2	EET CF	12/02/25 20:48
Total/NA	Prep	3005A			473973	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475450	NFT2	EET CF	12/03/25 13:11
Total/NA	Analysis	I-3765-85		1	473757	DGU1	EET CF	11/17/25 10:49

Client Sample ID: MW-9

Date Collected: 11/13/25 08:16

Date Received: 11/14/25 17:05

Lab Sample ID: 310-320686-4

Matrix: Ground Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	473879	WSE8	EET CF	11/18/25 13:24
Total/NA	Prep	3005A			473973	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475370	NFT2	EET CF	12/02/25 20:53
Total/NA	Prep	3005A			473973	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475450	NFT2	EET CF	12/03/25 13:17
Total/NA	Analysis	I-3765-85		1	473903	DGU1	EET CF	11/18/25 10:10

Lab Chronicle

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Client Sample ID: MW-10

Lab Sample ID: 310-320686-5

Date Collected: 11/12/25 10:11

Matrix: Ground Water

Date Received: 11/14/25 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	473879	WSE8	EET CF	11/18/25 13:46
Total/NA	Prep	3005A			473973	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475370	NFT2	EET CF	12/02/25 20:56
Total/NA	Prep	3005A			473973	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475450	NFT2	EET CF	12/03/25 13:19
Total/NA	Analysis	I-3765-85		1	473774	DGU1	EET CF	11/17/25 11:50

Client Sample ID: MW-11

Lab Sample ID: 310-320686-6

Date Collected: 11/12/25 08:57

Matrix: Ground Water

Date Received: 11/14/25 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	473879	WSE8	EET CF	11/18/25 14:08
Total/NA	Prep	3005A			473973	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475370	NFT2	EET CF	12/02/25 20:59
Total/NA	Prep	3005A			473973	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475450	NFT2	EET CF	12/03/25 13:22
Total/NA	Analysis	I-3765-85		1	473774	DGU1	EET CF	11/17/25 11:50

Client Sample ID: MW-D

Lab Sample ID: 310-320686-7

Date Collected: 11/12/25 10:11

Matrix: Ground Water

Date Received: 11/14/25 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	473879	WSE8	EET CF	11/18/25 14:30
Total/NA	Prep	3005A			473973	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475370	NFT2	EET CF	12/02/25 21:02
Total/NA	Prep	3005A			473973	RLT9	EET CF	11/19/25 08:30
Total/NA	Analysis	6020B		1	475450	NFT2	EET CF	12/03/25 13:25
Total/NA	Analysis	I-3765-85		1	473774	DGU1	EET CF	11/17/25 11:50

Client Sample ID: Trip Blank 1

Lab Sample ID: 310-320686-8

Date Collected: 11/13/25 00:00

Matrix: Ground Water

Date Received: 11/14/25 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	473879	WSE8	EET CF	11/18/25 11:34

Client Sample ID: Trip Blank 2

Lab Sample ID: 310-320686-9

Date Collected: 11/13/25 00:00

Matrix: Ground Water

Date Received: 11/14/25 17:05

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	473879	WSE8	EET CF	11/18/25 11:56

Eurofins Cedar Falls

Lab Chronicle

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

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

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Accreditation/Certification Summary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

Laboratory: Eurofins Cedar Falls

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	007	12-01-25 *

* Accreditation/Certification renewal pending - accreditation/certification considered valid.

Method Summary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

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.

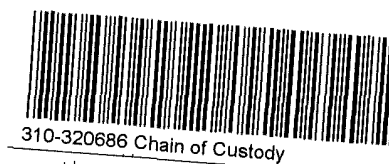
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

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>SES</u>			
City/State:	CITY <u>W. Des Moines</u>	STATE <u>IA</u>	Project:
Receipt Information			
Date/Time Received:	DATE <u>11.14.23</u>	TIME <u>1705</u>	Received By: <u>PH</u>
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler?		☒ Yes ☐ No	If yes: Cooler ID:
Multiple Coolers?		☒ Yes ☐ No	If yes: Cooler # <u>1</u> of <u>2</u>
Cooler Custody Seals Present?		☐ Yes ☒ No	If yes: Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?		☐ Yes ☒ No	If yes: Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?		☒ Yes ☐ No	If yes: Which VOA samples are in cooler? ↓ <u>MU-10, 11, D</u>
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>CC</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>0.3</u>		Corrected Temp (°C): <u>0.3</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1		CONTAINER 2
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE: If yes, contact PM before proceeding. If no, proceed with login			
Additional Comments			



Environment Testing
America

Place COC scanning label
here

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client: <u>SES</u>			
City/State:	CITY <u>W. Des Moines</u>	STATE <u>IA</u>	Project:
Receipt Information			
Date/Time Received.	DATE <u>11.14.23</u>	TIME <u>1705</u>	Received By: <u>PH</u>
Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee ☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other: _____			
Condition of Cooler/Containers			
Sample(s) received in Cooler? ☒ Yes ☐ No If yes: Cooler ID: _____			
Multiple Coolers? ☒ Yes ☐ No If yes: Cooler # <u>2</u> of <u>2</u>			
Cooler Custody Seals Present? ☐ Yes ☒ No If yes: Cooler custody seals intact? ☐ Yes ☐ No			
Sample Custody Seals Present? ☐ Yes ☒ No If yes: Sample custody seals intact? ☐ Yes ☐ No			
Trip Blank Present? ☒ Yes ☐ No If yes: Which VOA samples are in cooler? <u>↓</u>			
<u>The Rest</u>			
Temperature Record			
Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other: _____ ☐ NONE			
Thermometer ID: <u>CC</u>		Correction Factor (°C): <u>0</u>	
• Temp Blank Temperature – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature			
Uncorrected Temp (°C): <u>0.3</u>		Corrected Temp (°C): <u>0.3</u>	
• Sample Container Temperature			
Container(s) used:	CONTAINER 1		CONTAINER 2
Uncorrected Temp (°C):			
Corrected Temp (°C):			
Exceptions Noted			
1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No a) If yes: Is there evidence that the chilling process began? ☐ Yes ☐ No			
2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No			
NOTE If yes, contact PM before proceeding If no, proceed with login			
Additional Comments			

Chain of Custody Record



TestAmerica Laboratories, Inc. d/b/a Eurofins TestAmerica

Regulatory Program: ☐ DW ☐ NPDES ☒ RCRA ☐ Other:

Project Manager: Nathan Ohrt
Email: nohrt@scsengineers.com
Cell: 319-331-9613

Client Contact

SCS Engineers
1690 All-State Court, Suite 100
West Des Moines, IA 50265

Project Name: Sioux 2nd 2025 HMSP
Site: Sioux City Sanitary Landfill (HMSP)
P O # 27225426 00

Analysis Turnaround Time

☐ CALENDAR DAYS ☐ WORKING DAYS
Other:
☐ 2 weeks
☐ 1 week
☐ 2 days
☐ 1 day

Site Contact: Arah Montagne
Lab Contact: Sam Miller

Date: _____
Carrier: _____

COC No
1 of 2 COCs

Sampler

For Lab Use Only:
Walk-in Client
Lab Sampling

Job / SDG No

Sample Specific Notes

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y / N)	Perform MS / MSD (Y / N)	Appendix I	TSS	Dichlorodifluoromethane	Trip Blank	Sample Specific Notes
MW-2R	11/12/25	15:43	G	GW				X	X			
MW-3R	11/13/25	9:14	G	GW				X	X			
MW-4R3	11/11/25	14:00	G	GW				X	X			
MW-7	11/13/25	8:16	G	GW				X	X			
MW-9	11/12/25	10:11	G	GW				X	X			
MW-10	11/12/25	8:57	G	GW				X	X			
MW-11	11/12/25	10:11	G	GW				X	X			
MW-12			G	GW				X	X			
MW-D			G	GW				X	X			
Trip Blank										X		Include trip blanks in every cooler containing VOC sample containers

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

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample.
☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No

Relinquished by: *Michael Morgan*
Relinquished by: *SCS Engineers*
Relinquished by: _____

Custody Seal No.
Company: _____
Company: _____
Company: _____

Received by: _____
Received by: _____
Received in Laboratory by: _____

Date/Time: 11/14/25
Date/Time: 11/14/25
Date/Time: 11/14/25 1700

Cooler Temp (°C)

Obs'd

Cor'd

Therm ID No

Company

Date/Time:

Page 46 of 48

12/3/2025

Form No. CA-C-WI-002, Rev. 4.23, dated 4/16/2019

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-320686-1

SDG Number: Sioux City Sanitary Landfill (HMSP)

Login Number: 320686

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Robison, Jessie

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	

Quantitation Limit Exceptions Summary

Client: SCS Engineers
Project/Site: Sioux City 2nd 2025 HMSP

Job ID: 310-320686-1
SDG: Sioux City Sanitary Landfill (HMSP)

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	Ground Water	Total/NA	ug/L	1.20	5.0
8260D	1,2-Dibromoethane (EDB)	Ground Water	Total/NA	ug/L	0.340	1.0

Appendix B-2

Data Validation

QA/QC Completed by: Nathan Ohrt

Sample Date: 6/16-17/2025

Site Name: Sioux City Sanitary Landfill

Project Name: 1st 2025 HMSP & Bracketing

Lab Job ID: 310-309159

Lab Report Date: 6/30/2025

	OK	NO	N/A	NOTES
Sample Collection and Sample Holding				
Chain of Custody	X			
Temperature	X			
Preservation		X		The laboratory-supplied sample containers included a preservative that was not compatible with Method 8260 for acrylonitrile in Trip Blank 2.
Condition		X		Trip Blank 2 and Trip Blank 3 were analyzed with headspace in the laboratory-supplied sample containers.
Correct Constituents Analyzed	X			
Case Narrative	X			
Holding Times	X			
Analytical Sensitivity and Blanks				
Method Blank Detections		X		Vanadium was detected above the MDL in the method blank; associated samples were not re-analyzed because results were greater than 10X the value found in the method blank.
Trip Blank Detections	X			No detections.
Accuracy				
ICV/CCV		X		The continuing calibration verification (CCV) for multiple batches recovered outside control limits for multiple parameters. The associated samples were non-detect for the affected analytes or the laboratory control sample (LCS) passed using CCV criteria; therefore, the data have been reported.
LCS/LCSD	X			
MS/MSD	X			
Surrogates (organics only)	X			
Precision				
QA/QC Sample RPDs	X			
Field Duplicates			X	

QA/QC Completed by: Nathan Ohrt

Sample Date: 11/11-12/2025

Site Name: Sioux City Sanitary Landfill

Project Name: 2nd 2025 Bracketing

Lab Job ID: 310-320682

Lab Report Date: 12/3/2025

	OK	NO	N/A	NOTES
Sample Collection and Sample Holding				
Chain of Custody	X			
Temperature	X			
Preservation	X			
Condition	X			
Correct Constituents Analyzed	X			
Case Narrative	X			
Holding Times	X			
Analytical Sensitivity and Blanks				
Method Blank Detections	X			No detections.
Trip Blank Detections	X			No detections.
Accuracy				
ICV/CCV	X			
LCS/LCSD	X			
MS/MSD	X			
Surrogates (organics only)	X			
Precision				
QA/QC Sample RPDs	X			
Field Duplicates			X	

QA/QC Completed by: Nathan Ohrt

Sample Date: 11/11-13/2025

Site Name: Sioux City Sanitary Landfill

Project Name: 2nd 2025 HMSP

Lab Job ID: 310-320686

Lab Report Date: 12/3/2025

	OK	NO	N/A	NOTES
Sample Collection and Sample Holding				
Chain of Custody	X			
Temperature	X			
Preservation	X			
Condition	X			
Correct Constituents Analyzed	X			
Case Narrative	X			
Holding Times	X			
Analytical Sensitivity and Blanks				
Method Blank Detections		X		Barium was detected above the MDL in the method blank; associated samples were not re-analyzed because results were greater than 10X the value found in the method blank.
Trip Blank Detections	X			No detections.
Accuracy				
ICV/CCV		X		The initial calibration verification (ICV) or continuing calibration verification (CCV) for multiple batches recovered outside control limits for multiple parameters. The associated samples were non-detect for the affected analytes or the LCS passed using CCV criteria; therefore, the data have been reported.
LCS/LCSD	X			
MS/MSD	X			
Surrogates (organics only)	X			
Precision				
QA/QC Sample RPDs	X			
Field Duplicates	X			Sample MW-10 and duplicate sample MW-D has <50% RPD for analyzed parameters.

Appendix C

Reporting Period Summary of Groundwater Chemistry

SCS ENGINEERS

Summary of Groundwater Chemistry
City of Sioux City Sanitary Landfill - 97-SDP-03-81C

Total Metals Constituents	Sample Date	MW-7 UPG	MW-3R DNG	MW-4R3 DNG	MW-9 DNG	MW-10 DNG	MW-11 DNG	MW-13 DNG	MW-14 DNG	MW-15 DNG	MW-301 DNG	MW-401 DNG
Antimony, mg/L (CAS NO - 7440-36-0)	6/16/2025	< 0.002	< 0.002	< 0.002	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A
	11/11/2025	0.00171*	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A	N/A
Arsenic, mg/L (CAS NO - 7440-38-2)	6/16/2025	0.000974*	0.00128*	0.00146*	N/A	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A
	11/11/2025	0.000969*	0.00158*	0.00146*	0.00424	0.000776*	< 0.002	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	0.000641*	N/A	N/A	N/A	N/A	N/A	N/A
Barium, mg/L (CAS NO - 7440-39-3)	6/16/2025	0.16	0.591	1.15	N/A	N/A	0.09	N/A	N/A	N/A	N/A	N/A
	11/11/2025	0.169	0.686	1.17	0.605	0.273	0.0899	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	0.259	N/A	N/A	N/A	N/A	N/A	N/A
Beryllium, mg/L (CAS NO - 7440-41-7)	6/16/2025	< 0.001	< 0.001	< 0.001	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A
	11/11/2025	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A
Cadmium, mg/L (CAS NO - 7440-43-9)	6/16/2025	0.000194*	< 0.0002	< 0.0002	N/A	N/A	< 0.0002	N/A	N/A	N/A	N/A	N/A
	11/11/2025	< 0.0002	< 0.0002	< 0.0002	0.000109*	0.000406	0.000114*	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	0.000472	N/A	N/A	N/A	N/A	N/A	N/A
Chromium, mg/L (CAS NO - 7440-47-3)	6/16/2025	0.0147	< 0.005	< 0.005	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
	11/11/2025	0.0142	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	0.00241*	N/A	N/A	N/A	N/A	N/A	N/A
Cobalt, mg/L (CAS NO - 7440-48-4)	6/16/2025	< 0.0005	0.00294	0.00653	N/A	N/A	0.00137	0.000293*	0.000825	N/A	0.00612	0.0148
	11/11/2025	< 0.0005	0.0035	0.00574	0.00478	0.00275	0.00149	0.001	0.000656	0.000941	0.00425	0.00178
	11/11/2025	N/A	N/A	N/A	N/A	0.00323	N/A	N/A	N/A	N/A	N/A	N/A
Copper, mg/L (CAS NO - 7440-50-8)	6/16/2025	< 0.005	< 0.005	< 0.005	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
	11/11/2025	< 0.005	< 0.005	< 0.005	< 0.005	0.00683	< 0.005	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	0.00586	N/A	N/A	N/A	N/A	N/A	N/A
Lead, mg/L (CAS NO - 7439-92-1)	6/16/2025	< 0.0005	< 0.0005	< 0.0005	N/A	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A
	11/11/2025	< 0.0005	< 0.0005	< 0.0005	0.000503	0.00325	< 0.0005	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	0.00268	N/A	N/A	N/A	N/A	N/A	N/A
Nickel, mg/L (CAS NO - 7440-02-0)	6/16/2025	< 0.005	0.0186	0.025	N/A	N/A	0.00233*	N/A	N/A	N/A	N/A	N/A
	11/11/2025	< 0.005	0.0202	0.0235	0.0104	0.00684	0.00242*	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	0.00542	N/A	N/A	N/A	N/A	N/A	N/A
Selenium, mg/L (CAS NO - 7782-49-2)	6/16/2025	0.0408	< 0.005	< 0.005	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
	11/11/2025	0.0505	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A	N/A
Silver, mg/L (CAS NO - 7440-22-4)	6/16/2025	< 0.001	< 0.001	< 0.001	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A
	11/11/2025	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A
Thallium, mg/L (CAS NO - 7440-28-0)	6/16/2025	< 0.001	< 0.001	< 0.001	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A
	11/11/2025	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A	N/A
Vanadium, mg/L (CAS NO - 7440-62-2)	6/16/2025	0.00171*	< 0.005	< 0.005	N/A	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
	11/11/2025	< 0.005	< 0.005	< 0.005	< 0.005	0.0052	< 0.005	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	0.00415*	N/A	N/A	N/A	N/A	N/A	N/A
Zinc, mg/L (CAS NO - 7440-66-6)	6/16/2025	< 0.02	< 0.02	< 0.02	N/A	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A
	11/11/2025	< 0.02	< 0.02	< 0.02	< 0.02	0.016*	< 0.02	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	0.0138*	N/A	N/A	N/A	N/A	N/A	N/A
Total Suspended Solids, mg/L (CAS NO - TSS)	6/16/2025	4.88	6.38	2.75	N/A	N/A	< 1.88	29.9	100	N/A	291	3260
	11/11/2025	2.75	6.63	7.25	29.3	116	2.88	105	89	33.7	157	281
	11/11/2025	N/A	N/A	N/A	N/A	102	N/A	N/A	N/A	N/A	N/A	N/A

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

Denotes Detection.

Denotes Confirmed Outlier. Statistically Excluded.

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

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Summary of Groundwater Chemistry
City of Sioux City Sanitary Landfill - 97-SDP-03-81C

Appendix I VOC Constituents	Sample Date	MW-7 UPG	MW-3R DNG	MW-4R3 DNG	MW-9 DNG	MW-10 DNG	MW-11 DNG	MW-13 DNG	MW-14 DNG	MW-15 DNG	MW-301 DNG	MW-401 DNG
1,1,1,2-Tetrachloroethane, ug/L (CAS NO - 630-20-6)	6/16/2025	<1	<1	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
1,1,1-Trichloroethane, ug/L (CAS NO - 71-55-6)	6/16/2025	<1	<1	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
1,1,2,2-Tetrachloroethane, ug/L (CAS NO - 79-34-5)	6/16/2025	<1	<1	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
1,1,2-Trichloroethane, ug/L (CAS NO - 79-00-5)	6/16/2025	<1	<1	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethane, ug/L (CAS NO - 75-34-3)	6/16/2025	<1	68.8	84.9	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	60.7	77.4	28.6	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
1,1-Dichloroethene, ug/L (CAS NO - 75-35-4)	6/16/2025	<2	<2	<2	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<2	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A
1,2,3-Trichloropropane, ug/L (CAS NO - 96-18-4)	6/16/2025	<1	<1	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dibromo-3-Chloropropane, ug/L (CAS NO - 96-12-8)	6/16/2025	<1.2	<1.2	<1.2	N/A	N/A	<1.2	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1.2	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dibromoethane [EDB], ug/L (CAS NO - 106-93-4)	6/16/2025	<0.34	<0.34	<0.34	N/A	N/A	<0.34	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<0.34	<0.34	<0.34	<0.34	<0.34	<0.34	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<0.34	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichlorobenzene, ug/L (CAS NO - 95-50-1)	6/16/2025	<1	<1	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloroethane, ug/L (CAS NO - 107-06-2)	6/16/2025	<1	<1	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
1,2-Dichloropropane, ug/L (CAS NO - 78-87-5)	6/16/2025	<1	<1	0.949*	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	1.3	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
1,4-Dichlorobenzene, ug/L (CAS NO - 106-46-7)	6/16/2025	<1	<1	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
2-Butanone, ug/L (CAS NO - 78-93-3)	6/16/2025	<10	<10	<10	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<10	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A
2-Hexanone, ug/L (CAS NO - 591-78-6)	6/16/2025	<10	<10	<10	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<10	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A
4-Methyl-2-Pentanone, ug/L (CAS NO - 108-10-1)	6/16/2025	<10	<10	<10	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<10	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A
Acetone, ug/L (CAS NO - 67-64-1)	6/16/2025	<10	<10	<10	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<10	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A
Acrylonitrile, ug/L (CAS NO - 107-13-1)	6/16/2025	<10	<10	<10	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<10	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A
Benzene, ug/L (CAS NO - 71-43-2)	6/16/2025	<0.5	0.584	0.541	N/A	N/A	<0.5	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<0.5	<0.5	0.274*	0.389*	<0.5	<0.5	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<0.5	N/A	N/A	N/A	N/A	N/A	N/A
Bromochloromethane, ug/L (CAS NO - 74-97-5)	6/16/2025	<5	<5	<5	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<5	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A
Bromodichloromethane, ug/L (CAS NO - 75-27-4)	6/16/2025	<1	<1	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
Bromoform, ug/L (CAS NO - 75-25-2)	6/16/2025	<5	<5	<5	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<5	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A
Bromomethane, ug/L (CAS NO - 74-83-9)	6/16/2025	<4	<4	<4	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<4	<4	<4	<4	<4	<4	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A
Carbon Disulfide, ug/L (CAS NO - 75-15-0)	6/16/2025	<1	<1	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
Carbon Tetrachloride, ug/L (CAS NO - 56-23-5)	6/16/2025	<2	<2	<2	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<2	<2	<2	<2	<2	<2	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<2	N/A	N/A	N/A	N/A	N/A	N/A
Chlorobenzene, ug/L (CAS NO - 108-90-7)	6/16/2025	<1	<1	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
Chlorodibromomethane, ug/L (CAS NO - 124-48-1)	6/16/2025	<5	<5	<5	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<5	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A
Chloroethane, ug/L (CAS NO - 75-00-3)	6/16/2025	<4	6.99	2.63*	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<4	7.41	2.83*	4.19	<4	<4	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A
Chloroform, ug/L (CAS NO - 67-66-3)	6/16/2025	<3	<3	<3	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<3	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A

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Summary of Groundwater Chemistry City of Sioux City Sanitary Landfill - 97-SDP-03-81C

	Sample Date	MW-7 UPG	MW-3R DNG	MW-4R3 DNG	MW-9 DNG	MW-10 DNG	MW-11 DNG	MW-13 DNG	MW-14 DNG	MW-15 DNG	MW-301 DNG	MW-401 DNG
Appendix I VOC Constituents												
Chloromethane, ug/L (CAS NO - 74-87-3)	6/16/2025	<3	<3	<3	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<3	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A
cis-1,2-Dichloroethene, ug/L (CAS NO - 156-59-2)	6/16/2025	<1	2.15	36.5	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	1.63	31	0.96*	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
cis-1,3-Dichloropropene, ug/L (CAS NO - 10061-01-5)	6/16/2025	<5	<5	<5	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<5	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A
Ethylbenzene, ug/L (CAS NO - 100-41-4)	6/16/2025	<1	<1	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
Iodomethane, ug/L (CAS NO - 74-88-4)	6/16/2025	<10	<10	<10	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<10	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A
Methylene Bromide, ug/L (CAS NO - 74-95-3)	6/16/2025	<1	<1	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
Methylene Chloride, ug/L (CAS NO - 75-09-2)	6/16/2025	<5	<5	<5	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<5	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A
Styrene, ug/L (CAS NO - 100-42-5)	6/16/2025	<1	<1	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
Tetrachloroethene, ug/L (CAS NO - 127-18-4)	6/16/2025	<1	<1	4.46	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	5.07	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
Toluene, ug/L (CAS NO - 108-88-3)	6/16/2025	<1	<1	<1	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	<1	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
trans-1,2-Dichloroethene, ug/L (CAS NO - 156-60-5)	6/16/2025	<1	<1	1.76	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<1	<1	1.88	<1	<1	<1	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
trans-1,3-Dichloropropene, ug/L (CAS NO - 10061-02-6)	6/16/2025	<5	<5	<5	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<5	<5	<5	<5	<5	<5	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<5	N/A	N/A	N/A	N/A	N/A	N/A
trans-1,4-Dichloro-2-Butene, ug/L (CAS NO - 110-57-6)	6/16/2025	<10	<10	<10	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<10	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A
Trichloroethene, ug/L (CAS NO - 79-01-6)	6/16/2025	<1	<1	2.91	N/A	N/A	<1	1.3	1.64	N/A	4.92	<1
	11/11/2025	<1	<1	2.8	<1	<1	<1	0.799*	1.46	N/A	5.11	<1
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
Trichlorofluoromethane, ug/L (CAS NO - 75-69-4)	6/16/2025	<4	<4	<4	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<4	2.04*	1.43*	1.54*	<4	<4	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<4	N/A	N/A	N/A	N/A	N/A	N/A
Vinyl Acetate, ug/L (CAS NO - 108-05-4)	6/16/2025	<10	<10	<10	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<10	<10	<10	<10	<10	<10	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<10	N/A	N/A	N/A	N/A	N/A	N/A
Vinyl Chloride, ug/L (CAS NO - 75-01-4)	6/16/2025	<1	0.295*	4.03	N/A	N/A	<1	1.39	<1	N/A	2.68	<1
	11/11/2025	<1	<1	4.05	<1	<1	<1	2.39	<1	N/A	3.13	<1
	11/11/2025	N/A	N/A	N/A	N/A	<1	N/A	N/A	N/A	N/A	N/A	N/A
Xylenes, total, ug/L (CAS NO - 1330-20-7)	6/16/2025	<3	<3	<3	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A
	11/11/2025	<3	<3	<3	<3	<3	<3	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	<3	N/A	N/A	N/A	N/A	N/A	N/A

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

Denotes Detection.

Denotes Confirmed Outlier. Statistically Excluded.

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

SCS ENGINEERS

Summary of Groundwater Chemistry

City of Sioux City Sanitary Landfill - 97-SDP-03-81C

Other Constituents	Sample Date	MW-7 UPG	MW-3R DNG	MW-4R3 DNG	MW-9 DNG	MW-10 DNG	MW-11 DNG	MW-13 DNG	MW-14 DNG	MW-15 DNG	MW-301 DNG	MW-401 DNG
Dichlorodifluoromethane, ug/L (CAS NO - 75-71-8)	6/16/2025	N/A	0.303*	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	<3	N/A	<3	11.3	N/A	N/A	N/A	N/A	N/A	N/A
	11/11/2025	N/A	N/A	N/A	N/A	10.9	N/A	N/A	N/A	N/A	N/A	N/A

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

Denotes Detection.
Denotes Confirmed Outlier. Statistically Excluded.

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

Appendix D

Statistical Method and Output

Summary of Statistical Method and Output

Purpose

The purpose of this document is to provide the methodology for statistical evaluation of groundwater analytical data collected from the groundwater monitoring network of the City of Sioux City Sanitary Landfill (Landfill).

Statistical Method

Diagnostic and Exploratory Evaluations and Tests of Assumptions

The assessment/corrective action monitoring statistical programs include diagnostic and exploratory evaluations and statistical tests of assumptions, as appropriate, including the following:

- Time Series Plots
- Shapiro-Wilk test for normality
- Ohio Environmental Protection Agency (EPA) Method for identification of outliers
- Mann-Kendall/Sen's Slope trend test

Management of Non-Detect Data

Non-detect values in the dataset are managed using simple substitution or the Kaplan-Meier estimator. If less than 15% of the data are non-detects, simple substitution is used, where non-detect values are assigned a concentration of one-half ($\frac{1}{2}$) of the practical quantification limit (PQL). If greater than 15% but less than 50% of the data are non-detects, the Kaplan-Meier estimator is used to define the distribution of the dataset. If non-detects comprise greater than 50% of the available data, non-parametric statistical methods are used.

Management of Outliers

Background datasets are evaluated for outliers using the Ohio EPA Method included in the Sanitas™ statistical software program and described below, which includes the use of Dixon's, Rosner's, and Tukey's outlier tests, as appropriate based on the diagnostic tests, for the datasets that contain less than 75% of the measured concentrations below the PQL. Outliers are not confirmed unless a physical cause or explanation for the outlier is determined.

Management of Data (ND data < 75%)

If less than 75% of the background dataset is below the PQL, outliers are statistically evaluated using the following guidelines.

- A parametric dataset with $n < 20$ is evaluated with the Dixon's outlier test.
- A parametric dataset with $n \geq 20$ is evaluated with the Rosner's outlier test.
- A non-parametric dataset is evaluated with the Tukey's outlier test.

In accordance with the Ohio EPA Method, if a statistically significant outlier is not found using the above tests, but the highest value data point exceeds the second highest data point by an order of magnitude, the highest point is considered an outlier.

Management of Data (ND data $\geq$ 75%)

If greater than or equal to 75% of the background dataset is less than the PQL, outliers are statistically evaluated using the following guidelines.

- Single detection $\geq$ the PQL:
 - If $\geq$ 50% of the background dataset has detections $\geq$ the method detection limit (MDL), any value $\geq$ two times the PQL of background is considered an outlier.
 - If $<$ 50% of the background dataset has detections $\geq$ the MDL, any value $\geq$ the PQL of background is considered an outlier.
- Two or more detections $\geq$ the PQL:
 - If $\geq$ 50% of the background dataset has detections $\geq$ the MDL, any value $\geq$ three times the PQL of background is considered an outlier.
 - If $<$ 50% of the background dataset has detections $\geq$ the MDL, any value $\geq$ two times the PQL of background is considered an outlier.

Confirmed outliers, if any, are shown in the Reporting Period Summary of Groundwater Chemistry included in the Annual Water Quality Report. Analytical data prior to 2025 is available in the 2024 Annual Water Quality Report, dated November 26, 2024 (Doc #111376).

Detection Monitoring Statistical Program

The statistical evaluation of the analytical results from the downgradient monitoring wells should consist of a comparison to control limits of two standard deviations above (or below for pH) the means of the parameters listed in IAC 113.2(5)"d"(1) and (2) in a corresponding upgradient groundwater monitoring well. If the concentrations of the applicable parameters measured in the downgradient monitoring points are above (or below for pH) the control limit, then the monitoring point is required to progress to assessment monitoring.

Assessment/Corrective Action Monitoring Statistical Program

Confidence intervals or confidence bands, as appropriate, were selected as the appropriate statistical methods for comparison of the groundwater analytical data against a fixed groundwater protection standard (GWPS). The assessment/corrective action monitoring statistical evaluation is performed using the most recent eight samples or all samples if less than eight samples are available. The confidence intervals or confidence bands used for the assessment/corrective action monitoring statistical evaluation are established using the process below. Transformation of the distribution is not considered.

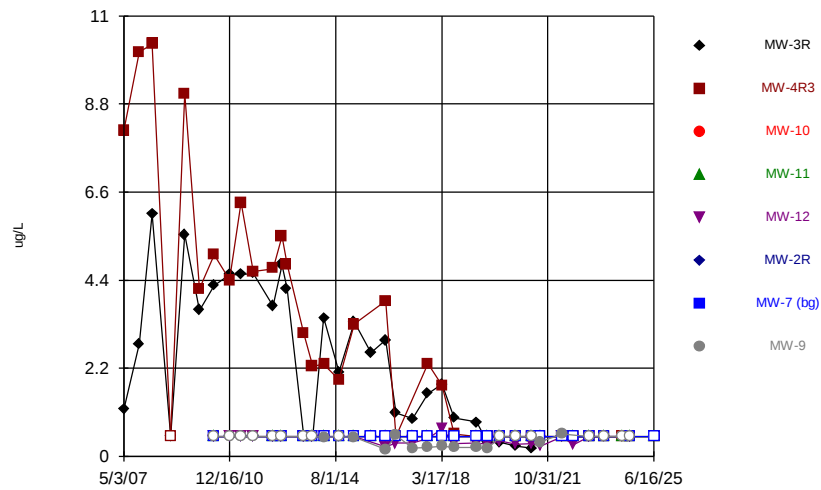
Confidence Intervals or Confidence Bands

- A parametric confidence interval around a normal mean is calculated if the dataset has a normal distribution and no statistically significant trend is present.
- A non-parametric confidence interval around a median is calculated if the dataset does not have a normal distribution and no statistically significant trend is present.
- Non-parametric confidence bands around a Theil-Sen trend line are calculated if the dataset has a statistically significant trend.

In the event that the lower confidence limit or any part of the lower confidence band, as appropriate, exceeds the GWPS, then the monitoring point is declared out of compliance, and an assessment of corrective measures (ACM) is required. An assessment of corrective measures (ACM) report was submitted on June 30, 2023 (Doc #107100) and approved in Permit Amendment #10, issued on July 24, 2023 (Doc #107359)

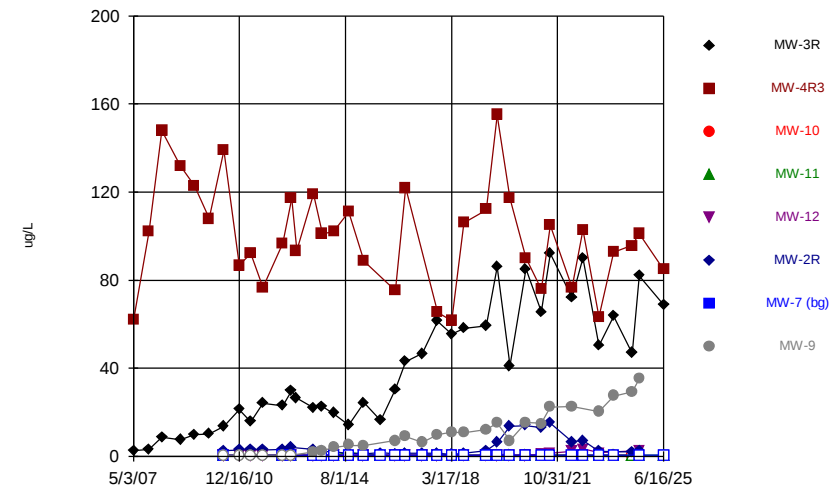
Time Series Plots

Time Series



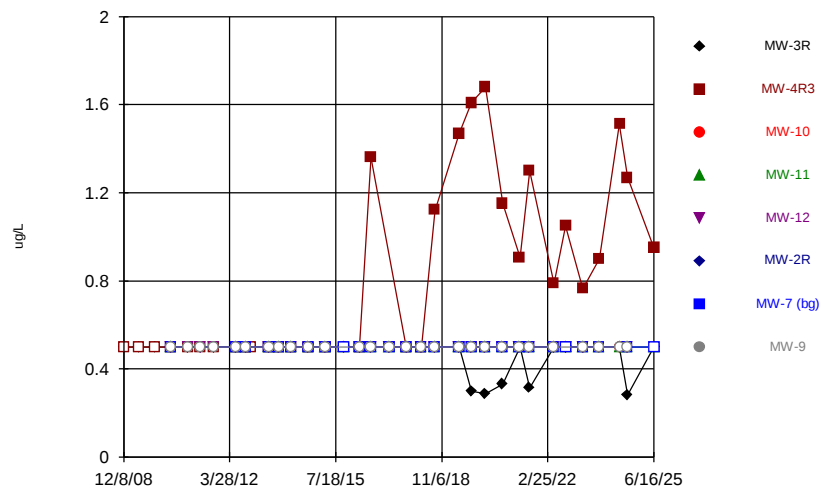
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City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



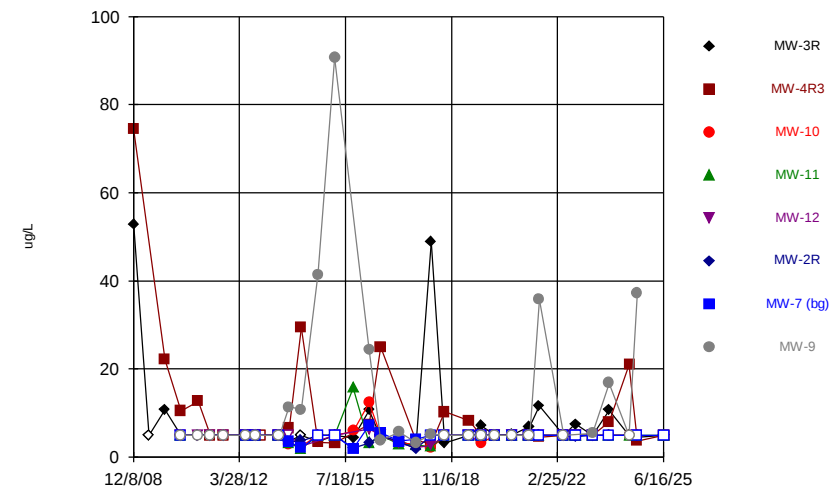
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Time Series



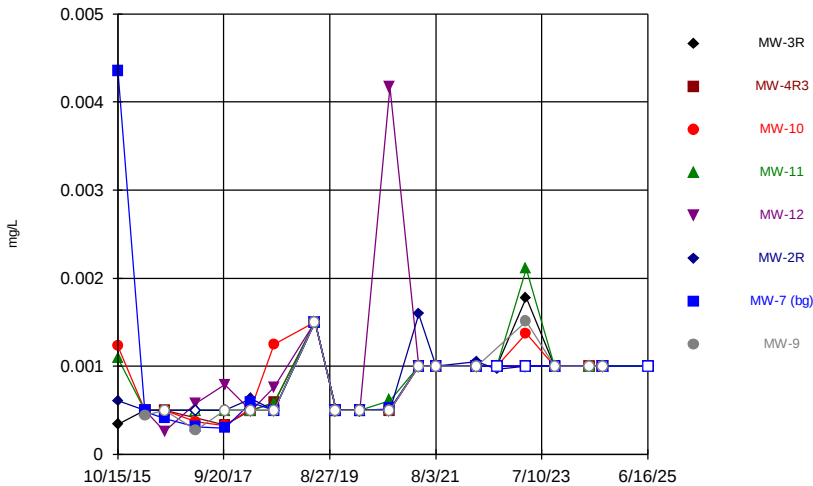
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Time Series



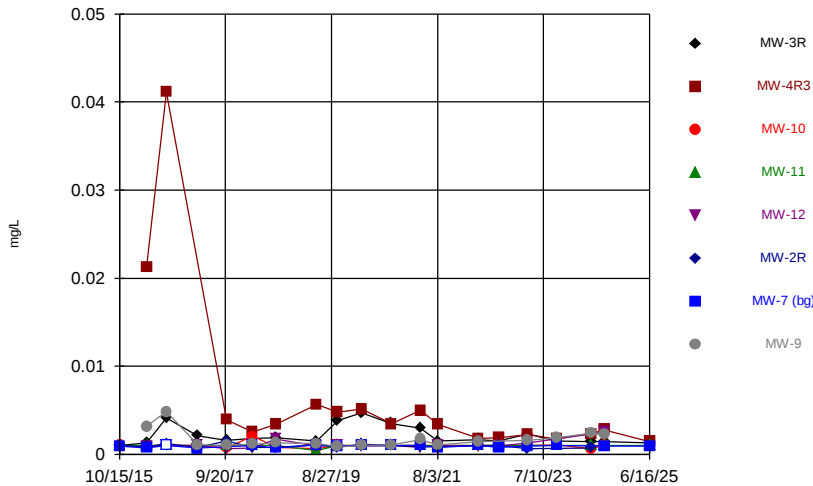
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City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



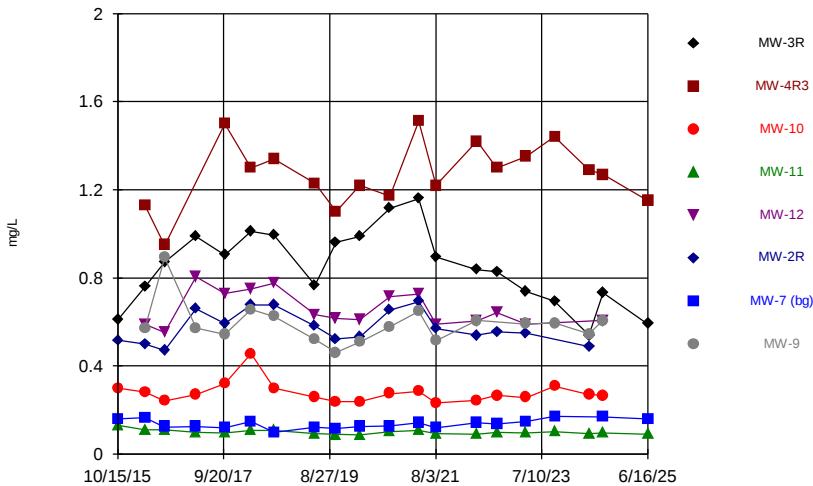
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City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



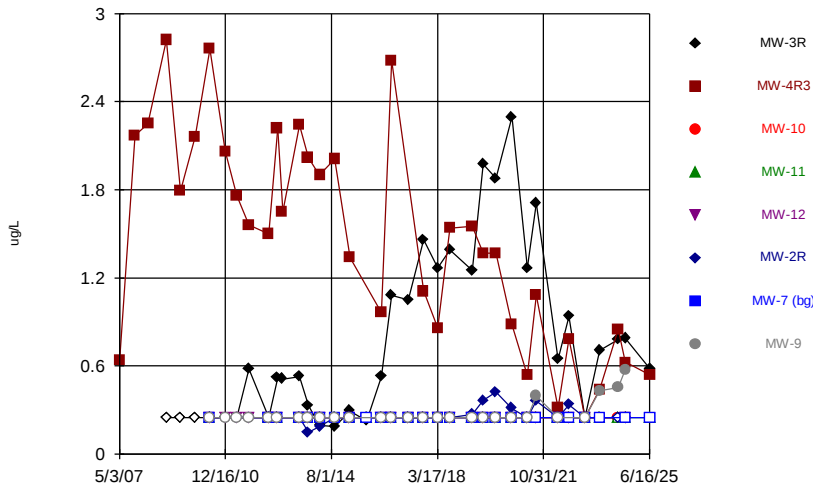
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City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



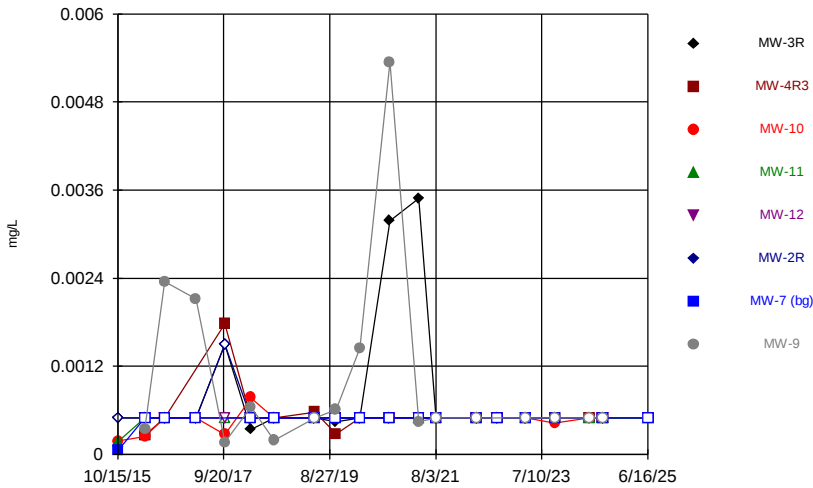
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City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series

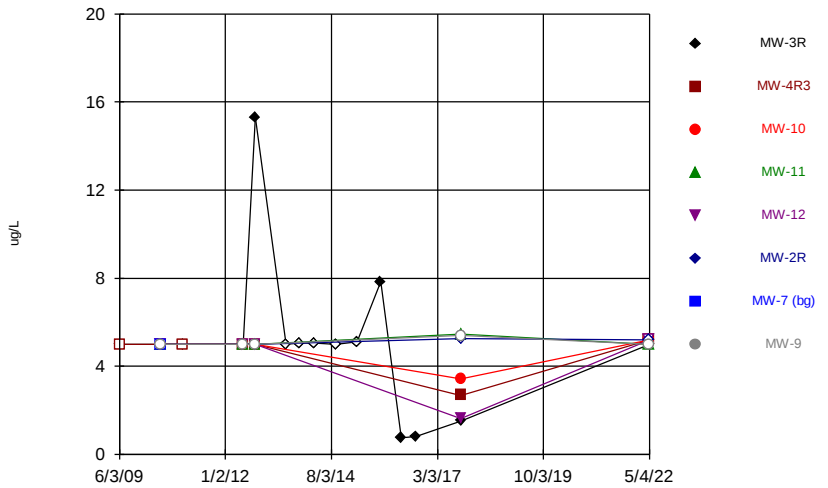


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City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

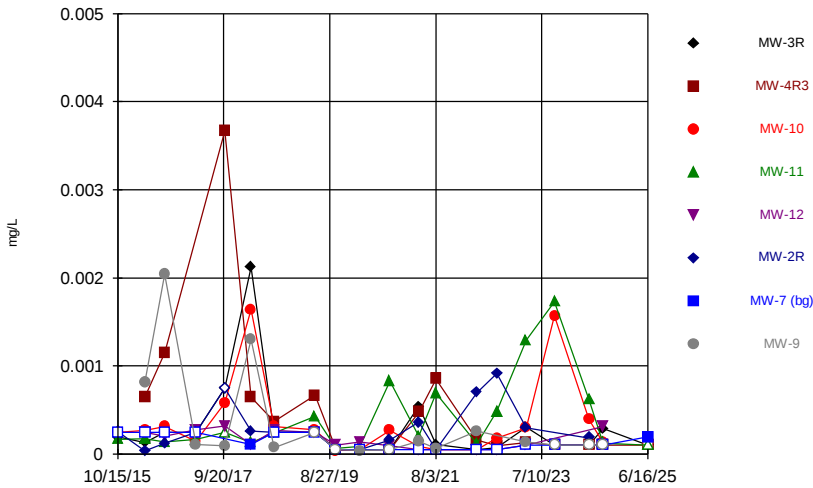
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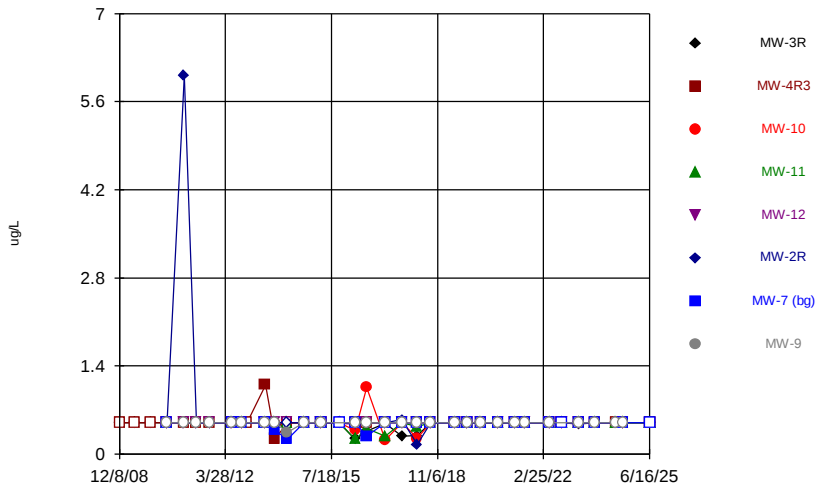
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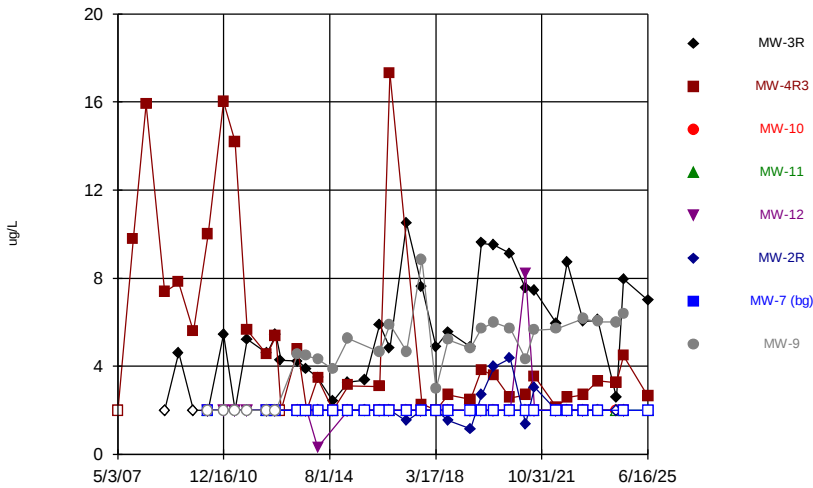
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Time Series

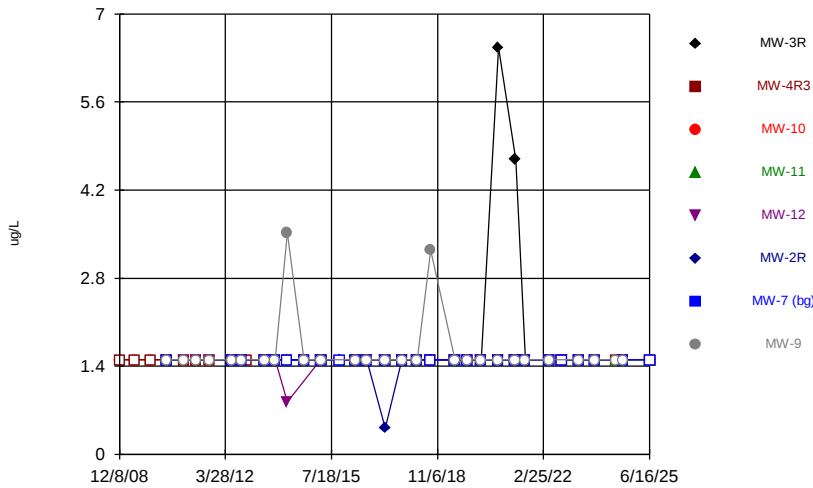


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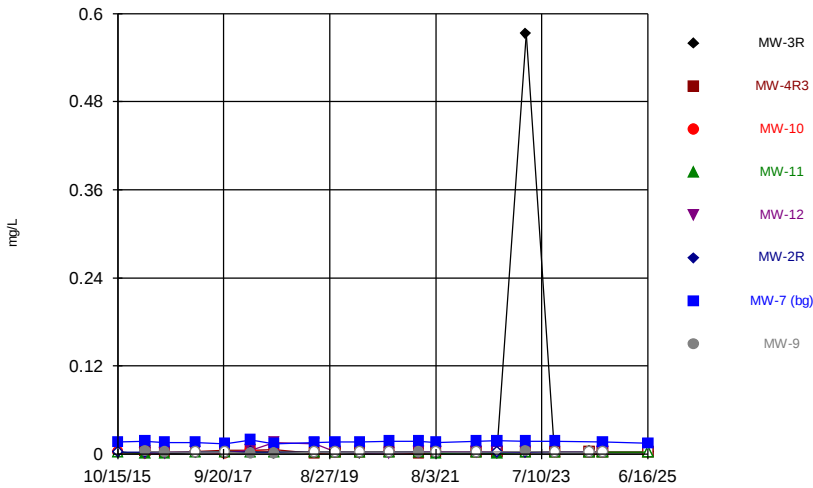
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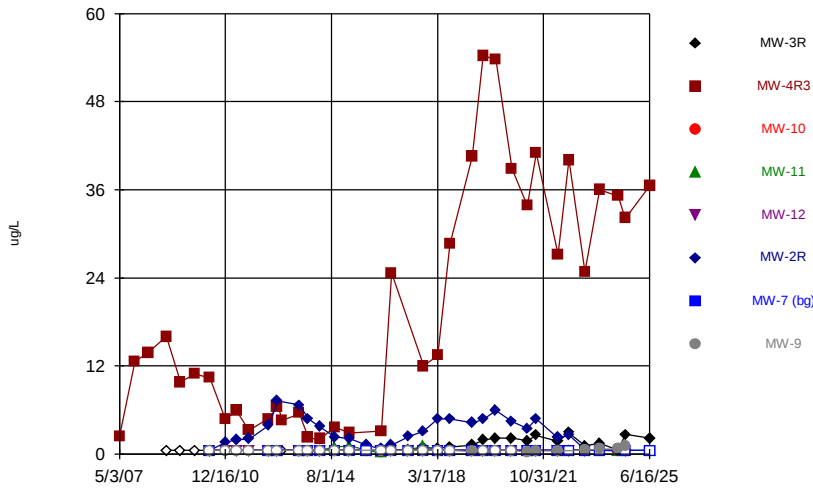
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Time Series



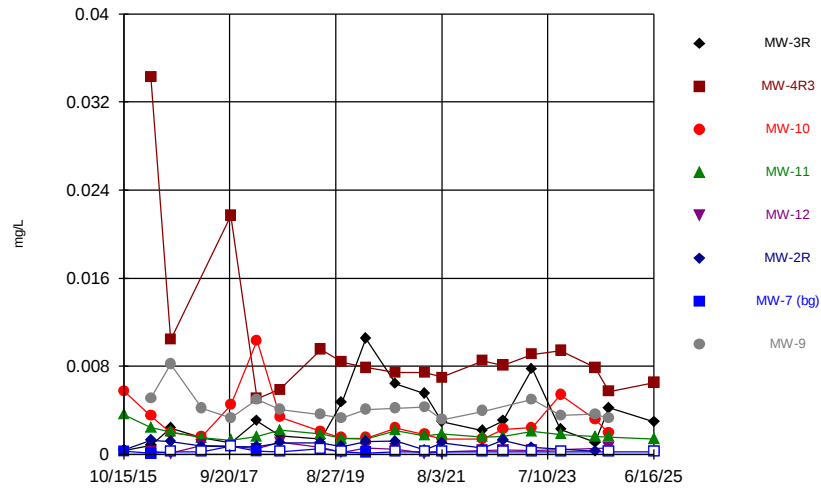
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City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



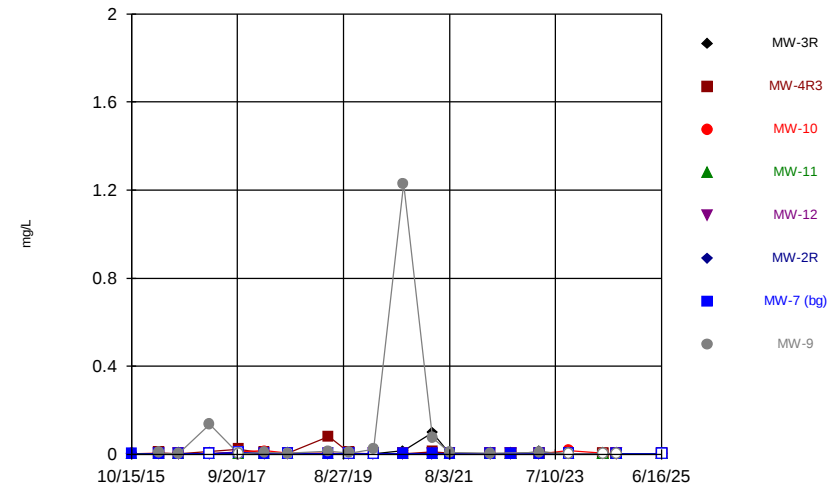
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Time Series



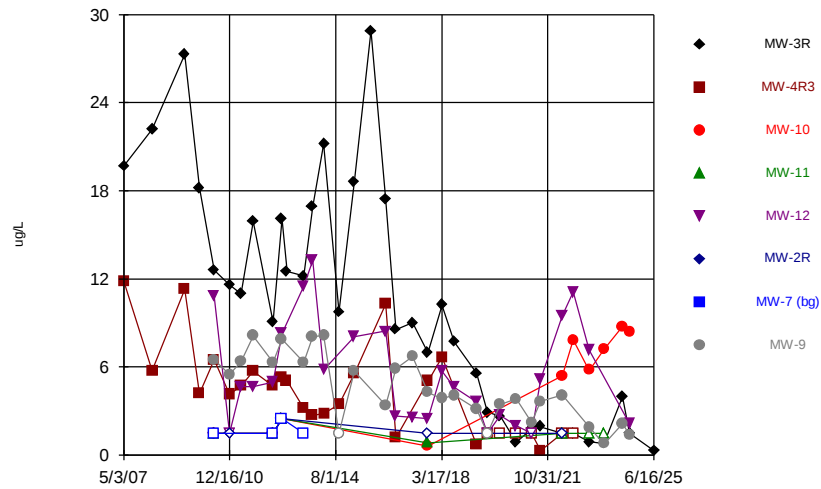
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City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



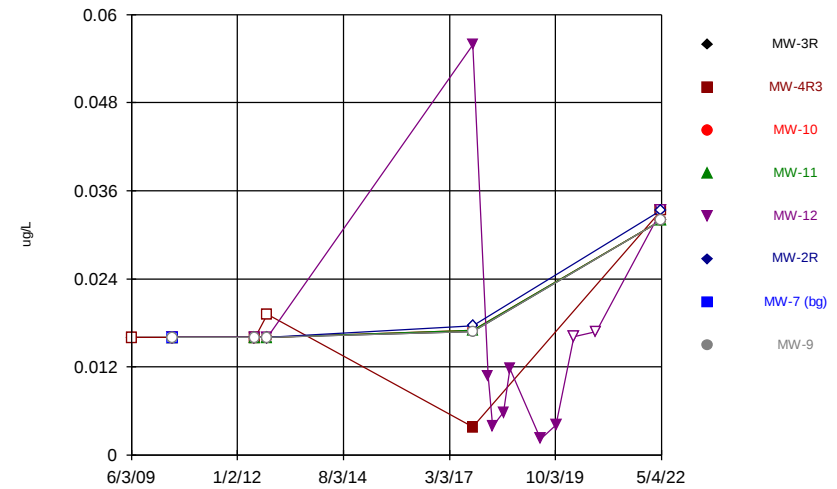
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City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



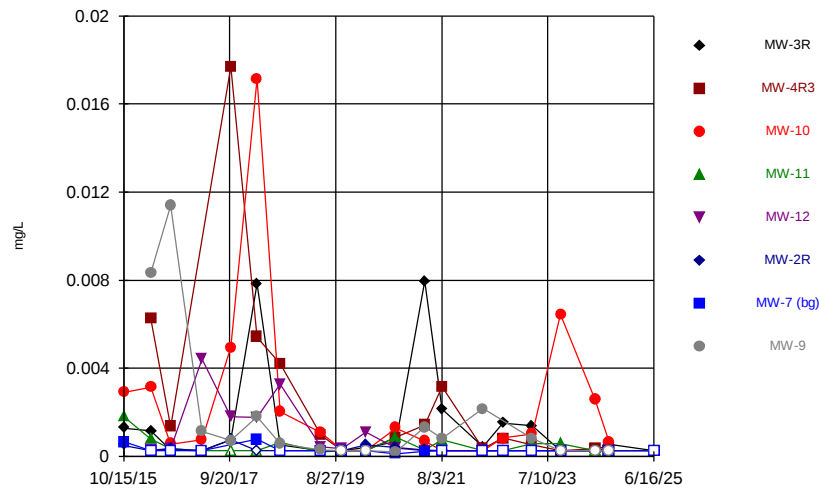
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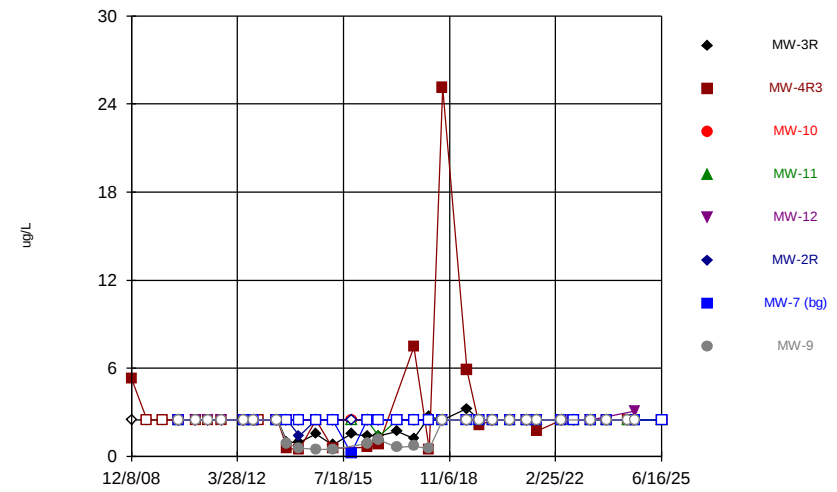
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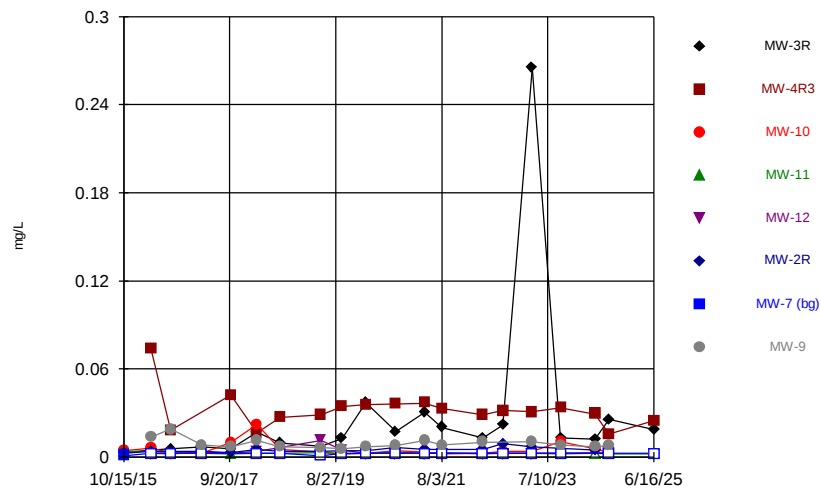
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City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



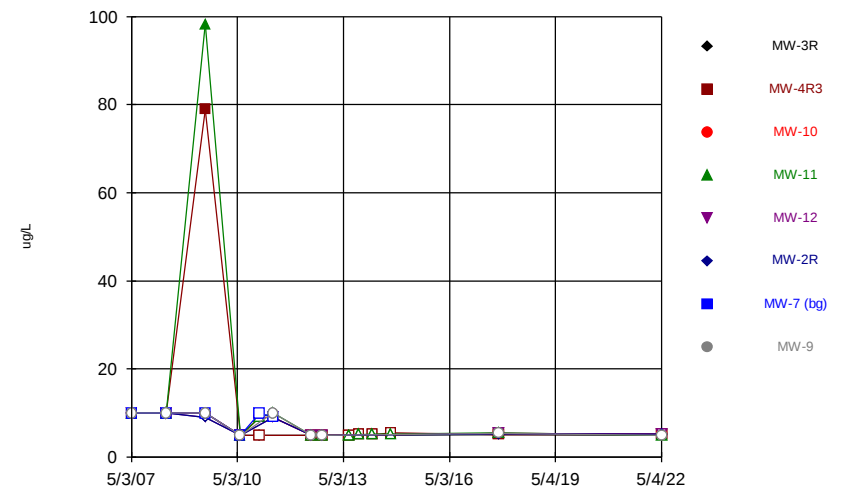
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Time Series



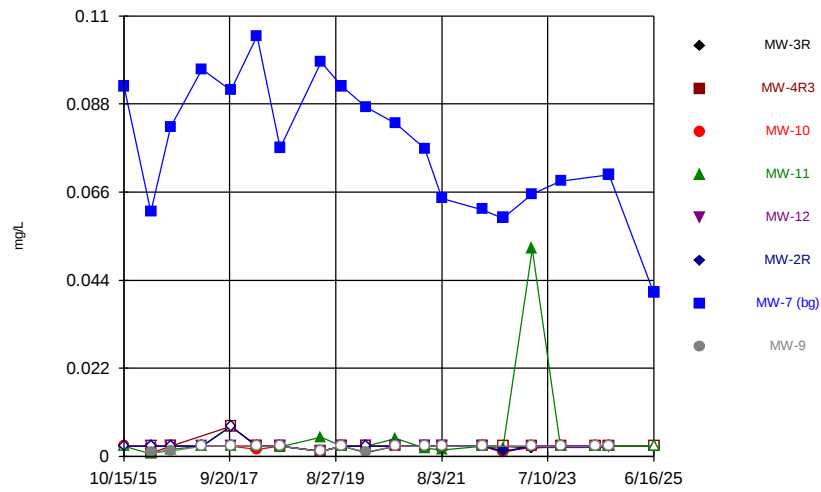
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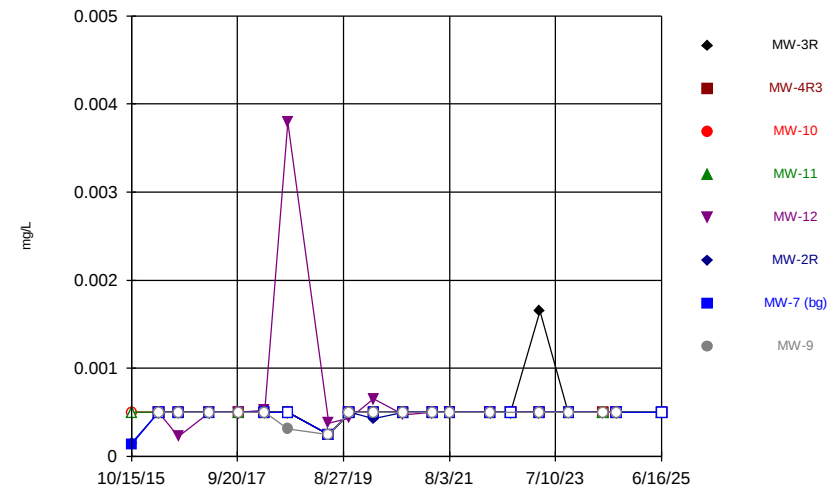


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City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

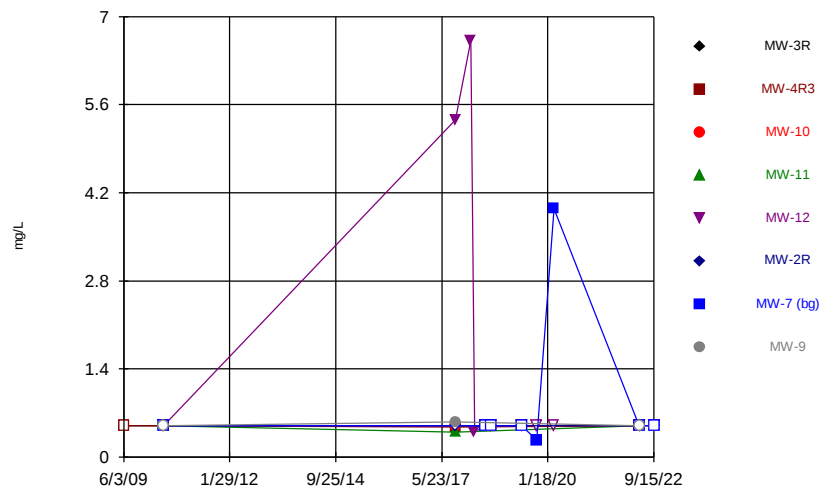
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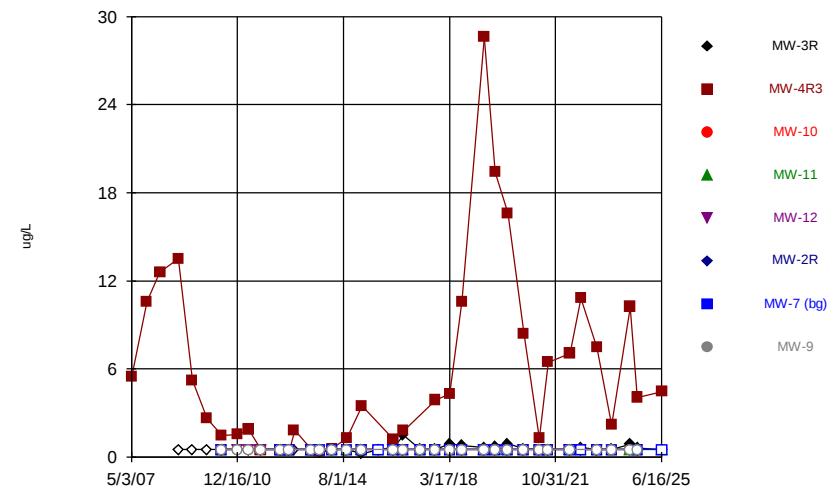
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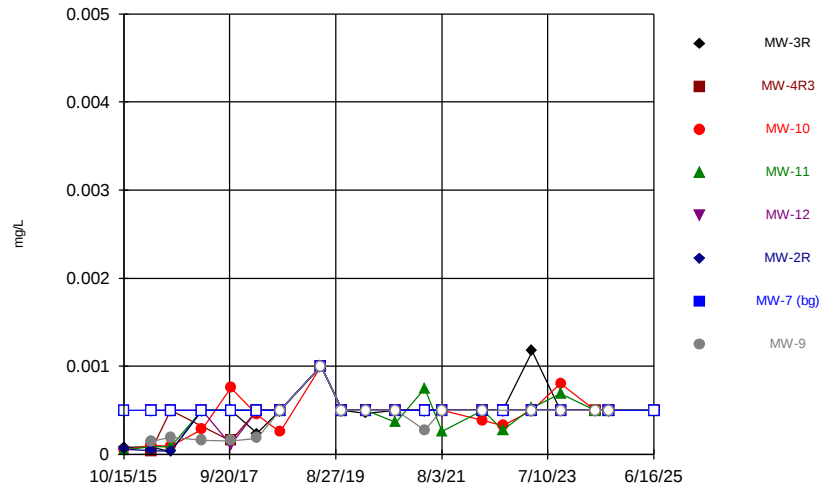
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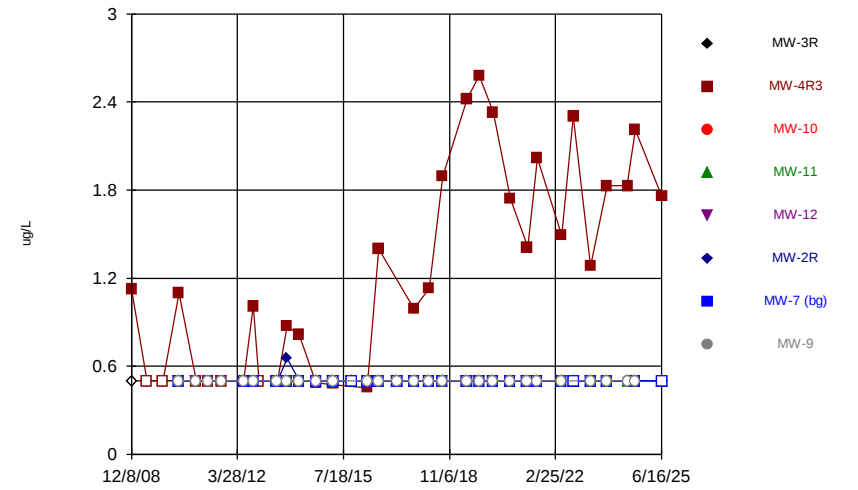
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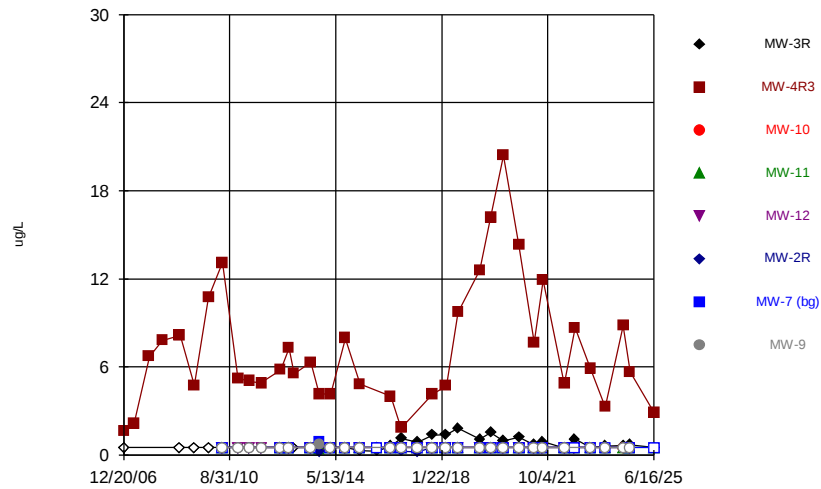
Time Series



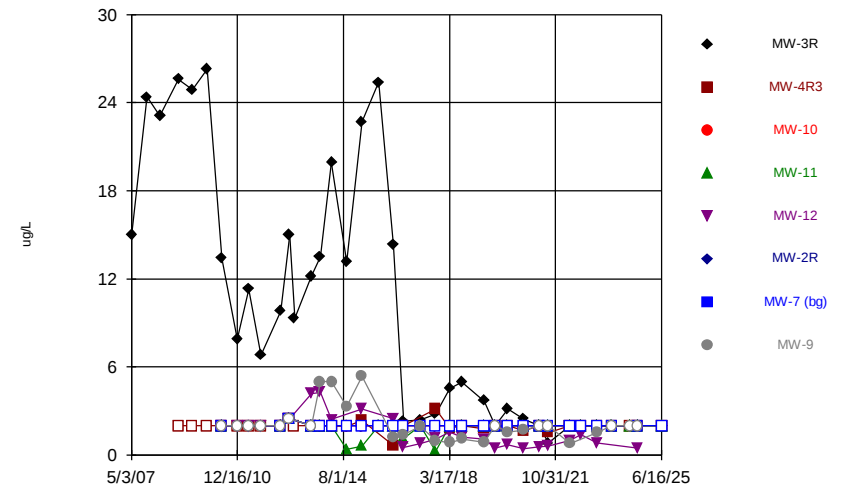
Time Series



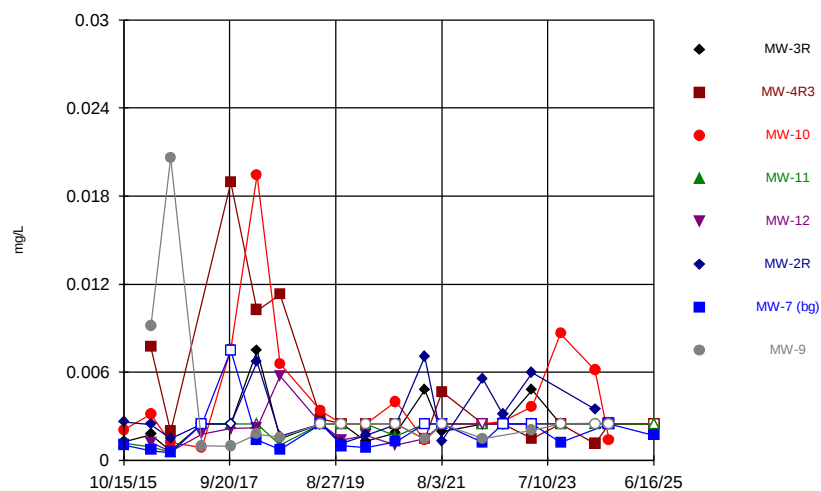
Time Series



Time Series

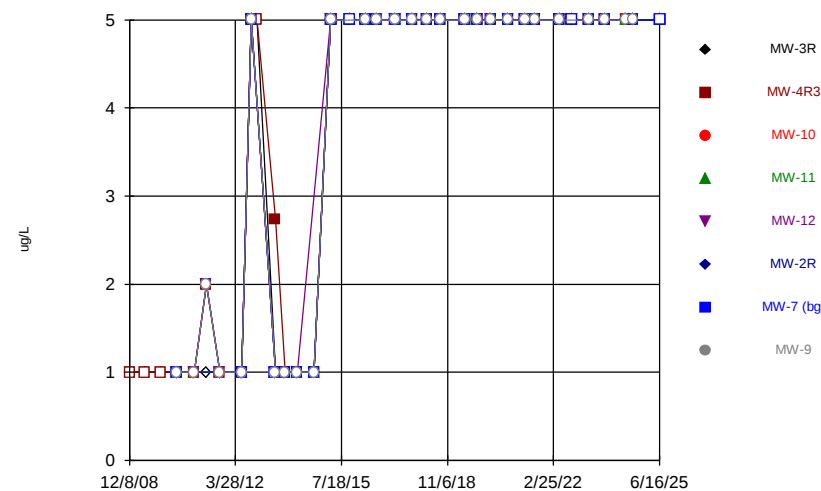


Time Series



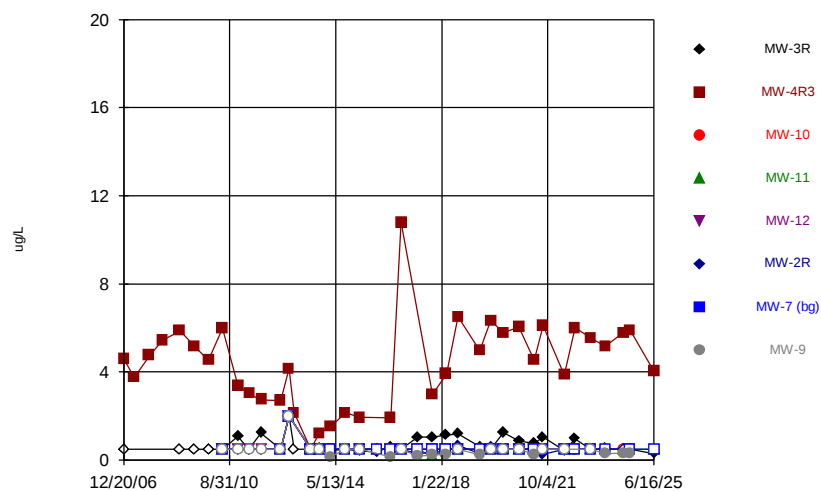
Constituent: Vanadium Analysis Run 9/10/2025 3:43 PM View: 2025_SSN-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



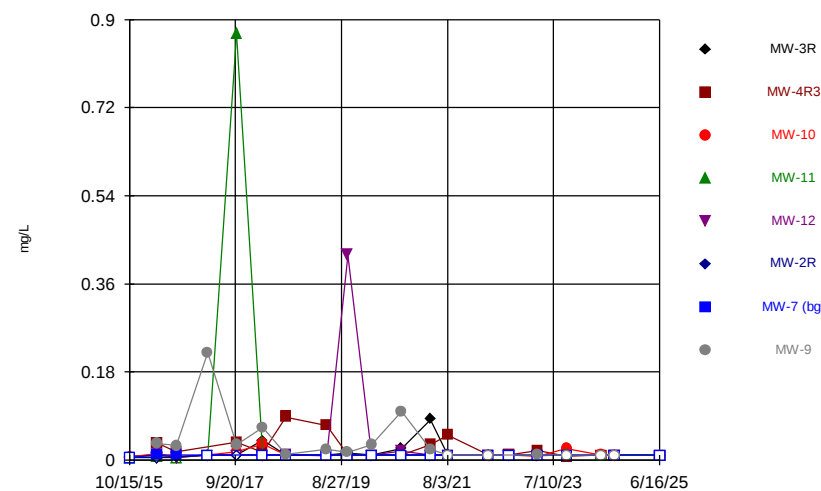
Constituent: Vinyl Acetate Analysis Run 9/10/2025 3:43 PM View: 2025_SSN-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



Constituent: Vinyl Chloride Analysis Run 9/10/2025 3:43 PM View: 2025_SSN-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



Constituent: Zinc Analysis Run 9/10/2025 3:43 PM View: 2025_SSN-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Outliers Summary Table and Graphs

Outlier Analysis

City of Sioux City SLF

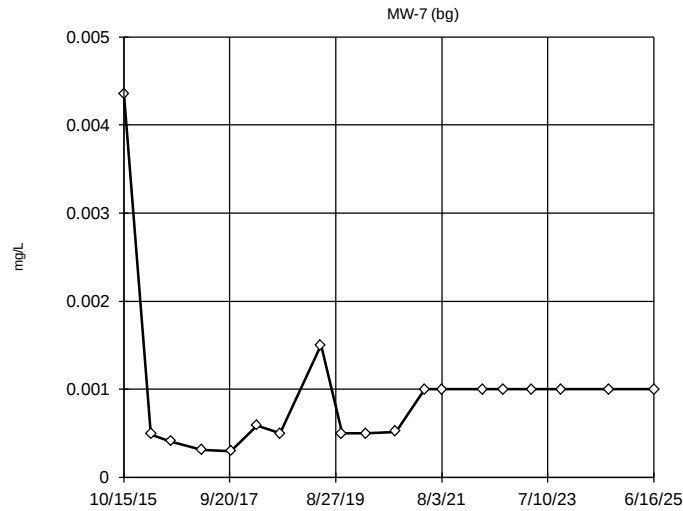
Client: SCS Engineers

Data: Sanitas SIOUX Master

Printed 9/11/2025, 10:46 AM

<u>Constituent</u>	<u>Well</u>	<u>Outlier</u>	<u>Value(s)</u>	<u>Date(s)</u>	<u>Method</u>	<u>Alpha</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Distribution</u>	<u>Normality Test</u>
Antimony (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	19	0.0009453	0.0008866	unknown	ShapiroWilk
Arsenic (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	18	0.0009212	0.0001244	unknown	ShapiroWilk
Barium (mg/L)	MW-7 (bg)	No	n/a	n/a	EPA 1989	0.05	19	0.1374	0.02037	normal	ShapiroWilk
Beryllium (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	18	0.0004753	0.0001049	unknown	ShapiroWilk
Cadmium (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	18	0.0001362	0.00009007	unknown	ShapiroWilk
Chromium (mg/L)	MW-7 (bg)	No	n/a	n/a	EPA 1989	0.05	19	0.01642	0.001387	normal	ShapiroWilk
Cobalt (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	19	0.0002786	0.0001374	unknown	ShapiroWilk
Copper (mg/L)	MW-7 (bg)	Yes	0.0075	9/26/2017	Dixon`s	0.05	19	0.002707	0.001325	ln(x)	ShapiroWilk
Lead (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	18	0.0002923	0.0001583	unknown	ShapiroWilk
Nickel (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	18	0.002335	0.0004802	unknown	ShapiroWilk
Selenium (mg/L)	MW-7 (bg)	No	n/a	n/a	Dixon`s	0.05	19	0.07762	0.01664	normal	ShapiroWilk
Silver (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	18	0.0004659	0.000101	unknown	ShapiroWilk
Vanadium (mg/L)	MW-7 (bg)	No	n/a	n/a	EPA 1989	0.05	19	0.001932	0.001541	ln(x)	ShapiroWilk
Zinc (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	18	0.009817	0.001233	unknown	ShapiroWilk

Tukey's Outlier Screening



n = 19

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

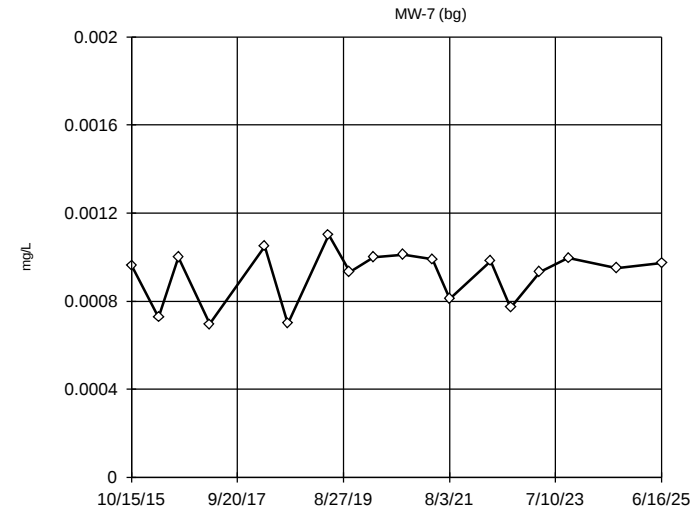
Data were natural log transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Antimony Analysis Run 9/11/2025 10:32 AM View: 2025_SSN-BG_Outliers

City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Tukey's Outlier Screening



n = 18

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

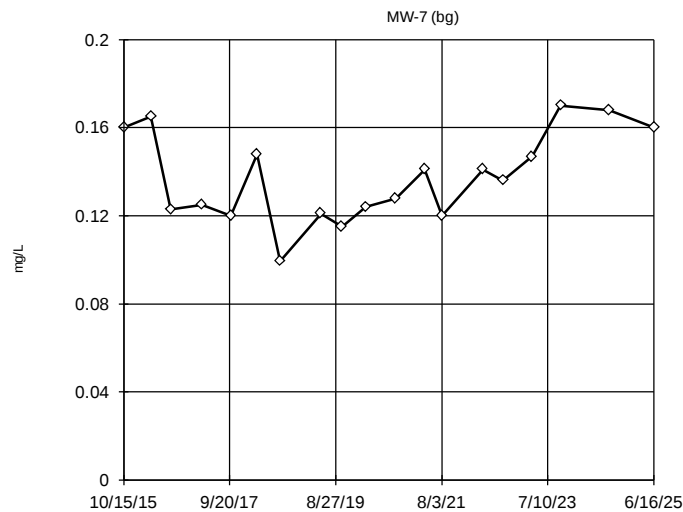
Data were x*6 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Arsenic Analysis Run 9/11/2025 10:32 AM View: 2025_SSN-BG_Outliers

City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

EPA Screening (suspected outliers for Dixon's Test)



n = 19

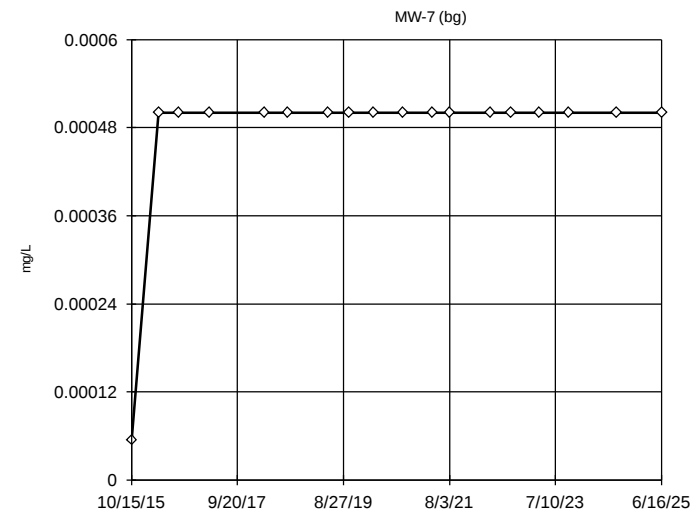
Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 0.1374, std. dev. 0.02037, critical Tn 2.532

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9438
Critical = 0.917
The distribution was found to be normally distributed.

Constituent: Barium Analysis Run 9/11/2025 10:32 AM View: 2025_SSN-BG_Outliers

City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Tukey's Outlier Screening



n = 18

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

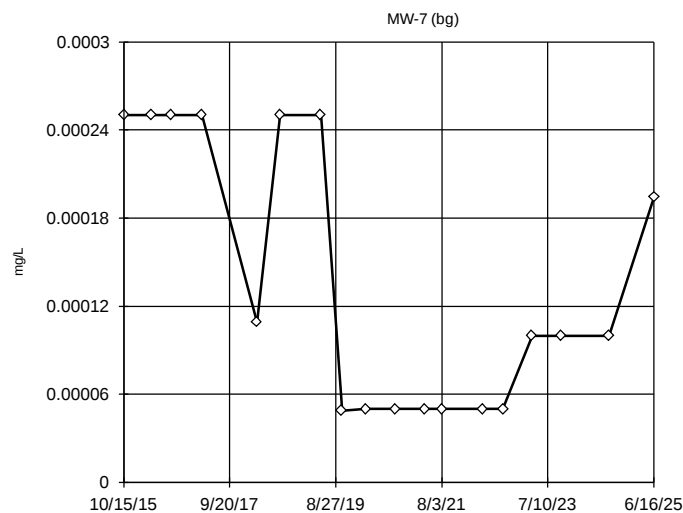
Data were x*5 transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Beryllium Analysis Run 9/11/2025 10:32 AM View: 2025_SSN-BG_Outliers

City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Tukey's Outlier Screening



n = 18

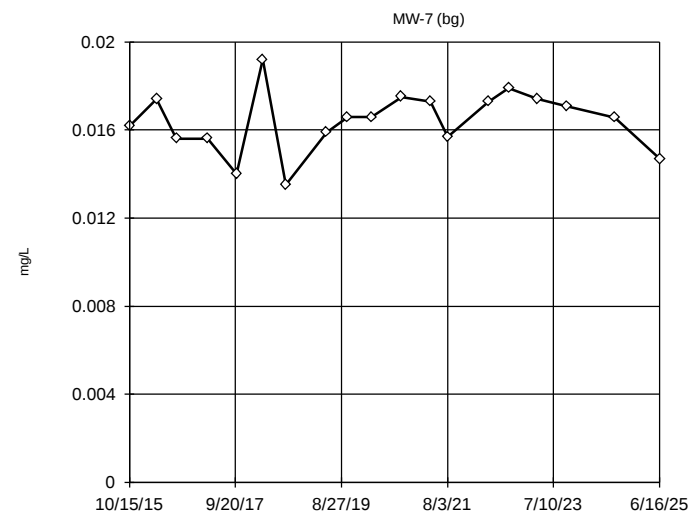
No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Cadmium Analysis Run 9/11/2025 10:32 AM View: 2025_SSN-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

EPA Screening (suspected outliers for Dixon's Test)



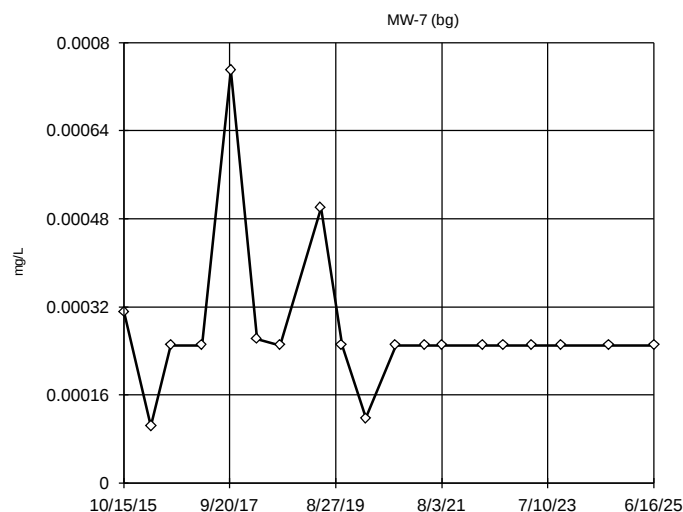
n = 19

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 0.01642, std. dev. 0.001387, critical Tn 2.532

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9631
Critical = 0.917
The distribution was found to be normally distributed.

Constituent: Chromium Analysis Run 9/11/2025 10:32 AM View: 2025_SSN-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Tukey's Outlier Screening



n = 19

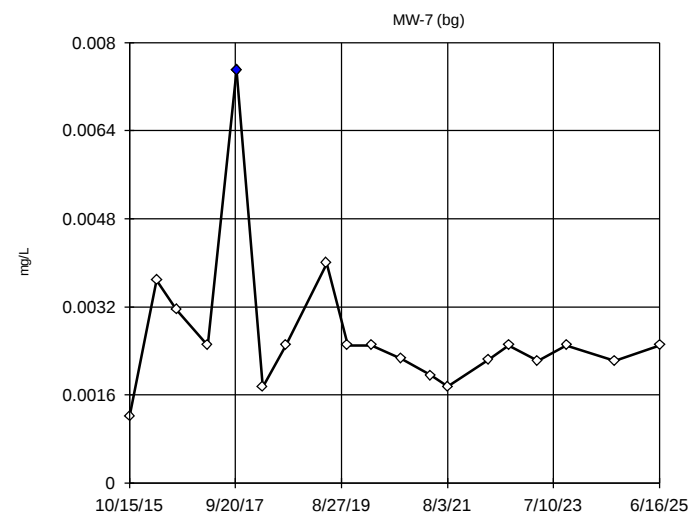
No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

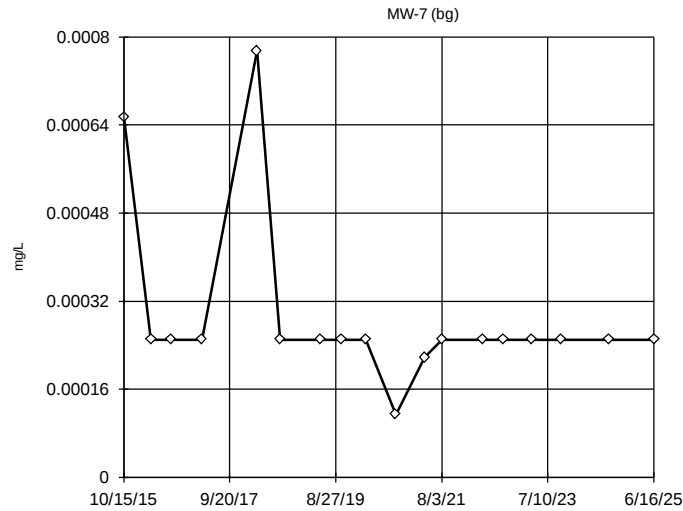
The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Cobalt Analysis Run 9/11/2025 10:32 AM View: 2025_SSN-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Dixon's Outlier Test

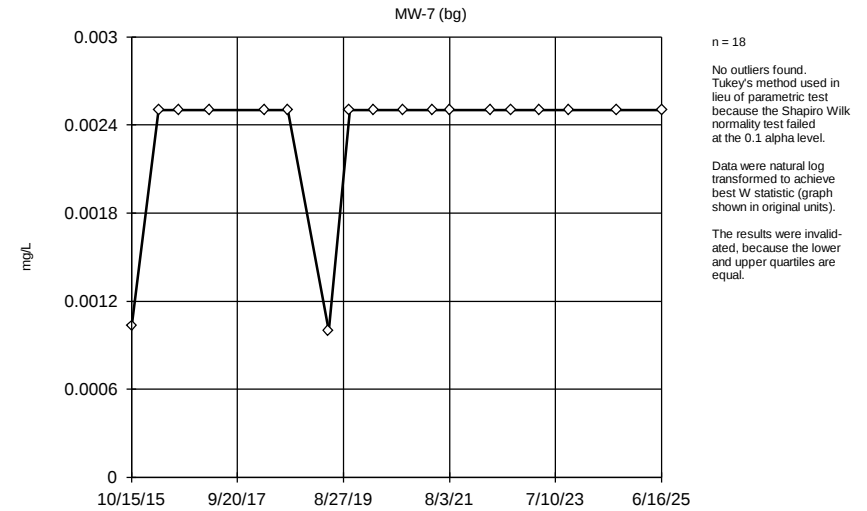


Tukey's Outlier Screening



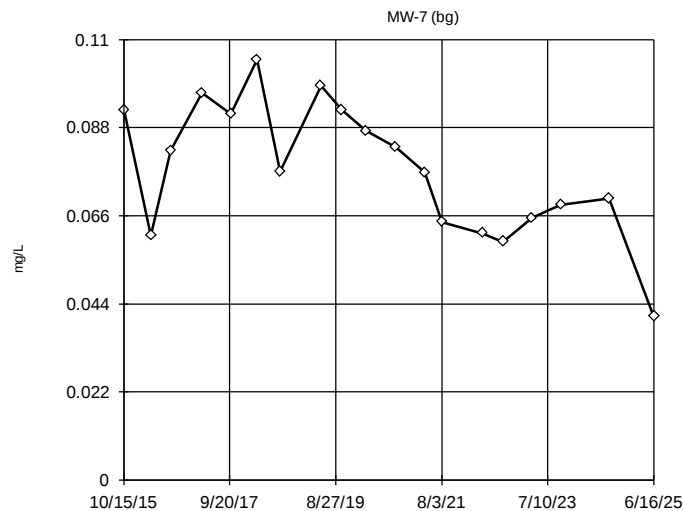
Constituent: Lead Analysis Run 9/11/2025 10:32 AM View: 2025_SSN-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Tukey's Outlier Screening



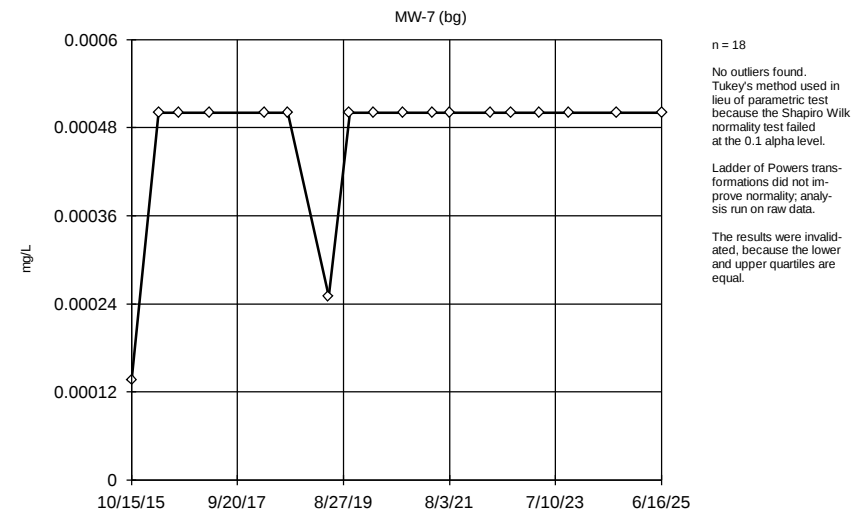
Constituent: Nickel Analysis Run 9/11/2025 10:32 AM View: 2025_SSN-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Dixon's Outlier Test



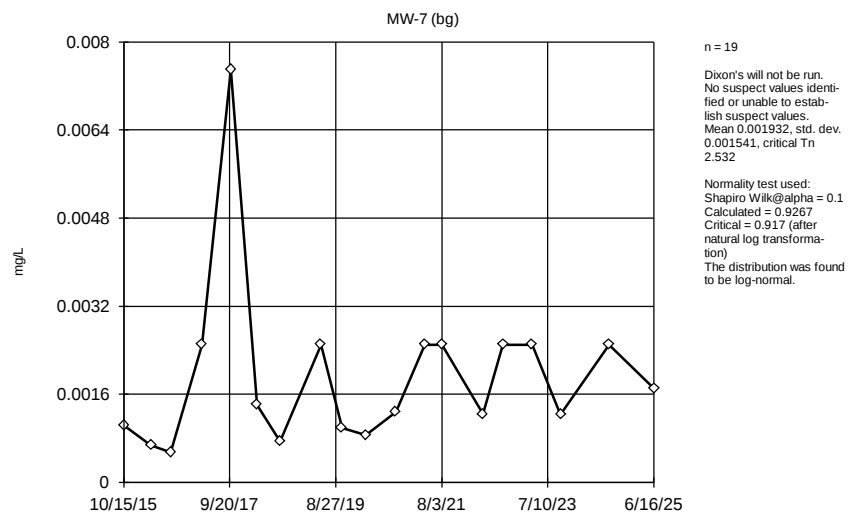
Constituent: Selenium Analysis Run 9/11/2025 10:32 AM View: 2025_SSN-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Tukey's Outlier Screening



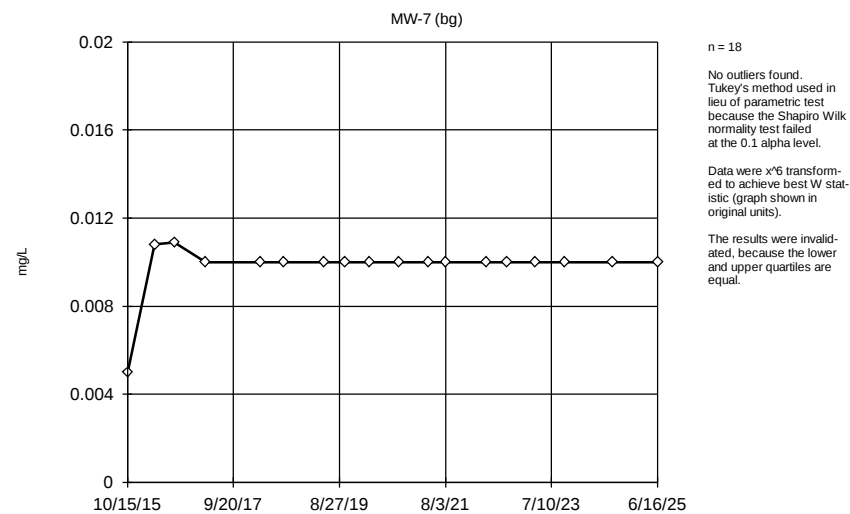
Constituent: Silver Analysis Run 9/11/2025 10:32 AM View: 2025_SSN-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

EPA Screening (suspected outliers for Dixon's Test)



Constituent: Vanadium Analysis Run 9/11/2025 10:32 AM View: 2025_SSN-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Tukey's Outlier Screening



Constituent: Zinc Analysis Run 9/11/2025 10:32 AM View: 2025_SSN-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Control Limits Summary Table and Graphs

Control Limit

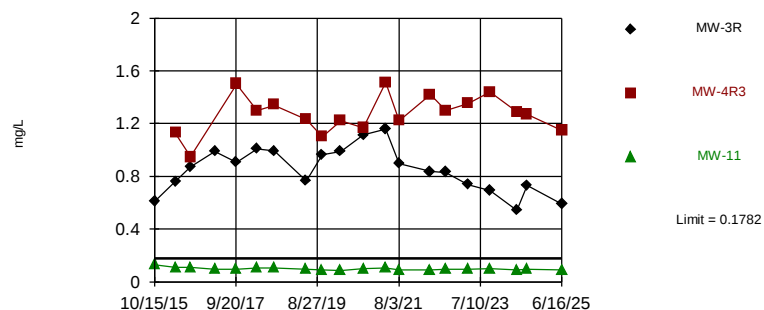
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master Printed 9/11/2025, 11:16 AM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Barium (mg/L)	MW-3R	0.1782	n/a	6/16/2025	0.591	Yes	19	0	No	0.0005374	Param Inter 1 of 2
Barium (mg/L)	MW-4R3	0.1782	n/a	6/16/2025	1.15	Yes	19	0	No	0.0005374	Param Inter 1 of 2
Barium (mg/L)	MW-11	0.1782	n/a	6/16/2025	0.09	No	19	0	No	0.0005374	Param Inter 1 of 2
Cobalt (mg/L)	MW-3R	0.0005534	n/a	6/16/2025	0.00294	Yes	19	78.95	No	0.0005374	Param Inter 1 of 2
Cobalt (mg/L)	MW-4R3	0.0005534	n/a	6/16/2025	0.00653	Yes	19	78.95	No	0.0005374	Param Inter 1 of 2
Cobalt (mg/L)	MW-11	0.0005534	n/a	6/16/2025	0.00137	Yes	19	78.95	No	0.0005374	Param Inter 1 of 2
Nickel (mg/L)	MW-3R	0.003295	n/a	6/16/2025	0.0186	Yes	18	94.44	No	0.0005374	Param Inter 1 of 2
Nickel (mg/L)	MW-4R3	0.003295	n/a	6/16/2025	0.025	Yes	18	94.44	No	0.0005374	Param Inter 1 of 2

Exceeds Limit: MW-3R, MW-4R3

Prediction Limit

Interwell Parametric



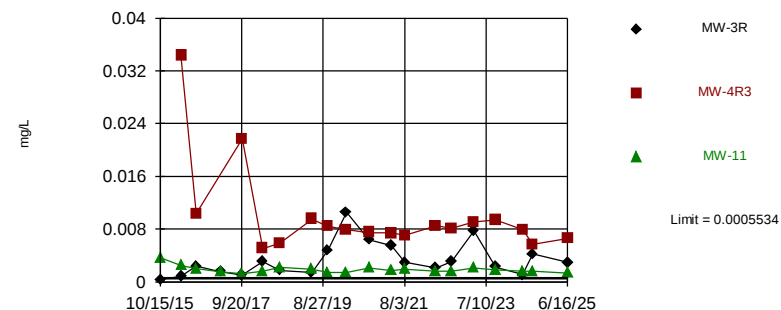
Background Data Summary: Mean=0.1374, Std. Dev.=0.02037, n=19. Normality test was disabled. Comparing 3 points to limit. Assumes 4 future values. Kappa overridden to 2.

Constituent: Barium Analysis Run 9/11/2025 11:10 AM View: 2025 SSN Control Limit
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Exceeds Limit: MW-3R, MW-4R3, MW-11

Prediction Limit

Interwell Parametric



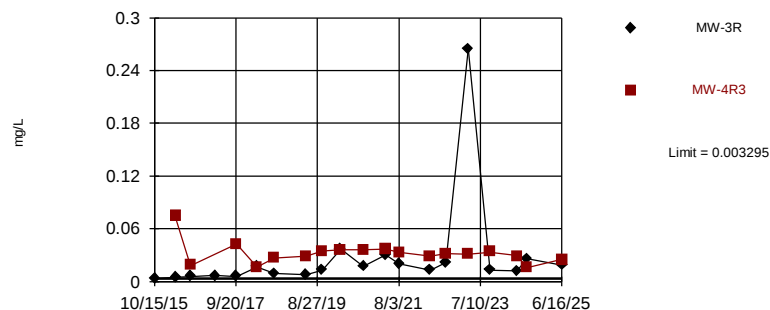
Background Data Summary: Mean=0.0002786, Std. Dev.=0.0001374, n=19, 78.95% NDs (user selected parametric test despite non-detects). Normality test was disabled. Comparing 3 points to limit. Assumes 4 future values. Kappa overridden to 2.

Constituent: Cobalt Analysis Run 9/11/2025 11:10 AM View: 2025 SSN Control Limit
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Exceeds Limit: MW-3R, MW-4R3

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.002335, Std. Dev.=0.0004802, n=18, 94.44% NDs (user selected parametric test despite non-detects). Normality test was disabled. Comparing 2 points to limit. Assumes 5 future values. Kappa overridden to 2.

Constituent: Nickel Analysis Run 9/11/2025 11:10 AM View: 2025 SSN Control Limit
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Mann-Kendall Trend Test Summary Table and Graphs

Trend Test

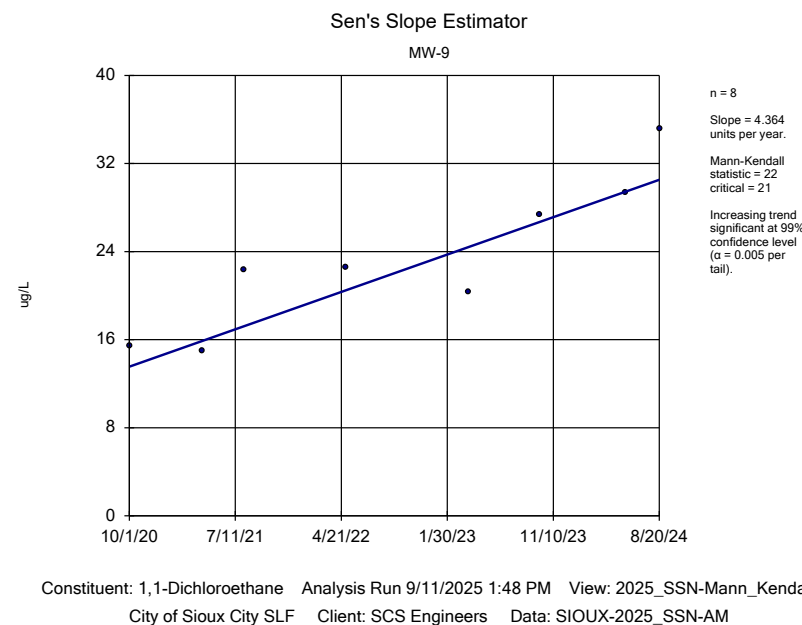
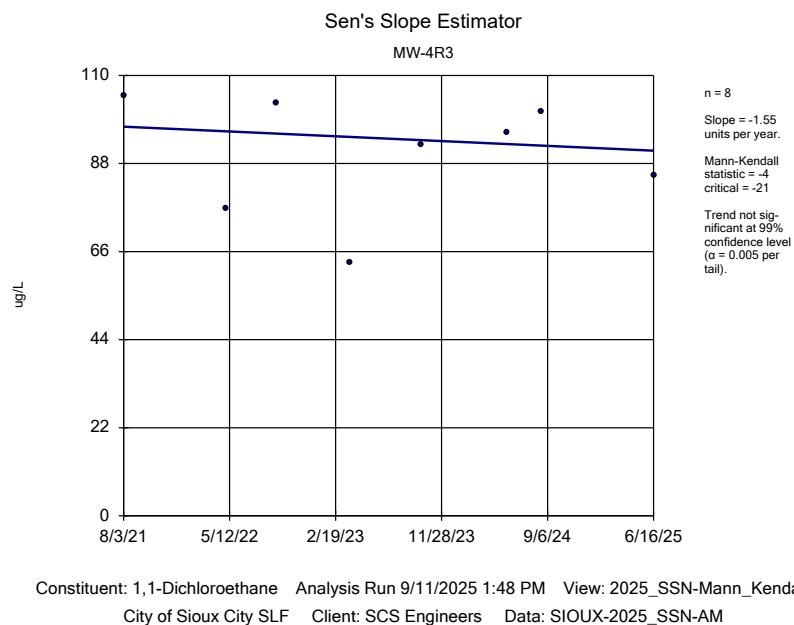
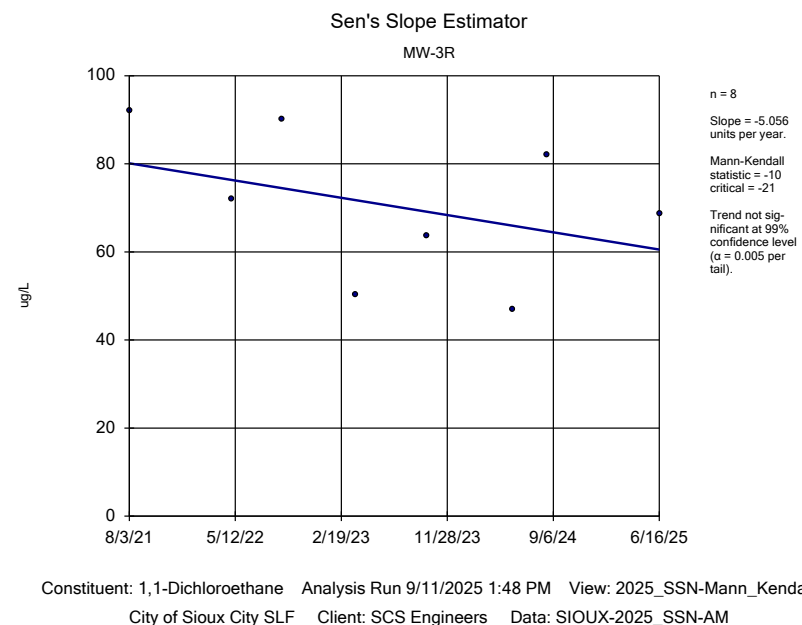
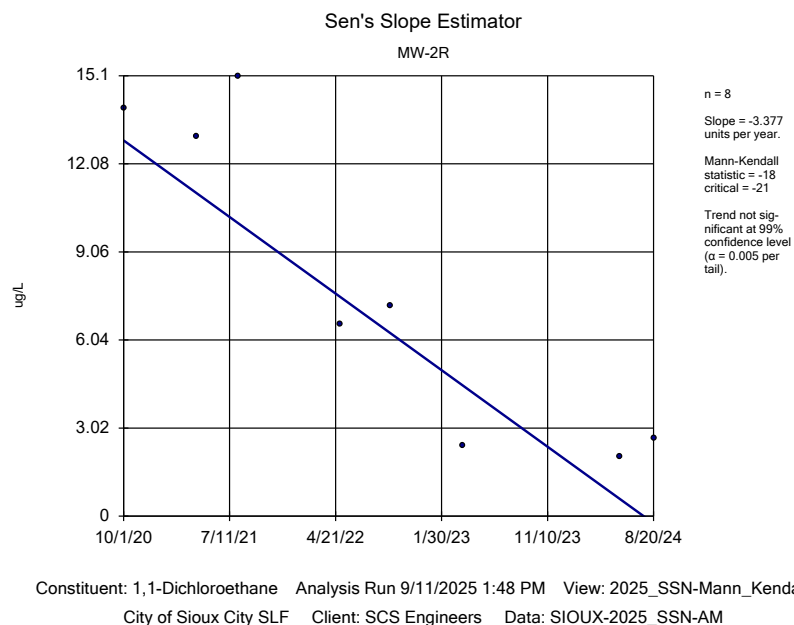
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM Printed 9/11/2025, 1:51 PM

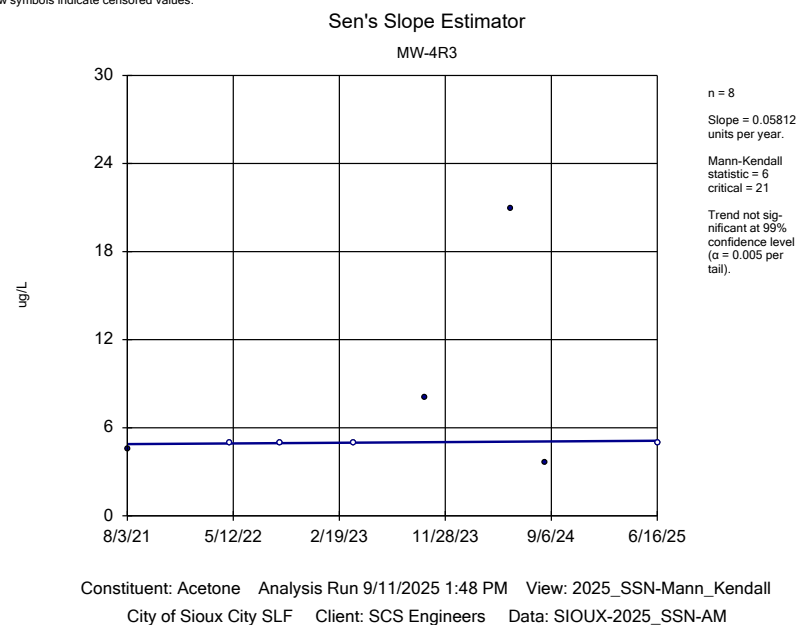
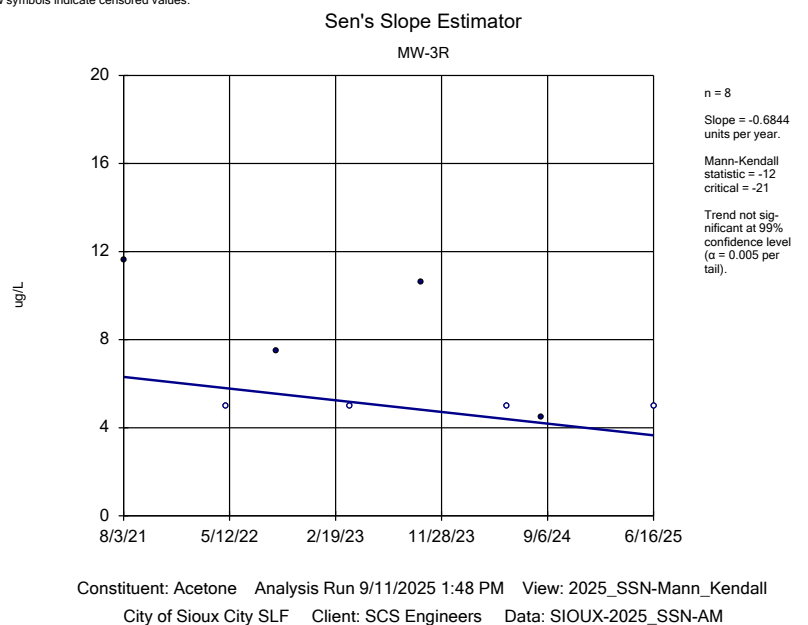
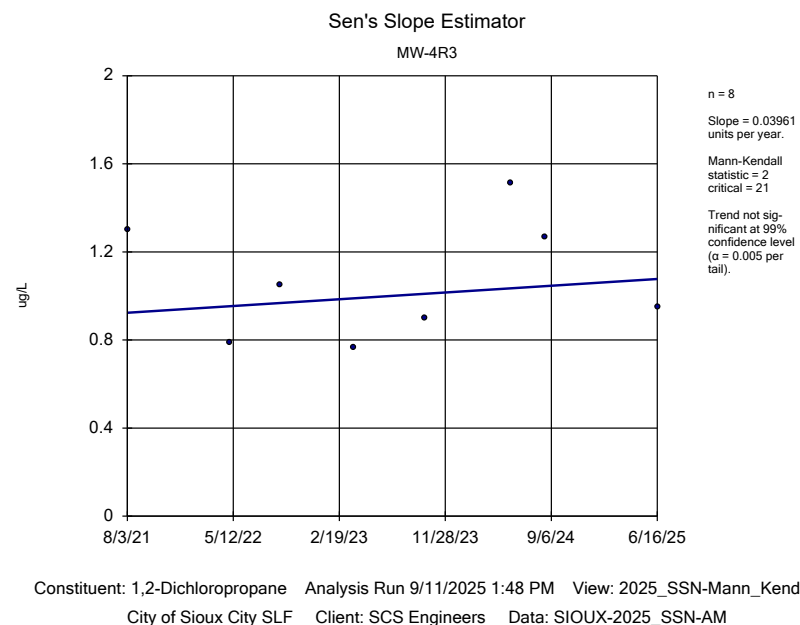
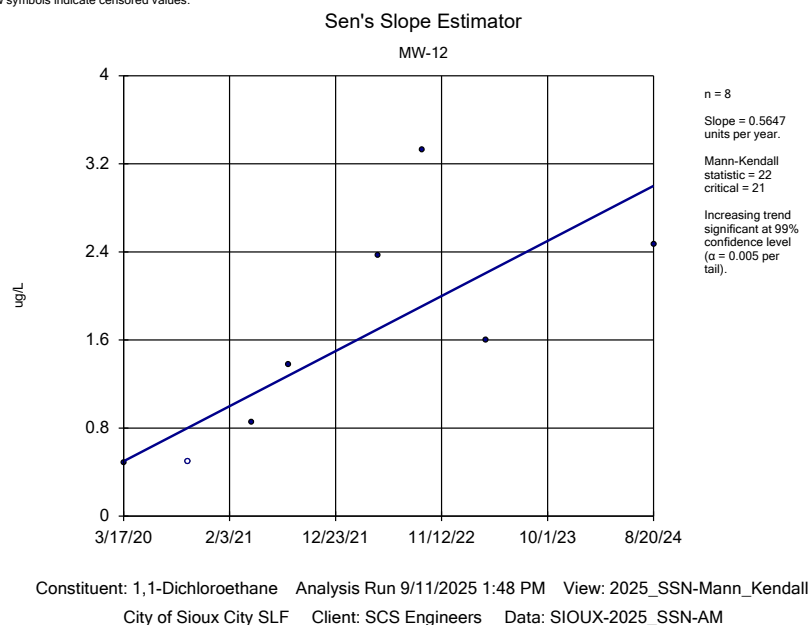
<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
1,1-Dichloroethane (ug/L)	MW-2R	-3.377	-18	-21	No	8	0	0.01	NP
1,1-Dichloroethane (ug/L)	MW-3R	-5.056	-10	-21	No	8	0	0.01	NP
1,1-Dichloroethane (ug/L)	MW-4R3	-1.55	-4	-21	No	8	0	0.01	NP
1,1-Dichloroethane (ug/L)	MW-9	4.364	22	21	Yes	8	0	0.01	NP
1,1-Dichloroethane (ug/L)	MW-12	0.5647	22	21	Yes	8	12.5	0.01	NP
1,2-Dichloropropane (ug/L)	MW-4R3	0.03961	2	21	No	8	0	0.01	NP
Acetone (ug/L)	MW-3R	-0.6844	-12	-21	No	8	50	0.01	NP
Acetone (ug/L)	MW-4R3	0.05812	6	21	No	8	50	0.01	NP
Acetone (ug/L)	MW-9	0.324	10	21	No	8	50	0.01	NP
Antimony (mg/L)	MW-11	0	-1	-21	No	8	87.5	0.01	NP
Antimony (mg/L)	MW-12	0	1	21	No	8	87.5	0.01	NP
Arsenic (mg/L)	MW-3R	-0.0000852	-18	-21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-4R3	-0.0001258	-4	-21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-9	0.0003071	20	21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-12	0.0001162	11	21	No	8	25	0.01	NP
Barium (mg/L)	MW-2R	-0.0273	-10	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-3R	-0.0819	-22	-21	Yes	8	0	0.01	NP
Barium (mg/L)	MW-4R3	-0.05331	-8	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-9	0.002811	1	21	No	8	0	0.01	NP
Barium (mg/L)	MW-10	0.009864	8	21	No	8	0	0.01	NP
Barium (mg/L)	MW-11	-0.0003391	-2	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-12	-0.0107	-8	-21	No	8	0	0.01	NP
Benzene (ug/L)	MW-3R	-0.08572	-6	-21	No	8	12.5	0.01	NP
Benzene (ug/L)	MW-4R3	-0.07618	-2	-21	No	8	12.5	0.01	NP
Benzene (ug/L)	MW-9	0.06296	18	21	No	8	50	0.01	NP
Beryllium (mg/L)	MW-9	0	-1	-21	No	8	75	0.01	NP
Cadmium (mg/L)	MW-2R	0.00006843	9	21	No	8	25	0.01	NP
Cadmium (mg/L)	MW-3R	0.00001291	5	21	No	8	50	0.01	NP
Cadmium (mg/L)	MW-4R3	-0.00002298	-12	-21	No	8	50	0.01	NP
Cadmium (mg/L)	MW-9	0	1	21	No	8	50	0.01	NP
Cadmium (mg/L)	MW-10	0.0001019	13	21	No	8	25	0.01	NP
Cadmium (mg/L)	MW-11	-0.00008591	-6	-21	No	8	12.5	0.01	NP
Cadmium (mg/L)	MW-12	0	2	21	No	8	62.5	0.01	NP
Chloroethane (ug/L)	MW-2R	0	-6	-21	No	8	62.5	0.01	NP
Chloroethane (ug/L)	MW-3R	-0.02915	0	21	No	8	0	0.01	NP
Chloroethane (ug/L)	MW-4R3	0.2681	6	21	No	8	0	0.01	NP
Chloroethane (ug/L)	MW-9	0.1782	16	21	No	8	0	0.01	NP
Chloroethane (ug/L)	MW-12	0	-3	-21	No	8	87.5	0.01	NP
Chromium (mg/L)	MW-3R	0.0001026	8	21	No	8	50	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-2R	-1.102	-20	-21	No	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-3R	-0.1636	-4	-21	No	8	12.5	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-4R3	-1.235	-4	-21	No	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-9	0.1327	20	21	No	8	12.5	0.01	NP
Cobalt (mg/L)	MW-2R	-0.0001773	-8	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-3R	0.00004026	1	21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-4R3	-0.0003602	-6	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-9	-0.0002126	-8	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-10	0.0003871	14	21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-11	-0.0001	-14	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-12	0.00001542	2	21	No	8	0	0.01	NP

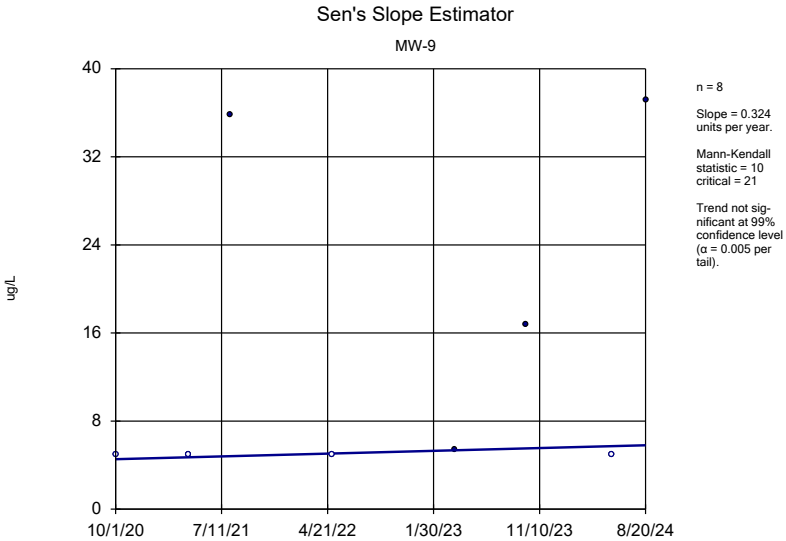
Trend Test

City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM Printed 9/11/2025, 1:51 PM

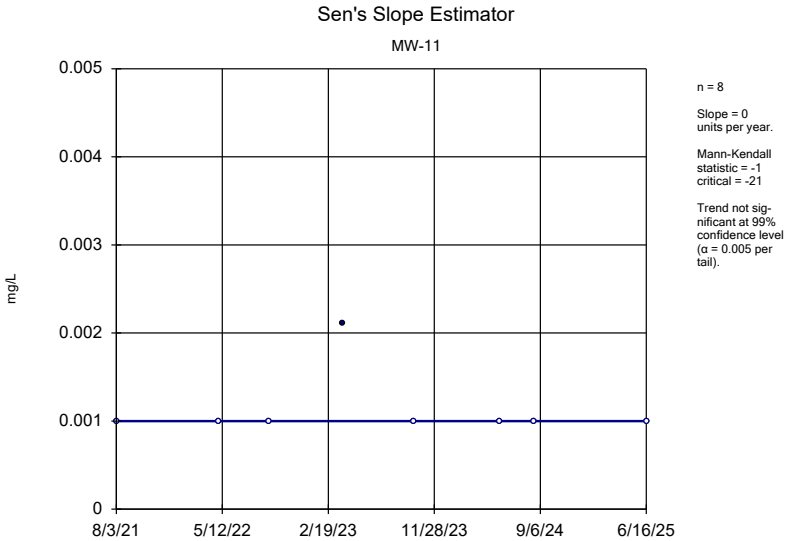
<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
Copper (mg/L)	MW-3R	0	-7	-21	No	8	75	0.01	NP
Copper (mg/L)	MW-9	-0.009353	-21	-21	No	8	37.5	0.01	NP
Copper (mg/L)	MW-10	0.0006663	11	21	No	8	37.5	0.01	NP
Dichlorodifluoromethane (ug/L)	MW-3R	-0.3361	-11	-21	No	8	37.5	0.01	NP
Dichlorodifluoromethane (ug/L)	MW-9	-0.5689	-14	-21	No	8	0	0.01	NP
Dichlorodifluoromethane (ug/L)	MW-10	0.9882	20	21	No	8	12.5	0.01	NP
Dichlorodifluoromethane (ug/L)	MW-12	1.608	8	21	No	8	12.5	0.01	NP
Lead (mg/L)	MW-2R	-0.00004056	-18	-21	No	8	62.5	0.01	NP
Lead (mg/L)	MW-3R	-0.0004618	-15	-21	No	8	37.5	0.01	NP
Lead (mg/L)	MW-4R3	-0.000201	-17	-21	No	8	37.5	0.01	NP
Lead (mg/L)	MW-9	-0.0001876	-5	-21	No	8	37.5	0.01	NP
Lead (mg/L)	MW-10	0.0004223	11	21	No	8	25	0.01	NP
Lead (mg/L)	MW-11	-0.000006112	-10	-21	No	8	50	0.01	NP
Lead (mg/L)	MW-12	0	-13	-21	No	8	75	0.01	NP
Nickel (mg/L)	MW-2R	0.0002794	6	21	No	8	0	0.01	NP
Nickel (mg/L)	MW-3R	-0.0001597	0	21	No	8	0	0.01	NP
Nickel (mg/L)	MW-4R3	-0.001461	-12	-21	No	8	0	0.01	NP
Nickel (mg/L)	MW-9	-0.0003619	-6	-21	No	8	0	0.01	NP
Nickel (mg/L)	MW-10	0.0007035	10	21	No	8	12.5	0.01	NP
Selenium (mg/L)	MW-11	0	8	21	No	8	62.5	0.01	NP
Silver (mg/L)	MW-3R	0	-1	-21	No	8	87.5	0.01	NP
Tetrachloroethene (ug/L)	MW-4R3	-0.6473	-4	-21	No	8	0	0.01	NP
Thallium (mg/L)	MW-3R	0	-1	-21	No	8	87.5	0.01	NP
trans-1,2-Dichloroethene (ug/L)	MW-4R3	-0.02057	-1	-21	No	8	0	0.01	NP
Trichloroethene (ug/L)	MW-3R	-0.03056	-1	-21	No	8	25	0.01	NP
Trichloroethene (ug/L)	MW-4R3	-1.45	-12	-21	No	8	0	0.01	NP
Vanadium (mg/L)	MW-2R	0.0004429	8	21	No	8	0	0.01	NP
Vanadium (mg/L)	MW-10	0.001124	13	21	No	8	25	0.01	NP
Vinyl Chloride (ug/L)	MW-3R	-0.1076	-13	-21	No	8	37.5	0.01	NP
Vinyl Chloride (ug/L)	MW-4R3	-0.09556	-6	-21	No	8	0	0.01	NP
Zinc (mg/L)	MW-4R3	-0.0005001	-10	-21	No	8	50	0.01	NP
Zinc (mg/L)	MW-9	-0.00028	-14	-21	No	8	62.5	0.01	NP
Zinc (mg/L)	MW-10	0	4	21	No	8	62.5	0.01	NP



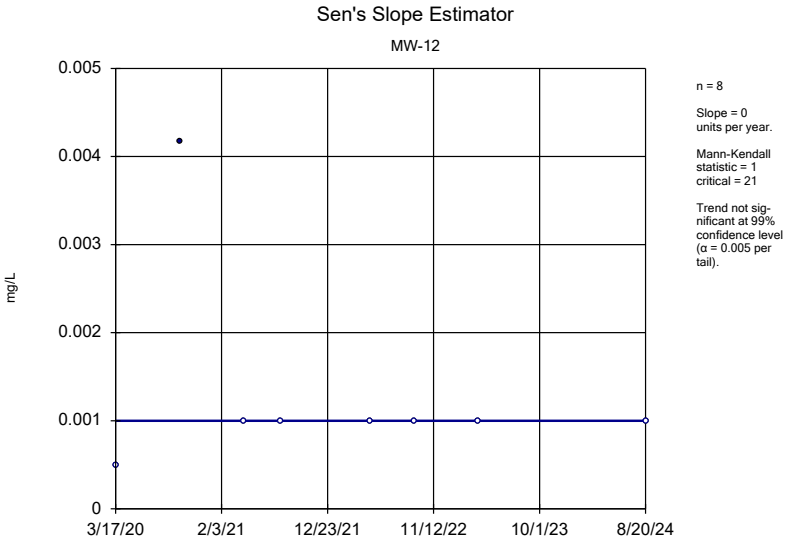




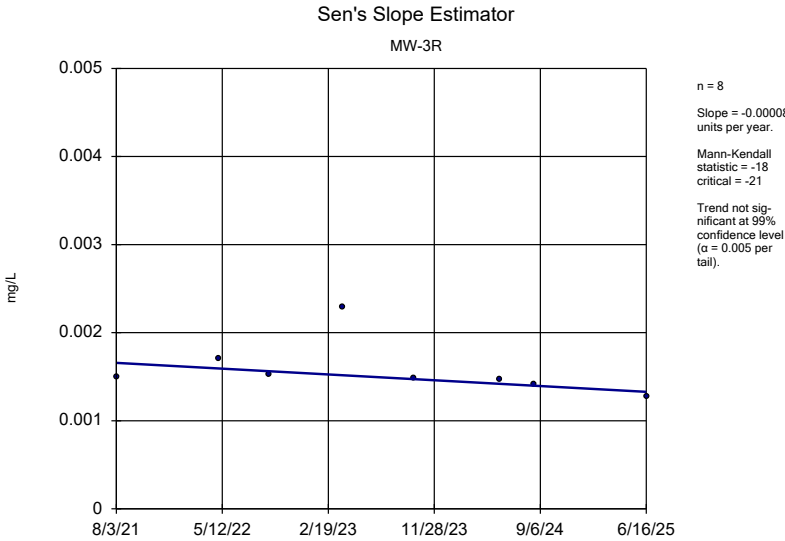
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



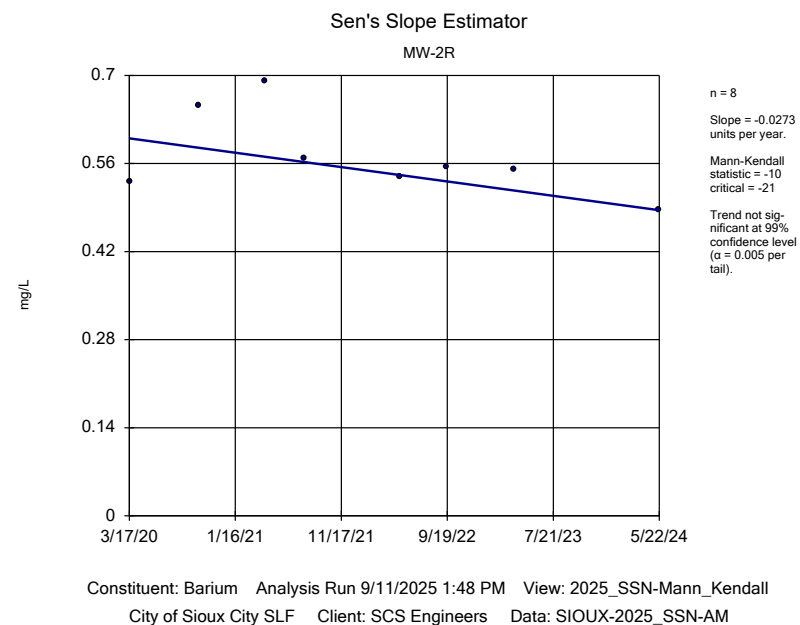
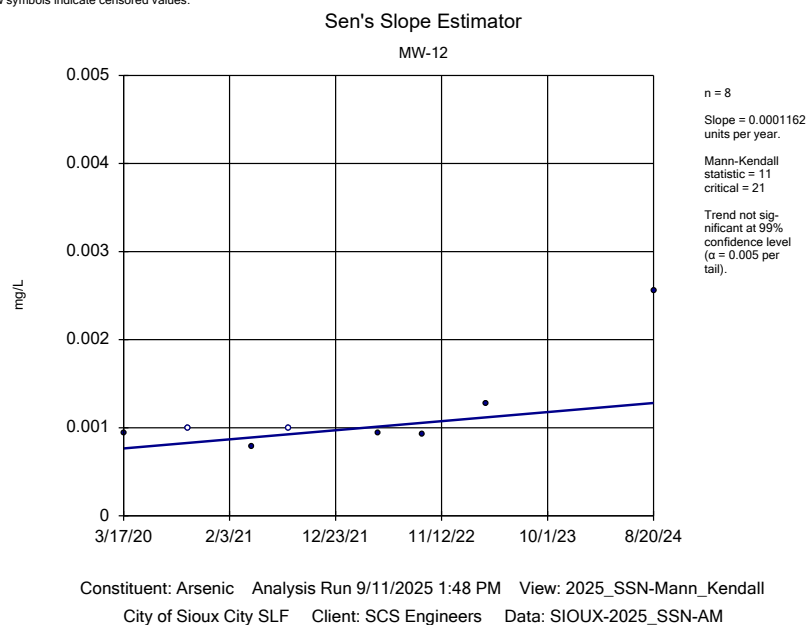
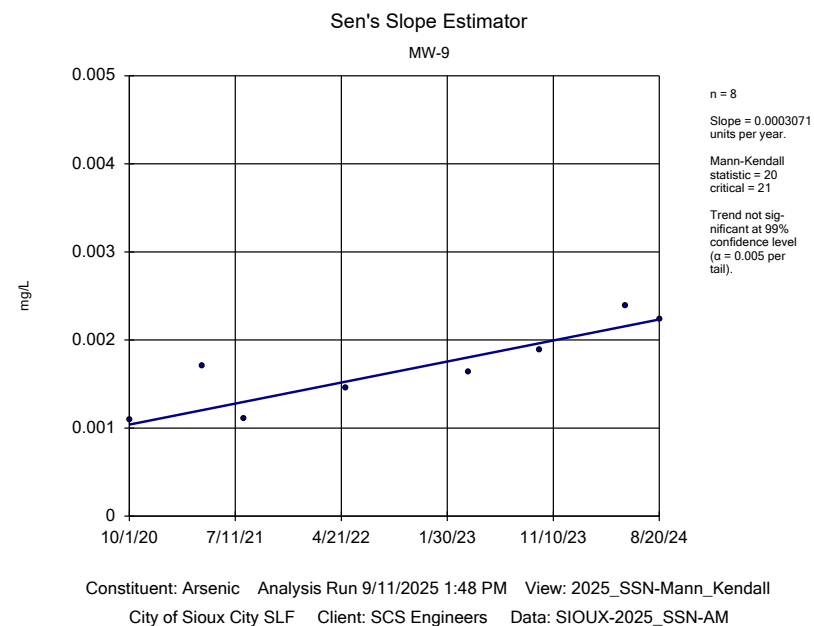
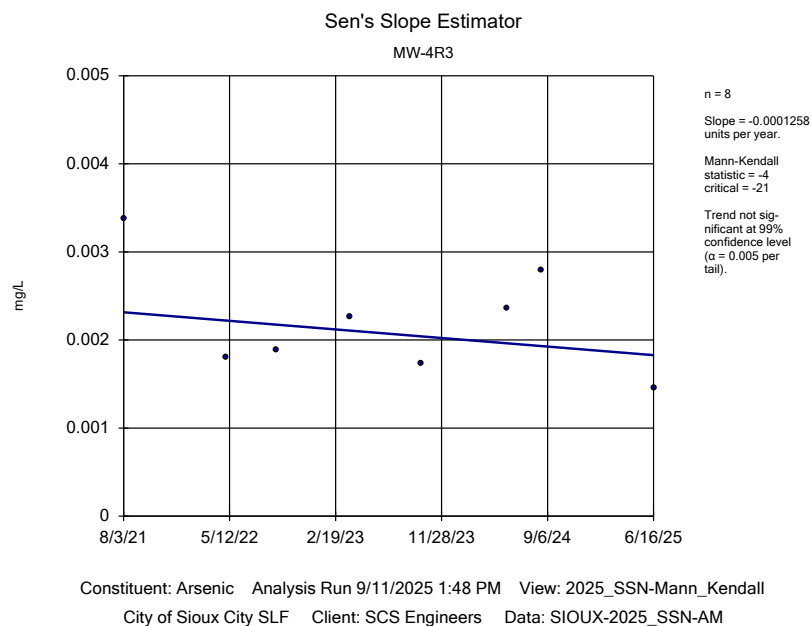
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

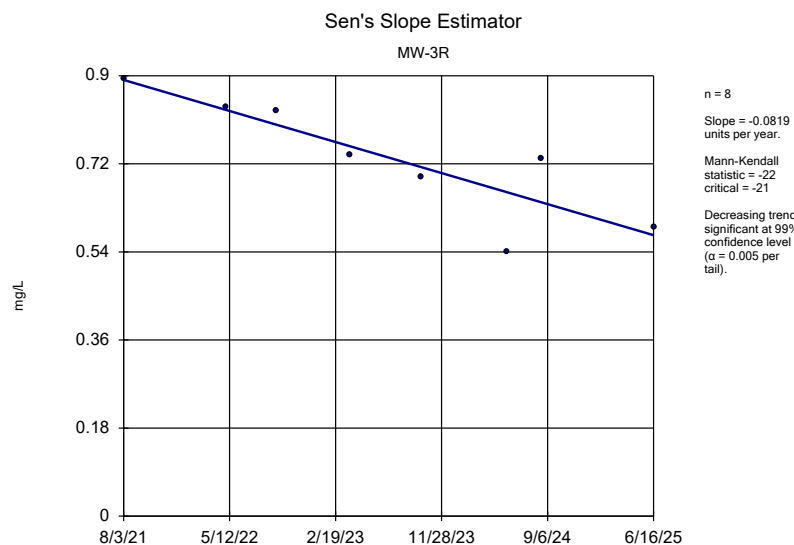


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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

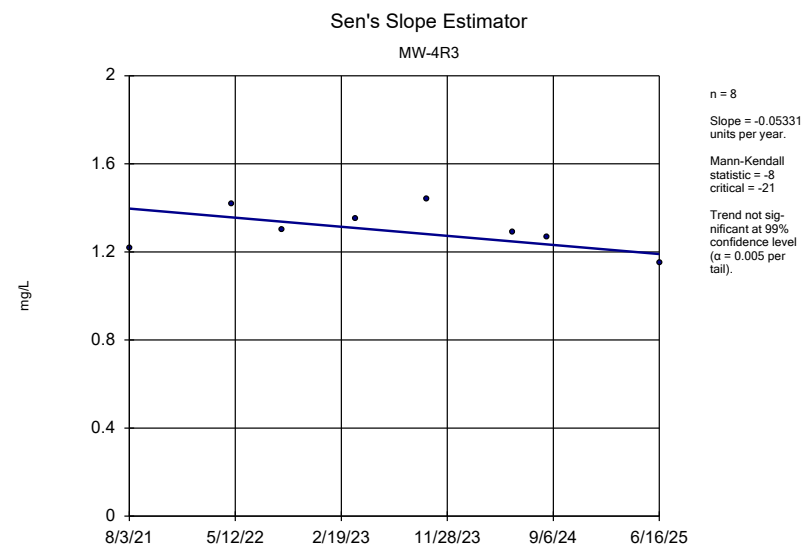


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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

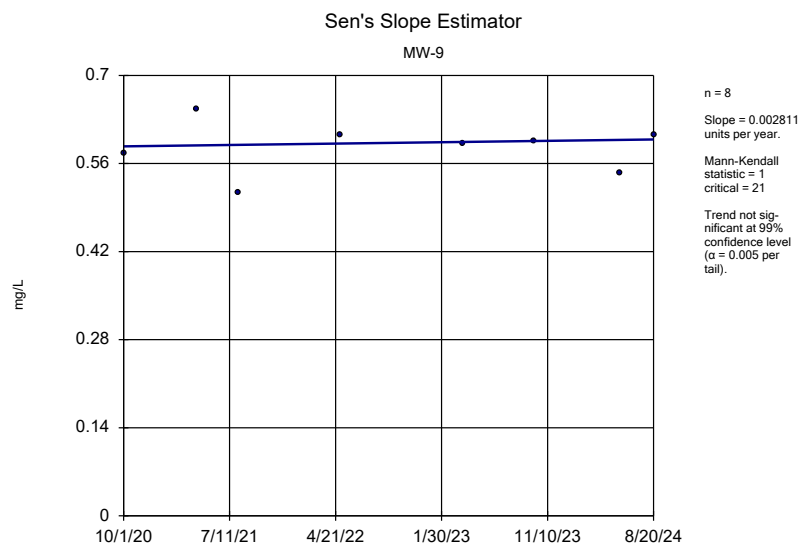




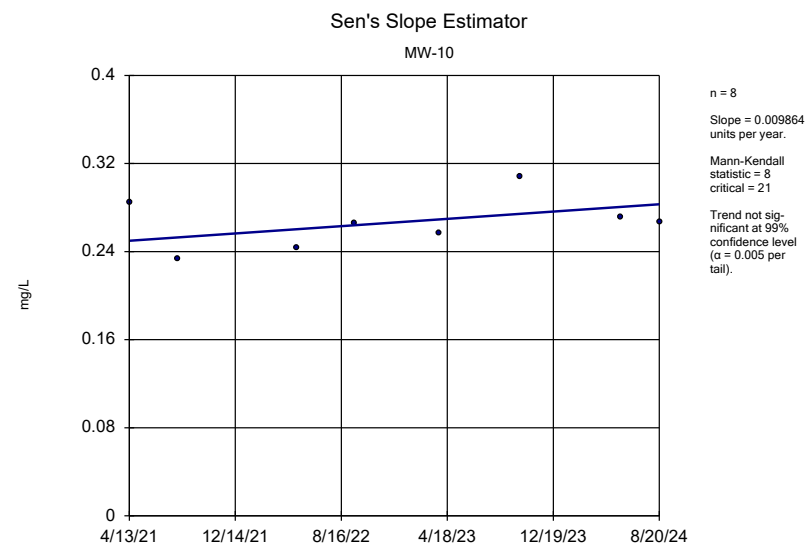
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



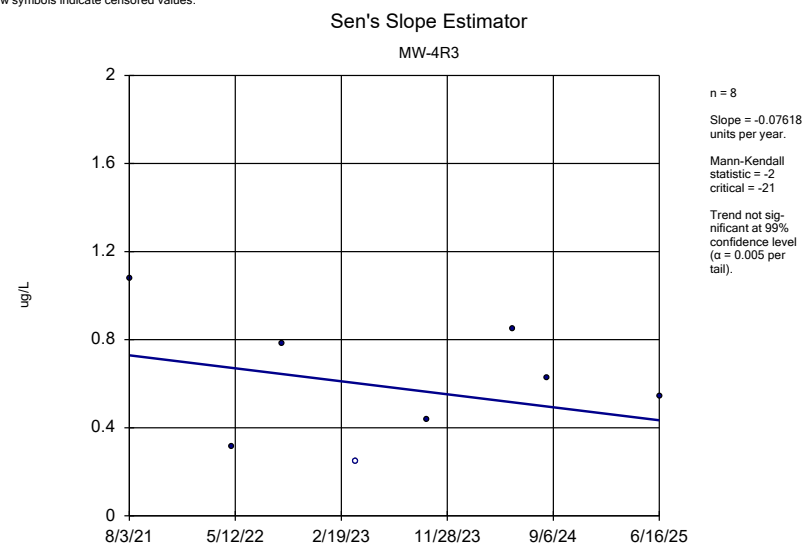
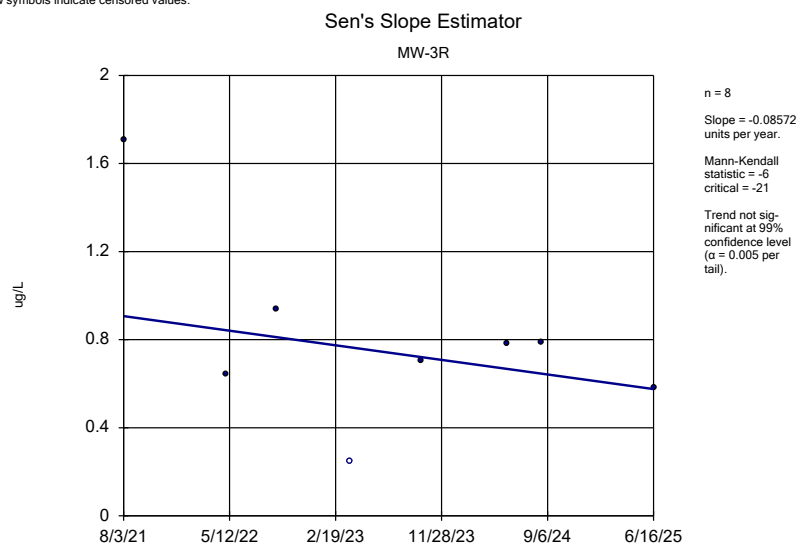
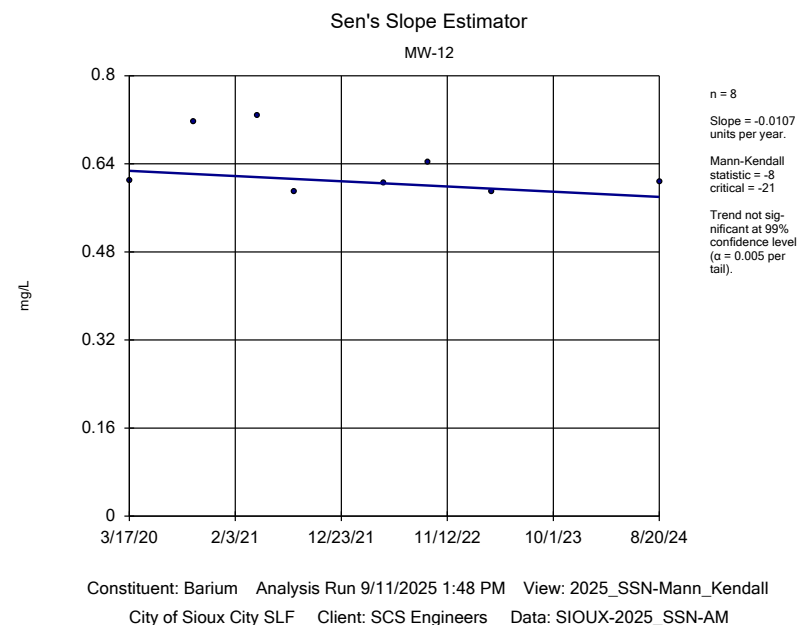
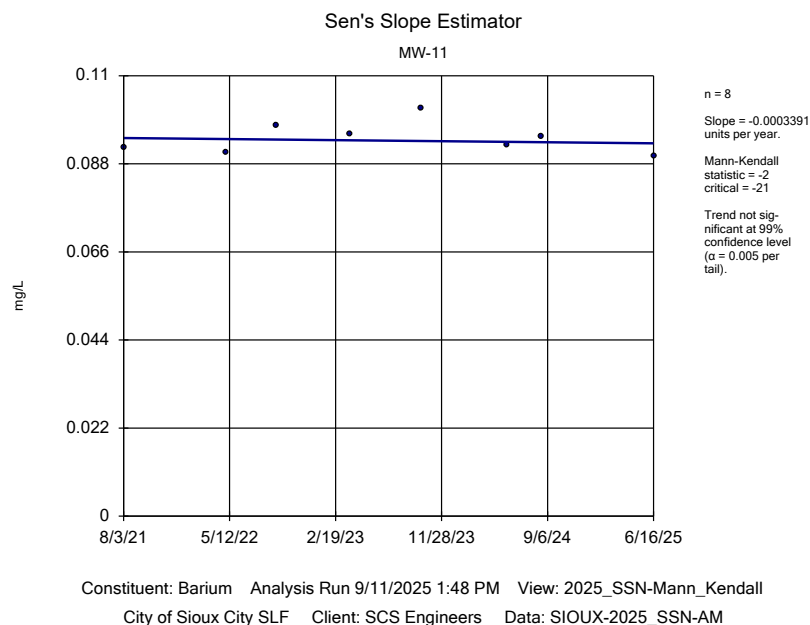
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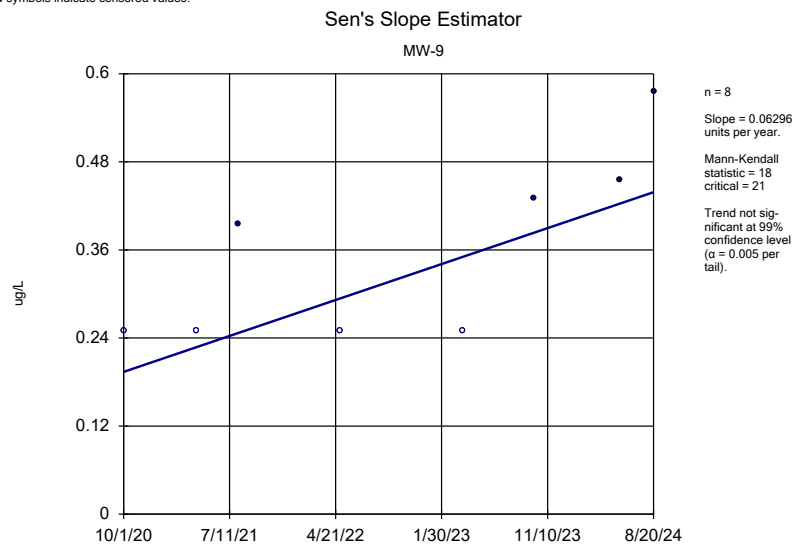


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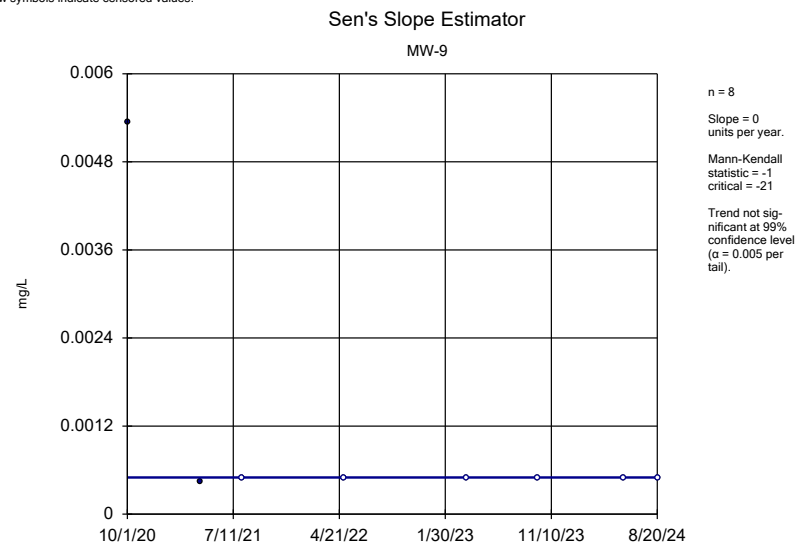


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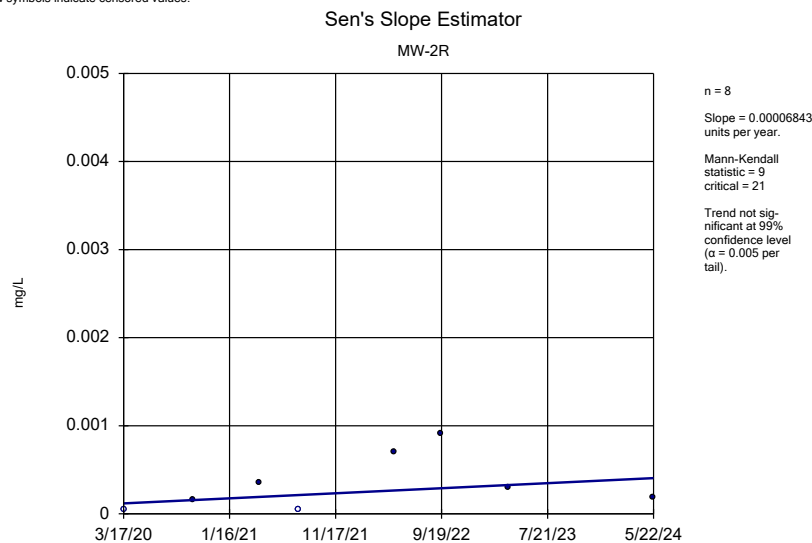




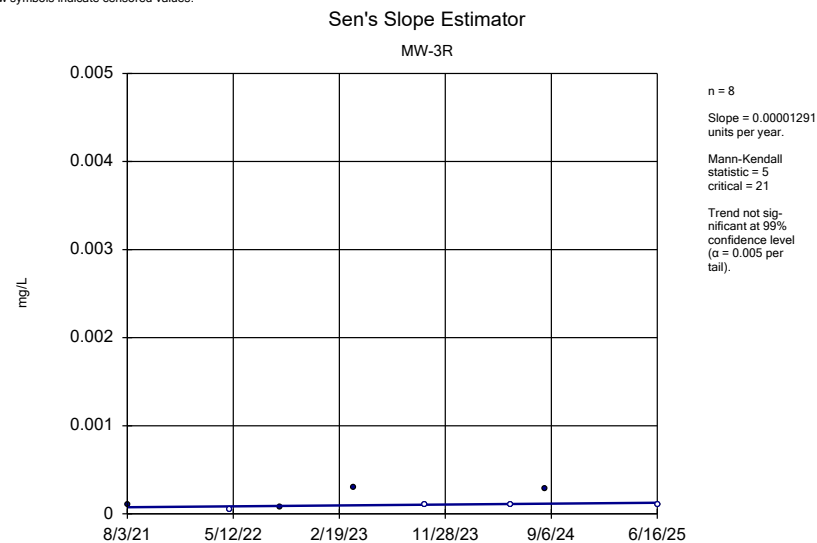
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



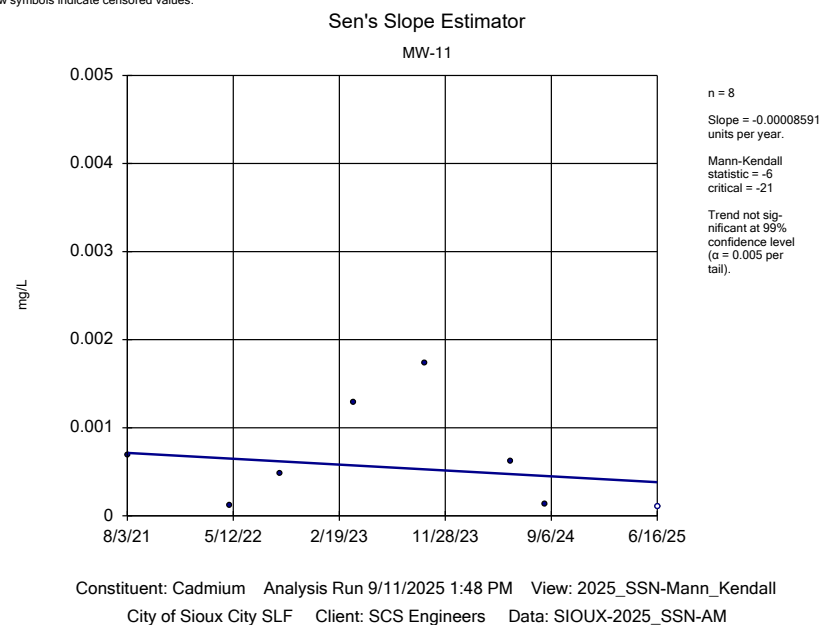
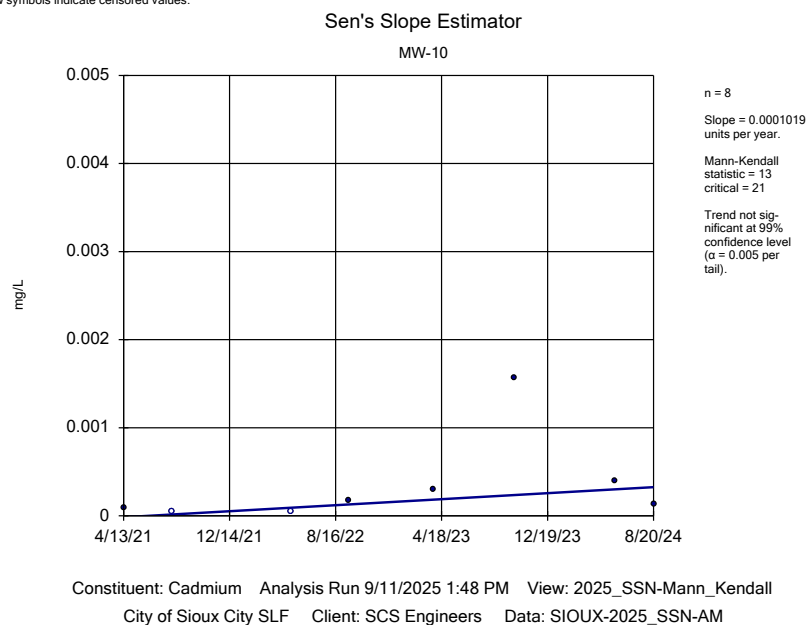
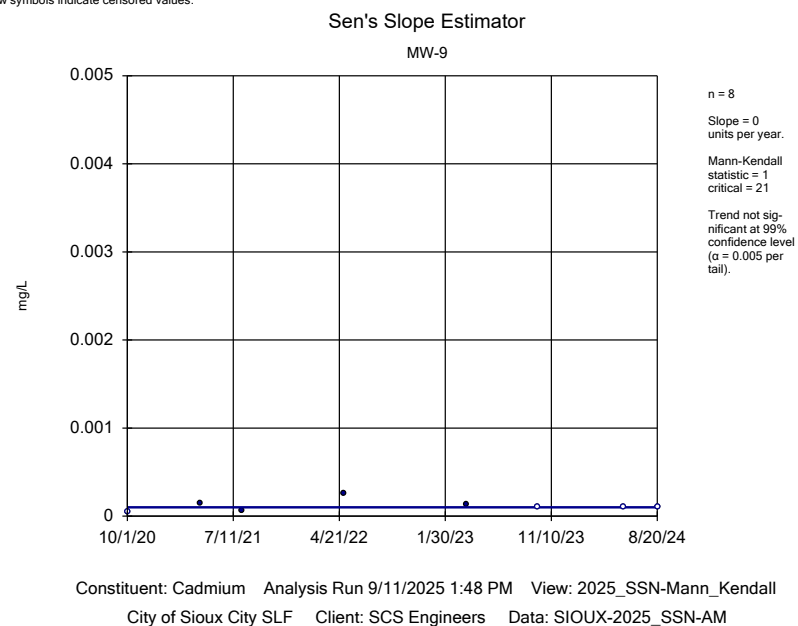
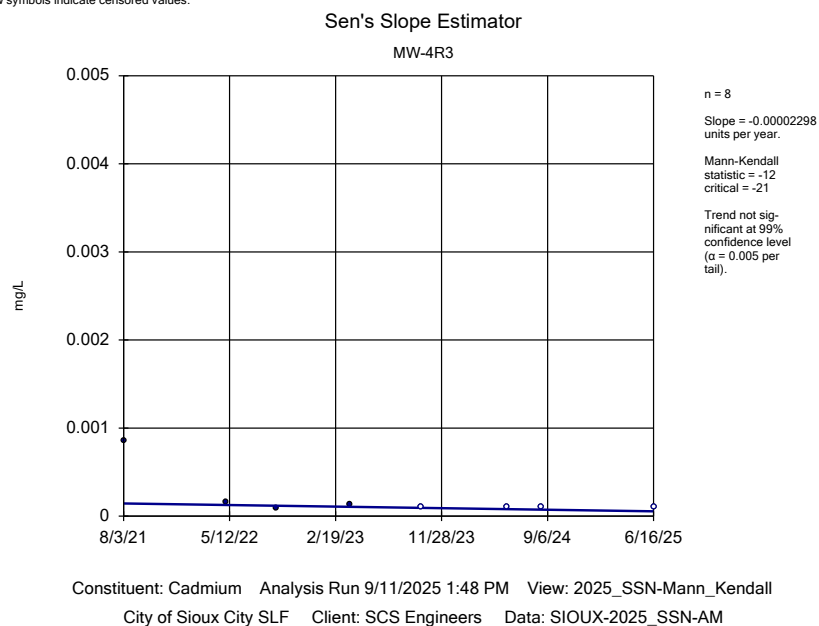
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

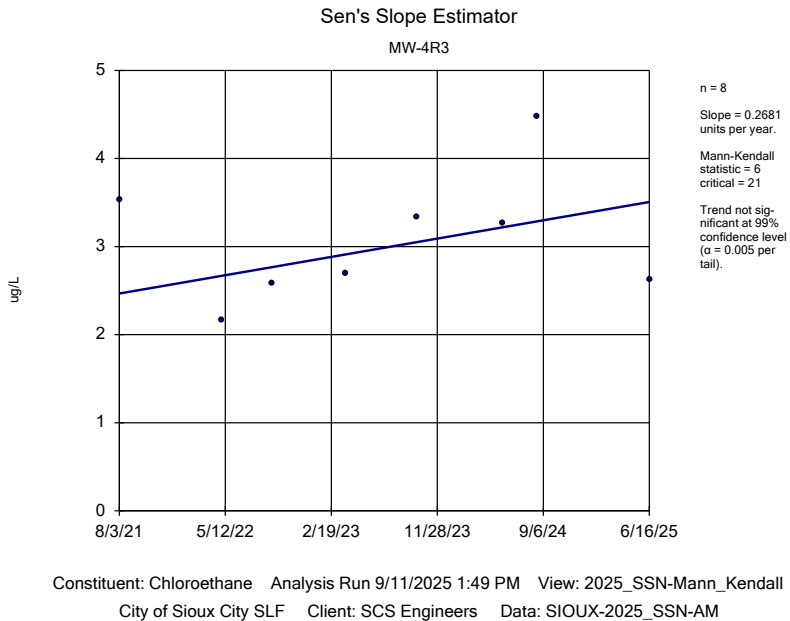
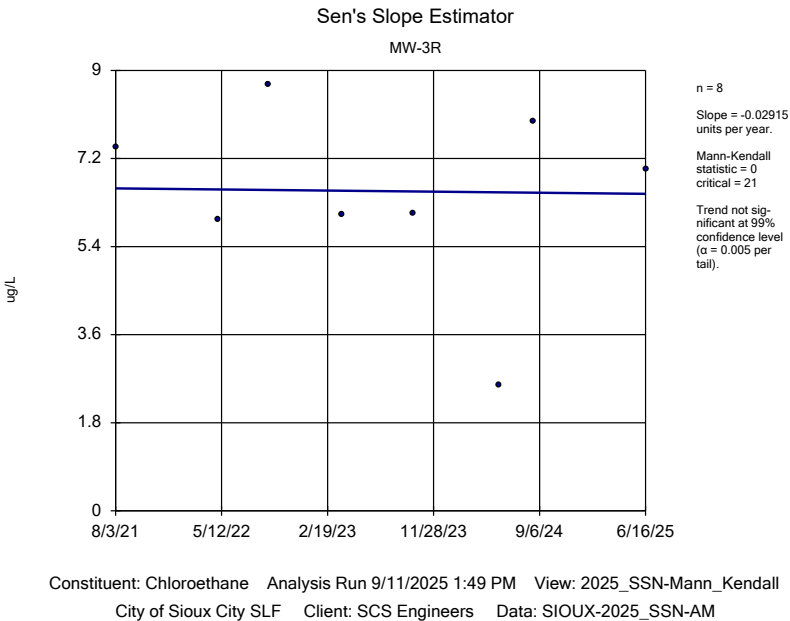
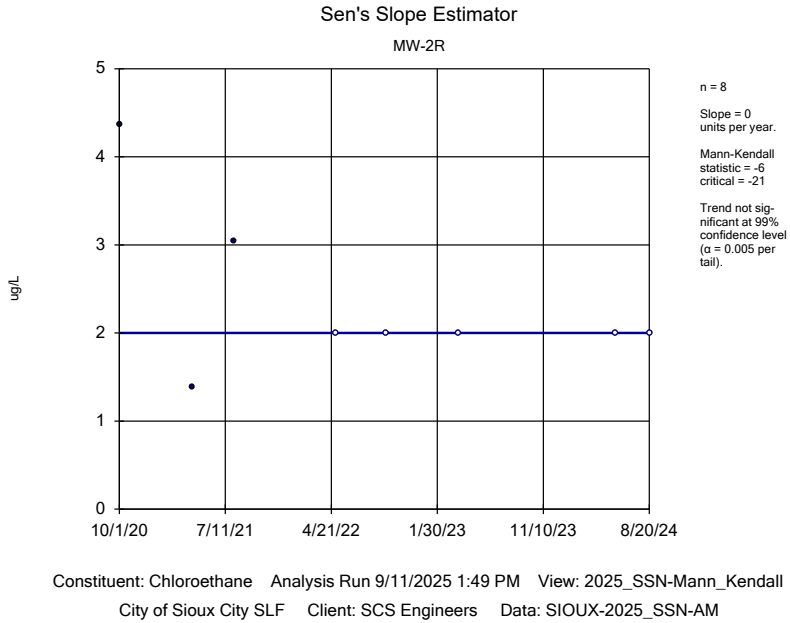
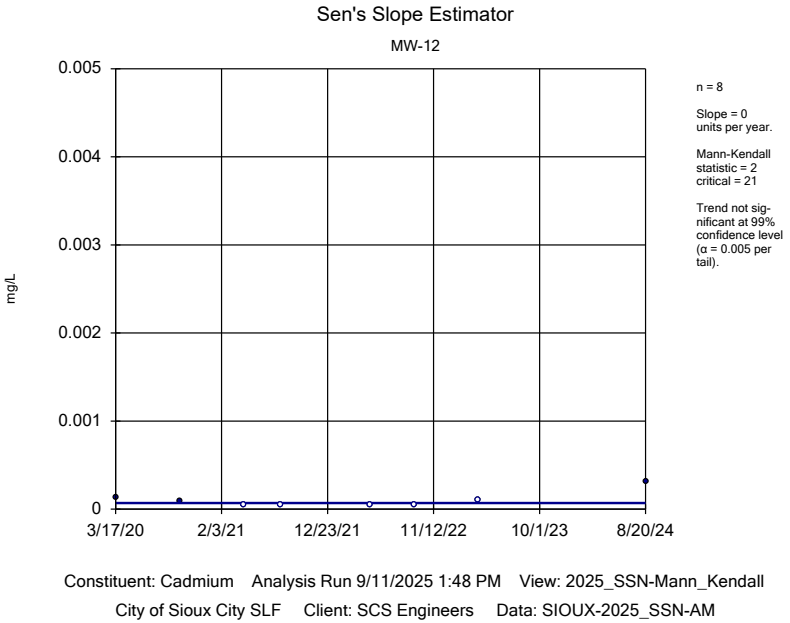


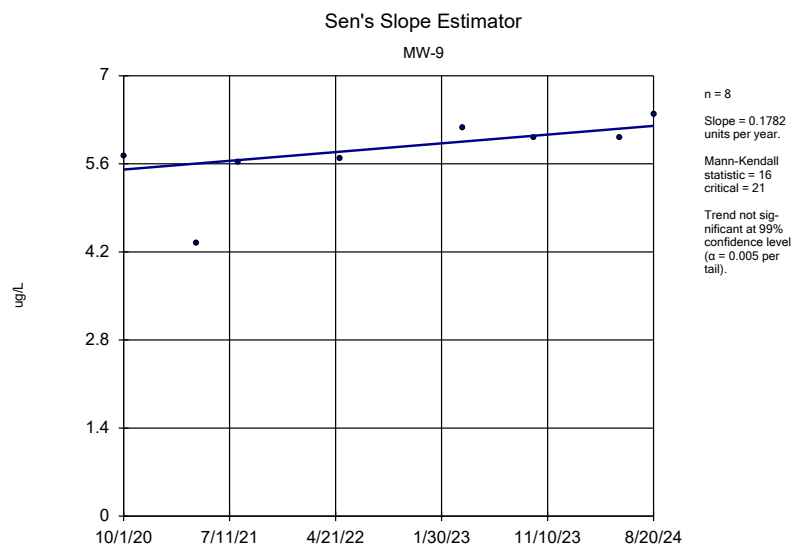
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



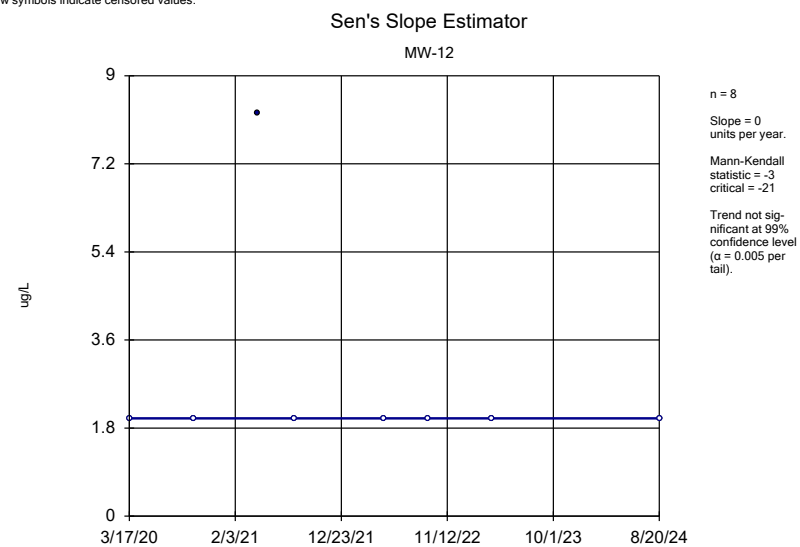
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



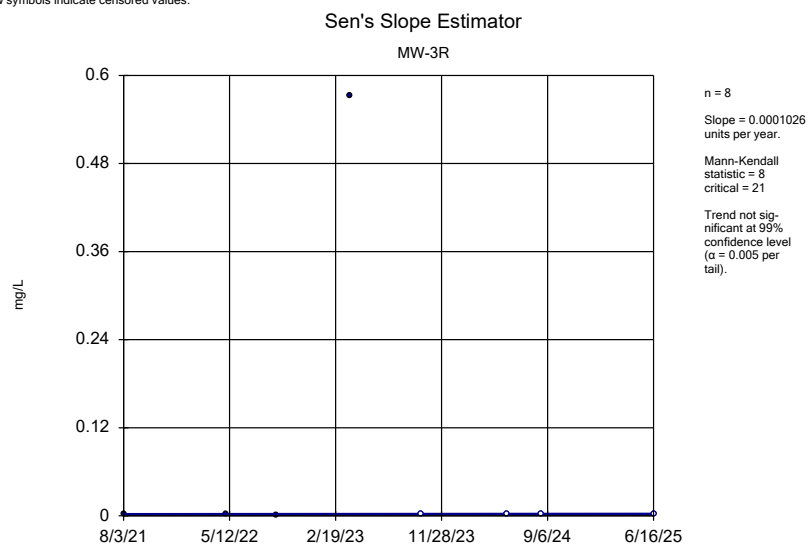




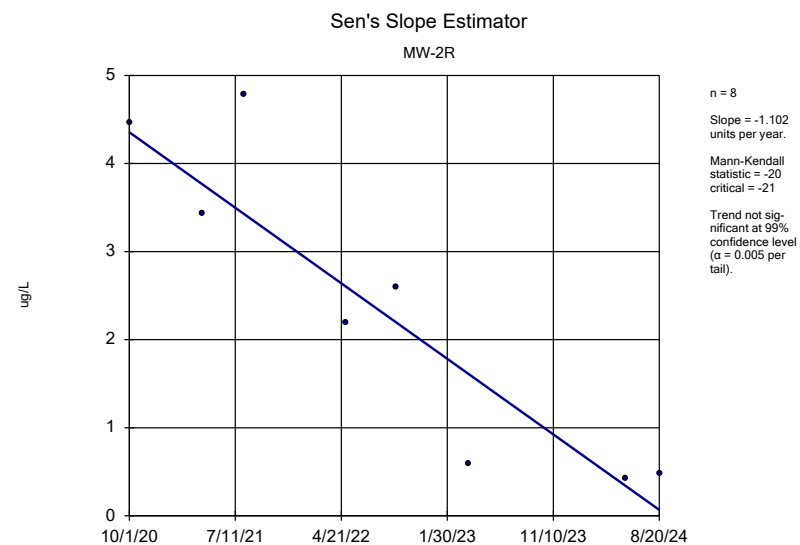
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



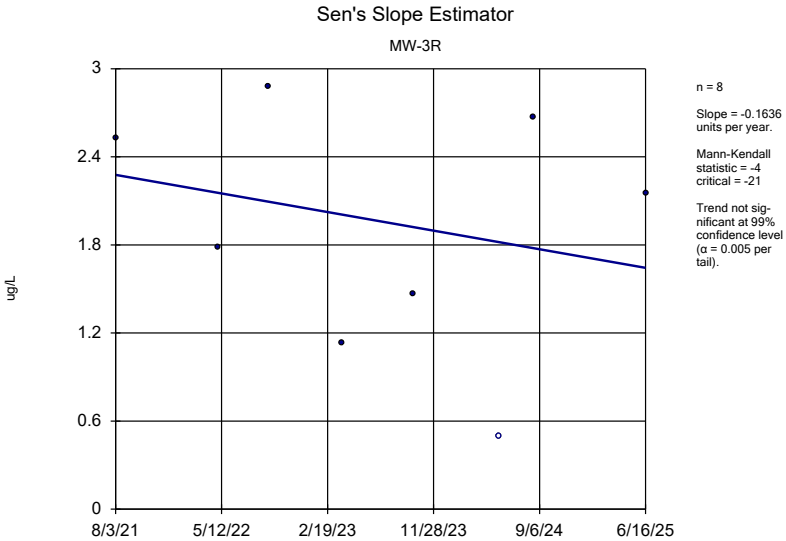
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



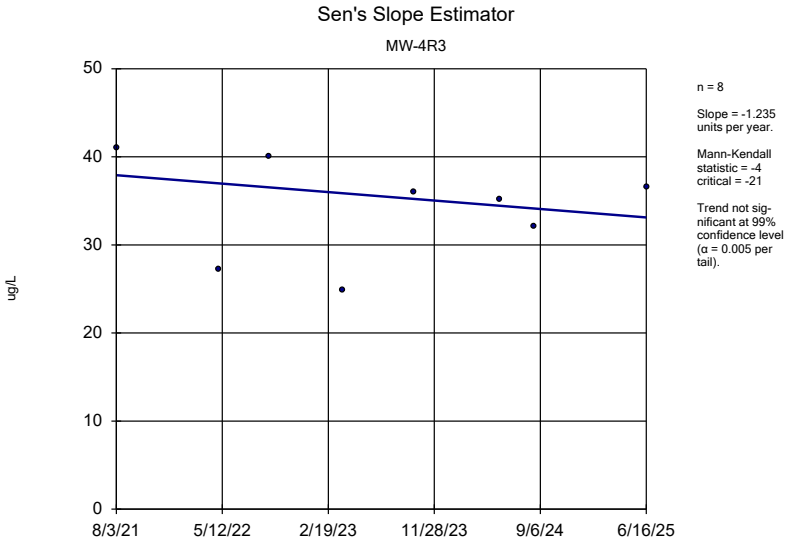
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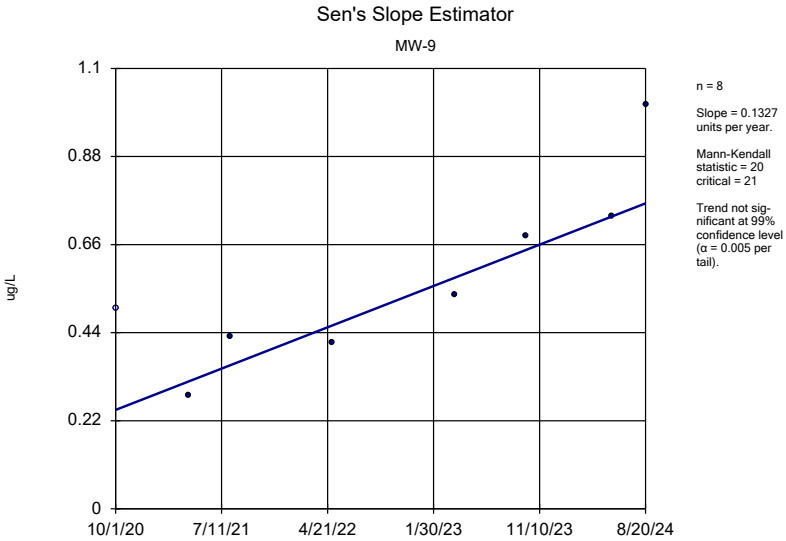
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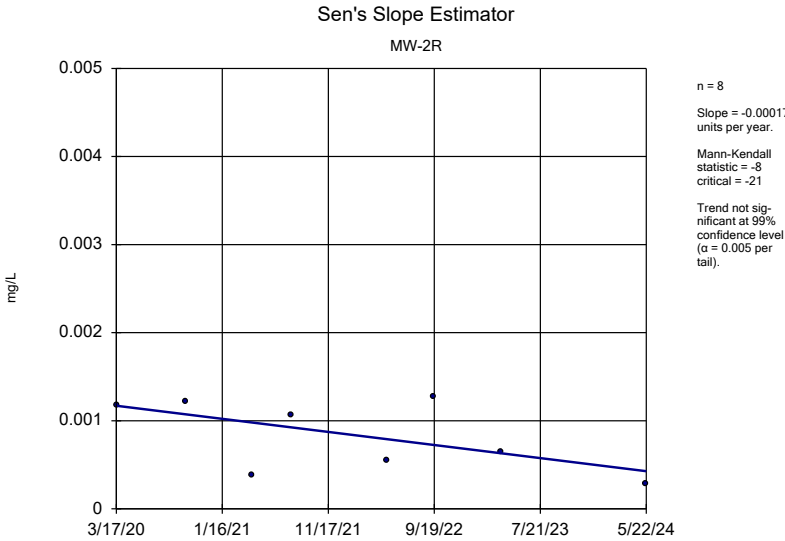
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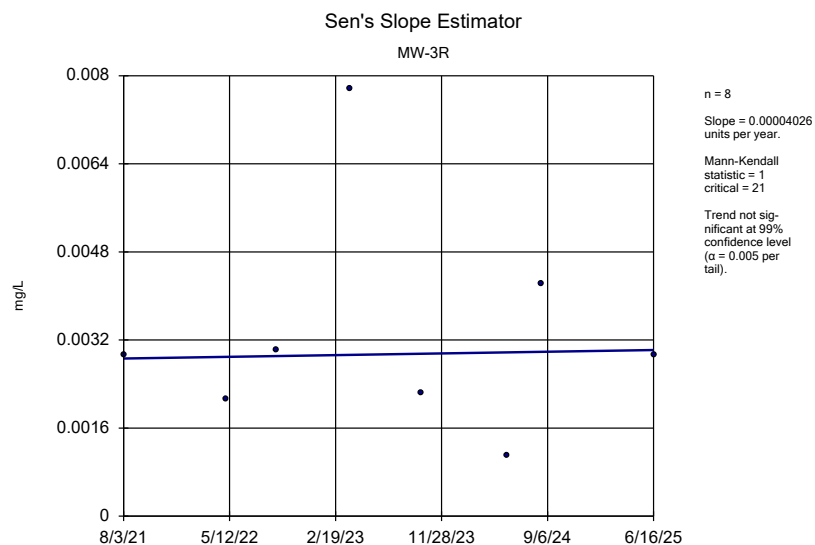
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



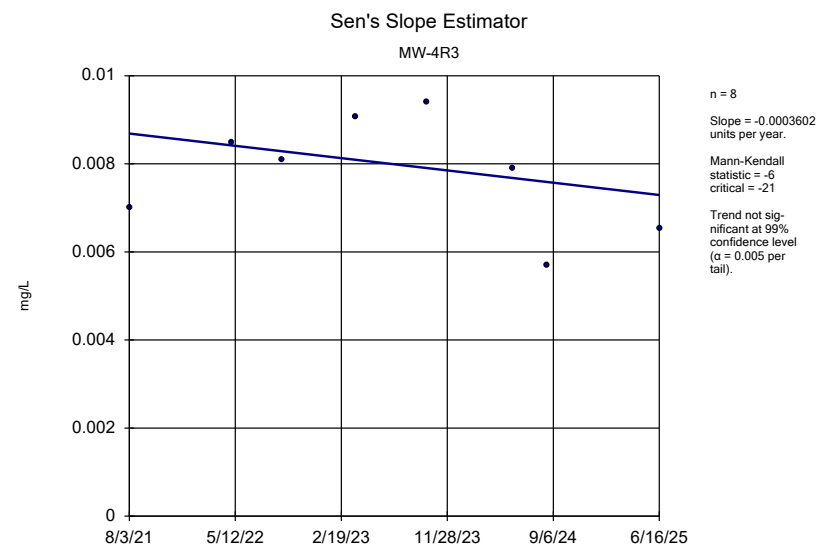
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



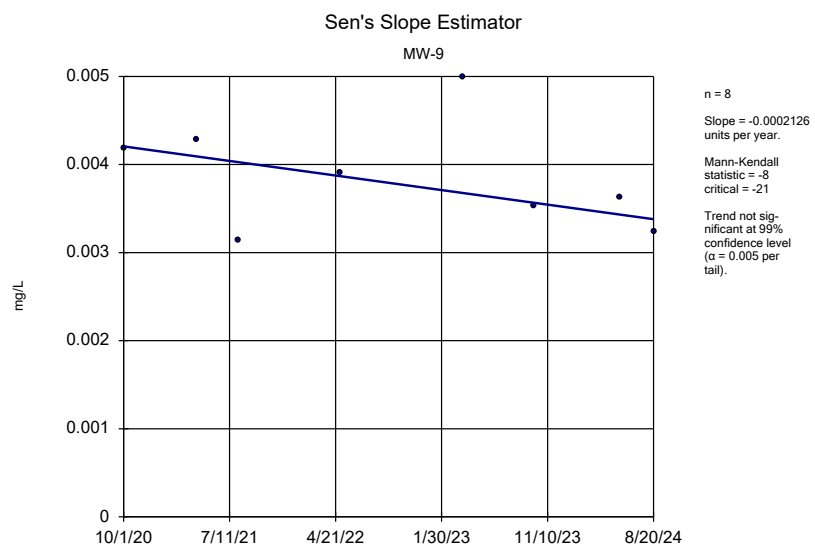
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



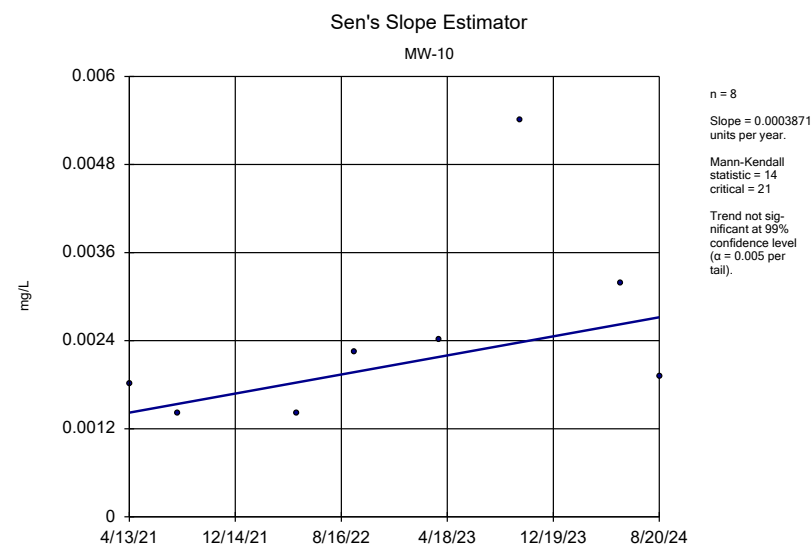
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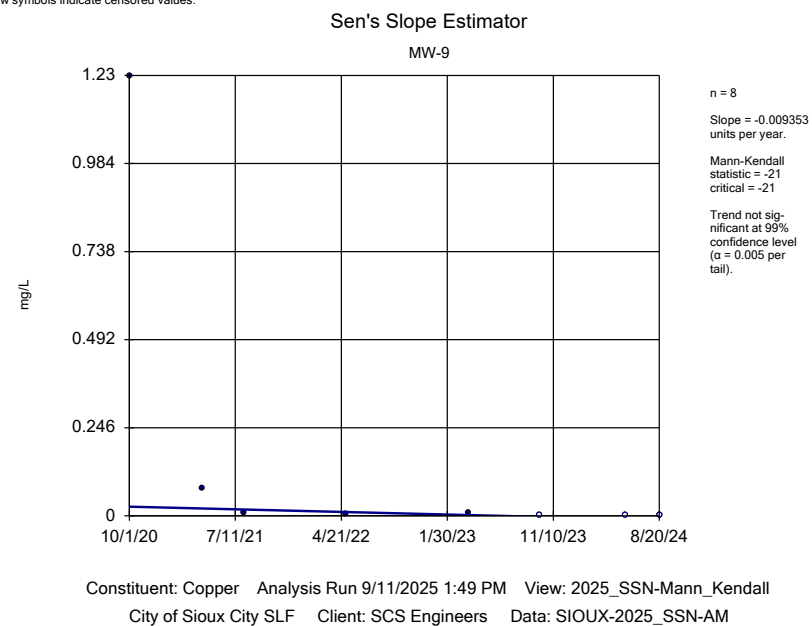
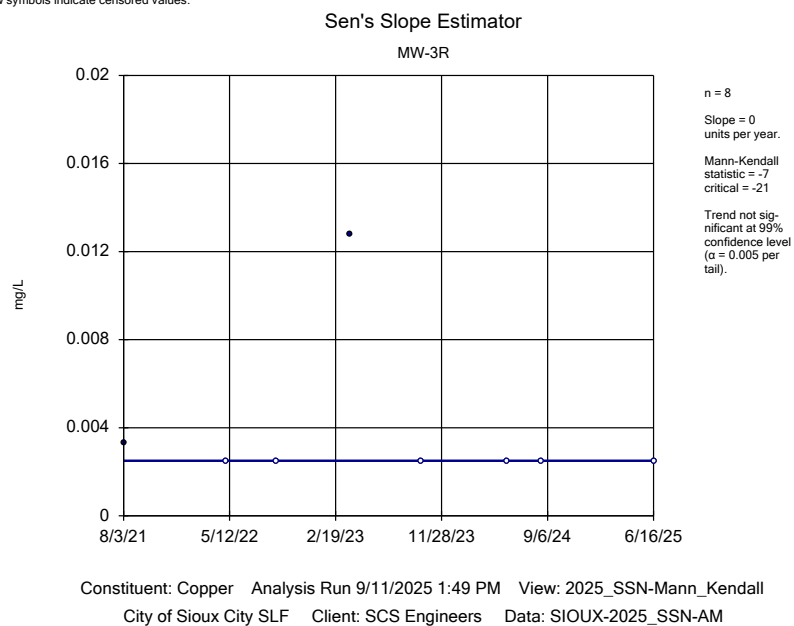
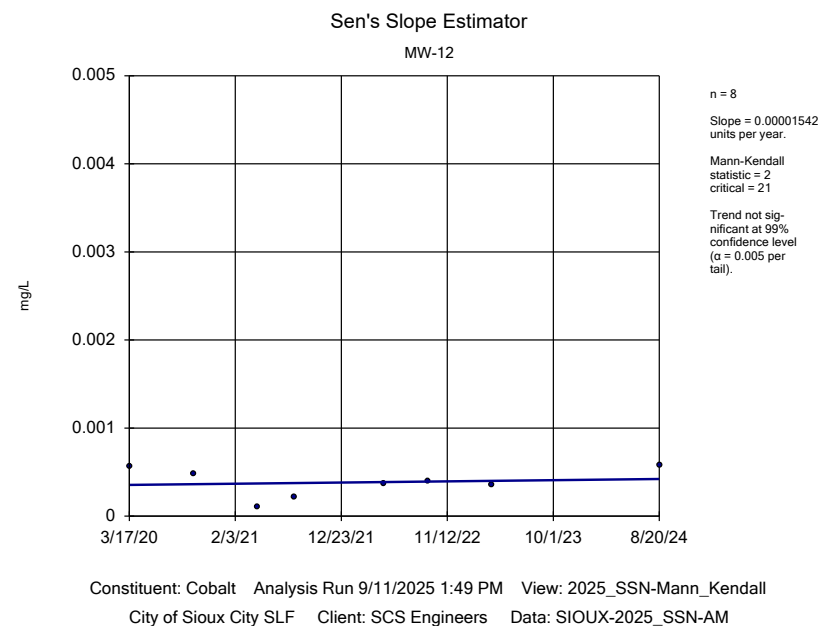
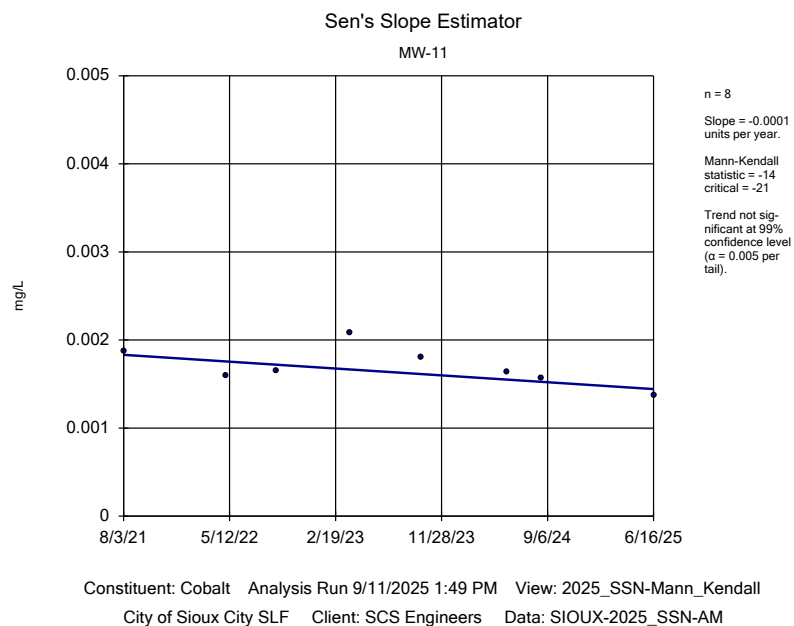
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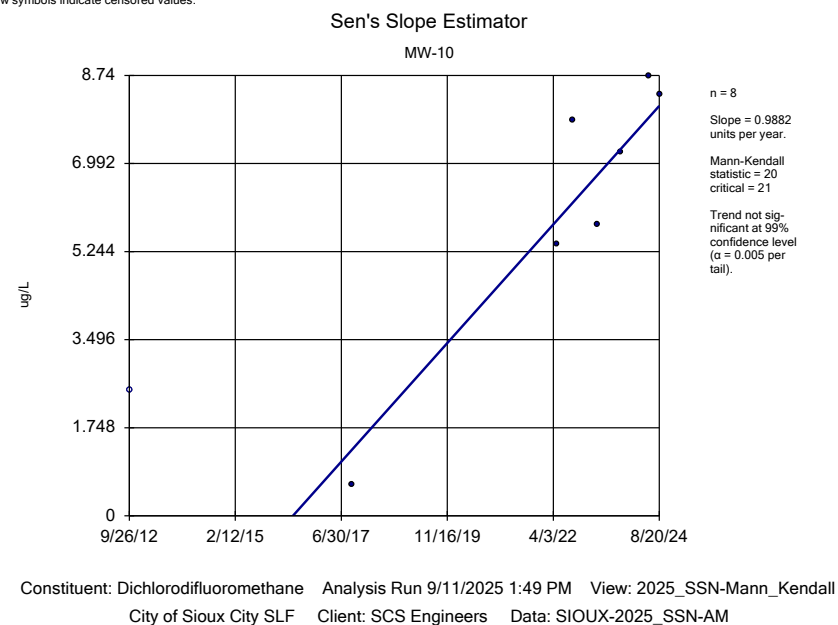
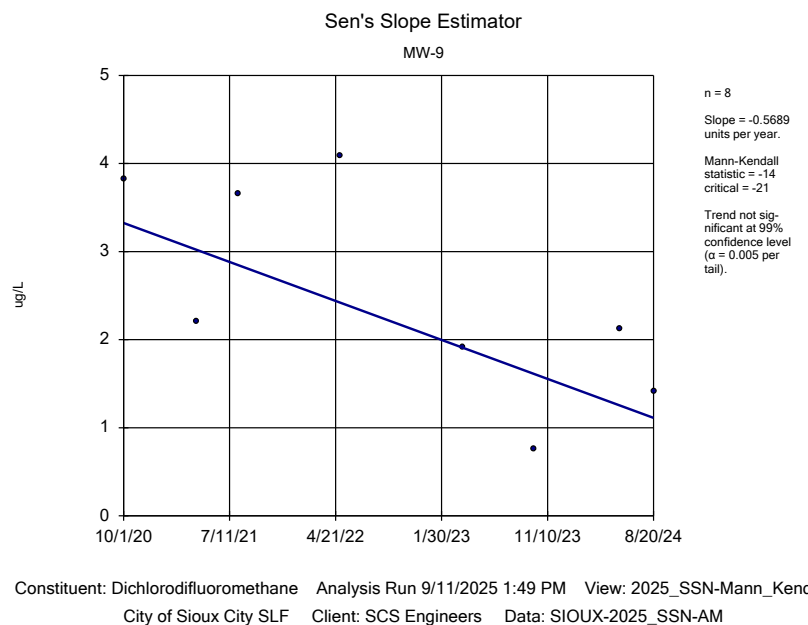
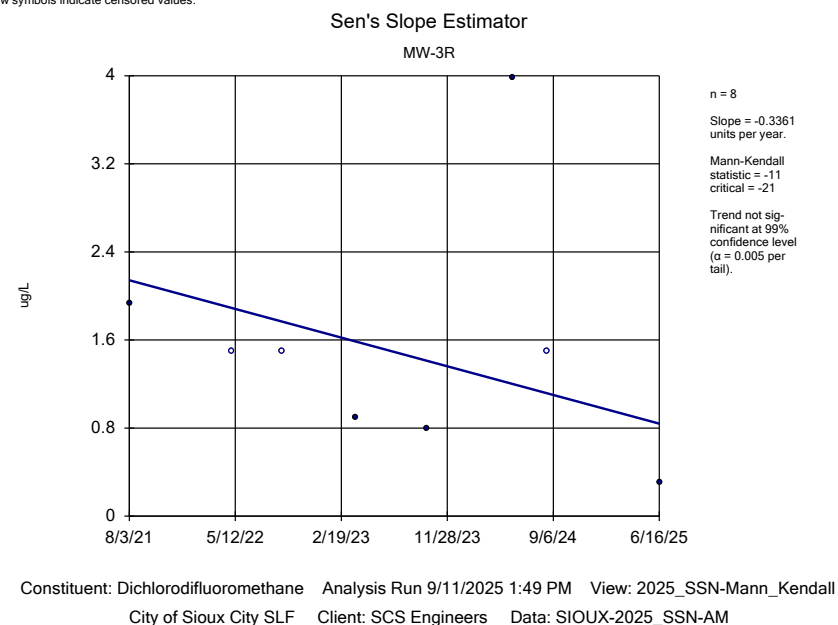
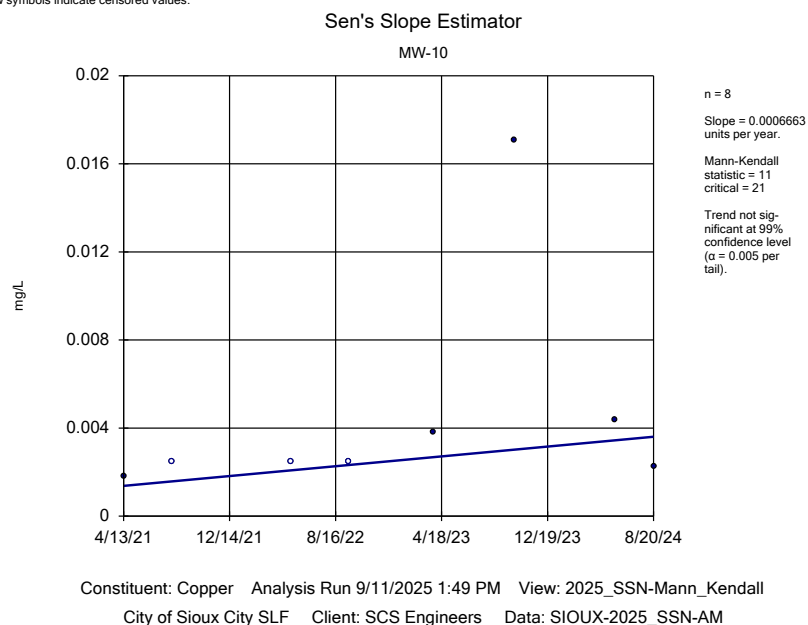


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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



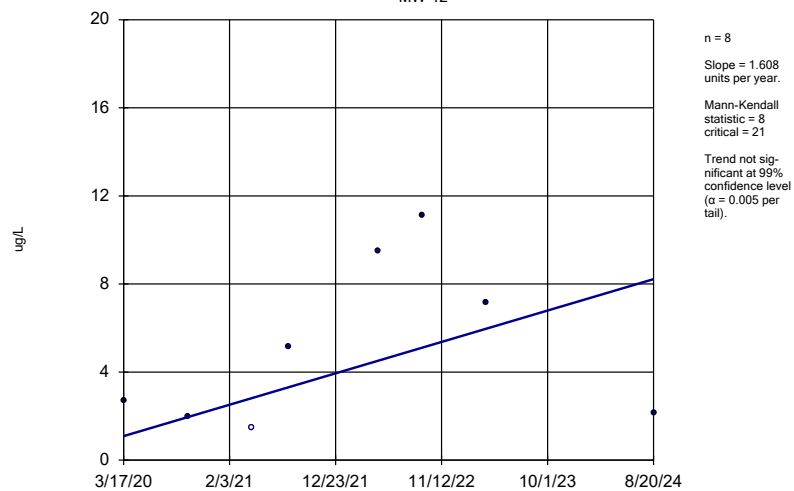
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Sen's Slope Estimator

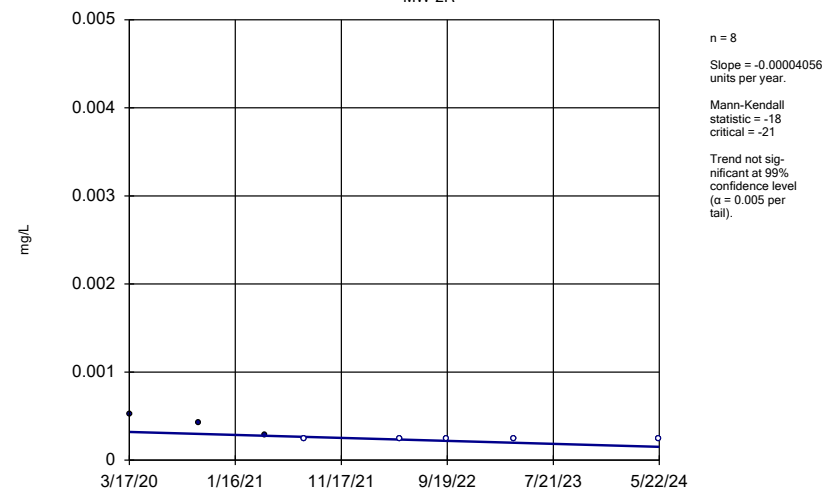
MW-12



Constituent: Dichlorodifluoromethane Analysis Run 9/11/2025 1:49 PM View: 2025_SSN-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Sen's Slope Estimator

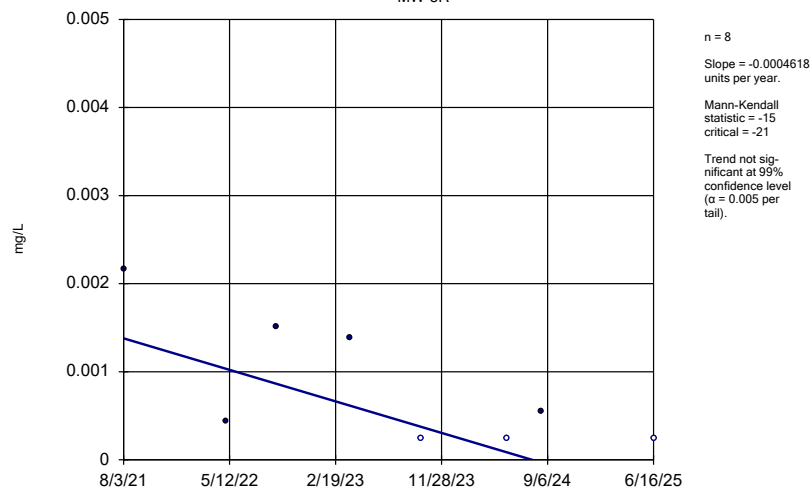
MW-2R



Constituent: Lead Analysis Run 9/11/2025 1:49 PM View: 2025_SSN-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Sen's Slope Estimator

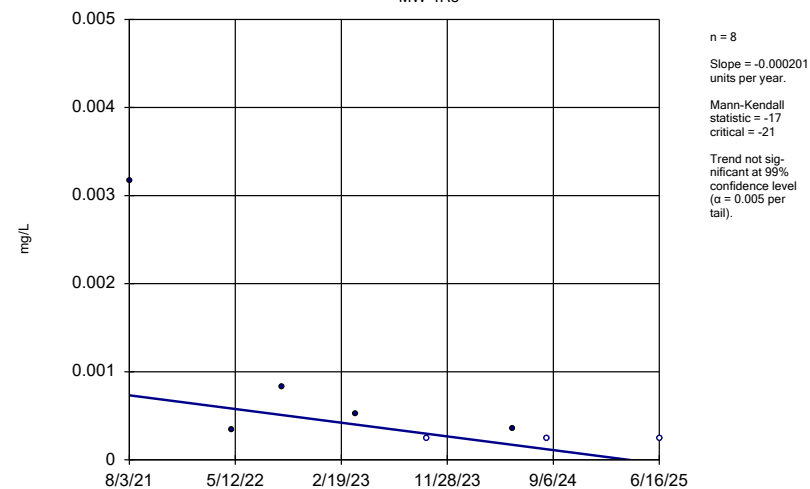
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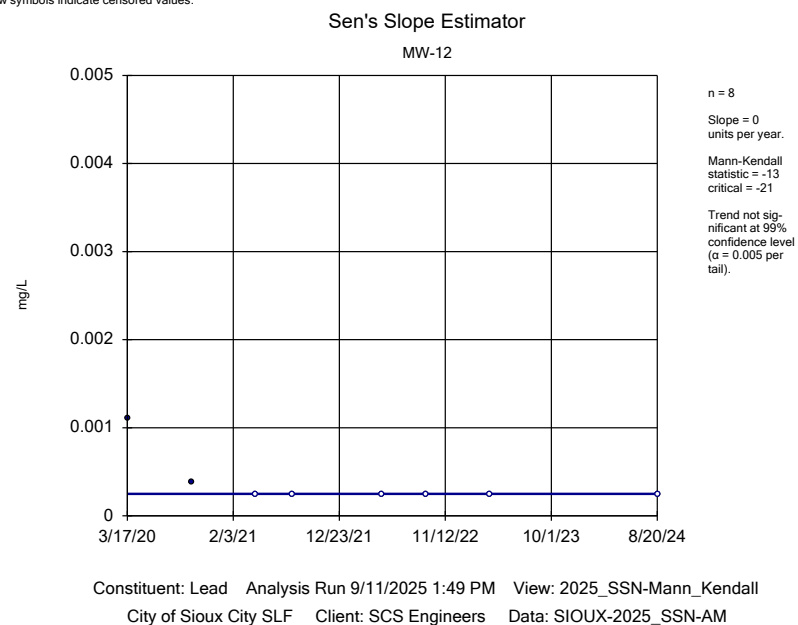
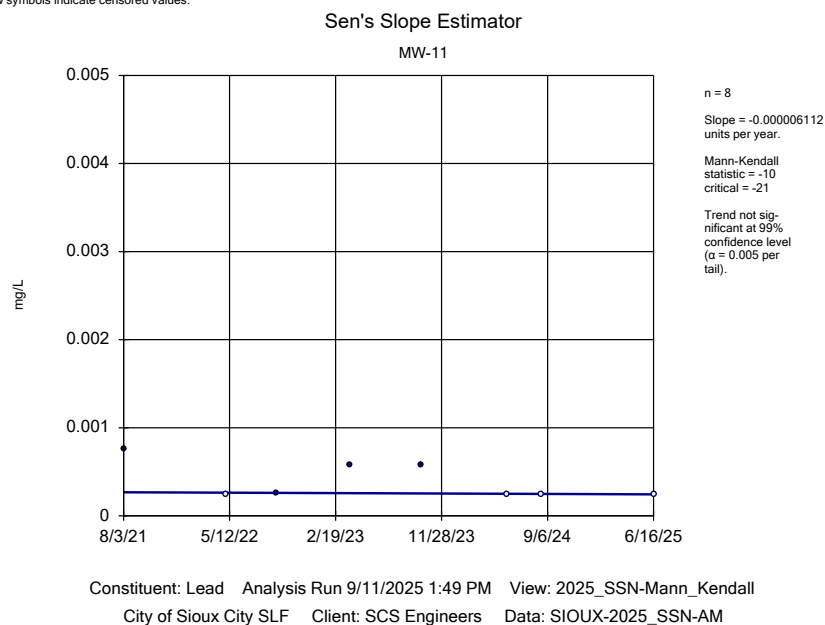
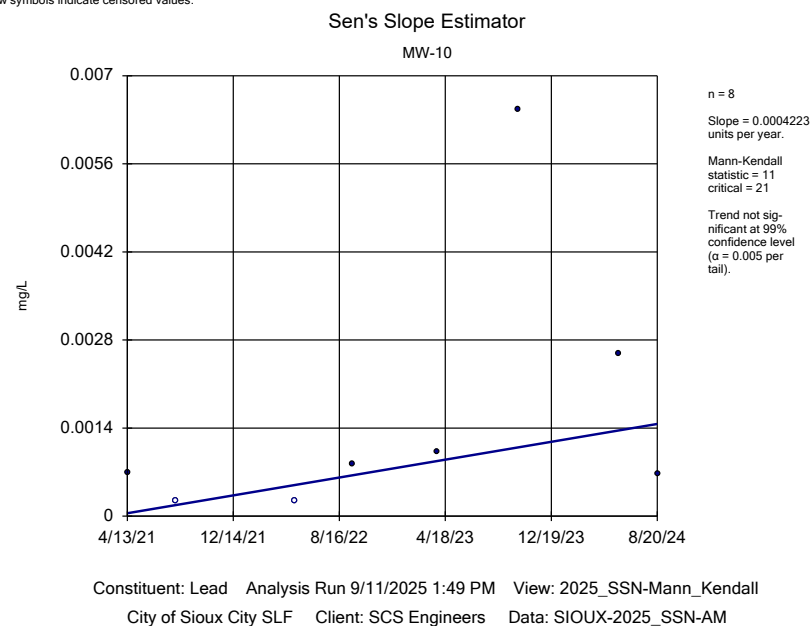
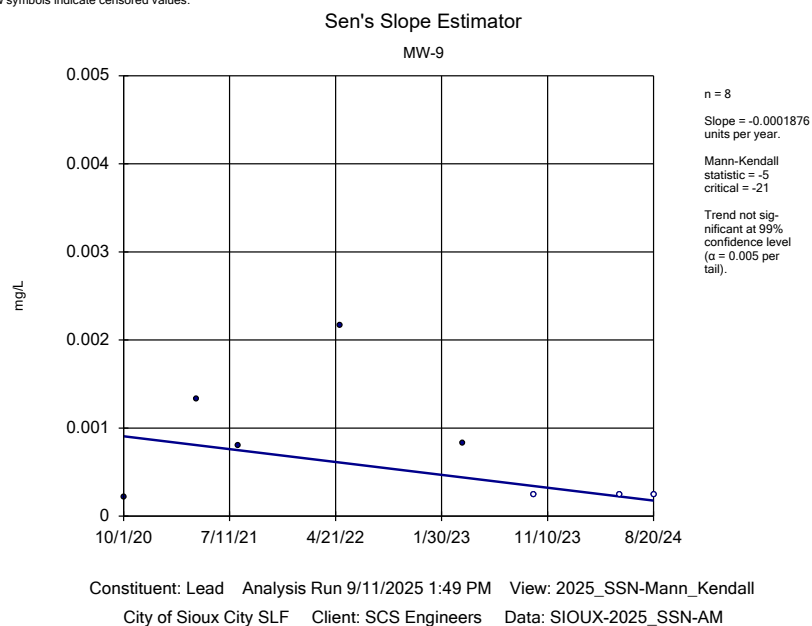
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

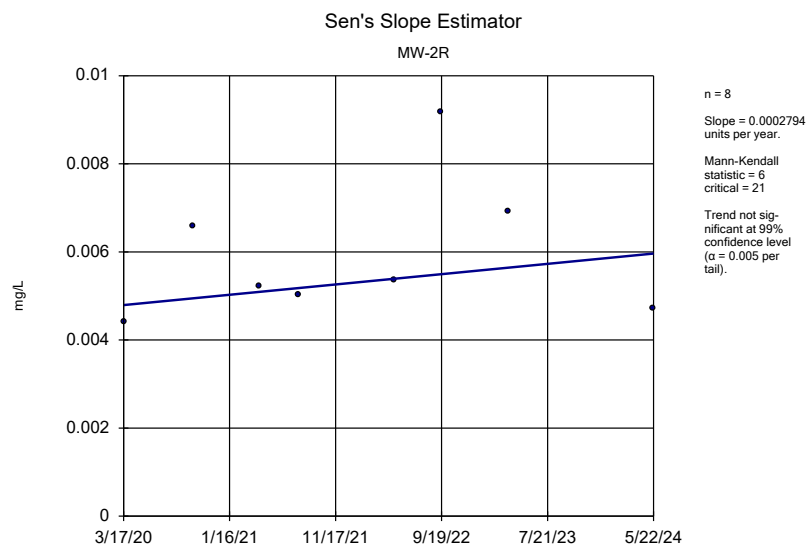
Sen's Slope Estimator

MW-4R3

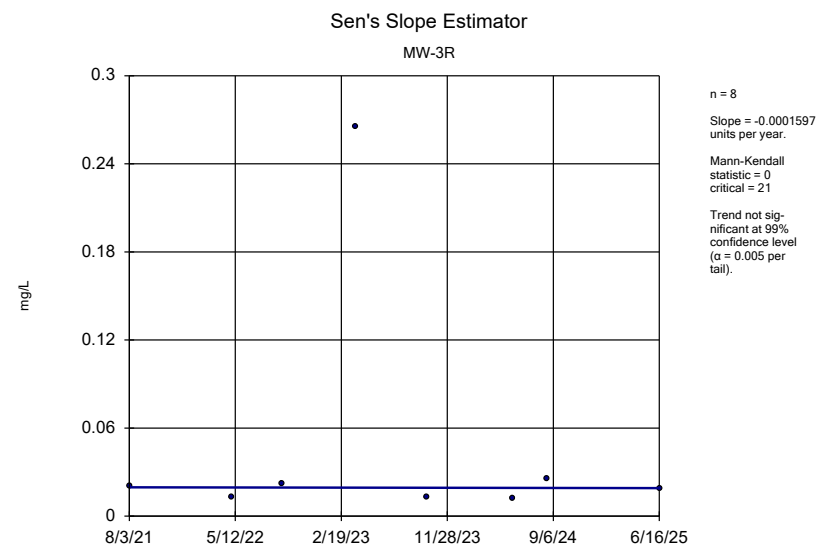


Constituent: Lead Analysis Run 9/11/2025 1:49 PM View: 2025_SSN-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

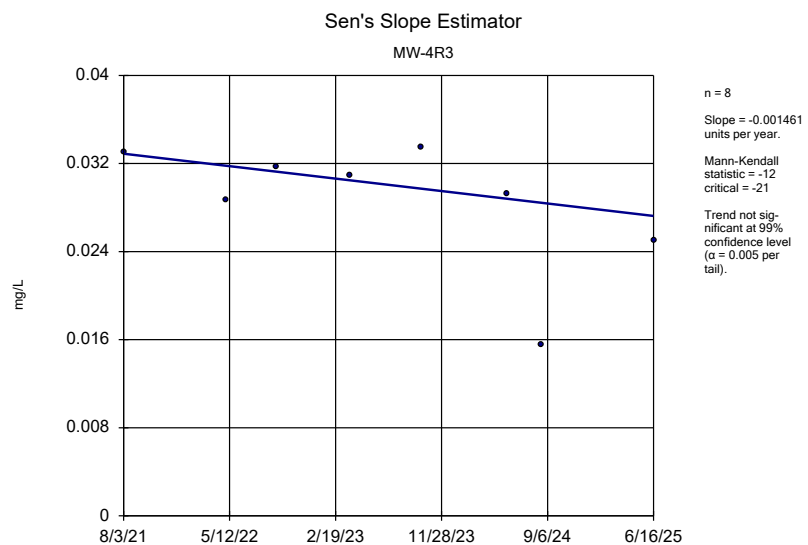




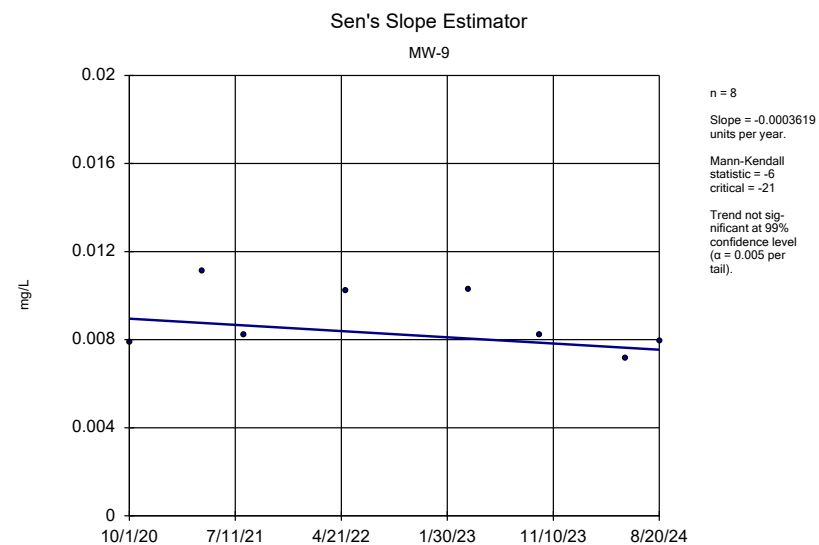
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



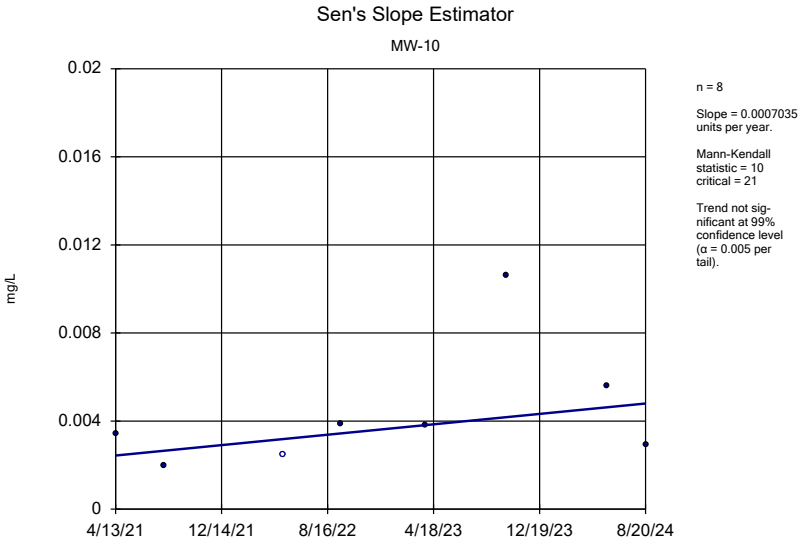
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



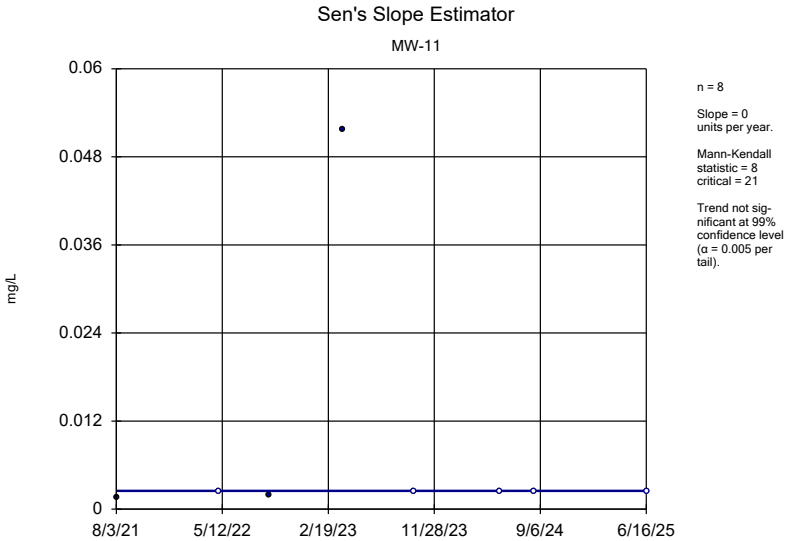
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



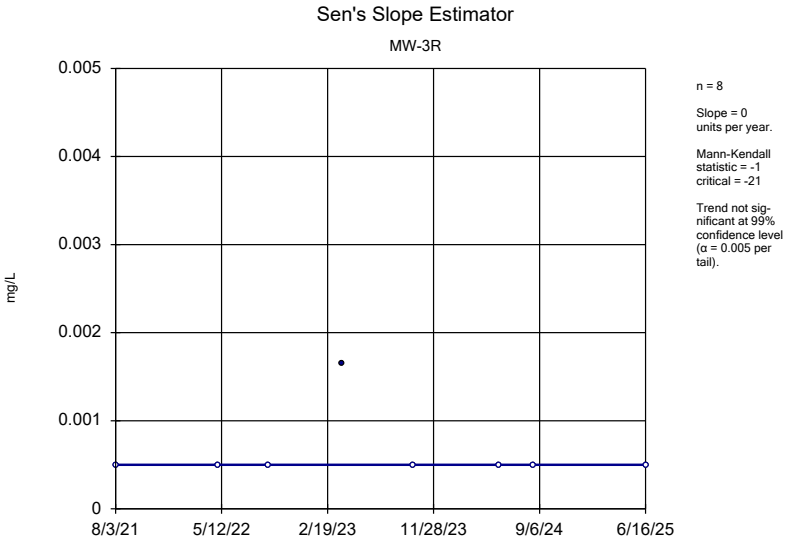
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



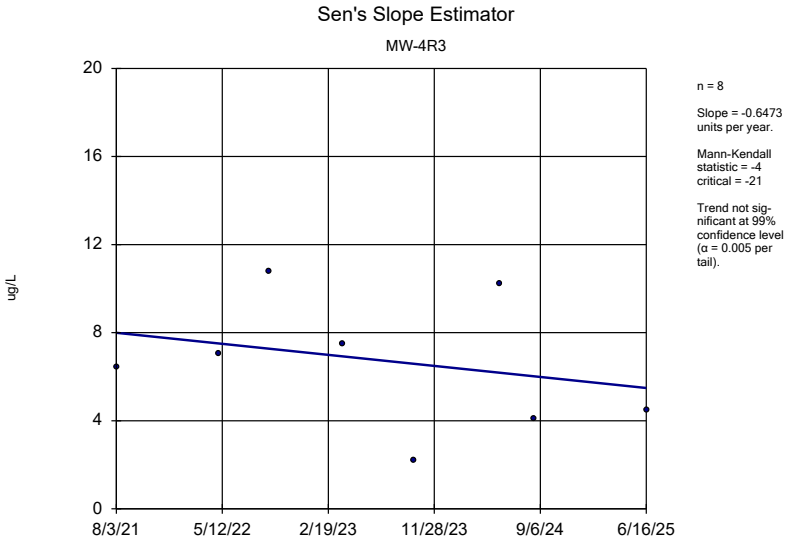
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



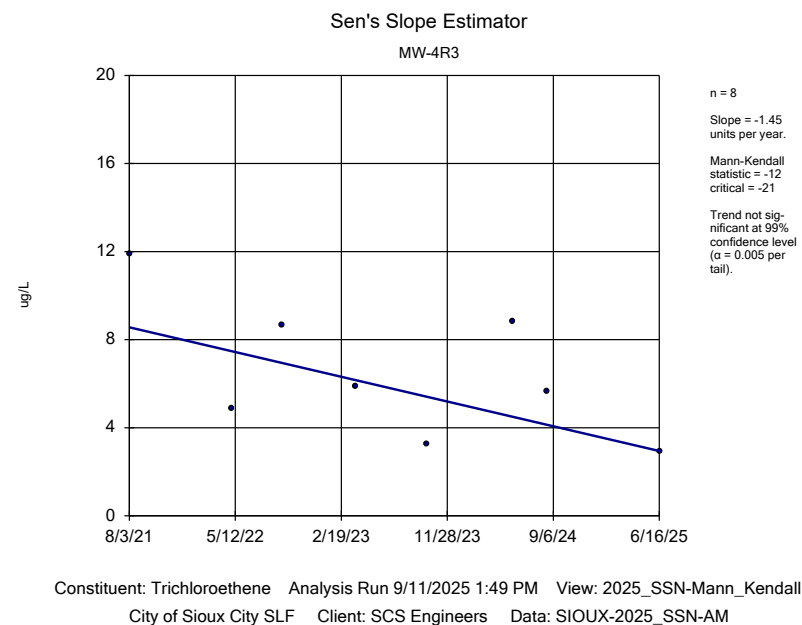
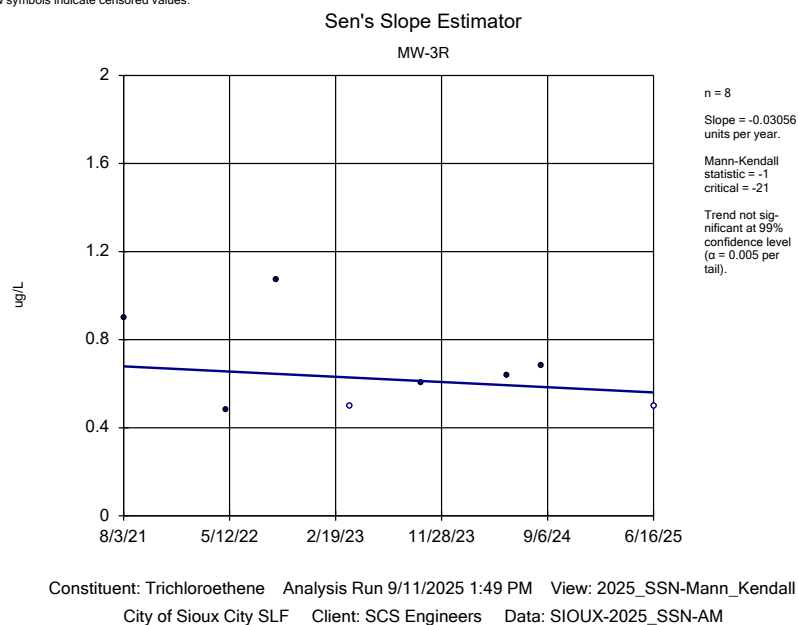
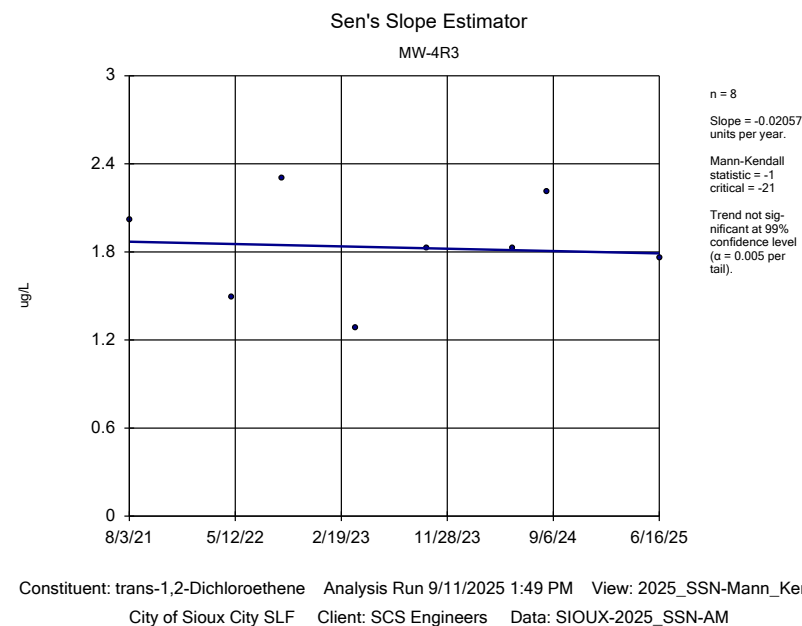
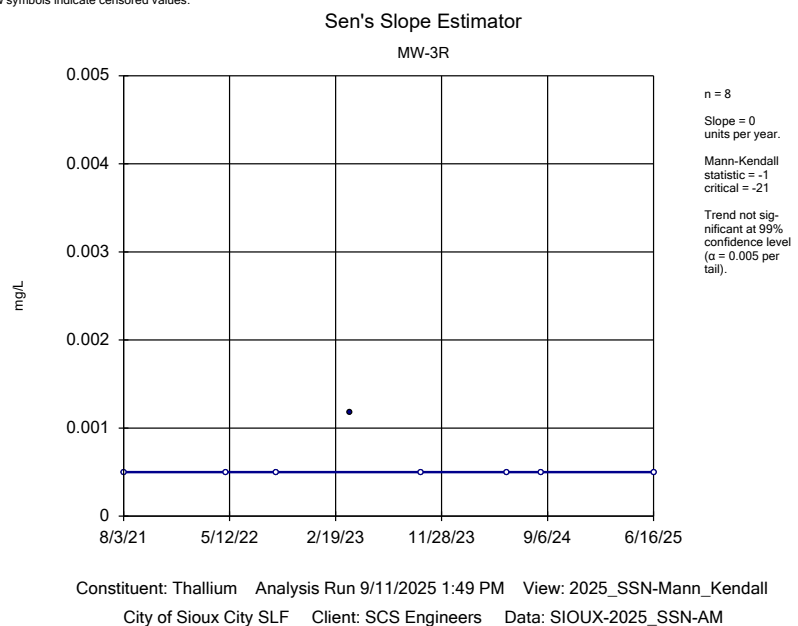
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

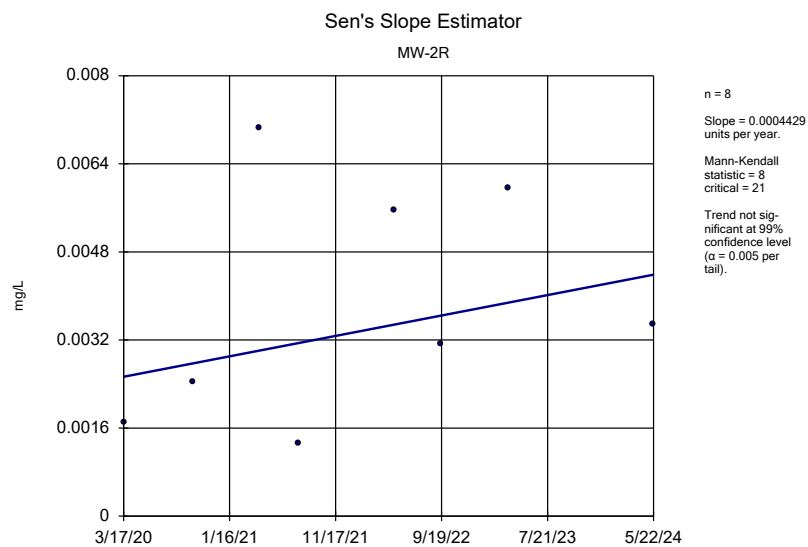


Constituent: Silver Analysis Run 9/11/2025 1:49 PM View: 2025_SSN-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

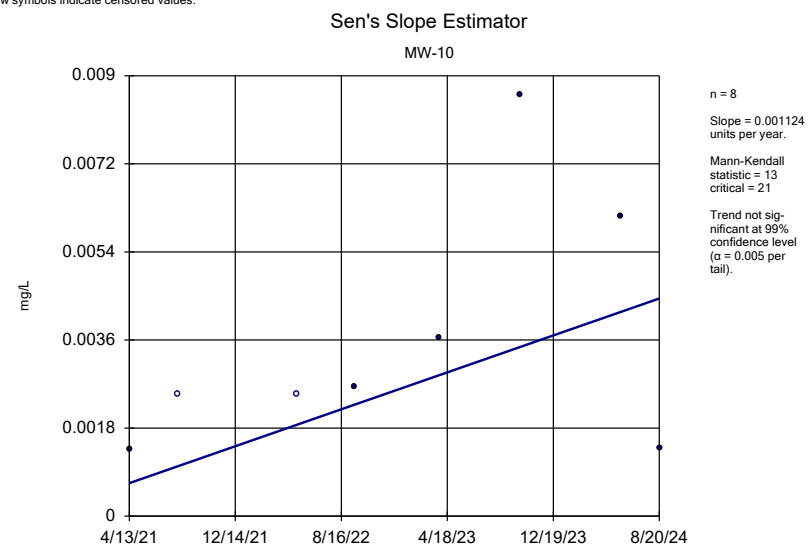


Constituent: Tetrachloroethene Analysis Run 9/11/2025 1:49 PM View: 2025_SSN-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

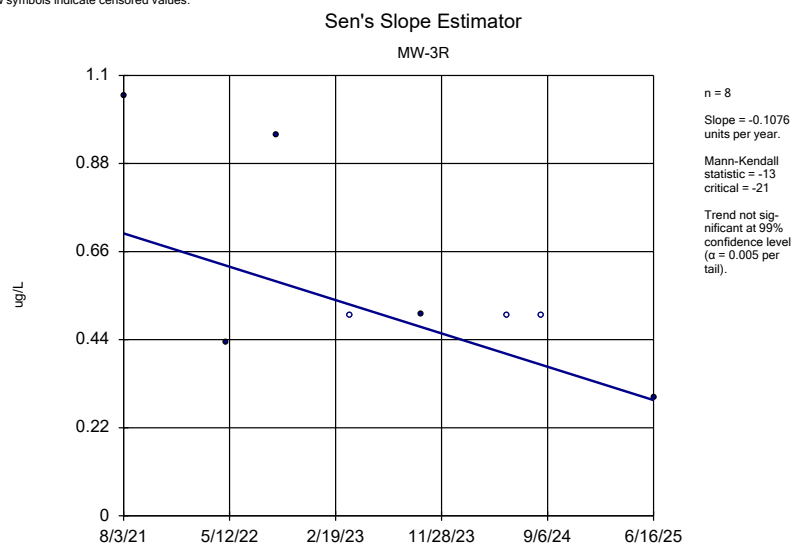




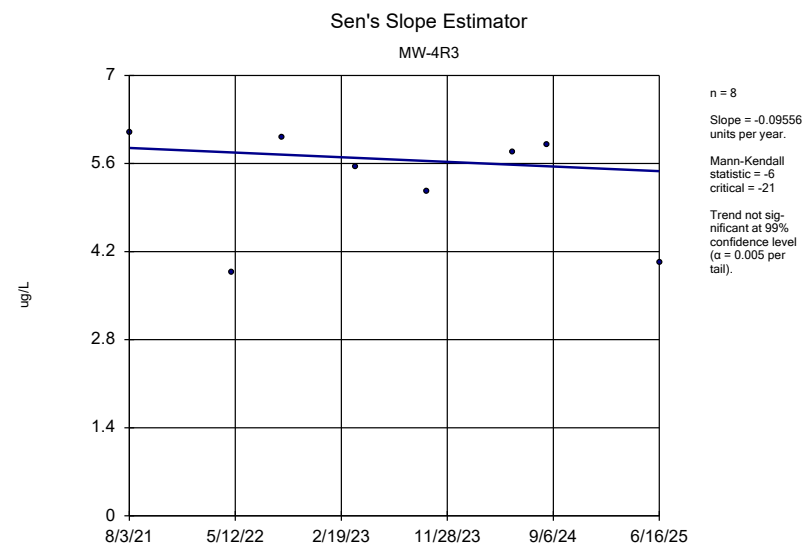
Constituent: Vanadium Analysis Run 9/11/2025 1:49 PM View: 2025_SSN-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



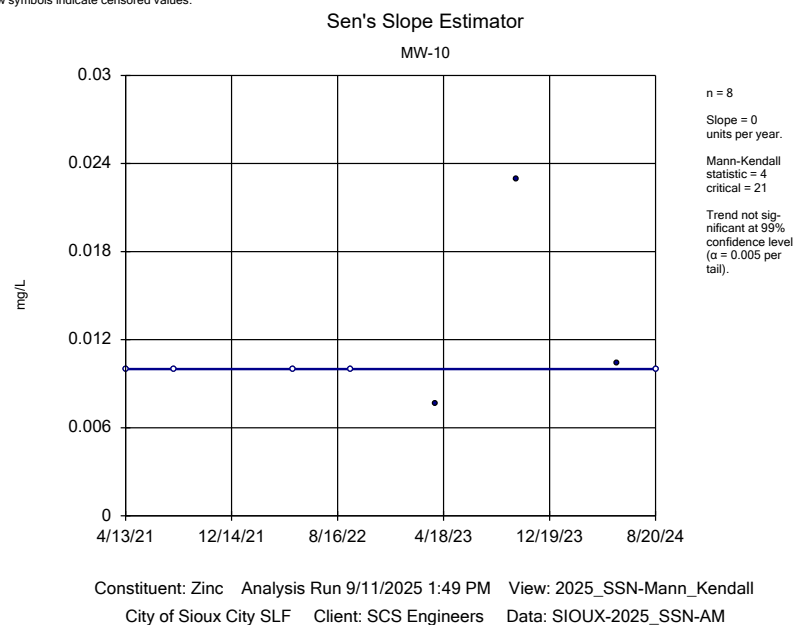
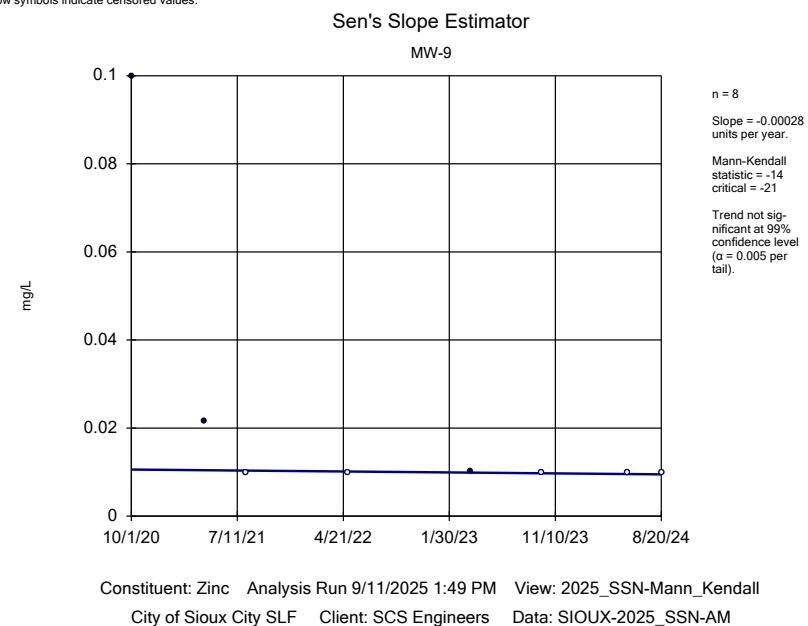
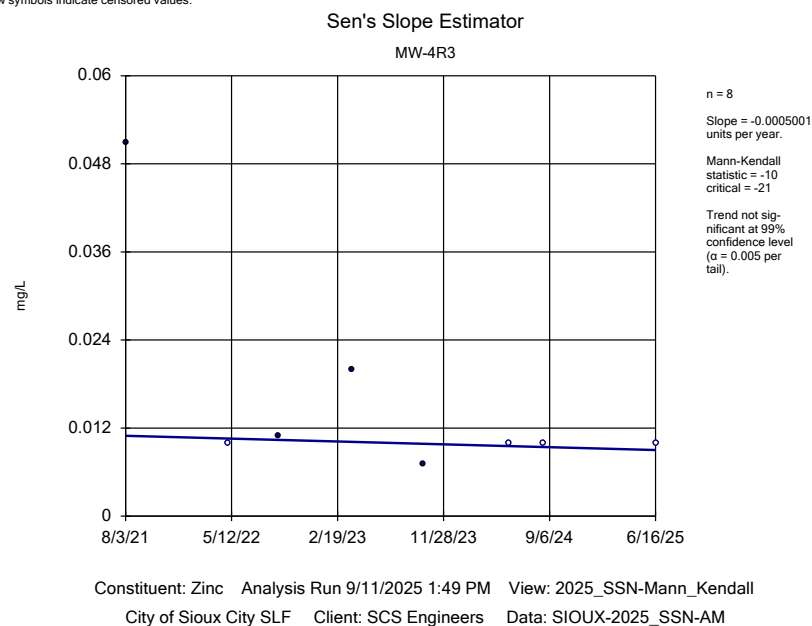
Constituent: Vanadium Analysis Run 9/11/2025 1:49 PM View: 2025_SSN-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



Constituent: Vinyl Chloride Analysis Run 9/11/2025 1:49 PM View: 2025_SSN-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



Constituent: Vinyl Chloride Analysis Run 9/11/2025 1:49 PM View: 2025_SSN-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



Confidence Interval Summary Table and Graphs

Confidence Interval

City of Sioux City SLF

Client: SCS Engineers

Data: SIOUX-2025_SSN-AM

Printed 9/15/2025, 2:53 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
1,1-Dichloroethane (ug/L)	MW-2R	13.67	2.093	140	No	8	0	No	0.01	Param.
1,1-Dichloroethane (ug/L)	MW-3R	88.59	52.78	140	No	8	0	No	0.01	Param.
1,1-Dichloroethane (ug/L)	MW-4R3	105.6	74.98	140	No	8	0	No	0.01	Param.
1,2-Dichloropropane (ug/L)	MW-4R3	1.351	0.7825	5	No	8	0	No	0.01	Param.
Acetone (ug/L)	MW-3R	11.6	4.51	6300	No	8	50	No	0.004	NP (normality)
Acetone (ug/L)	MW-4R3	20.9	3.66	6300	No	8	50	No	0.004	NP (normality)
Acetone (ug/L)	MW-9	37.2	5	6300	No	8	50	No	0.004	NP (normality)
Antimony (mg/L)	MW-11	0.00211	0.001	0.006	No	8	87.5	No	0.004	NP (NDs)
Antimony (mg/L)	MW-12	0.00417	0.0005	0.006	No	8	87.5	No	0.004	NP (NDs)
Arsenic (mg/L)	MW-3R	0.00229	0.00128	0.01	No	8	0	No	0.004	NP (normality)
Arsenic (mg/L)	MW-4R3	0.002878	0.001542	0.01	No	8	0	No	0.01	Param.
Arsenic (mg/L)	MW-9	0.00219	0.001187	0.01	No	8	0	No	0.01	Param.
Arsenic (mg/L)	MW-12	0.00255	0.000781	0.01	No	8	25	No	0.004	NP (normality)
Barium (mg/L)	MW-2R	0.6429	0.5008	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-4R3	1.408	1.202	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-9	0.6282	0.542	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-10	0.2911	0.2414	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-11	0.09861	0.09029	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-12	0.727	0.589	2	No	8	0	No	0.004	NP (normality)
Benzene (ug/L)	MW-3R	1.244	0.356	5	No	8	12.5	No	0.01	Param.
Benzene (ug/L)	MW-4R3	0.9109	0.3108	5	No	8	12.5	No	0.01	Param.
Benzene (ug/L)	MW-9	0.575	0.25	5	No	8	50	No	0.004	NP (normality)
Beryllium (mg/L)	MW-9	0.00534	0.000442	0.004	No	8	75	No	0.004	NP (normality)
Cadmium (mg/L)	MW-2R	0.0006507	0.00005282	0.005	No	8	25	No	0.01	Param.
Cadmium (mg/L)	MW-3R	0.000305	0.00005	0.005	No	8	50	No	0.004	NP (normality)
Cadmium (mg/L)	MW-4R3	0.00085	0.000094	0.005	No	8	50	No	0.004	NP (normality)
Cadmium (mg/L)	MW-9	0.000261	0.00005	0.005	No	8	50	No	0.004	NP (normality)
Cadmium (mg/L)	MW-10	0.00157	0.00005	0.005	No	8	25	No	0.004	NP (normality)
Cadmium (mg/L)	MW-11	0.001274	0.00001618	0.005	No	8	12.5	No	0.01	Param.
Cadmium (mg/L)	MW-12	0.000311	0.00005	0.005	No	8	62.5	No	0.004	NP (normality)
Chloroethane (ug/L)	MW-2R	4.37	1.38	2800	No	8	62.5	No	0.004	NP (normality)
Chloroethane (ug/L)	MW-3R	8.439	4.496	2800	No	8	0	No	0.01	Param.
Chloroethane (ug/L)	MW-4R3	3.856	2.314	2800	No	8	0	No	0.01	Param.
Chloroethane (ug/L)	MW-9	6.38	4.33	2800	No	8	0	No	0.004	NP (normality)
Chloroethane (ug/L)	MW-12	8.24	2	2800	No	8	87.5	No	0.004	NP (NDs)
Chromium (mg/L)	MW-3R	0.573	0.00127	0.1	No	8	50	No	0.004	NP (normality)
cis-1,2-Dichloroethene (ug/L)	MW-2R	4.25	0.4999	70	No	8	0	No	0.01	Param.
cis-1,2-Dichloroethene (ug/L)	MW-3R	2.763	1.014	70	No	8	12.5	No	0.01	Param.
cis-1,2-Dichloroethene (ug/L)	MW-4R3	40.2	28	70	No	8	0	No	0.01	Param.
cis-1,2-Dichloroethene (ug/L)	MW-9	0.815	0.3316	70	No	8	12.5	No	0.01	Param.
Cobalt (mg/L)	MW-2R	0.001255	0.0004012	0.0021	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-3R	0.00777	0.00111	0.0021	No	8	0	No	0.004	NP (normality)
Cobalt (mg/L)	MW-4R3	0.009129	0.006419	0.0021	Yes	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-9	0.004511	0.003214	0.0021	Yes	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-10	0.00541	0.00141	0.0021	No	8	0	No	0.004	NP (normality)
Cobalt (mg/L)	MW-11	0.001925	0.001465	0.0021	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-12	0.0005544	0.0002088	0.0021	No	8	0	No	0.01	Param.
Copper (mg/L)	MW-3R	0.0128	0.0025	1.3	No	8	75	No	0.004	NP (normality)
Copper (mg/L)	MW-9	1.23	0.0025	1.3	No	8	37.5	No	0.004	NP (normality)
Copper (mg/L)	MW-10	0.0171	0.0018	1.3	No	8	37.5	No	0.004	NP (normality)

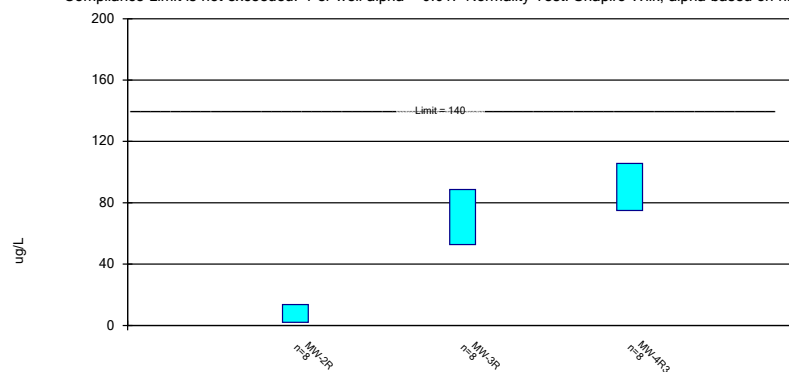
Confidence Interval

City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM Printed 9/15/2025, 2:53 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Dichlorodifluoromethane (ug/L)	MW-3R	3.98	0.303	1000	No	8	37.5	No	0.004	NP (normality)
Dichlorodifluoromethane (ug/L)	MW-9	3.791	1.203	1000	No	8	0	No	0.01	Param.
Dichlorodifluoromethane (ug/L)	MW-10	8.894	2.719	1000	No	8	12.5	No	0.01	Param.
Dichlorodifluoromethane (ug/L)	MW-12	9.094	1.216	1000	No	8	12.5	No	0.01	Param.
Lead (mg/L)	MW-2R	0.000522	0.00025	0.015	No	8	62.5	No	0.004	NP (normality)
Lead (mg/L)	MW-3R	0.00216	0.00025	0.015	No	8	37.5	No	0.004	NP (normality)
Lead (mg/L)	MW-4R3	0.00317	0.00025	0.015	No	8	37.5	No	0.004	NP (normality)
Lead (mg/L)	MW-9	0.00217	0.000216	0.015	No	8	37.5	No	0.004	NP (normality)
Lead (mg/L)	MW-10	0.00646	0.00025	0.015	No	8	25	No	0.004	NP (normality)
Lead (mg/L)	MW-11	0.000754	0.00025	0.015	No	8	50	No	0.004	NP (normality)
Lead (mg/L)	MW-12	0.00111	0.00025	0.015	No	8	75	No	0.004	NP (normality)
Nickel (mg/L)	MW-2R	0.007598	0.004262	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-3R	0.265	0.0123	0.1	No	8	0	No	0.004	NP (normality)
Nickel (mg/L)	MW-4R3	0.0335	0.0155	0.1	No	8	0	No	0.004	NP (normality)
Nickel (mg/L)	MW-9	0.0104	0.007358	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-10	0.0106	0.00197	0.1	No	8	12.5	No	0.004	NP (normality)
Selenium (mg/L)	MW-11	0.0518	0.00157	0.1109	No	8	62.5	No	0.004	NP (normality)
Silver (mg/L)	MW-3R	0.00165	0.0005	0.1	No	8	87.5	No	0.004	NP (NDs)
Tetrachloroethene (ug/L)	MW-4R3	9.744	3.434	5	No	8	0	No	0.01	Param.
Thallium (mg/L)	MW-3R	0.00117	0.0005	0.002	No	8	87.5	No	0.004	NP (NDs)
trans-1,2-Dichloroethene (ug/L)	MW-4R3	2.204	1.476	100	No	8	0	No	0.01	Param.
Trichloroethene (ug/L)	MW-3R	0.9095	0.5144	5	No	8	25	No	0.01	Param.
Trichloroethene (ug/L)	MW-4R3	9.763	3.237	5	No	8	0	No	0.01	Param.
Vanadium (mg/L)	MW-2R	0.00607	0.001599	0.035	No	8	0	No	0.01	Param.
Vanadium (mg/L)	MW-10	0.00861	0.00136	0.035	No	8	25	No	0.004	NP (normality)
Vinyl Chloride (ug/L)	MW-3R	1.05	0.295	2	No	8	37.5	No	0.004	NP (normality)
Vinyl Chloride (ug/L)	MW-4R3	6.1	3.87	2	Yes	8	0	No	0.004	NP (normality)
Zinc (mg/L)	MW-4R3	0.0509	0.00718	2	No	8	50	No	0.004	NP (normality)
Zinc (mg/L)	MW-9	0.0999	0.01	2	No	8	62.5	No	0.004	NP (normality)
Zinc (mg/L)	MW-10	0.0229	0.00763	2	No	8	62.5	No	0.004	NP (normality)

Parametric Confidence Interval

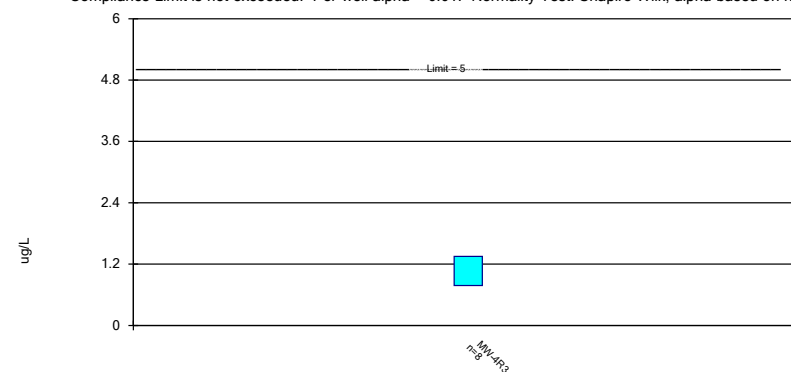
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Constituent: 1,1-Dichloroethane Analysis Run 9/15/2025 2:48 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Parametric Confidence Interval

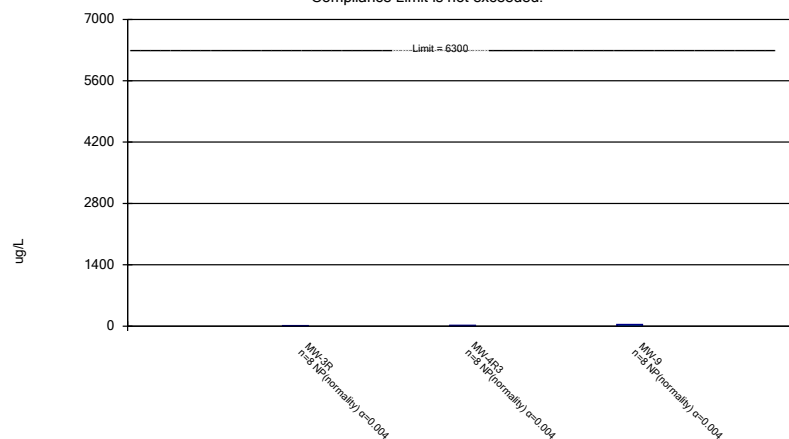
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Constituent: 1,2-Dichloropropane Analysis Run 9/15/2025 2:48 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Non-Parametric Confidence Interval

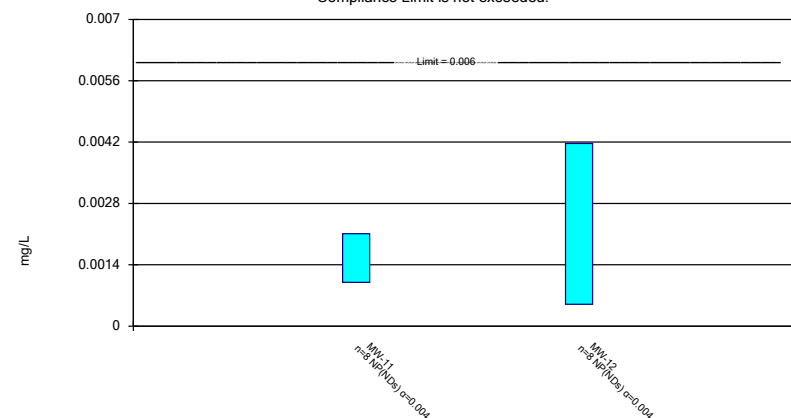
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Constituent: Acetone Analysis Run 9/15/2025 2:48 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Non-Parametric Confidence Interval

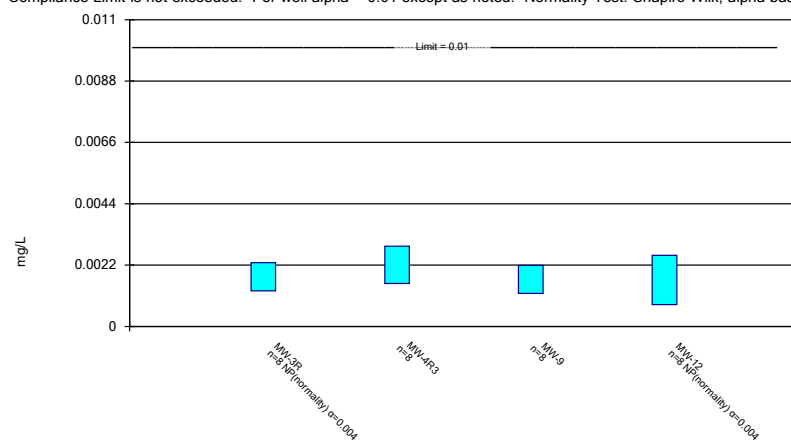
Compliance Limit is not exceeded.



Constituent: Antimony Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Parametric and Non-Parametric (NP) Confidence Interval

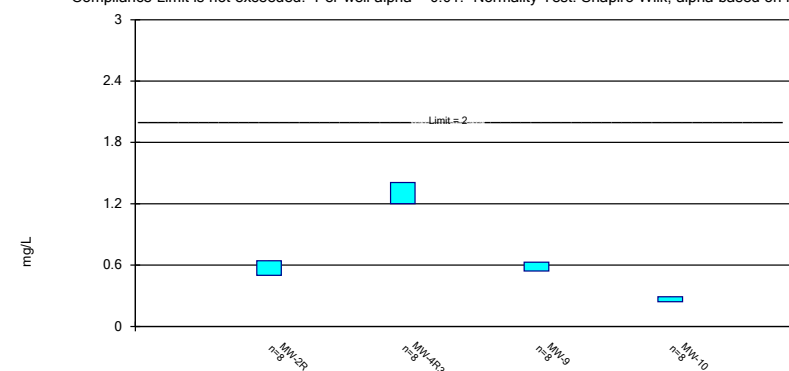
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Arsenic Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Parametric Confidence Interval

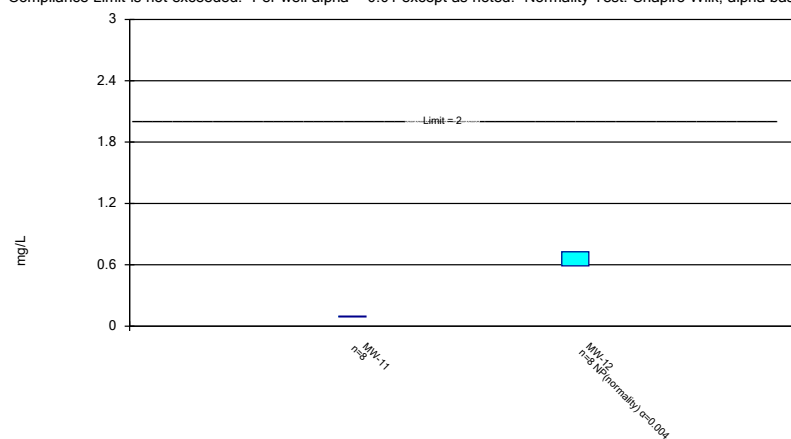
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Barium Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Parametric and Non-Parametric (NP) Confidence Interval

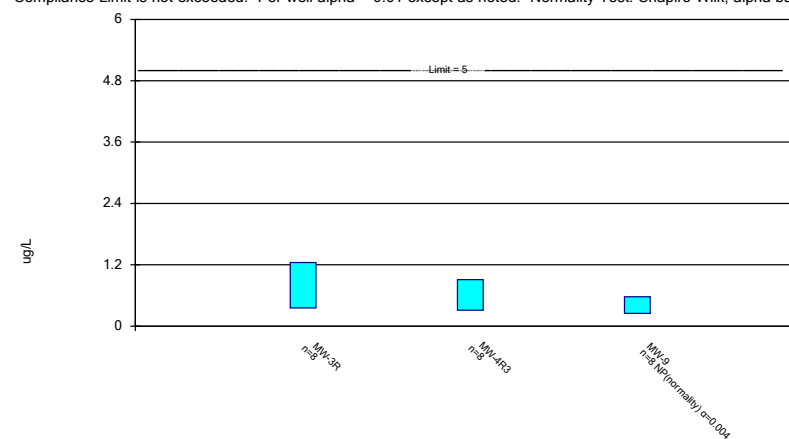
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Constituent: Barium Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Parametric and Non-Parametric (NP) Confidence Interval

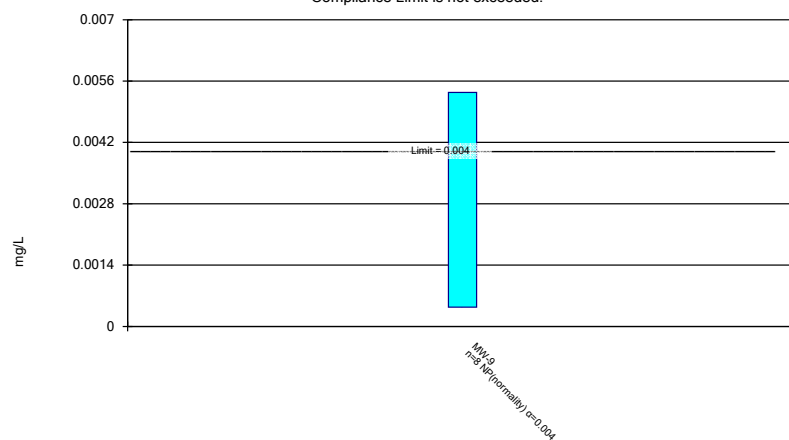
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Constituent: Benzene Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Non-Parametric Confidence Interval

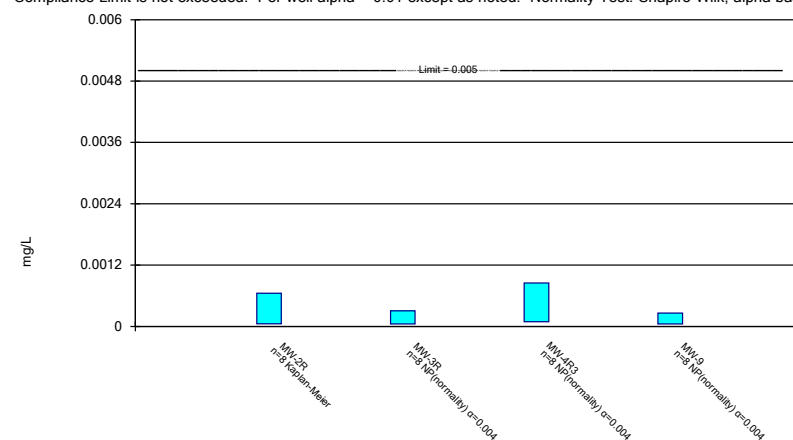
Compliance Limit is not exceeded.



Constituent: Beryllium Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Parametric and Non-Parametric (NP) Confidence Interval

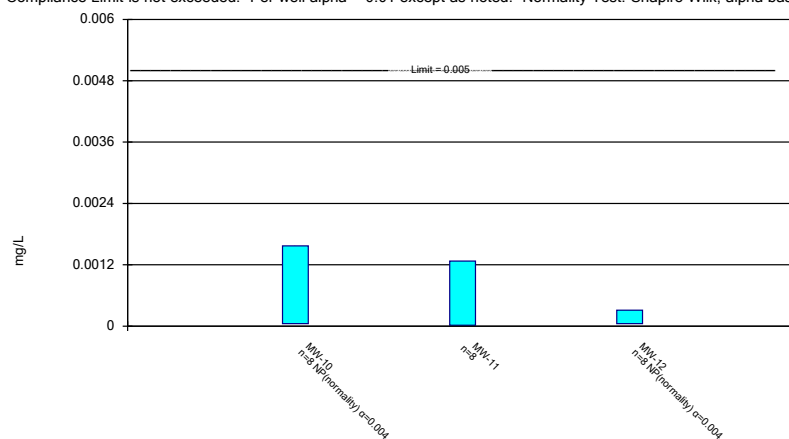
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cadmium Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Parametric and Non-Parametric (NP) Confidence Interval

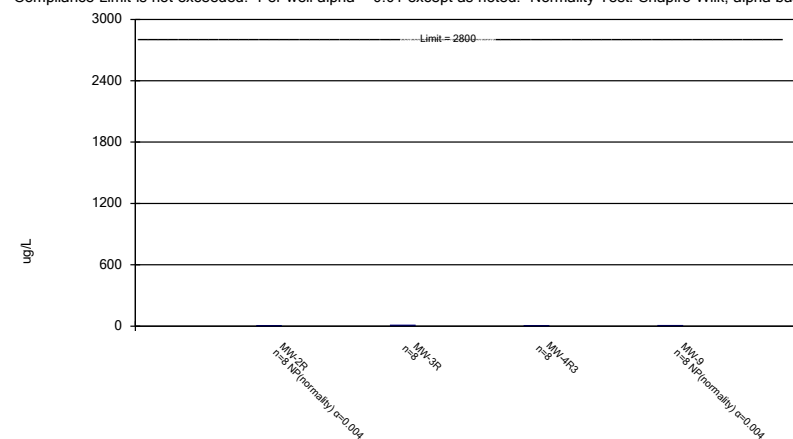
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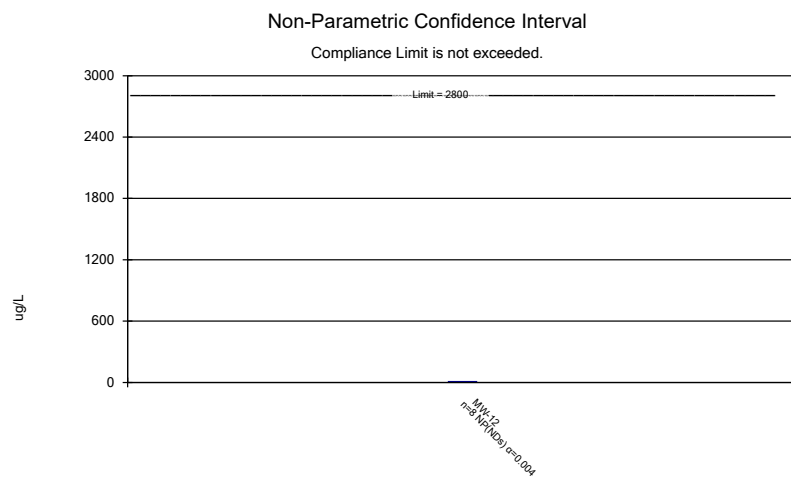
Constituent: Cadmium Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Parametric and Non-Parametric (NP) Confidence Interval

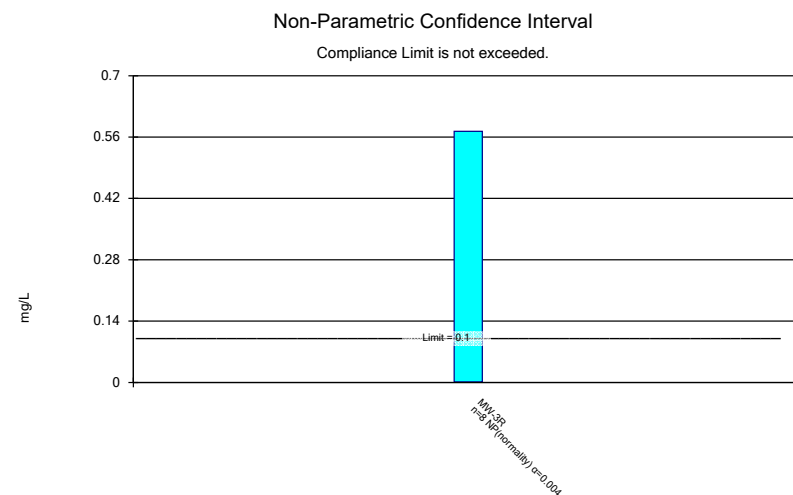
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



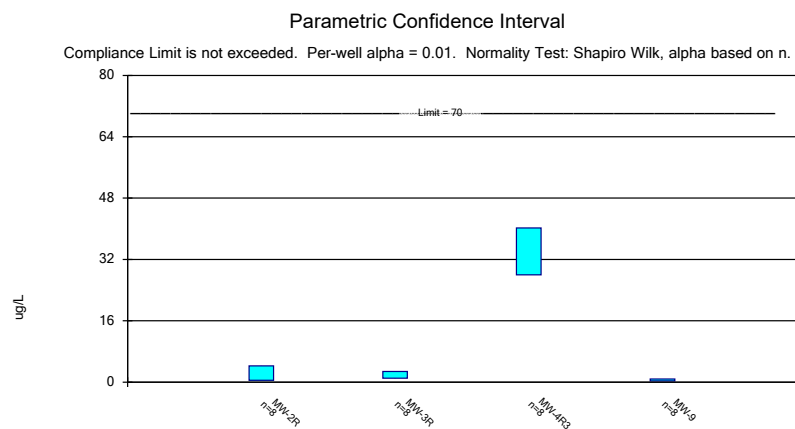
Constituent: Chloroethane Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



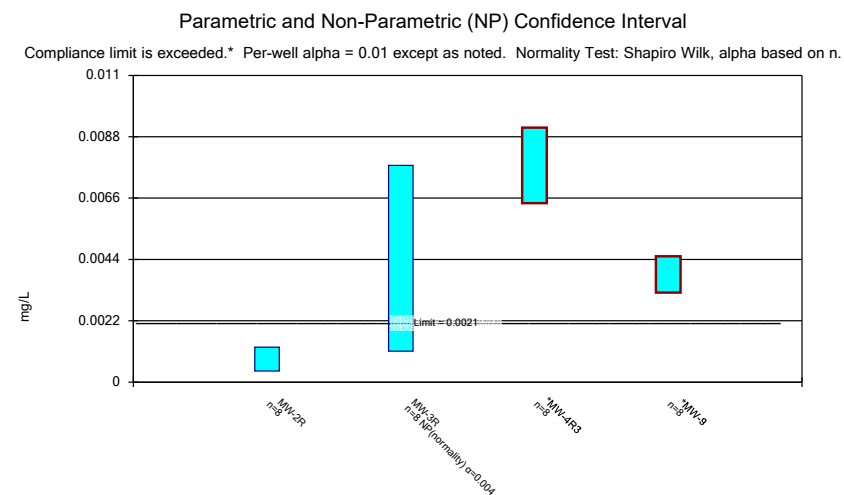
Constituent: Chloroethane Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



Constituent: Chromium Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



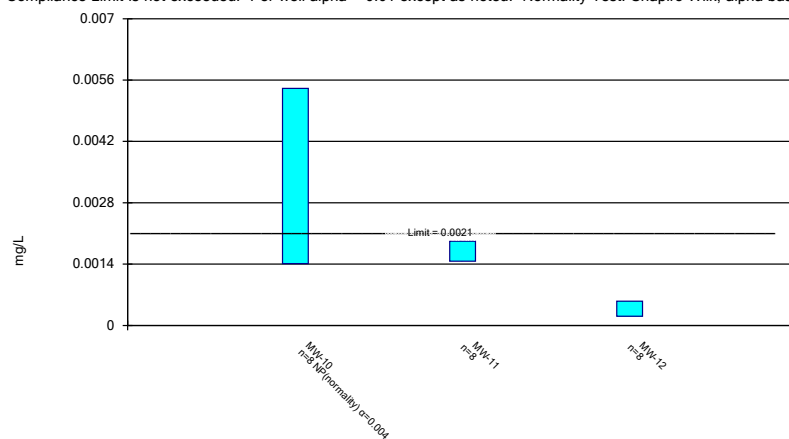
Constituent: cis-1,2-Dichloroethene Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interv
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



Constituent: Cobalt Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Parametric and Non-Parametric (NP) Confidence Interval

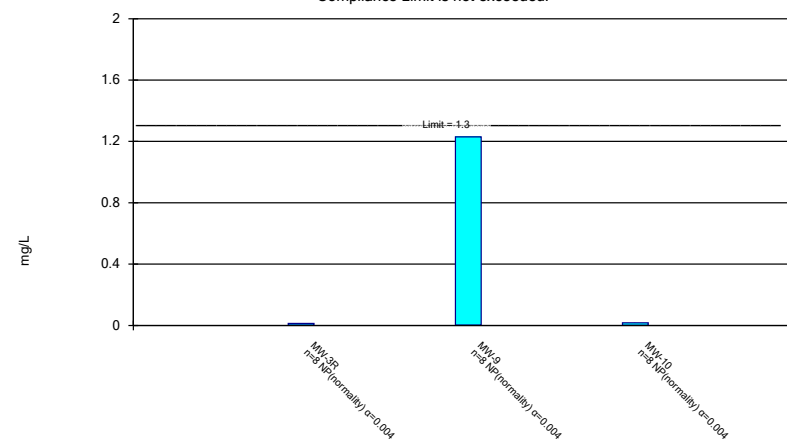
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Cobalt Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Non-Parametric Confidence Interval

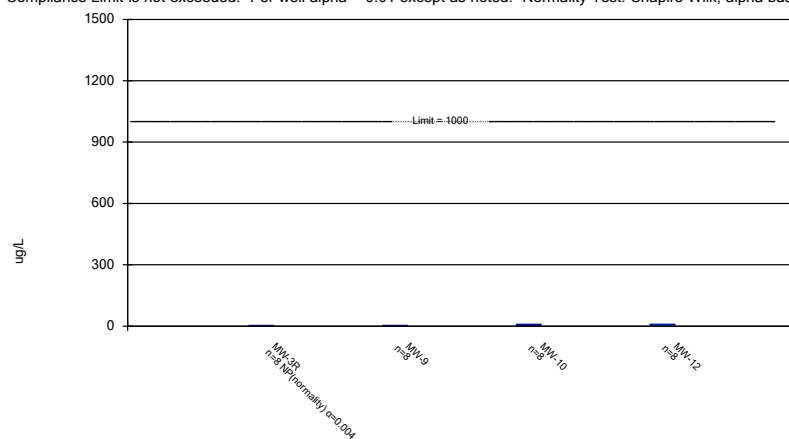
Compliance Limit is not exceeded.



Constituent: Copper Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Parametric and Non-Parametric (NP) Confidence Interval

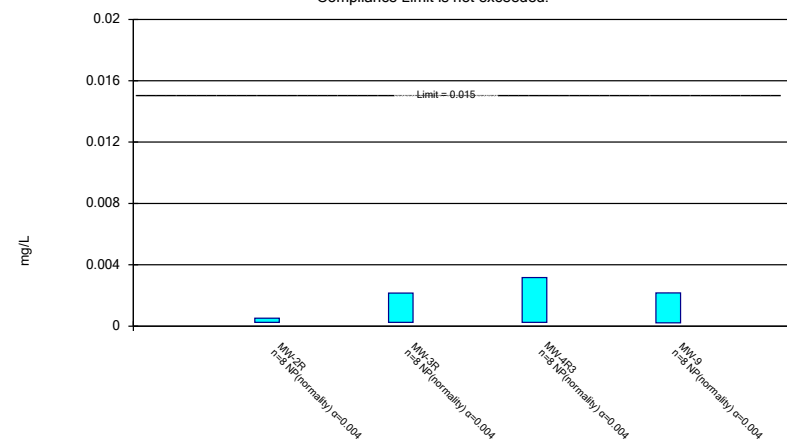
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Dichlorodifluoromethane Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Inte
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Non-Parametric Confidence Interval

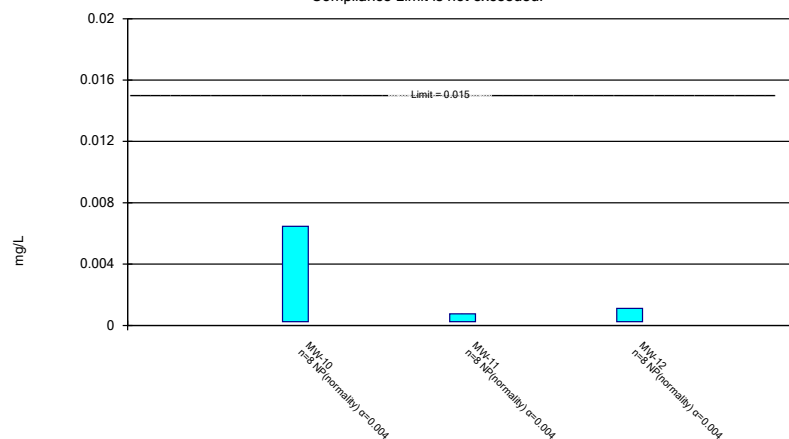
Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Non-Parametric Confidence Interval

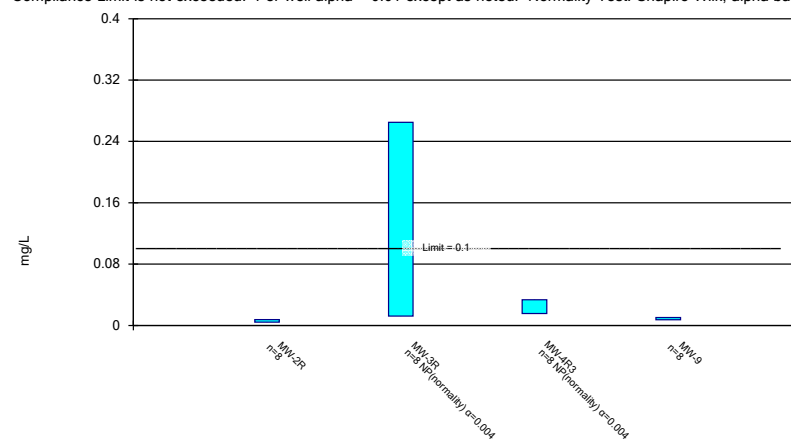
Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Parametric and Non-Parametric (NP) Confidence Interval

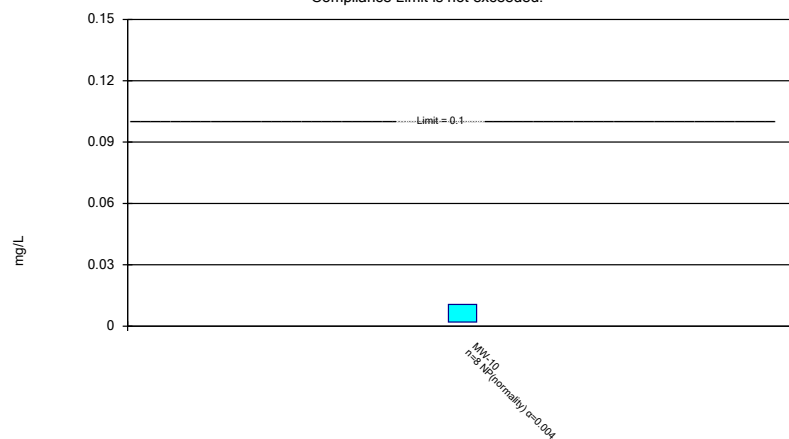
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Nickel Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Non-Parametric Confidence Interval

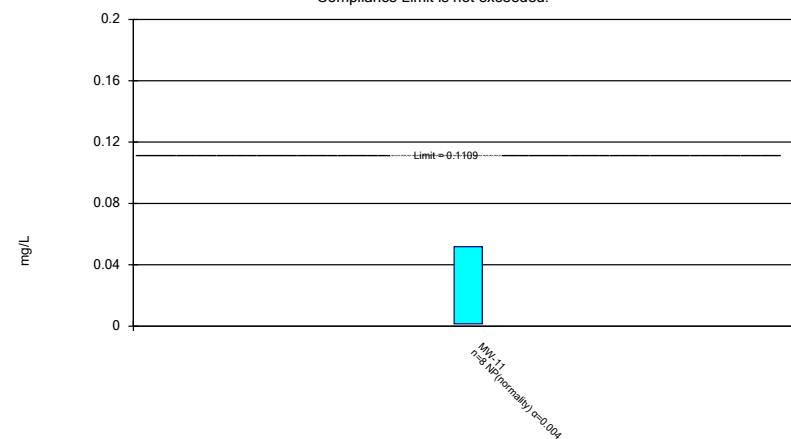
Compliance Limit is not exceeded.



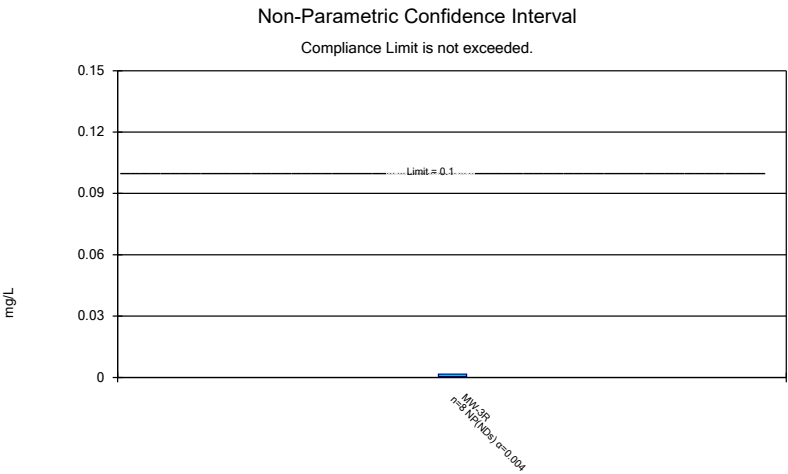
Constituent: Nickel Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Non-Parametric Confidence Interval

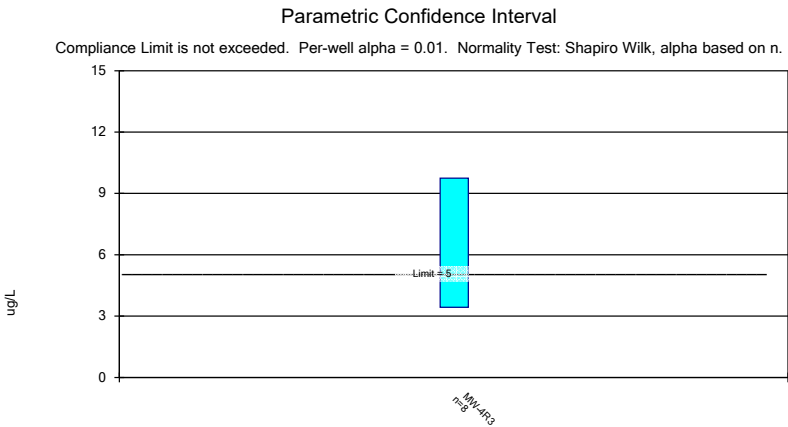
Compliance Limit is not exceeded.



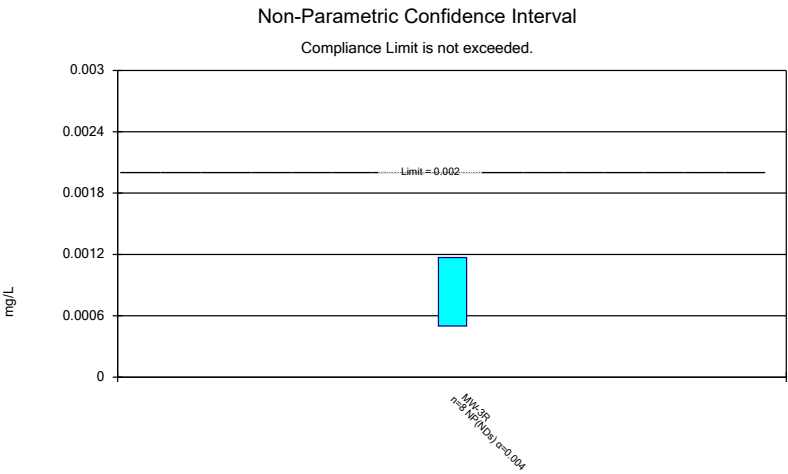
Constituent: Selenium Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



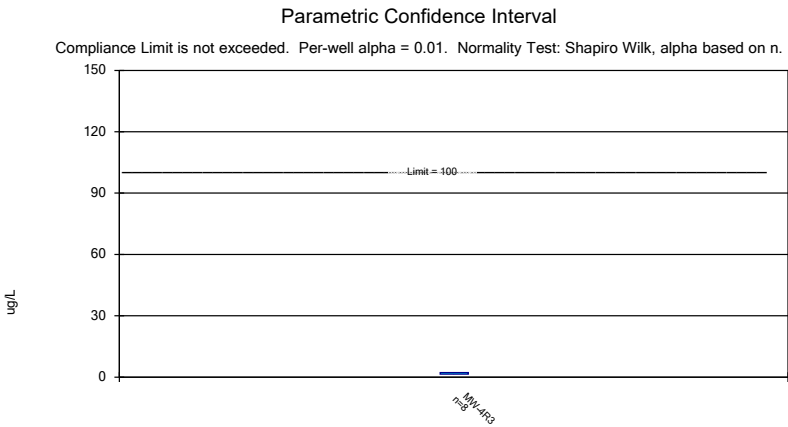
Constituent: Silver Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



Constituent: Tetrachloroethene Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



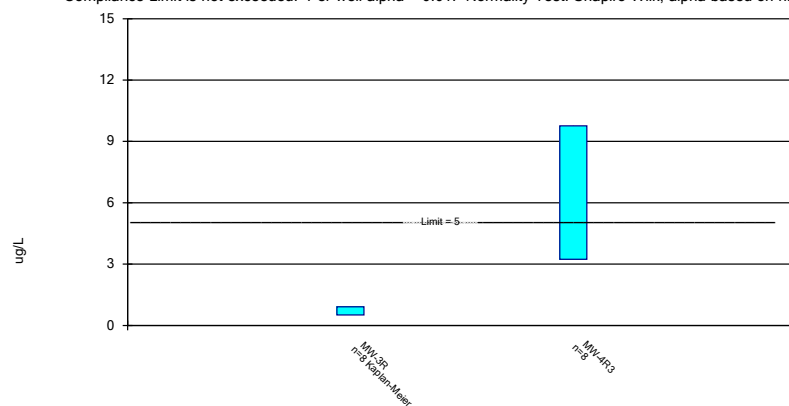
Constituent: Thallium Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM



Constituent: trans-1,2-Dichloroethene Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Inte
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Parametric Confidence Interval

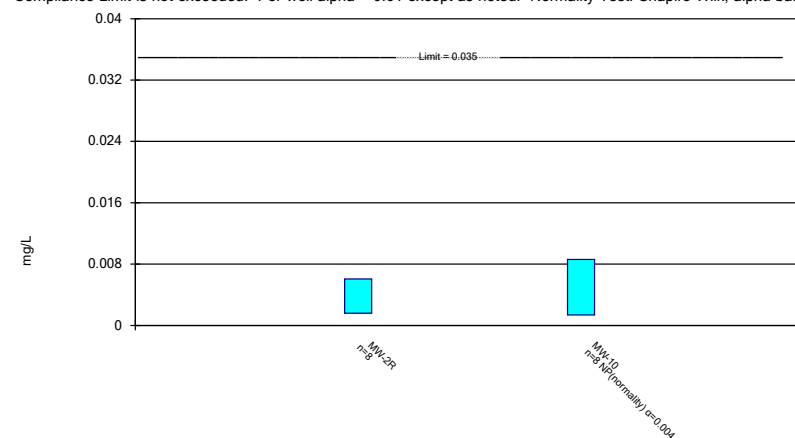
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Trichloroethene Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Parametric and Non-Parametric (NP) Confidence Interval

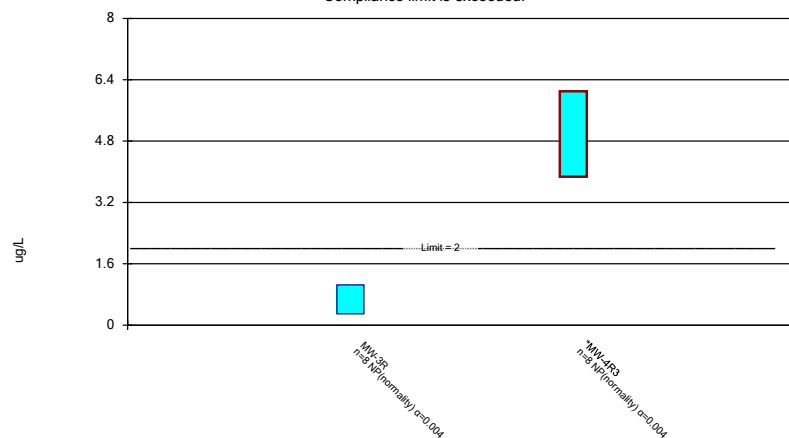
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk, alpha based on n.



Constituent: Vanadium Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Non-Parametric Confidence Interval

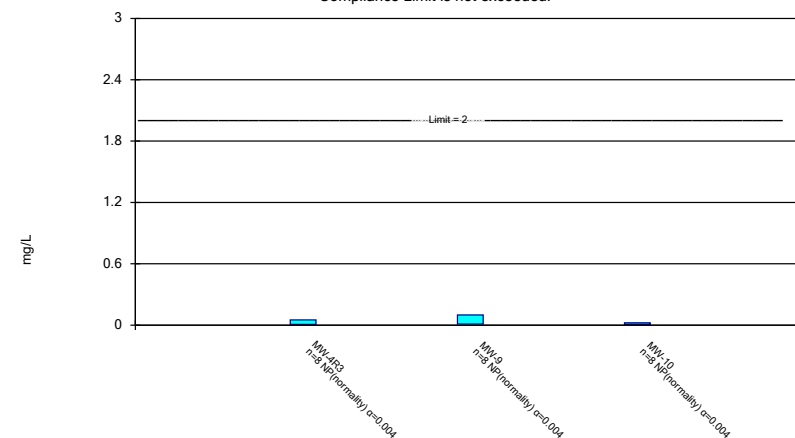
Compliance limit is exceeded.*



Constituent: Vinyl Chloride Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Zinc Analysis Run 9/15/2025 2:49 PM View: 2025_SSN-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Theil-Sen Confidence Bands Table and Graphs

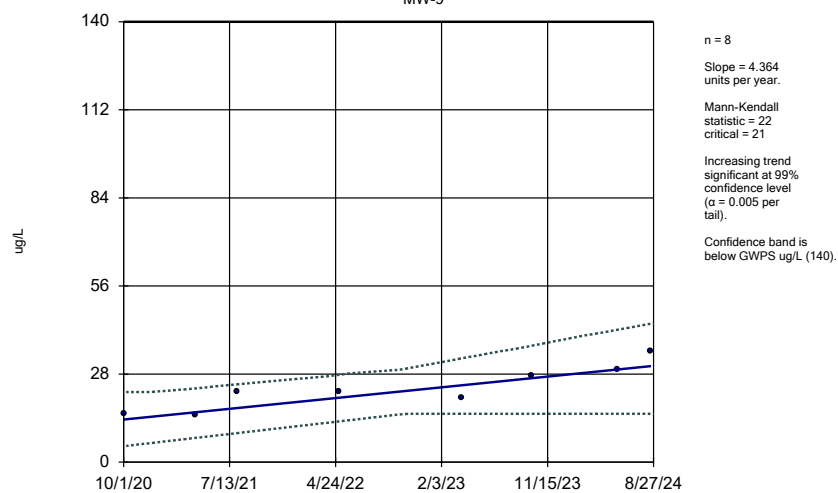
Theil Sen/Trend Test

City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM Printed 9/15/2025, 3:17 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
1,1-Dichloroethane (ug/L)	MW-9	4.364	22	21	Yes	8	0	0.01	NP
1,1-Dichloroethane (ug/L)	MW-12	0.5647	22	21	Yes	8	12.5	0.01	NP
Barium (mg/L)	MW-3R	-0.0819	-22	-21	Yes	8	0	0.01	NP

Sen's Slope and 99% Confidence Band

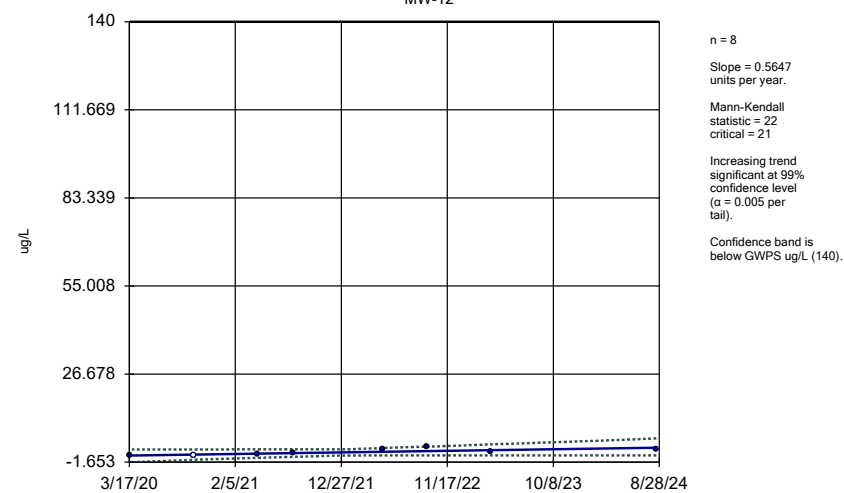
MW-9



Constituent: 1,1-Dichloroethane Analysis Run 9/15/2025 3:15 PM View: 2025_SSN-Theil_Sen
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Sen's Slope and 99% Confidence Band

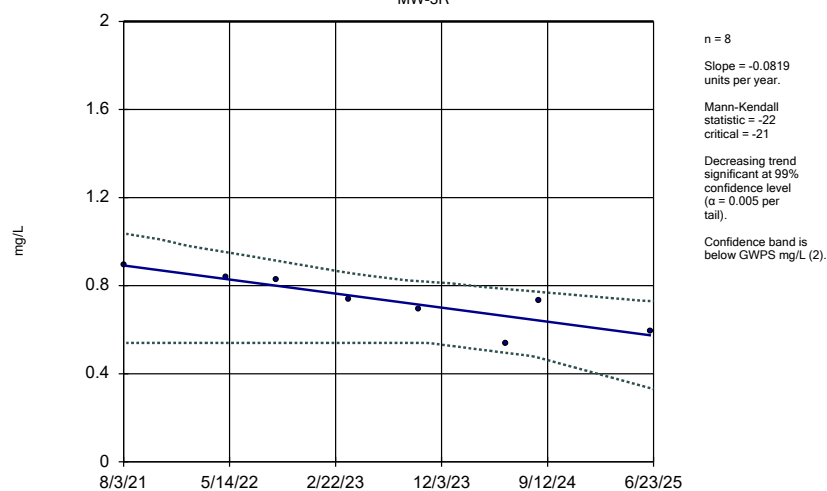
MW-12



Constituent: 1,1-Dichloroethane Analysis Run 9/15/2025 3:15 PM View: 2025_SSN-Theil_Sen
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

Sen's Slope and 99% Confidence Band

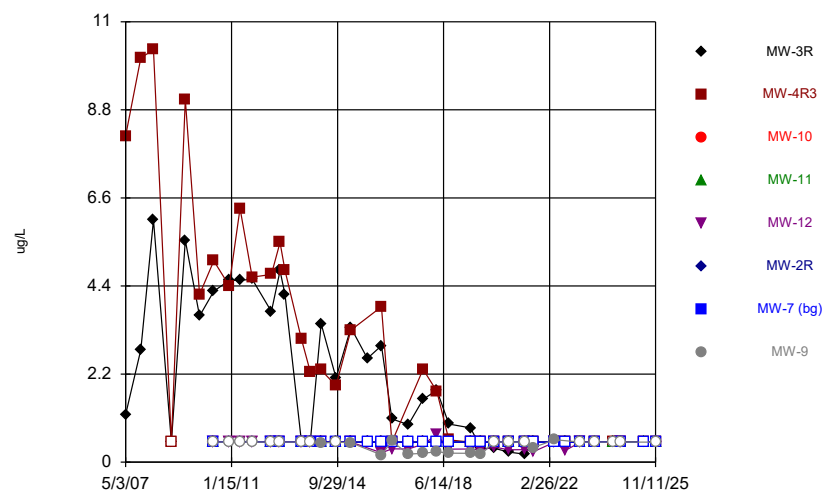
MW-3R



Constituent: Barium Analysis Run 9/15/2025 3:15 PM View: 2025_SSN-Theil_Sen
City of Sioux City SLF Client: SCS Engineers Data: SIOUX-2025_SSN-AM

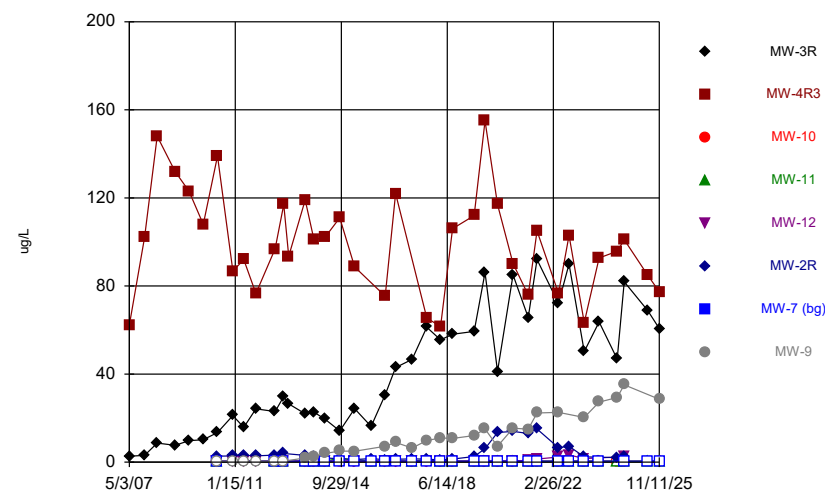
Time Series Plots

Time Series



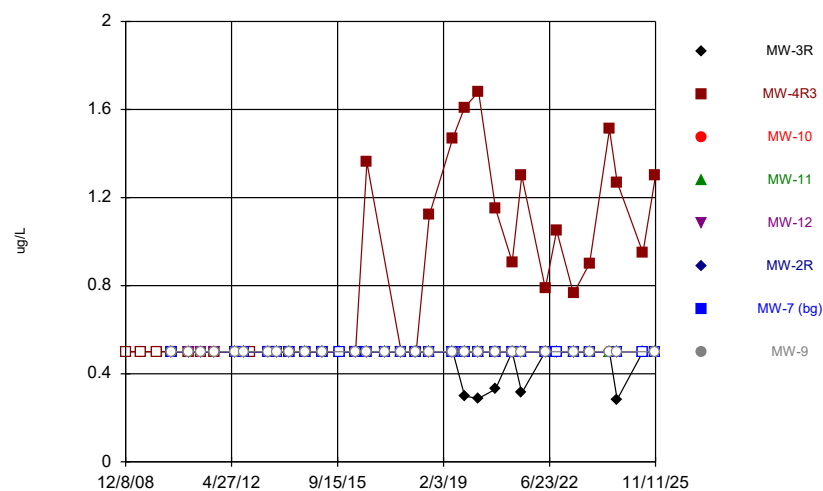
Constituent: 1,1,1-Trichloroethane Analysis Run 12/9/2025 12:34 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



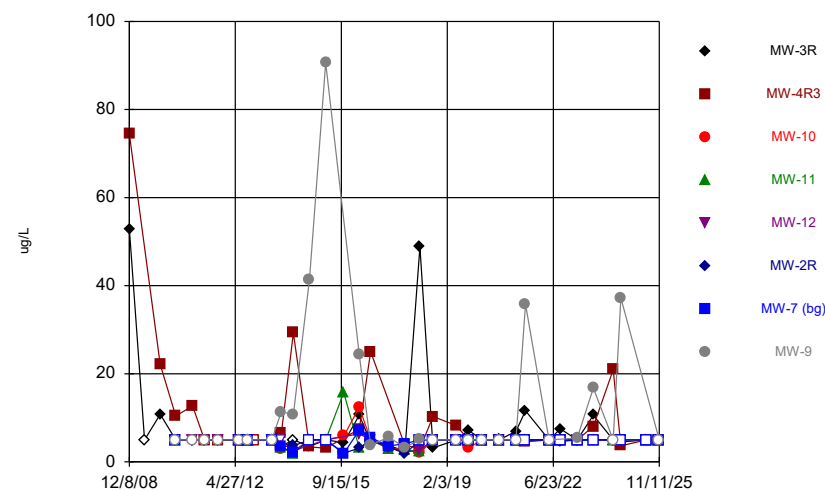
Constituent: 1,1-Dichloroethane Analysis Run 12/9/2025 12:34 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



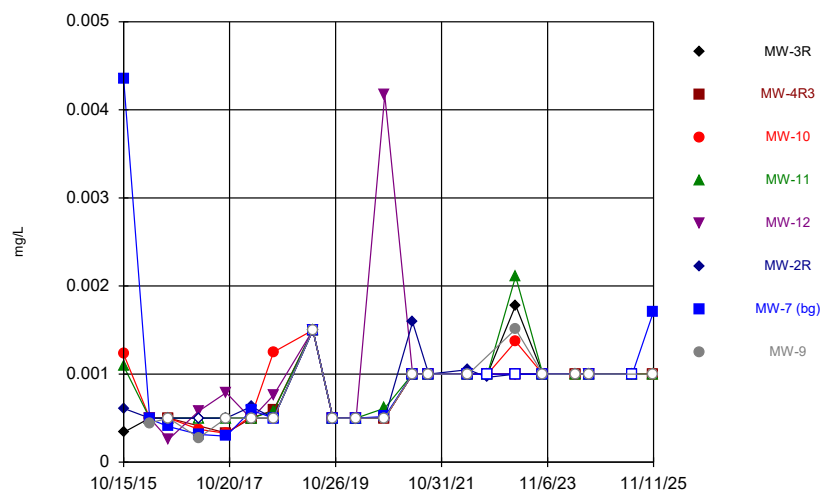
Constituent: 1,2-Dichloropropane Analysis Run 12/9/2025 12:34 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



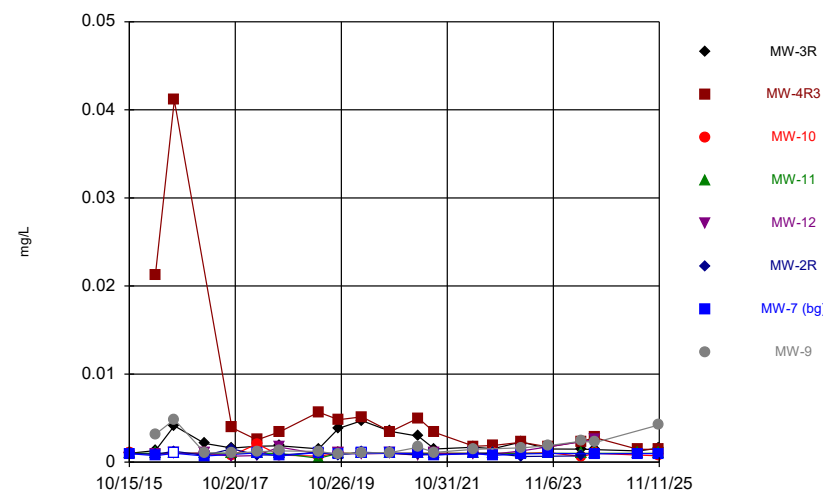
Constituent: Acetone Analysis Run 12/9/2025 12:34 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



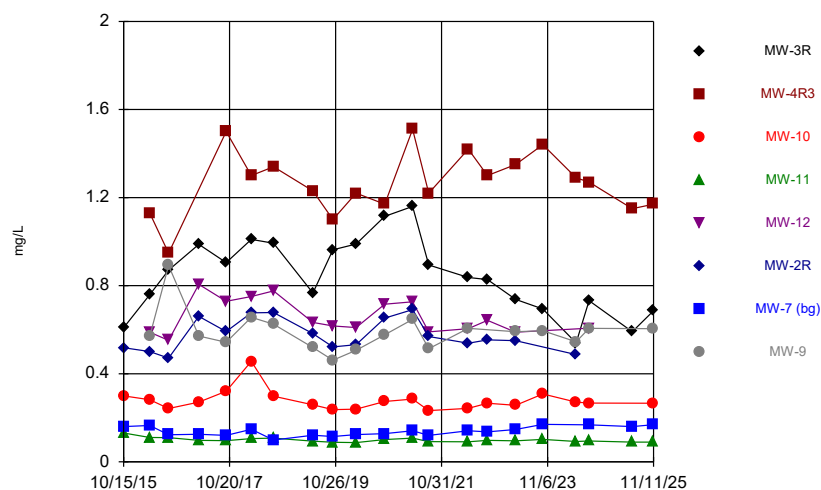
Constituent: Antimony Analysis Run 12/9/2025 12:34 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



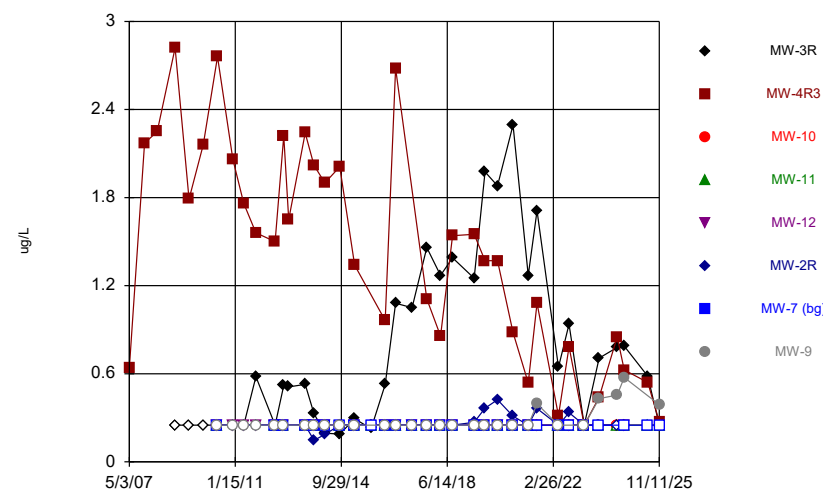
Constituent: Arsenic Analysis Run 12/9/2025 12:34 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



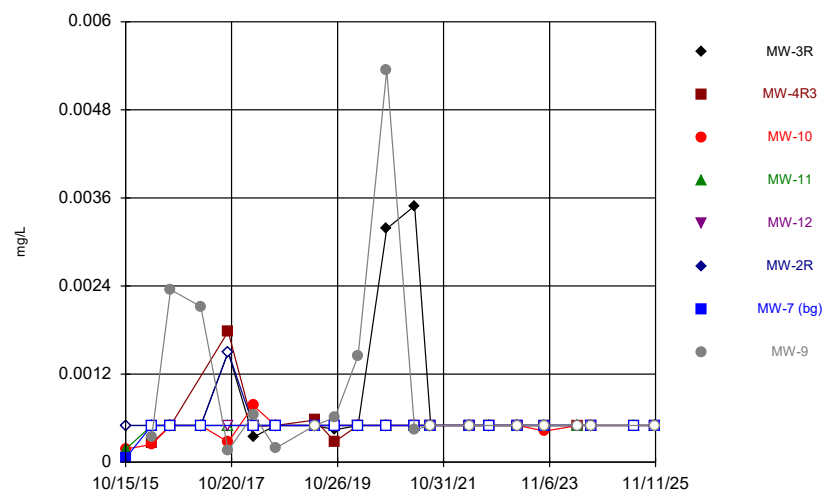
Constituent: Barium Analysis Run 12/9/2025 12:34 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



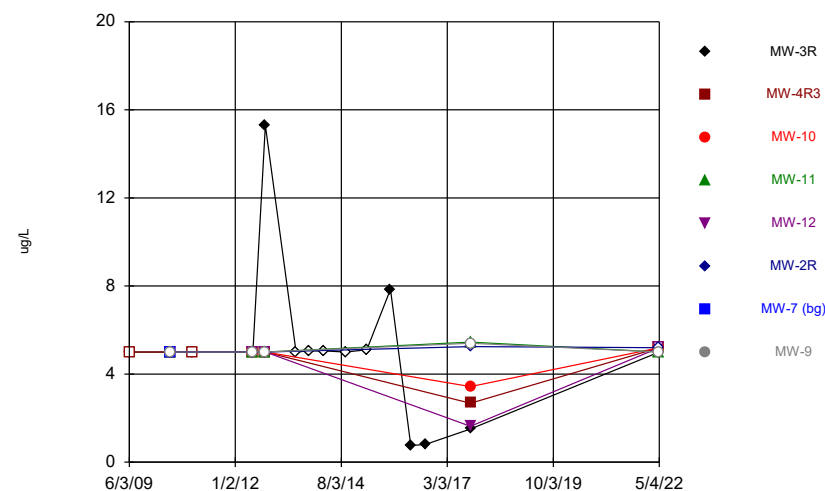
Constituent: Benzene Analysis Run 12/9/2025 12:34 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



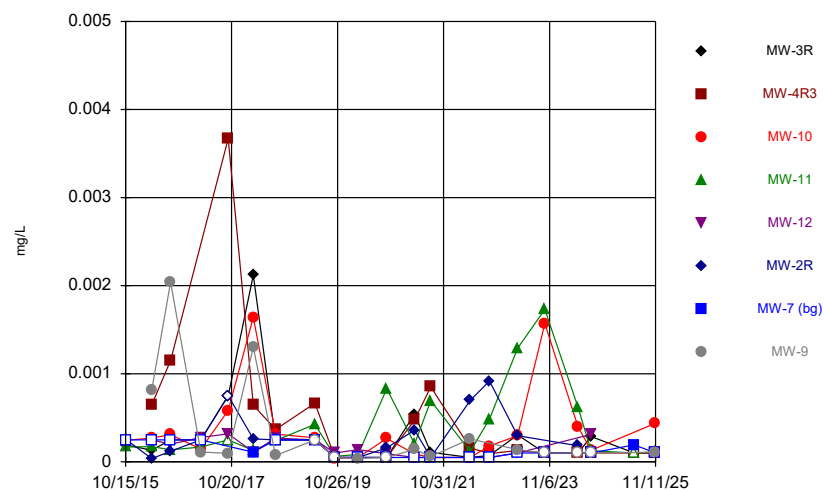
Constituent: Beryllium Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



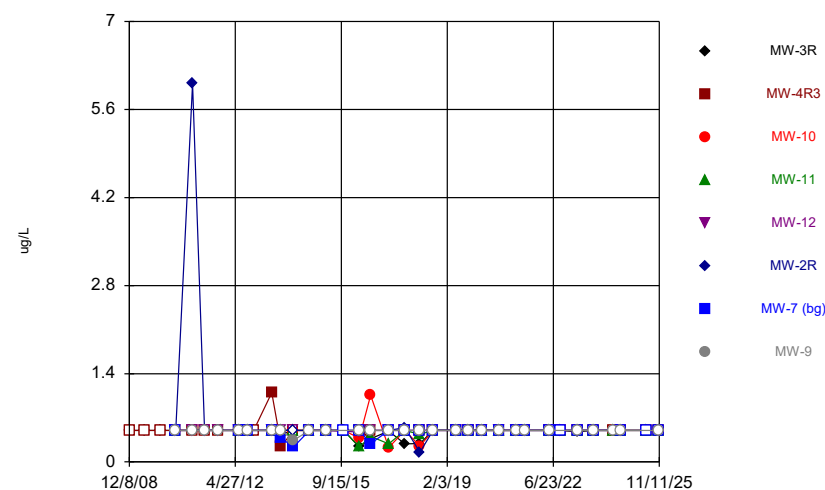
Constituent: Bis[2-ethylhexyl]phthalate Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



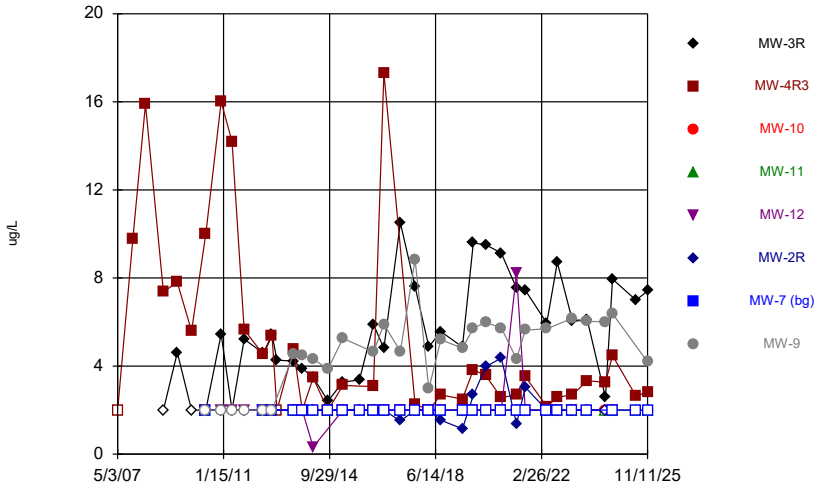
Constituent: Cadmium Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



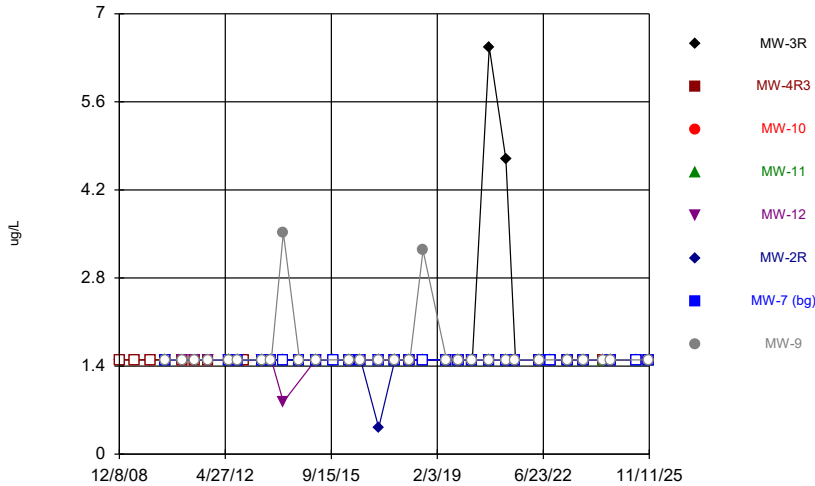
Constituent: Carbon Disulfide Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



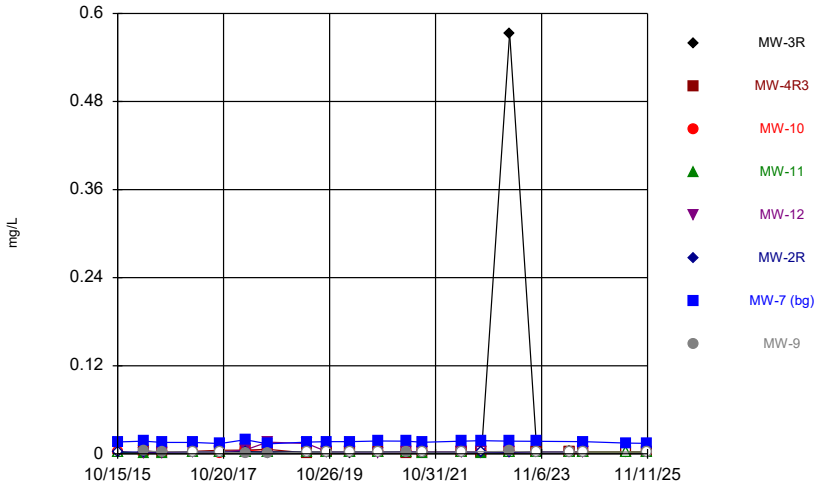
Constituent: Chloroethane Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



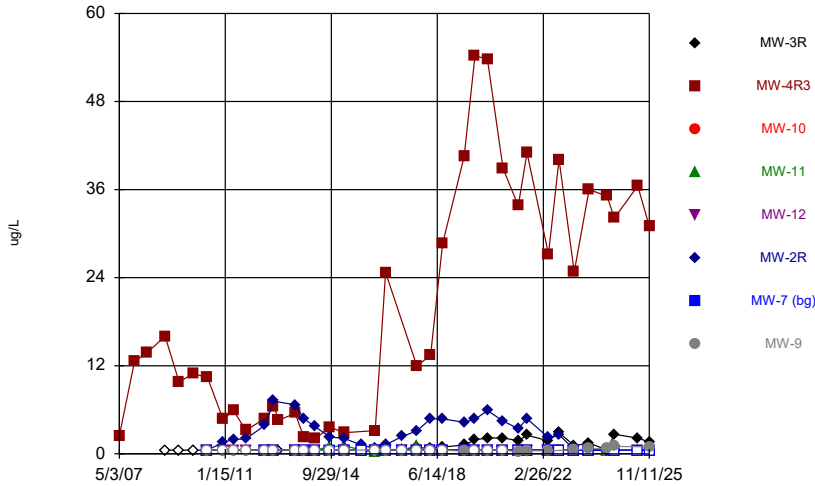
Constituent: Chloromethane Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



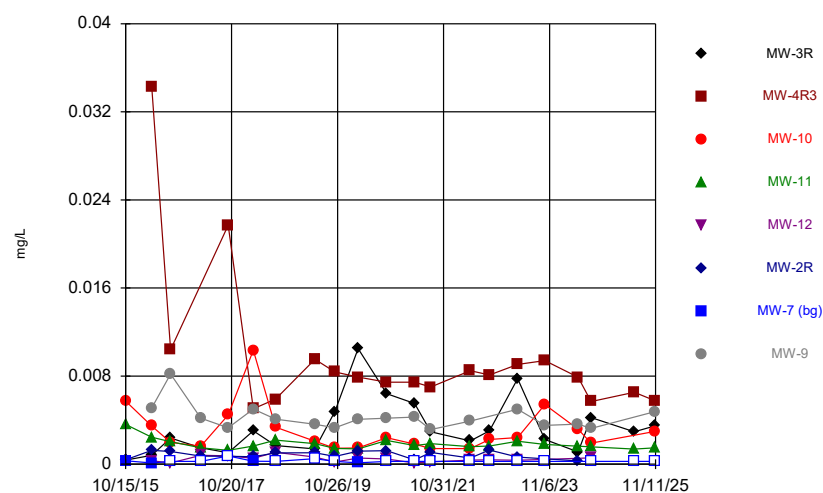
Constituent: Chromium Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



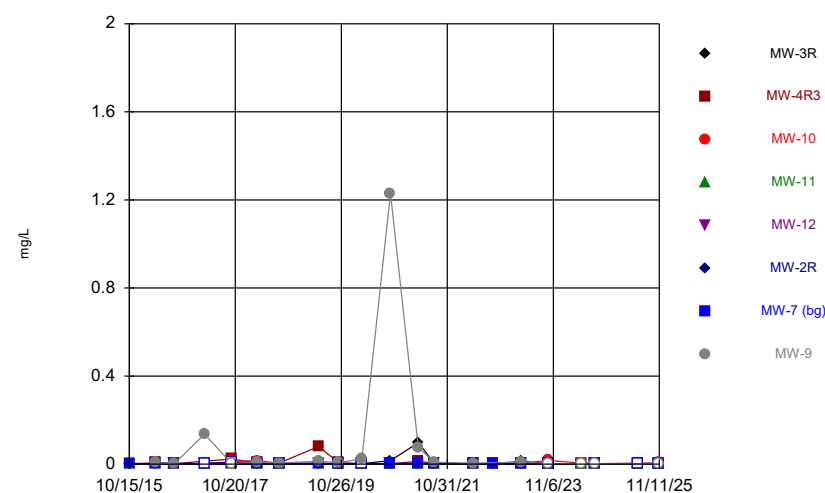
Constituent: cis-1,2-Dichloroethene Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



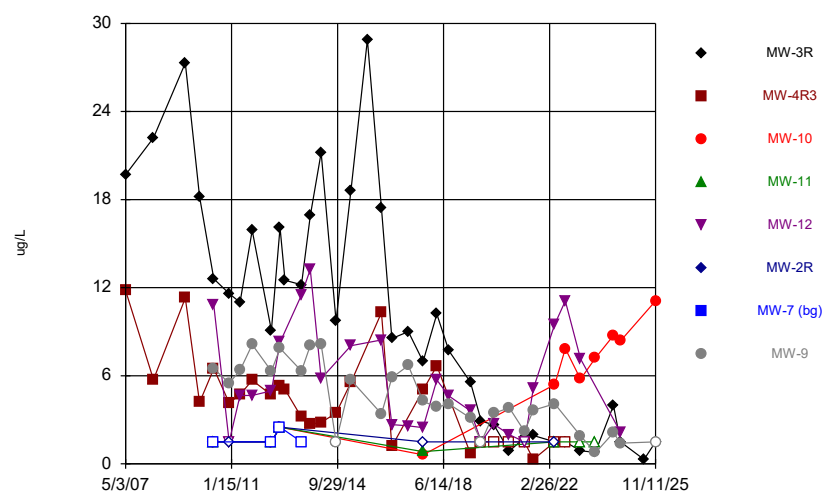
Constituent: Cobalt Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



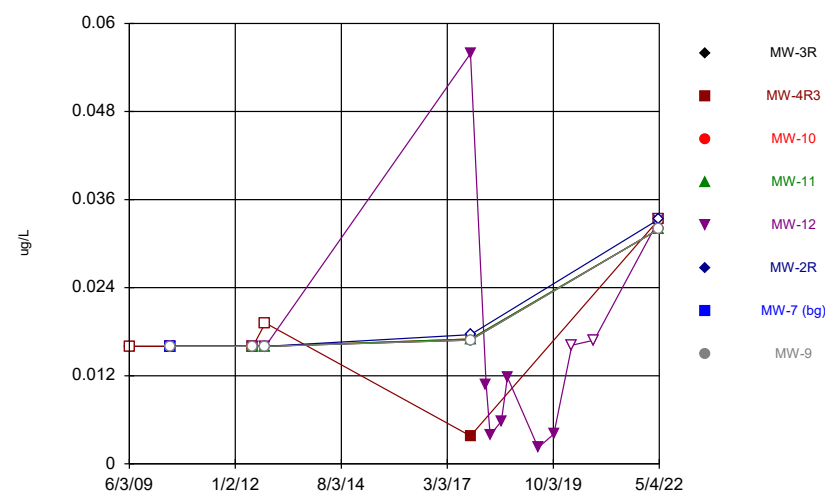
Constituent: Copper Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



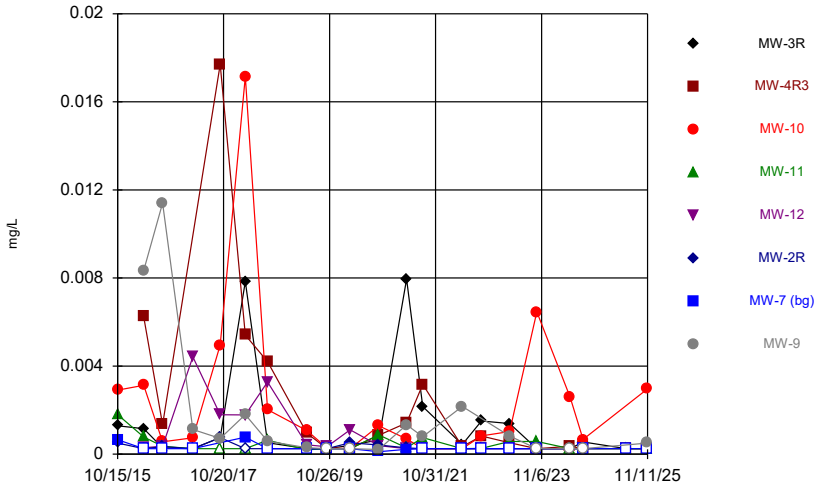
Constituent: Dichlorodifluoromethane Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



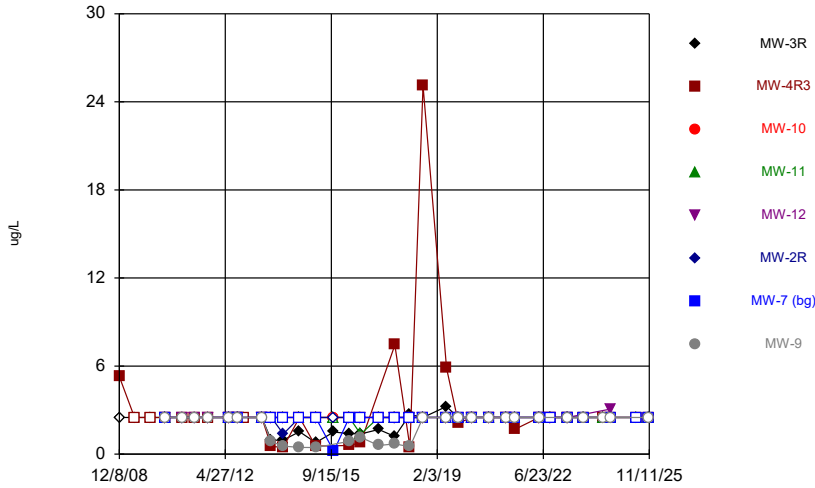
Constituent: Endosulfan I Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



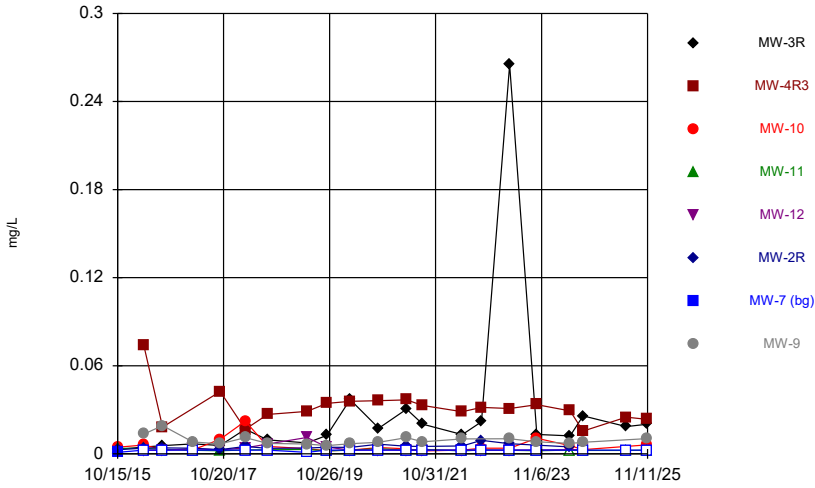
Constituent: Lead Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



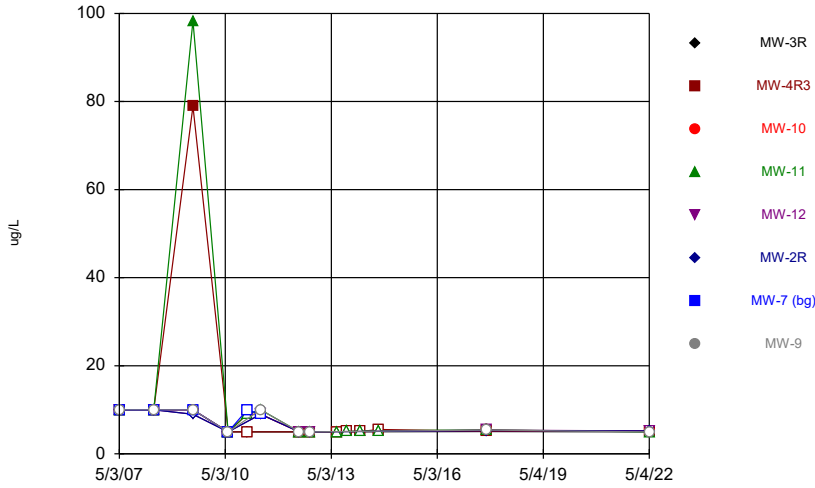
Constituent: Methylene Chloride Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



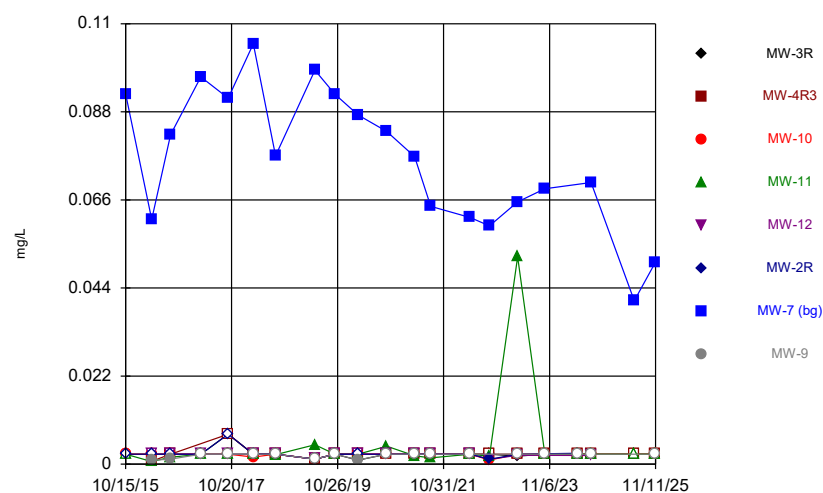
Constituent: Nickel Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



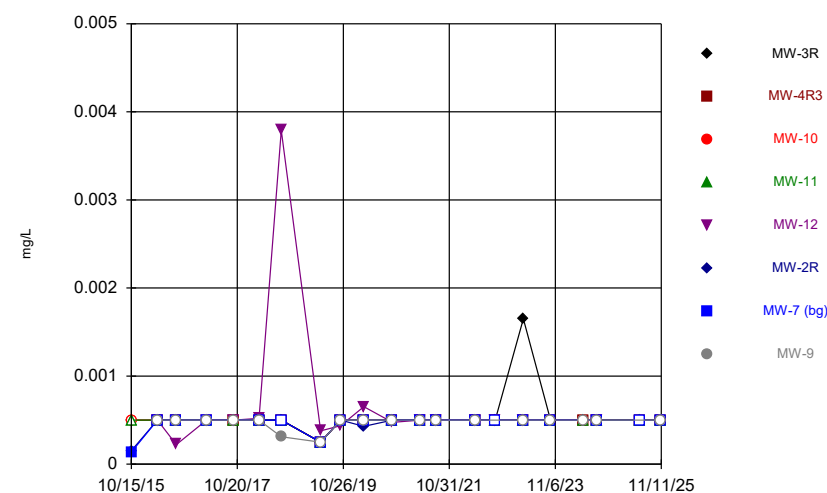
Constituent: Phenol Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



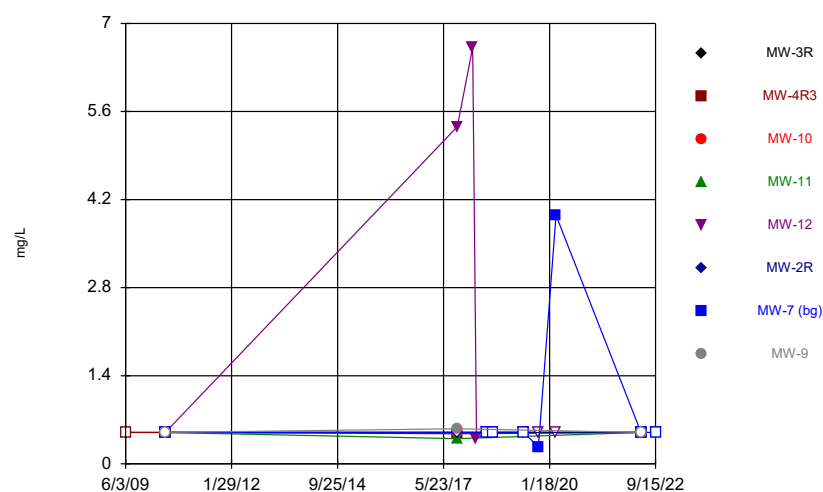
Constituent: Selenium Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



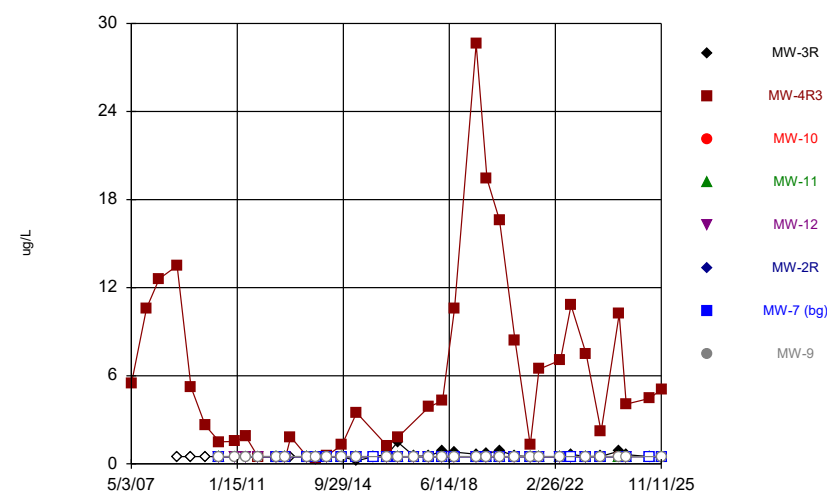
Constituent: Silver Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



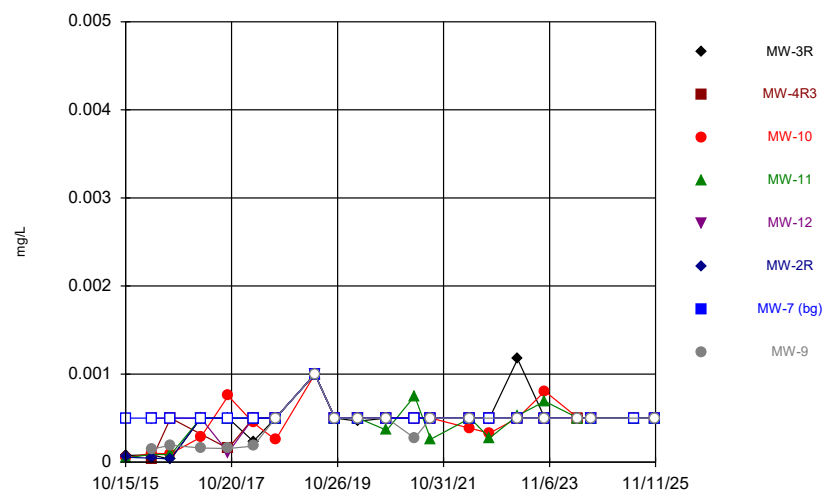
Constituent: Sulfide Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



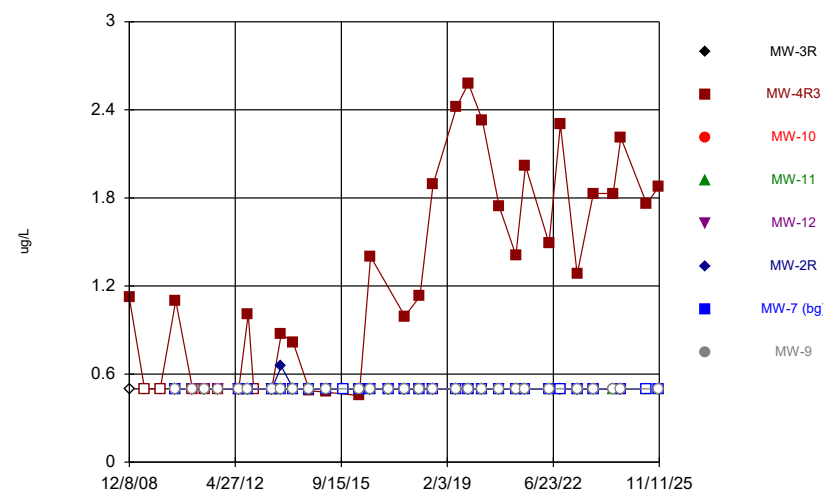
Constituent: Tetrachloroethene Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



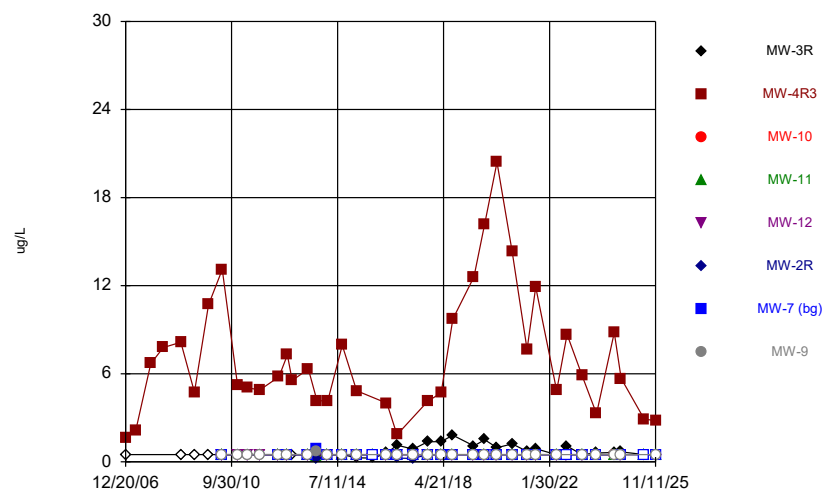
Constituent: Thallium Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



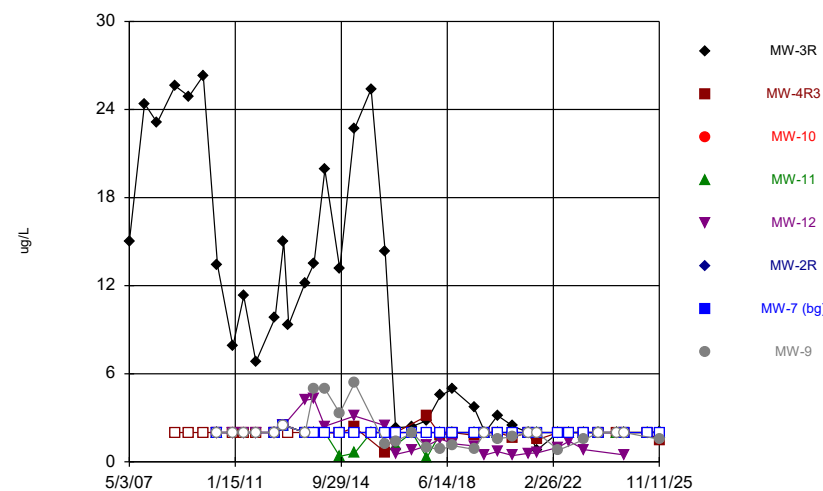
Constituent: trans-1,2-Dichloroethene Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



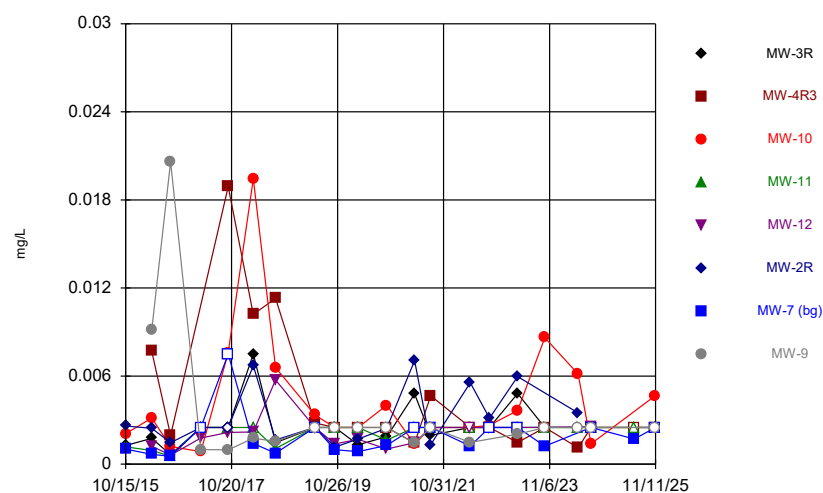
Constituent: Trichloroethene Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



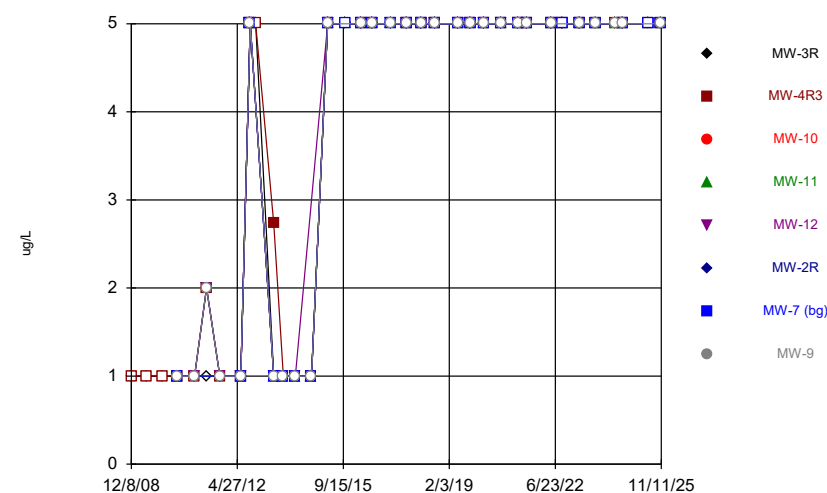
Constituent: Trichlorofluoromethane Analysis Run 12/9/2025 12:35 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



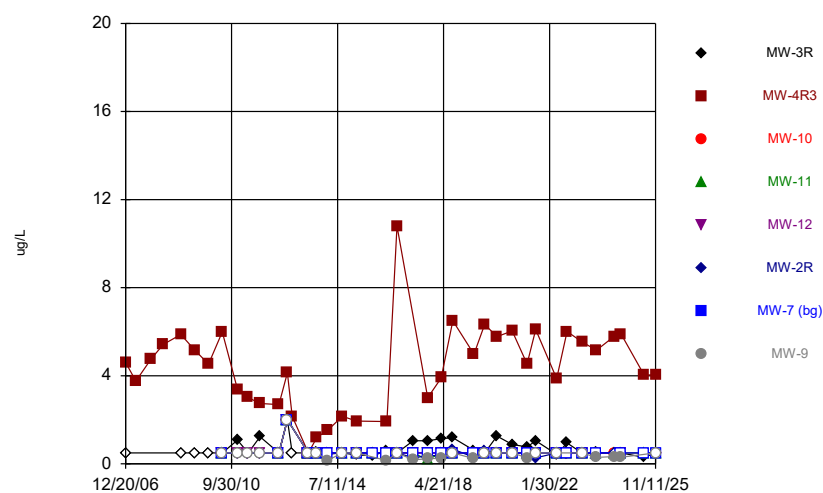
Constituent: Vanadium Analysis Run 12/9/2025 12:36 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



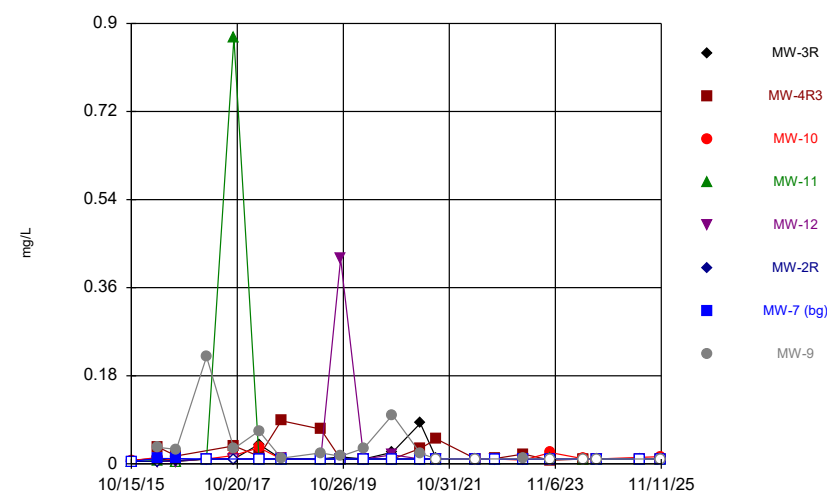
Constituent: Vinyl Acetate Analysis Run 12/9/2025 12:36 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



Constituent: Vinyl Chloride Analysis Run 12/9/2025 12:36 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Time Series



Constituent: Zinc Analysis Run 12/9/2025 12:36 PM View: 2025AWQR-Time_Series
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

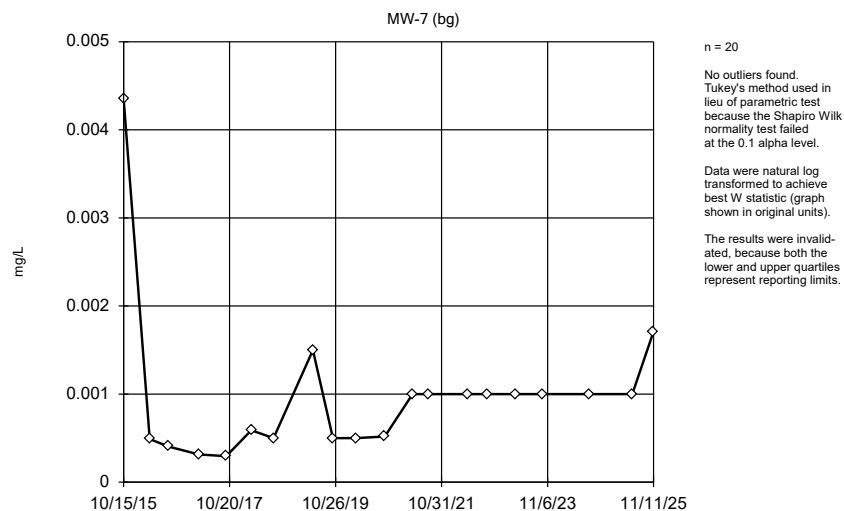
Outliers Summary Table and Graphs

BG Outlier Analysis

City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master Printed 12/9/2025, 12:53 PM

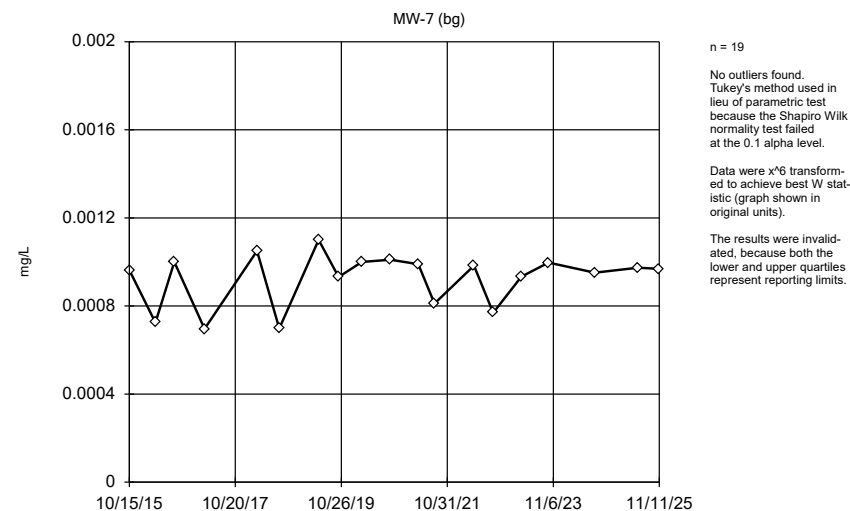
<u>Constituent</u>	<u>Well</u>	<u>Outlier</u>	<u>Value(s)</u>	<u>Date(s)</u>	<u>Method</u>	<u>Alpha</u>	<u>N</u>	<u>Mean</u>	<u>Std. Dev.</u>	<u>Distribution</u>	<u>Normality Test</u>
Antimony (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	20	0.0009835	0.0008797	unknown	ShapiroWilk
Arsenic (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	19	0.0009237	0.0001214	unknown	ShapiroWilk
Barium (mg/L)	MW-7 (bg)	No	n/a	n/a	EPA 1989	0.05	20	0.139	0.02105	normal	ShapiroWilk
Beryllium (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	19	0.0004766	0.0001021	unknown	ShapiroWilk
Cadmium (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	19	0.0001343	0.00008792	unknown	ShapiroWilk
Chromium (mg/L)	MW-7 (bg)	No	n/a	n/a	EPA 1989	0.05	20	0.01631	0.001439	normal	ShapiroWilk
Cobalt (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	20	0.0002772	0.0001339	unknown	ShapiroWilk
Copper (mg/L)	MW-7 (bg)	Yes	0.00122,0.00368,0.0075,0.00399	10/15/2015,4/13/2016,9/26/2017,5/22/2019	NP (nrm)	NaN	20	0.002696	0.00129	unknown	ShapiroWilk
Lead (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	19	0.0002901	0.0001542	unknown	ShapiroWilk
Nickel (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	19	0.002344	0.0004682	unknown	ShapiroWilk
Selenium (mg/L)	MW-7 (bg)	No	n/a	n/a	EPA 1989	0.05	20	0.07627	0.0173	normal	ShapiroWilk
Silver (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	19	0.0004677	0.00009846	unknown	ShapiroWilk
Vanadium (mg/L)	MW-7 (bg)	No	n/a	n/a	NP (nrm)	NaN	20	0.00196	0.001506	unknown	ShapiroWilk
Zinc (mg/L)	MW-7 (bg)	n/a	n/a	n/a	NP (nrm)	NaN	19	0.009826	0.001199	unknown	ShapiroWilk

Tukey's Outlier Screening



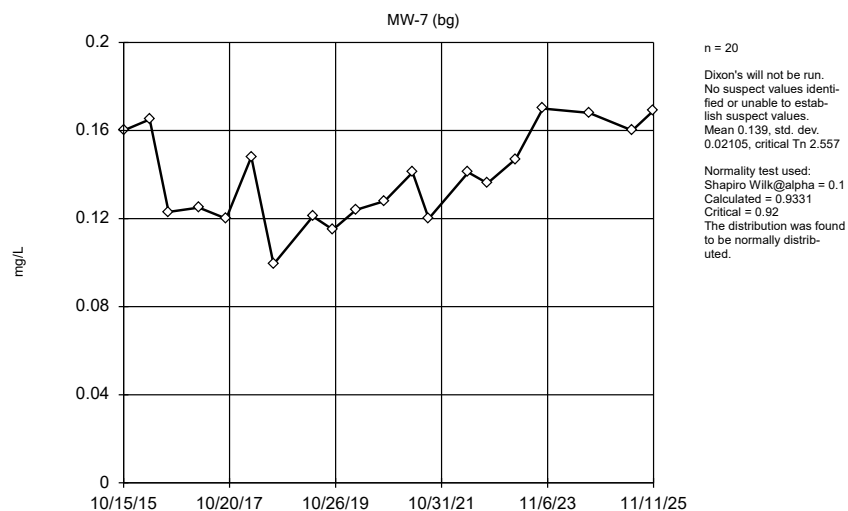
Constituent: Antimony Analysis Run 12/9/2025 12:50 PM View: 2025AWQR-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Tukey's Outlier Screening



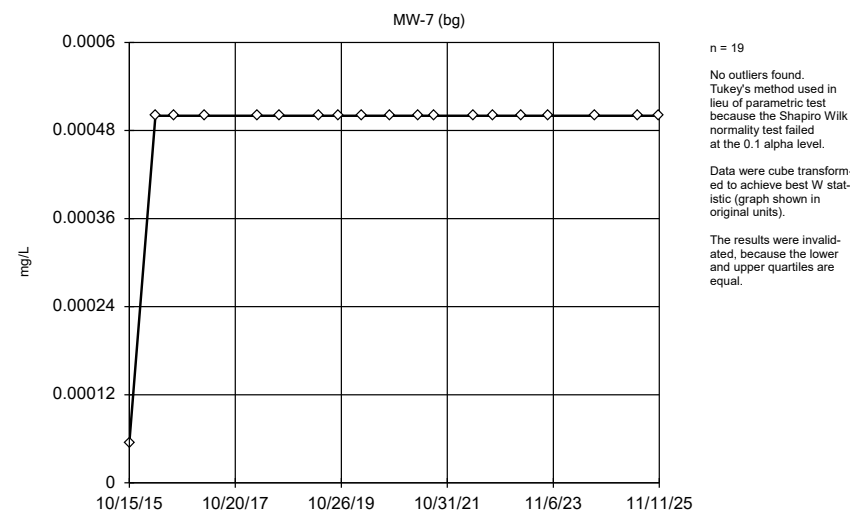
Constituent: Arsenic Analysis Run 12/9/2025 12:50 PM View: 2025AWQR-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

EPA Screening (suspected outliers for Dixon's Test)



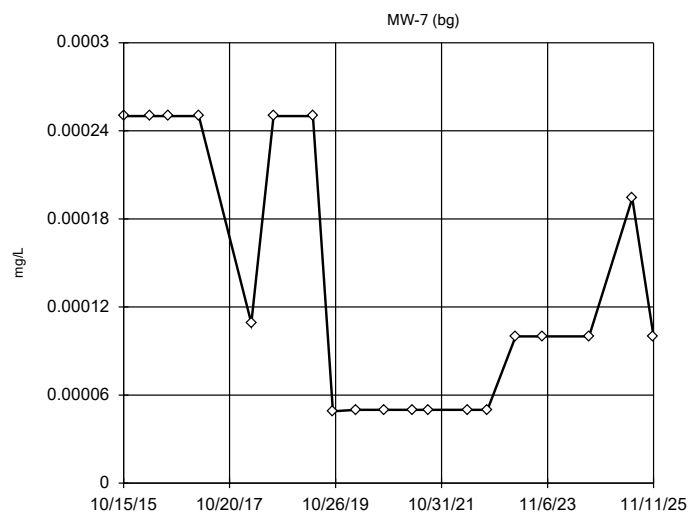
Constituent: Barium Analysis Run 12/9/2025 12:50 PM View: 2025AWQR-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Tukey's Outlier Screening



Constituent: Beryllium Analysis Run 12/9/2025 12:50 PM View: 2025AWQR-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Tukey's Outlier Screening



n = 19

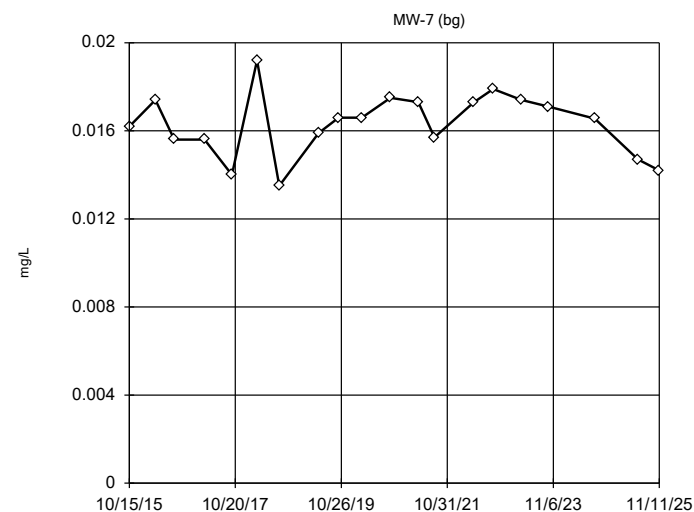
No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Cadmium Analysis Run 12/9/2025 12:50 PM View: 2025AWQR-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

EPA Screening (suspected outliers for Dixon's Test)



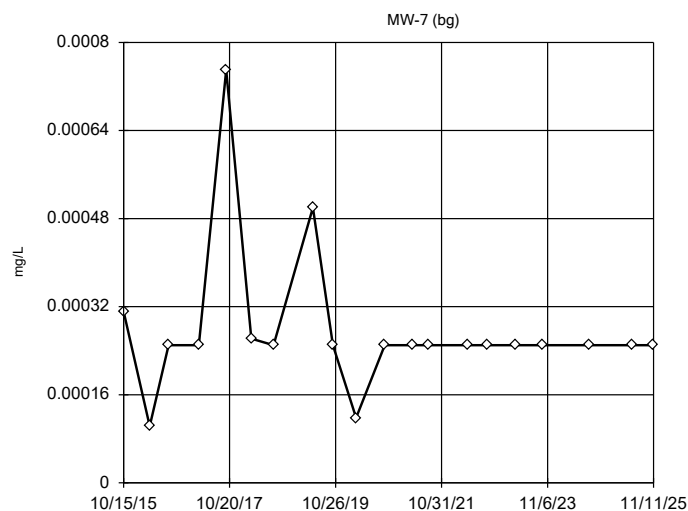
n = 20

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 0.01631, std. dev. 0.001439, critical Tn 2.557

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9636
Critical = 0.92
The distribution was found to be normally distributed.

Constituent: Chromium Analysis Run 12/9/2025 12:50 PM View: 2025AWQR-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Tukey's Outlier Screening



n = 20

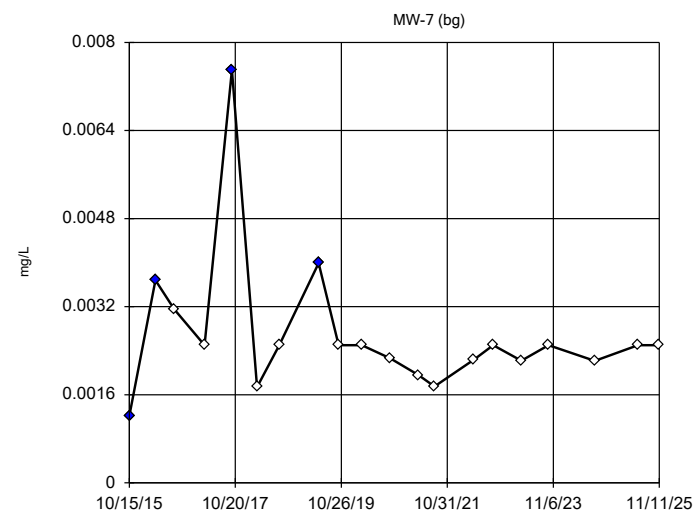
No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Cobalt Analysis Run 12/9/2025 12:50 PM View: 2025AWQR-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Tukey's Outlier Screening



n = 20

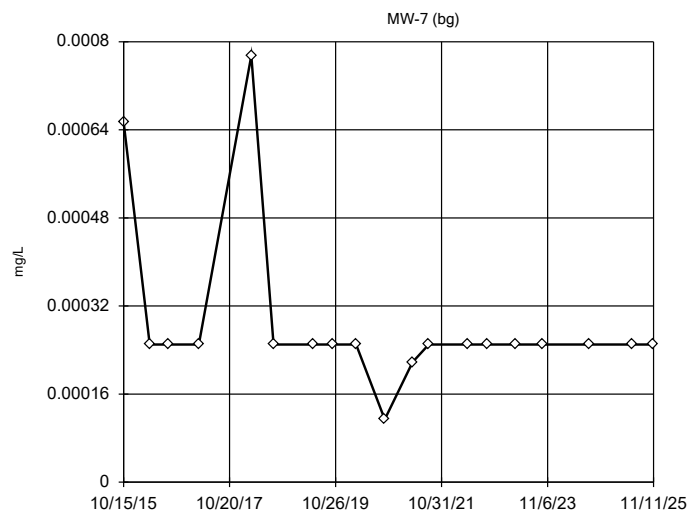
Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.003582,
low cutoff = 0.001548,
based on IQR multiplier of 3.

Constituent: Copper Analysis Run 12/9/2025 12:50 PM View: 2025AWQR-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Tukey's Outlier Screening



n = 19

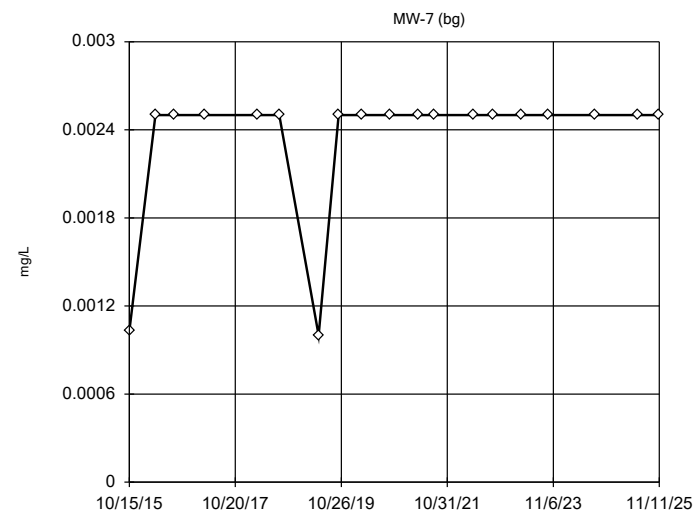
No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Lead Analysis Run 12/9/2025 12:50 PM View: 2025AWQR-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Tukey's Outlier Screening



n = 19

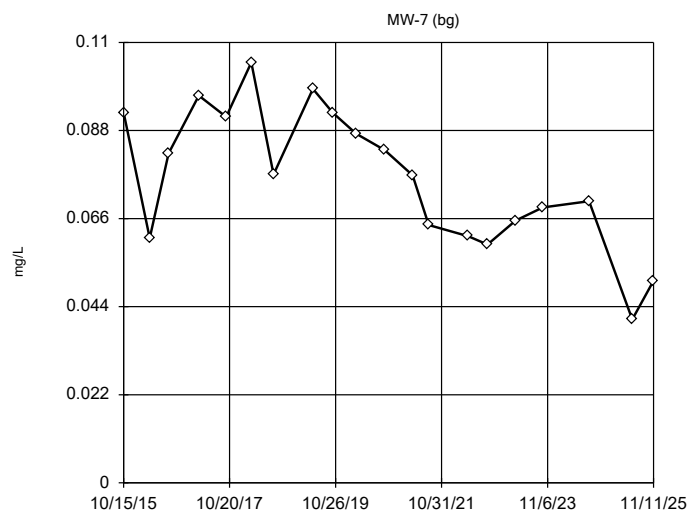
No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Nickel Analysis Run 12/9/2025 12:50 PM View: 2025AWQR-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

EPA Screening (suspected outliers for Dixon's Test)



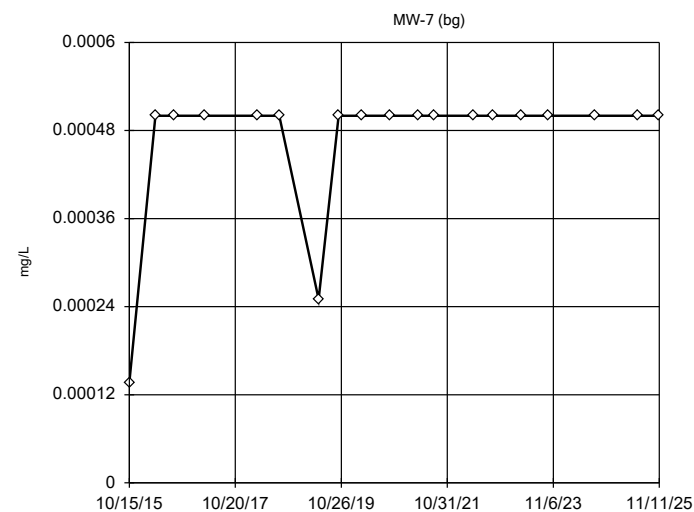
n = 20

Dixon's will not be run.
No suspect values identified or unable to establish suspect values.
Mean 0.07627, std. dev. 0.0173, critical Tn 2.557

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9731
Critical = 0.92
The distribution was found to be normally distributed.

Constituent: Selenium Analysis Run 12/9/2025 12:50 PM View: 2025AWQR-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Tukey's Outlier Screening



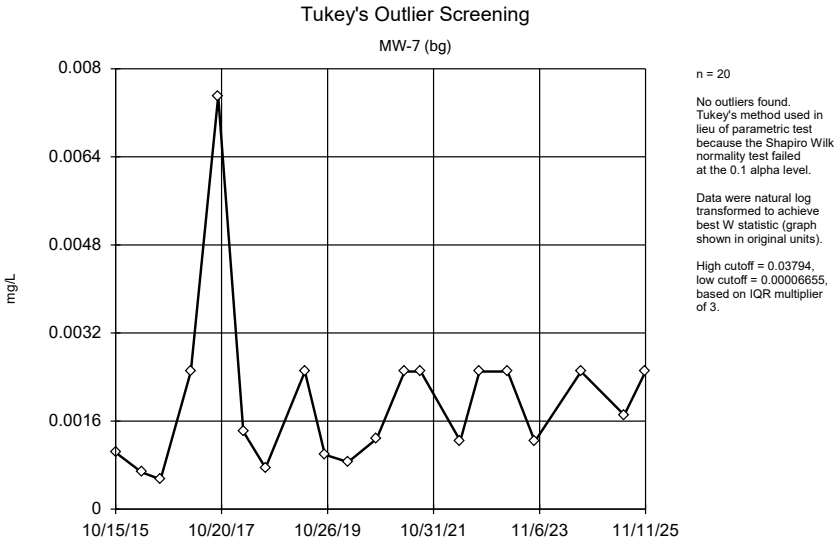
n = 19

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.1 alpha level.

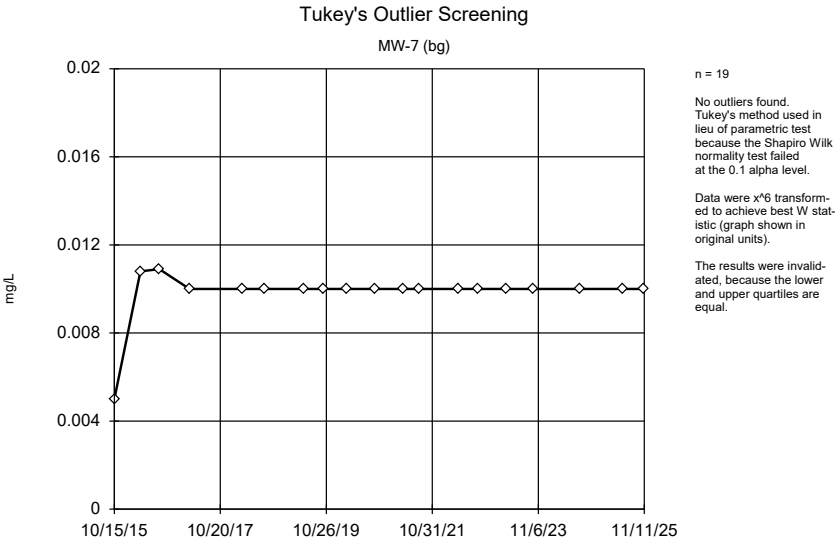
Ladder of Powers transformations did not improve normality; analysis run on raw data.

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Silver Analysis Run 12/9/2025 12:50 PM View: 2025AWQR-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master



Constituent: Vanadium Analysis Run 12/9/2025 12:50 PM View: 2025AWQR-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master



Constituent: Zinc Analysis Run 12/9/2025 12:50 PM View: 2025AWQR-BG_Outliers
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Control Limits Summary Table and Graphs

Control Limit

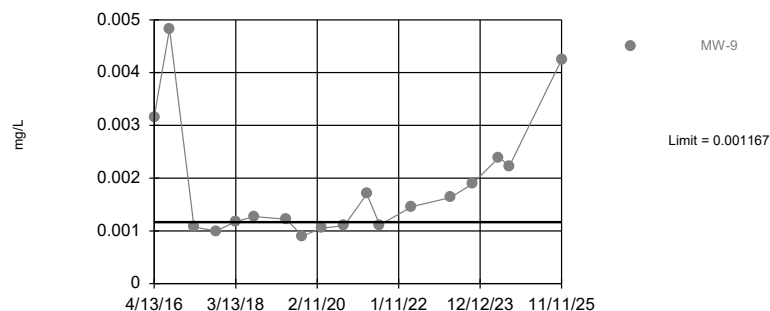
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master Printed 12/9/2025, 1:29 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Date</u>	<u>Observ.</u>	<u>Sig.</u>	<u>Bg N</u>	<u>Bg Wells</u>	<u>Bg Mean</u>	<u>Std. Dev.</u>	<u>%NDs</u>
Arsenic (mg/L)	MW-9	0.001167	n/a	11/11/2025	0.00424	Yes	19	MW-7	0.0009237	0.0001214	10.53
Barium (mg/L)	MW-3R	0.1811	n/a	11/11/2025	0.686	Yes	20	MW-7	0.139	0.02105	0
Barium (mg/L)	MW-4R3	0.1811	n/a	11/11/2025	1.17	Yes	20	MW-7	0.139	0.02105	0
Barium (mg/L)	MW-10	0.1811	n/a	11/11/2025	0.266	Yes	20	MW-7	0.139	0.02105	0
Barium (mg/L)	MW-11	0.1811	n/a	11/11/2025	0.0899	No	20	MW-7	0.139	0.02105	0
Barium (mg/L)	MW-9	0.1811	n/a	11/11/2025	0.605	Yes	20	MW-7	0.139	0.02105	0
Cadmium (mg/L)	MW-10	0.0003102	n/a	11/11/2025	0.000439	Yes	19	MW-7	0.0001343	0.00008792	84.21
Cobalt (mg/L)	MW-3R	0.000545	n/a	11/11/2025	0.0035	Yes	20	MW-7	0.0002772	0.0001339	80
Cobalt (mg/L)	MW-4R3	0.000545	n/a	11/11/2025	0.00574	Yes	20	MW-7	0.0002772	0.0001339	80
Cobalt (mg/L)	MW-10	0.000545	n/a	11/11/2025	0.00299	Yes	20	MW-7	0.0002772	0.0001339	80
Cobalt (mg/L)	MW-11	0.000545	n/a	11/11/2025	0.00149	Yes	20	MW-7	0.0002772	0.0001339	80
Cobalt (mg/L)	MW-9	0.000545	n/a	11/11/2025	0.00478	Yes	20	MW-7	0.0002772	0.0001339	80
Copper (mg/L)	MW-10	0.005276	n/a	11/11/2025	0.006345	Yes	20	MW-7	0.002696	0.00129	40
Lead (mg/L)	MW-10	0.0005984	n/a	11/11/2025	0.002965	Yes	19	MW-7	0.0002901	0.0001542	78.95
Lead (mg/L)	MW-9	0.0005984	n/a	11/11/2025	0.000503	No	19	MW-7	0.0002901	0.0001542	78.95
Nickel (mg/L)	MW-3R	0.00328	n/a	11/11/2025	0.0202	Yes	19	MW-7	0.002344	0.0004682	94.74
Nickel (mg/L)	MW-4R3	0.00328	n/a	11/11/2025	0.0235	Yes	19	MW-7	0.002344	0.0004682	94.74
Nickel (mg/L)	MW-10	0.00328	n/a	11/11/2025	0.00613	Yes	19	MW-7	0.002344	0.0004682	94.74
Nickel (mg/L)	MW-9	0.00328	n/a	11/11/2025	0.0104	Yes	19	MW-7	0.002344	0.0004682	94.74
Vanadium (mg/L)	MW-10	0.004972	n/a	11/11/2025	0.004675J	No	20	MW-7	0.00196	0.001506	45

Exceeds Limit: MW-9

Prediction Limit

Interwell Parametric



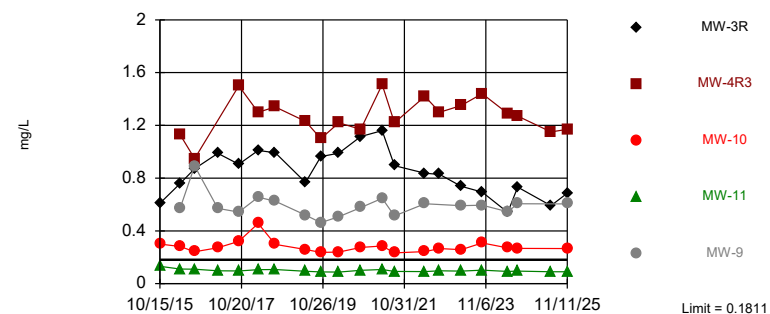
Background Data Summary: Mean=0.0009237, Std. Dev.=0.0001214, n=19, 10.53% NDs. Normality test was disabled. Assumes 6 future values. Kappa overridden to 2.

Constituent: Arsenic Analysis Run 12/9/2025 1:28 PM View: 2025AWQR-Control_Limits
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Exceeds Limit: MW-3R, MW-4R3, MW-10, MW-9

Prediction Limit

Interwell Parametric



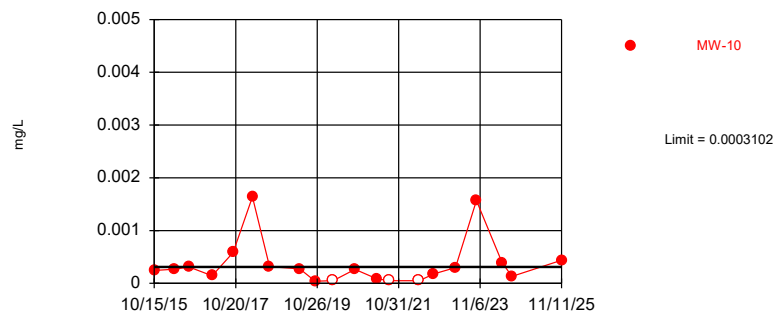
Background Data Summary: Mean=0.139, Std. Dev.=0.02105, n=20. Normality test was disabled. Comparing 5 points to limit. Assumes 2 future values. Kappa overridden to 2.

Constituent: Barium Analysis Run 12/9/2025 1:28 PM View: 2025AWQR-Control_Limits
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Exceeds Limit: MW-10

Prediction Limit

Interwell Parametric



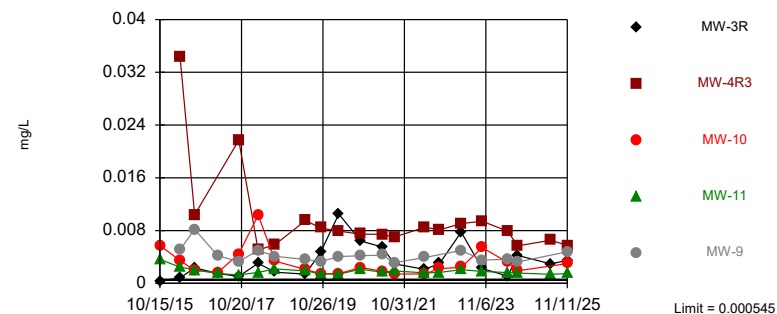
Background Data Summary: Mean=0.0001343, Std. Dev.=0.00008792, n=19, 84.21% NDs (user selected parametric test despite non-detects). Normality test was disabled. Assumes 6 future values. Kappa overridden to 2.

Constituent: Cadmium Analysis Run 12/9/2025 1:28 PM View: 2025AWQR-Control_Limits
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Exceeds Limit: MW-3R, MW-4R3, MW-10, MW-11, MW-9

Prediction Limit

Interwell Parametric



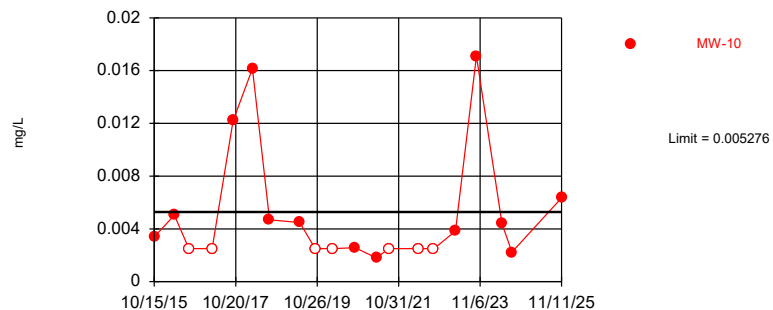
Background Data Summary: Mean=0.0002772, Std. Dev.=0.0001339, n=20, 80% NDs (user selected parametric test despite non-detects). Normality test was disabled. Comparing 5 points to limit. Assumes 2 future values. Kappa overridden to 2.

Constituent: Cobalt Analysis Run 12/9/2025 1:28 PM View: 2025AWQR-Control_Limits
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Exceeds Limit: MW-10

Prediction Limit

Interwell Parametric



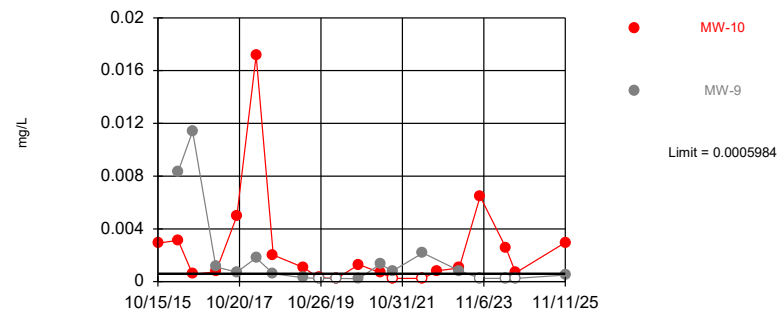
Background Data Summary: Mean=0.002696, Std. Dev.=0.00129, n=20, 40% NDs. Normality test was disabled. Assumes 6 future values. Kappa overridden to 2.

Constituent: Copper Analysis Run 12/9/2025 1:28 PM View: 2025AWQR-Control_Limits
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Exceeds Limit: MW-10

Prediction Limit

Interwell Parametric



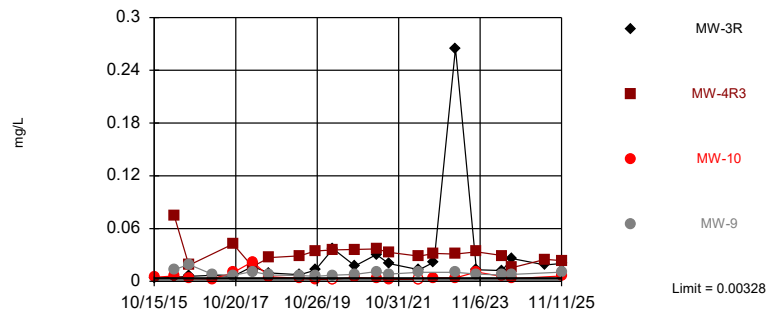
Background Data Summary: Mean=0.0002901, Std. Dev.=0.0001542, n=19, 78.95% NDs (user selected parametric test despite non-detects). Normality test was disabled. Comparing 2 points to limit. Assumes 5 future values. Kappa overridden to 2.

Constituent: Lead Analysis Run 12/9/2025 1:28 PM View: 2025AWQR-Control_Limits
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Exceeds Limit: MW-3R, MW-4R3, MW-10,
MW-9

Prediction Limit

Interwell Parametric



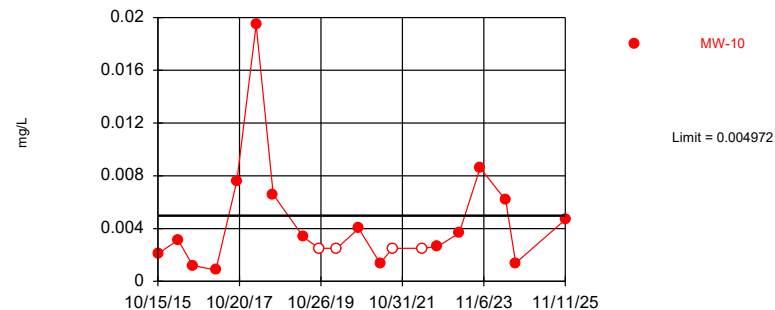
Background Data Summary: Mean=0.002344, Std. Dev.=0.0004682, n=19, 94.74% NDs (user selected parametric test despite non-detects). Normality test was disabled. Comparing 4 points to limit. Assumes 3 future values. Kappa overridden to 2.

Constituent: Nickel Analysis Run 12/9/2025 1:28 PM View: 2025AWQR-Control_Limits
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary: Mean=0.00196, Std. Dev.=0.001506, n=20, 45% NDs. Normality test was disabled. Assumes 6 future values. Kappa overridden to 2.

Constituent: Vanadium Analysis Run 12/9/2025 1:28 PM View: 2025AWQR-Control_Limits
City of Sioux City SLF Client: SCS Engineers Data: Sanitas SIOUX Master

Mann-Kendall Trend Test Summary Table and Graphs

Trend Test

City of Sioux City SLF

Client: SCS Engineers

Data: SIOUX_AM_2025_AWQR_RSTUDIO

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<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
1,1-Dichloroethane (ug/L)	MW-2R	-3.377	-18	-21	No	8	0	0.01	NP
1,1-Dichloroethane (ug/L)	MW-3R	-3.094	-6	-21	No	8	0	0.01	NP
1,1-Dichloroethane (ug/L)	MW-4R3	-0.4185	0	21	No	8	0	0.01	NP
1,1-Dichloroethane (ug/L)	MW-9	3.313	20	21	No	8	0	0.01	NP
1,1-Dichloroethane (ug/L)	MW-12	0.5647	22	21	Yes	8	12.5	0.01	NP
1,2-Dichloropropane (ug/L)	MW-4R3	0.09863	12	21	No	8	0	0.01	NP
Acetone (ug/L)	MW-3R	0	-6	-21	No	8	62.5	0.01	NP
Acetone (ug/L)	MW-4R3	0	0	21	No	8	62.5	0.01	NP
Acetone (ug/L)	MW-9	0	2	21	No	8	50	0.01	NP
Antimony (mg/L)	MW-11	0	-3	-21	No	8	87.5	0.01	NP
Antimony (mg/L)	MW-12	0	1	21	No	8	87.5	0.01	NP
Arsenic (mg/L)	MW-3R	-0.0001014	-14	-21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-4R3	-0.00006935	-3	-21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-9	0.0004109	20	21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-12	0.0001162	11	21	No	8	25	0.01	NP
Barium (mg/L)	MW-2R	-0.0273	-10	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-3R	-0.05512	-18	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-4R3	-0.06974	-18	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-9	-0.0001418	-1	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-10	0.009079	13	21	No	8	0	0.01	NP
Barium (mg/L)	MW-11	-0.002012	-12	-21	No	8	0	0.01	NP
Barium (mg/L)	MW-12	-0.0107	-8	-21	No	8	0	0.01	NP
Benzene (ug/L)	MW-3R	-0.07498	-5	-21	No	8	25	0.01	NP
Benzene (ug/L)	MW-4R3	-0.0011	0	21	No	8	12.5	0.01	NP
Benzene (ug/L)	MW-9	0.04619	13	21	No	8	37.5	0.01	NP
Cadmium (mg/L)	MW-2R	0.00006843	9	21	No	8	25	0.01	NP
Cadmium (mg/L)	MW-3R	0.000009177	8	21	No	8	62.5	0.01	NP
Cadmium (mg/L)	MW-4R3	0	-6	-21	No	8	62.5	0.01	NP
Cadmium (mg/L)	MW-9	-0.000004621	-5	-21	No	8	37.5	0.01	NP
Cadmium (mg/L)	MW-10	0.0001006	15	21	No	8	25	0.01	NP
Cadmium (mg/L)	MW-11	-0.0000747	-8	-21	No	8	12.5	0.01	NP
Cadmium (mg/L)	MW-12	0	2	21	No	8	62.5	0.01	NP
Chloroethane (ug/L)	MW-2R	0	-6	-21	No	8	62.5	0.01	NP
Chloroethane (ug/L)	MW-3R	0.2221	6	21	No	8	0	0.01	NP
Chloroethane (ug/L)	MW-4R3	0.3141	12	21	No	8	0	0.01	NP
Chloroethane (ug/L)	MW-9	0.1691	8	21	No	8	0	0.01	NP
Chloroethane (ug/L)	MW-12	0	-3	-21	No	8	87.5	0.01	NP
Chromium (mg/L)	MW-3R	0	6	21	No	8	62.5	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-2R	-1.102	-20	-21	No	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-3R	-0.07563	-2	-21	No	8	12.5	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-4R3	-0.3012	0	21	No	8	0	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-9	0.1547	24	21	Yes	8	0	0.01	NP
Cobalt (mg/L)	MW-2R	-0.0001773	-8	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-3R	0.0002058	4	21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-4R3	-0.001035	-14	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-9	-0.00002361	0	21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-10	0.0004074	14	21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-11	-0.00008274	-14	-21	No	8	0	0.01	NP
Cobalt (mg/L)	MW-12	0.00001542	2	21	No	8	0	0.01	NP
Copper (mg/L)	MW-3R	0	-3	-21	No	8	87.5	0.01	NP

Trend Test

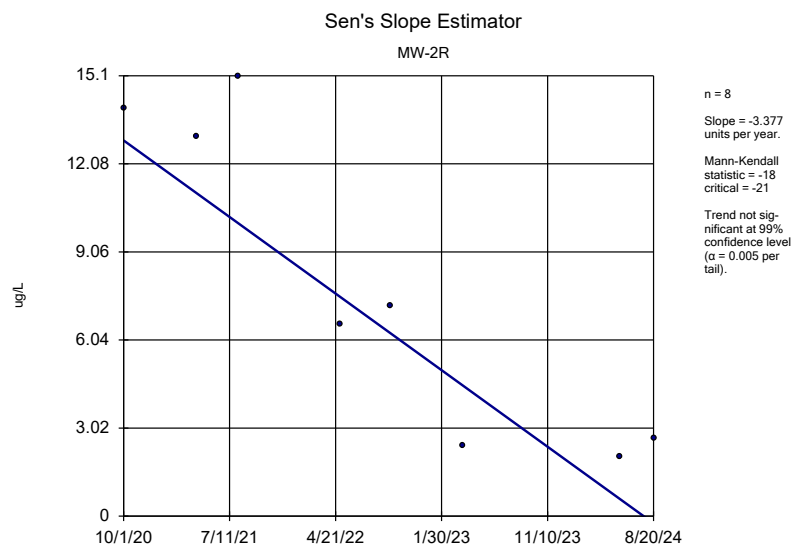
City of Sioux City SLF

Client: SCS Engineers

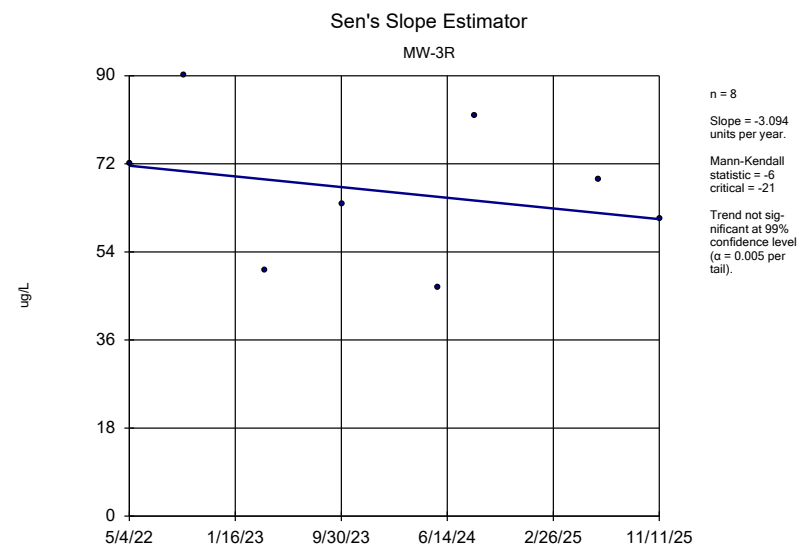
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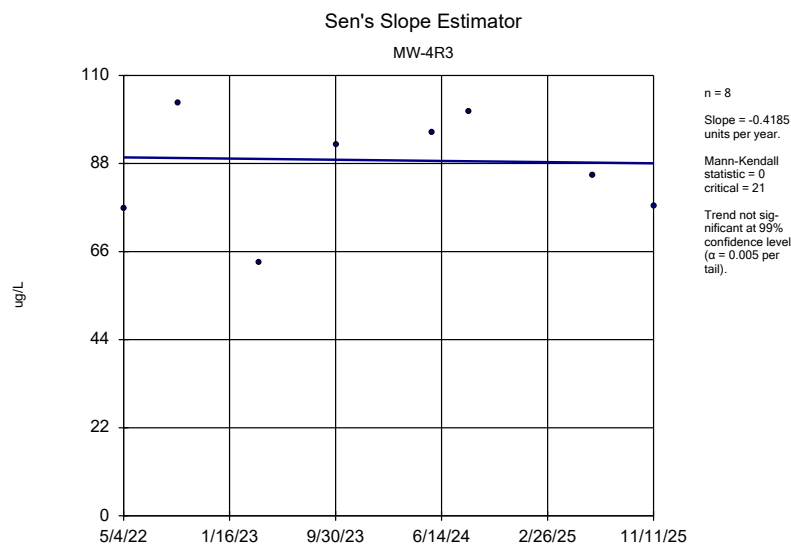
<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
Copper (mg/L)	MW-9	-0.001883	-18	-21	No	8	50	0.01	NP
Copper (mg/L)	MW-10	0.0008551	9	21	No	8	37.5	0.01	NP
Dichlorodifluoromethane (ug/L)	MW-3R	0	-4	-21	No	8	50	0.01	NP
Dichlorodifluoromethane (ug/L)	MW-9	-0.3892	-12	-21	No	8	12.5	0.01	NP
Dichlorodifluoromethane (ug/L)	MW-10	1.291	22	21	Yes	8	0	0.01	NP
Dichlorodifluoromethane (ug/L)	MW-12	1.608	8	21	No	8	12.5	0.01	NP
Lead (mg/L)	MW-2R	-0.00004056	-18	-21	No	8	62.5	0.01	NP
Lead (mg/L)	MW-3R	-0.0001126	-12	-21	No	8	50	0.01	NP
Lead (mg/L)	MW-4R3	-0.0000687	-14	-21	No	8	50	0.01	NP
Lead (mg/L)	MW-9	-0.000224	-13	-21	No	8	37.5	0.01	NP
Lead (mg/L)	MW-10	0.0006552	15	21	No	8	25	0.01	NP
Lead (mg/L)	MW-11	0	-6	-21	No	8	62.5	0.01	NP
Lead (mg/L)	MW-12	0	-13	-21	No	8	75	0.01	NP
Nickel (mg/L)	MW-2R	0.0002794	6	21	No	8	0	0.01	NP
Nickel (mg/L)	MW-3R	0.0009165	2	21	No	8	0	0.01	NP
Nickel (mg/L)	MW-4R3	-0.002515	-12	-21	No	8	0	0.01	NP
Nickel (mg/L)	MW-9	-0.0003619	-6	-21	No	8	0	0.01	NP
Nickel (mg/L)	MW-10	0.0009908	14	21	No	8	12.5	0.01	NP
Selenium (mg/L)	MW-11	0	1	21	No	8	75	0.01	NP
Silver (mg/L)	MW-3R	0	-3	-21	No	8	87.5	0.01	NP
Tetrachloroethene (ug/L)	MW-4R3	-0.8754	-6	-21	No	8	0	0.01	NP
Thallium (mg/L)	MW-3R	0	-3	-21	No	8	87.5	0.01	NP
trans-1,2-Dichloroethene (ug/L)	MW-4R3	0.06022	5	21	No	8	0	0.01	NP
Trichloroethene (ug/L)	MW-3R	0	1	21	No	8	37.5	0.01	NP
Trichloroethene (ug/L)	MW-4R3	-0.8675	-12	-21	No	8	0	0.01	NP
Vanadium (mg/L)	MW-2R	0.0004429	8	21	No	8	0	0.01	NP
Vanadium (mg/L)	MW-10	0.0005627	9	21	No	8	25	0.01	NP
Vinyl Chloride (ug/L)	MW-4R3	-0.09635	-2	-21	No	8	0	0.01	NP
Zinc (mg/L)	MW-4R3	0	-4	-21	No	8	62.5	0.01	NP
Zinc (mg/L)	MW-9	0	-9	-21	No	8	75	0.01	NP
Zinc (mg/L)	MW-10	0.0001688	8	21	No	8	50	0.01	NP



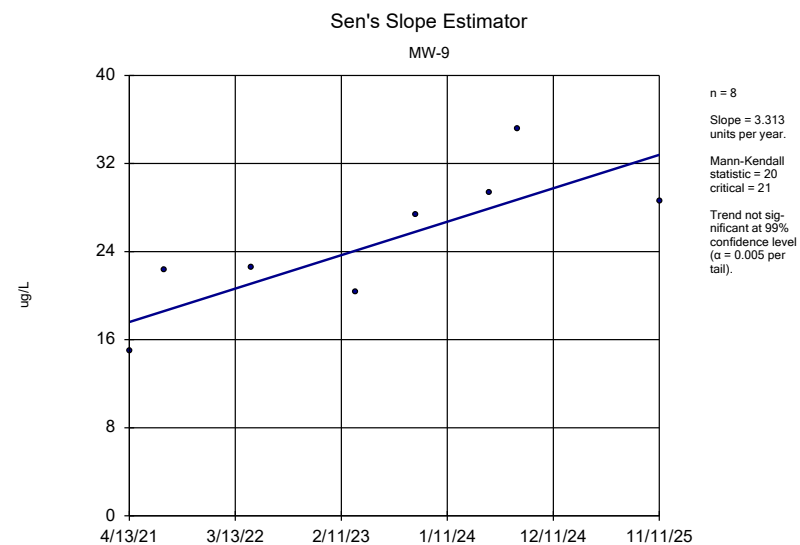
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



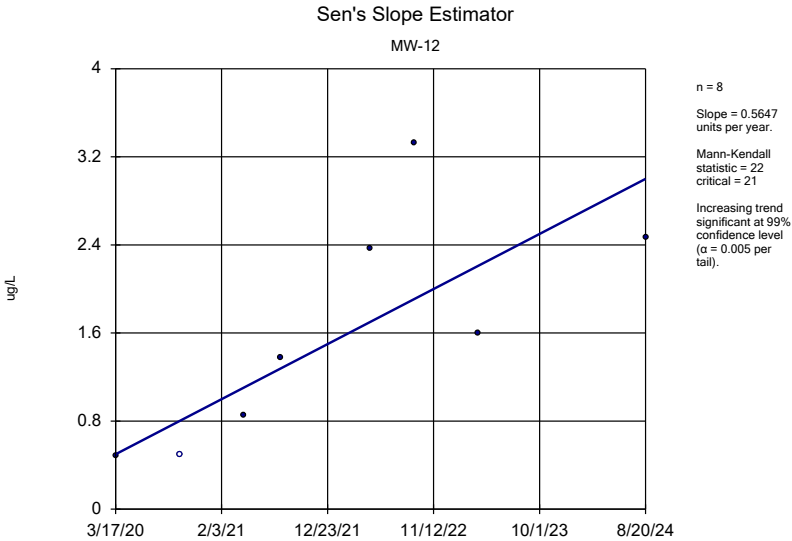
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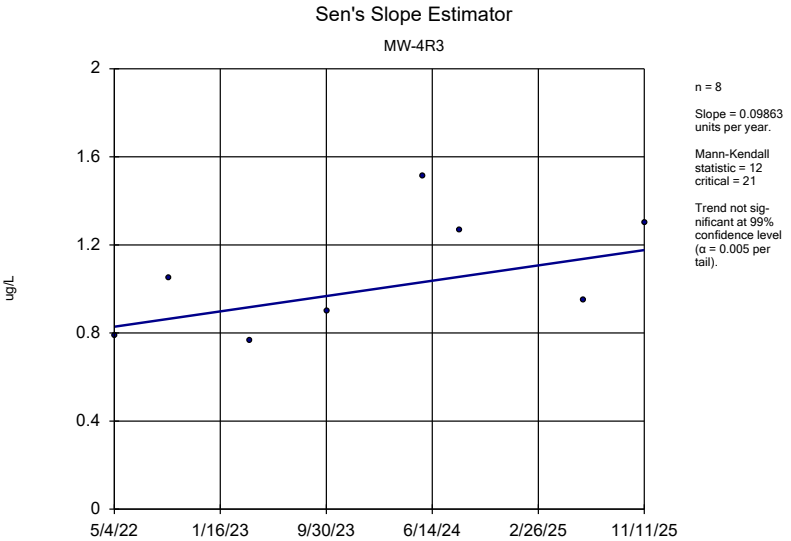
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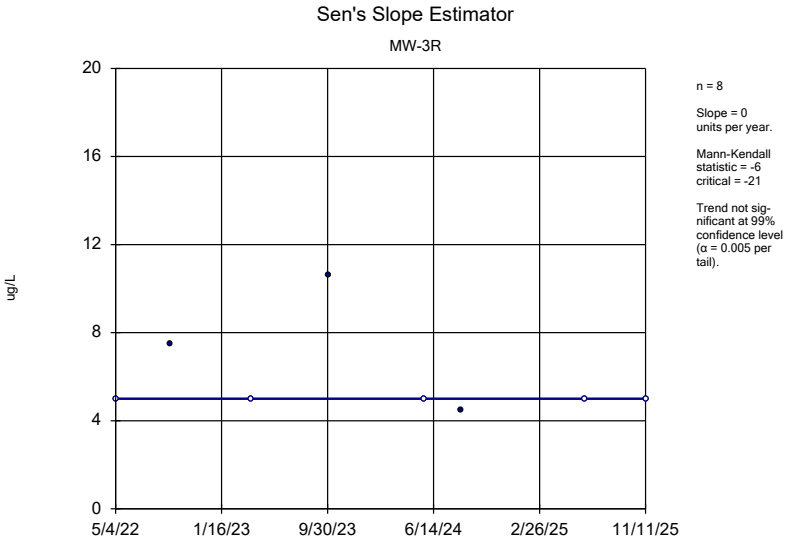
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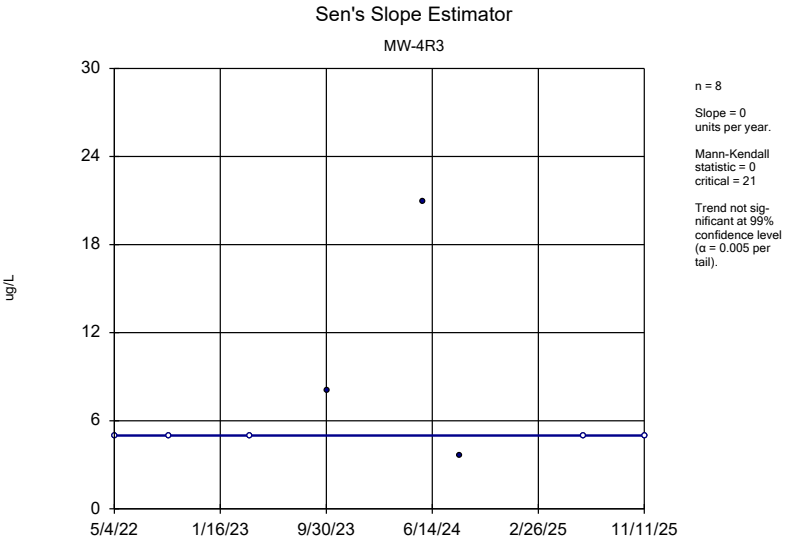
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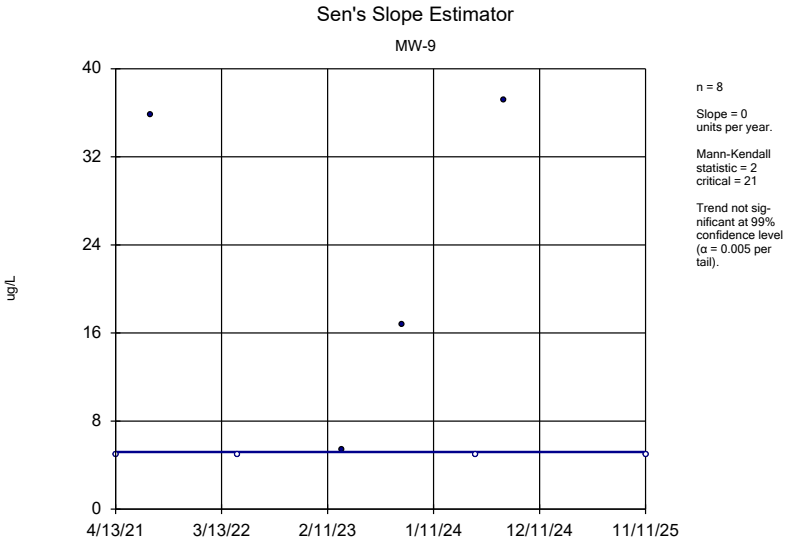
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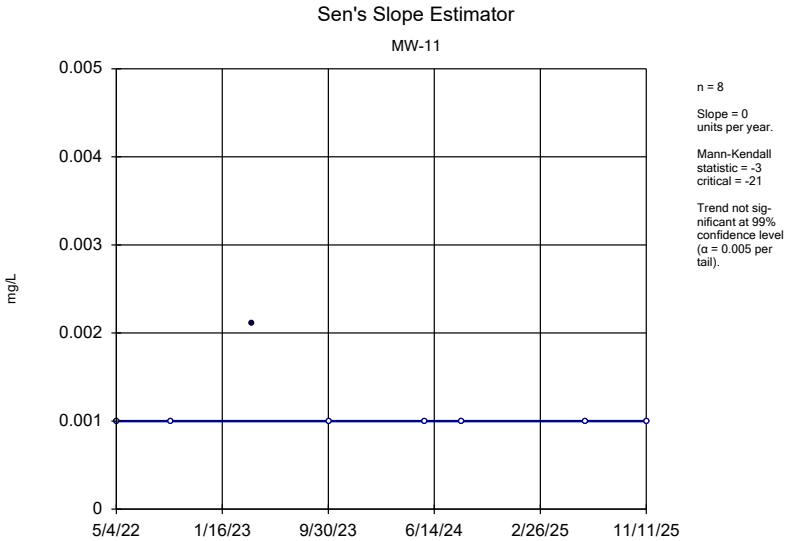
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



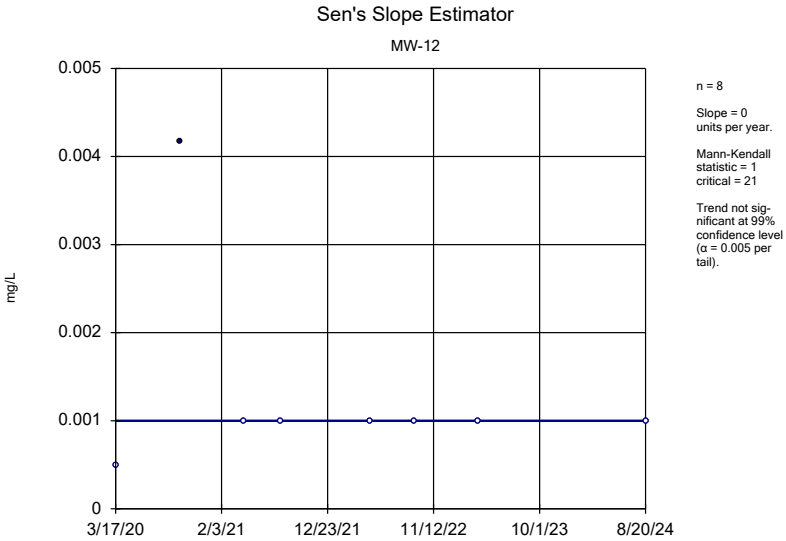
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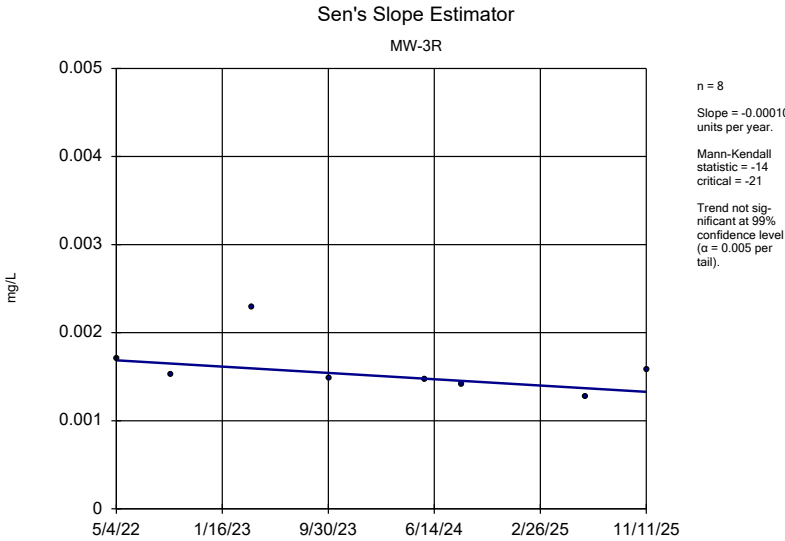
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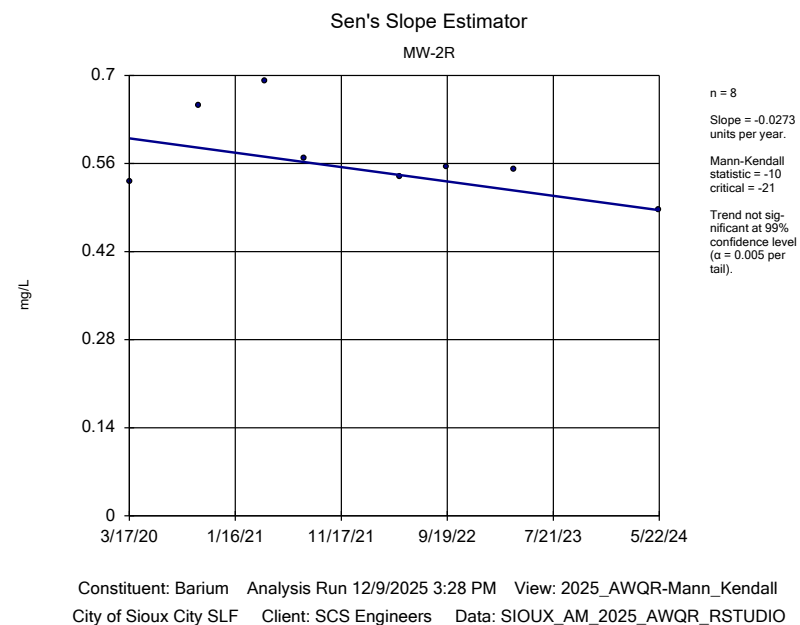
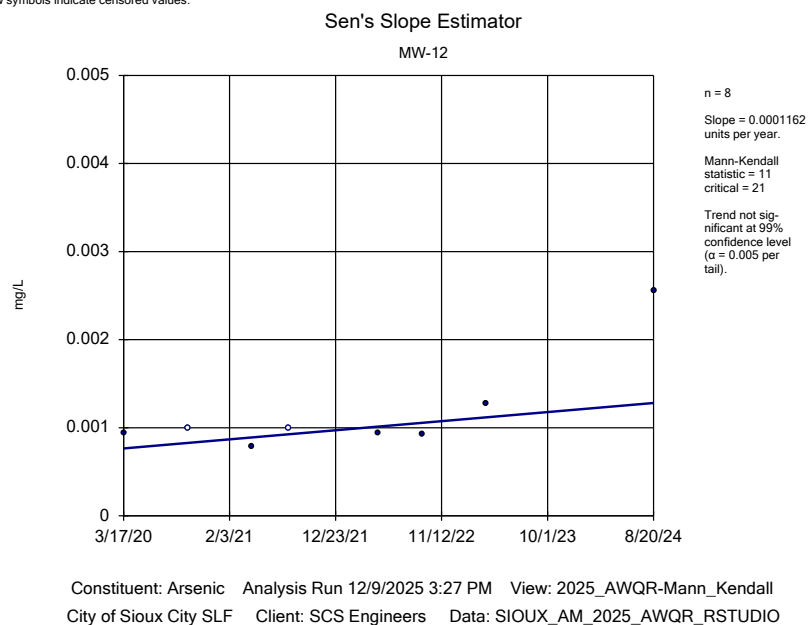
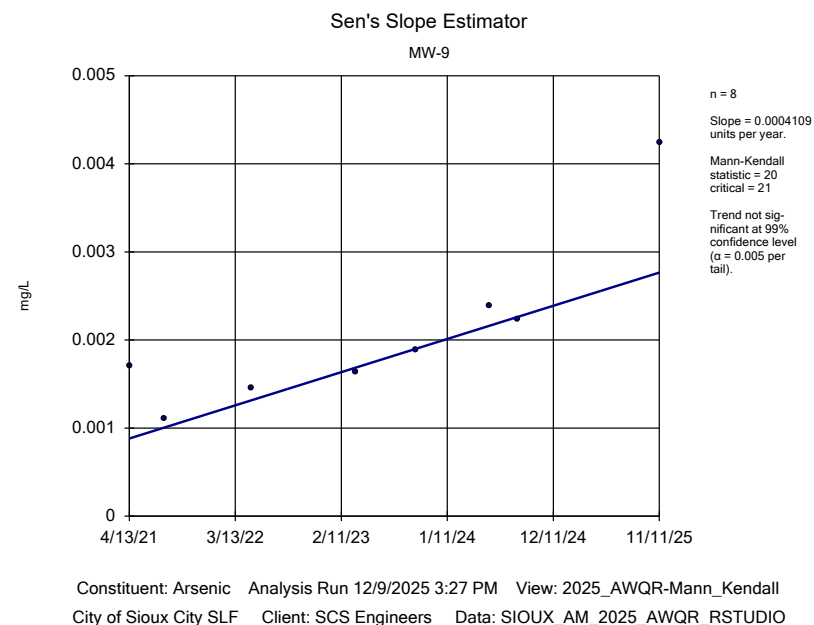
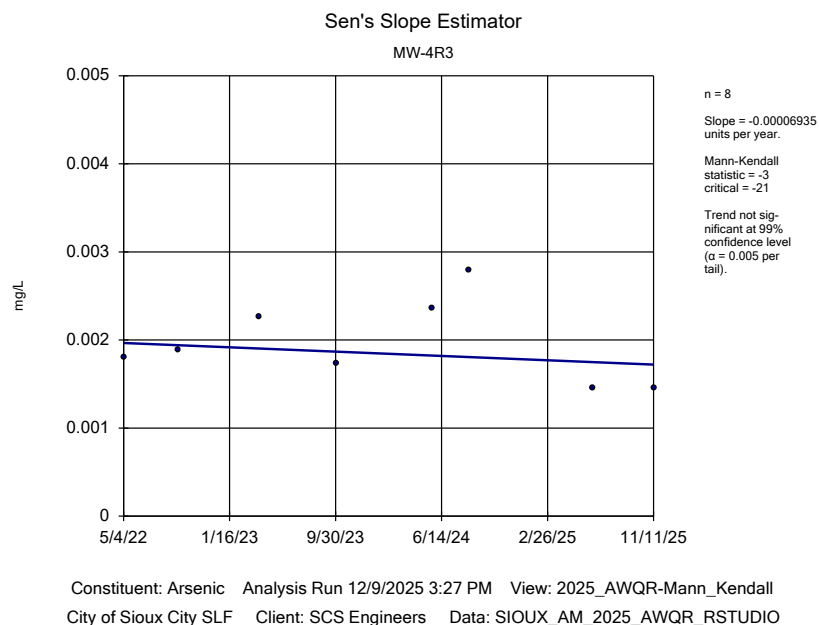
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

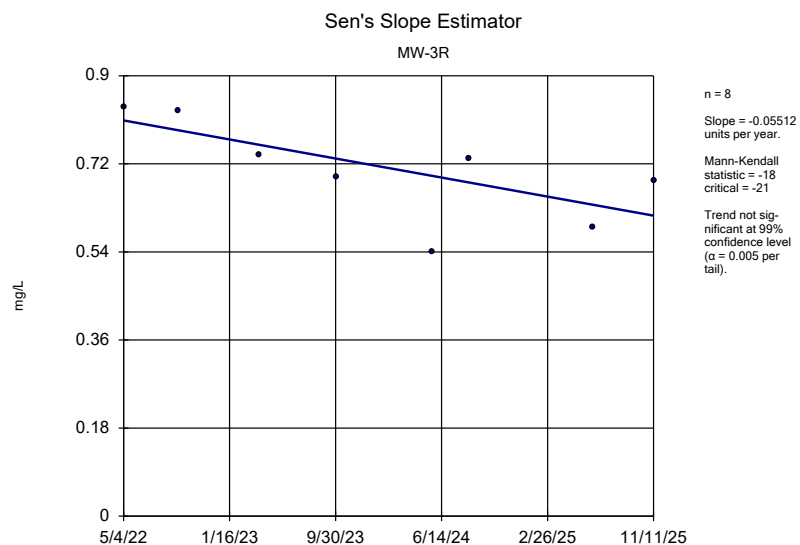


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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

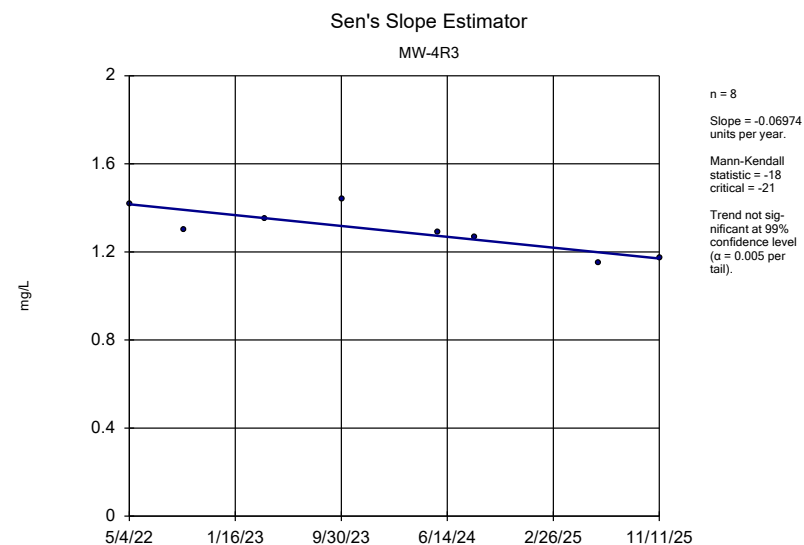


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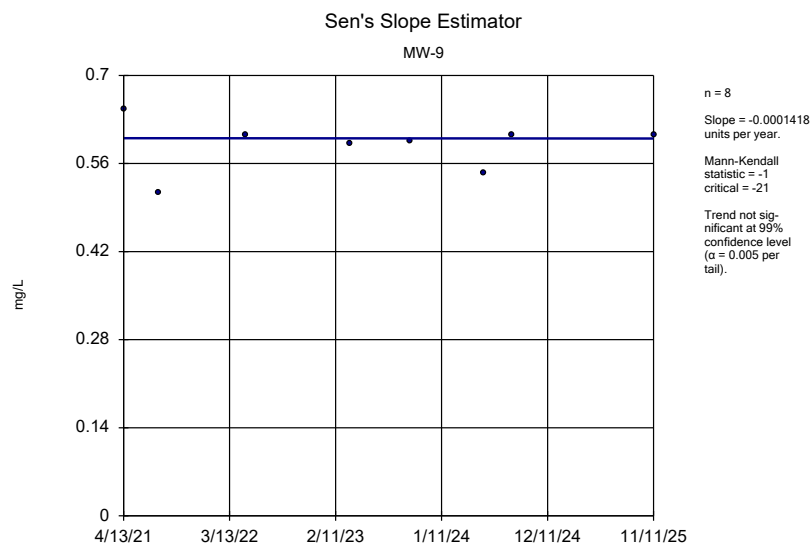




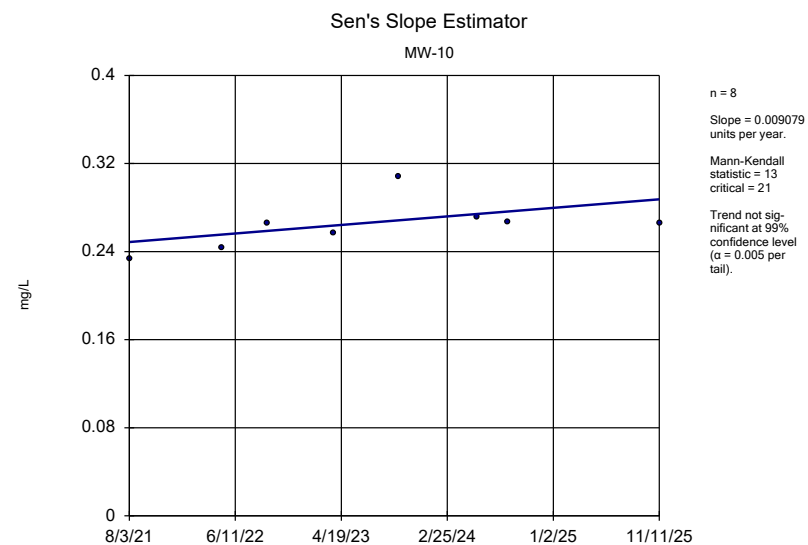
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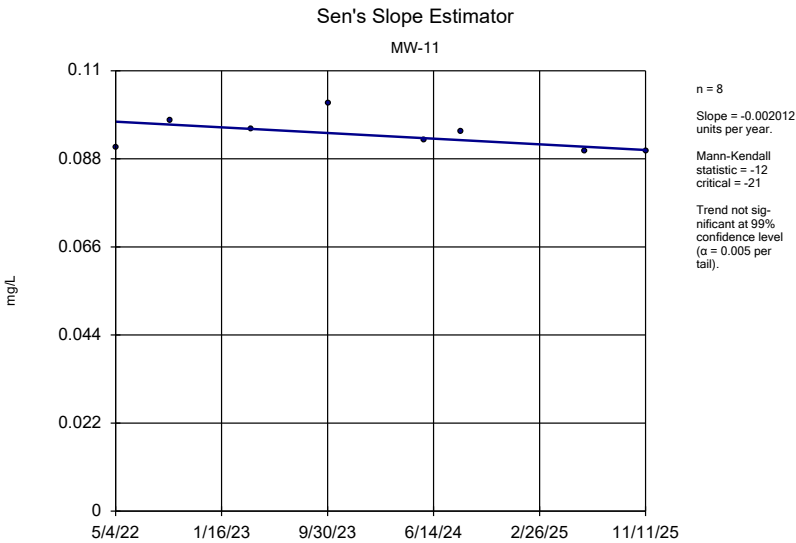
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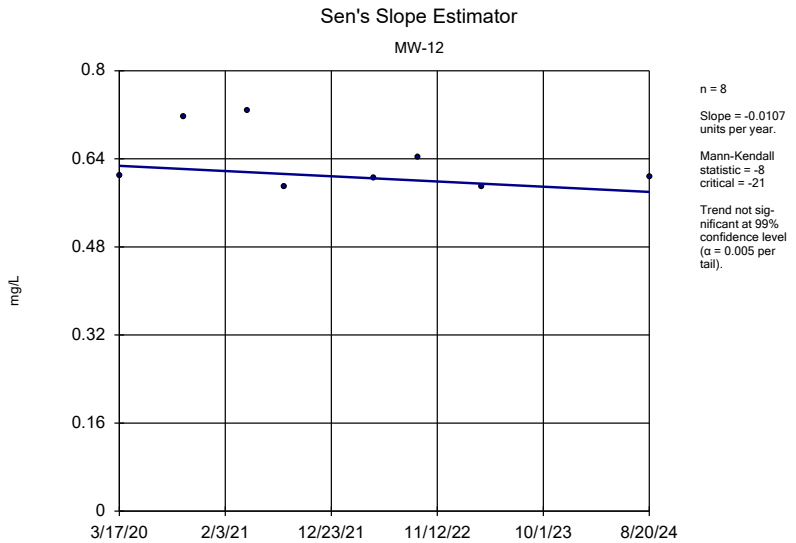
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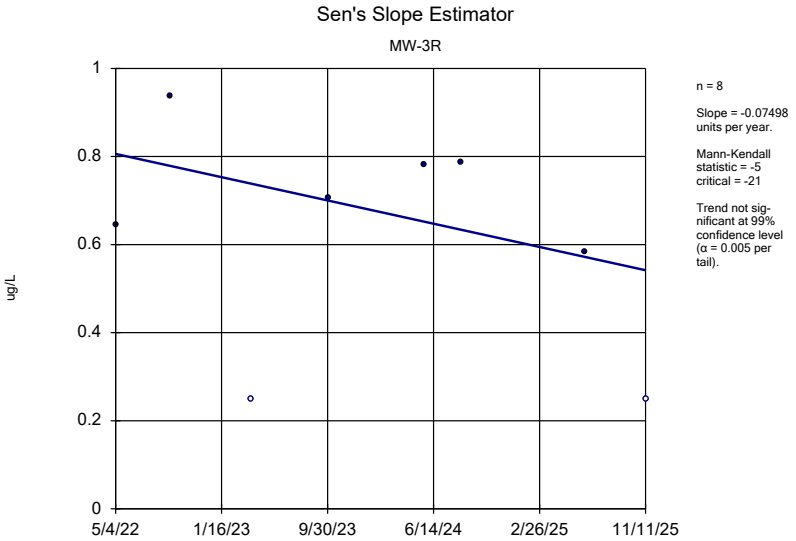
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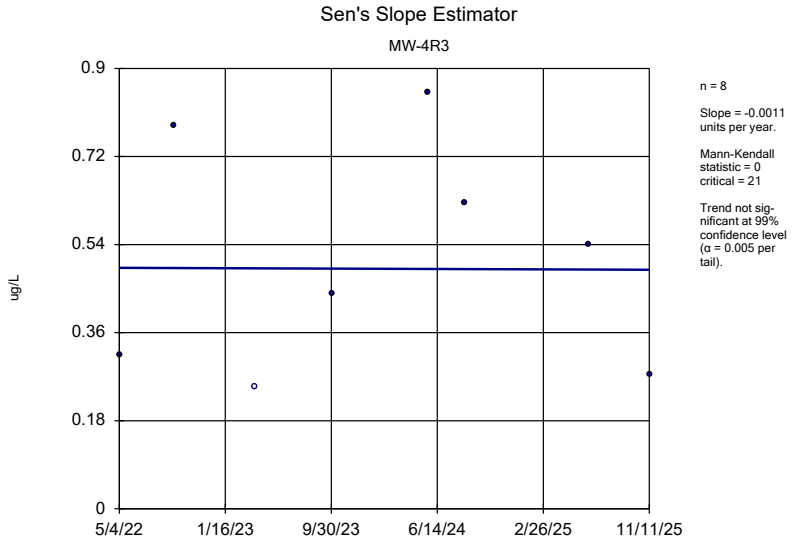
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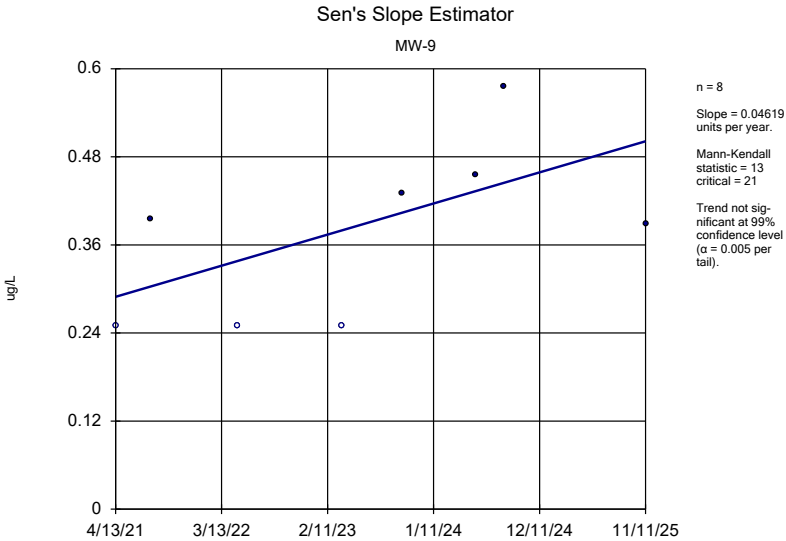
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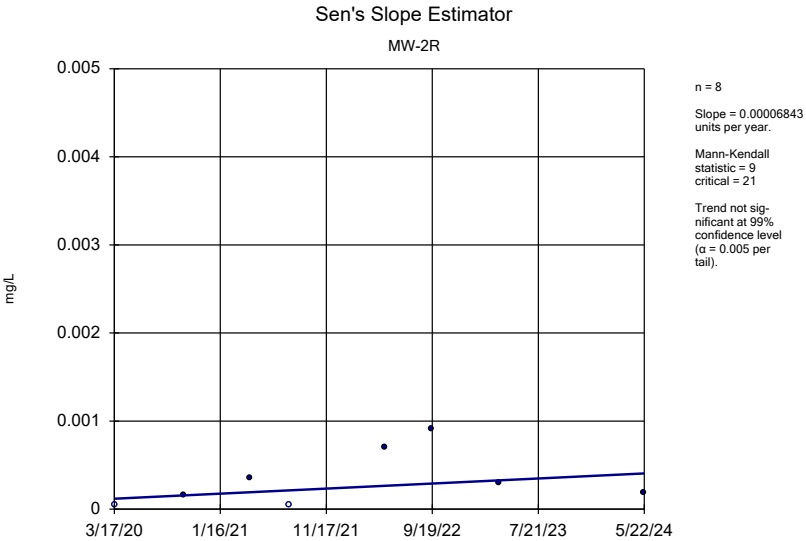
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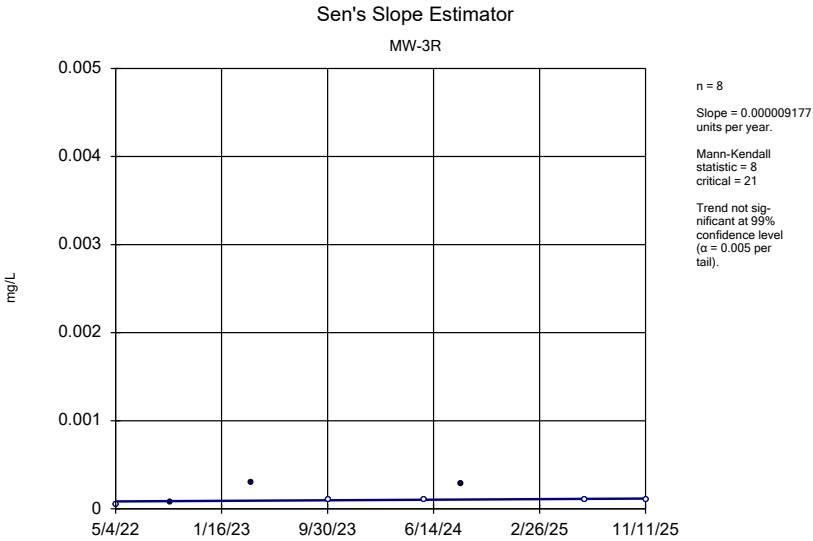
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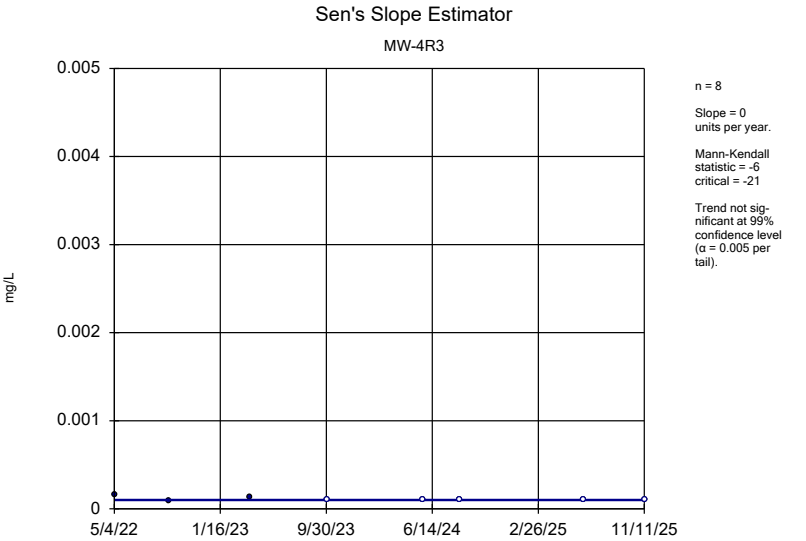
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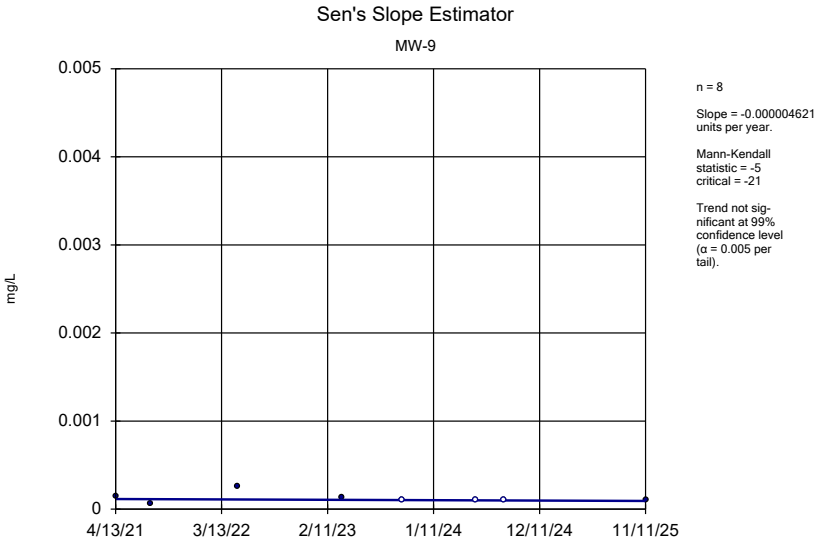
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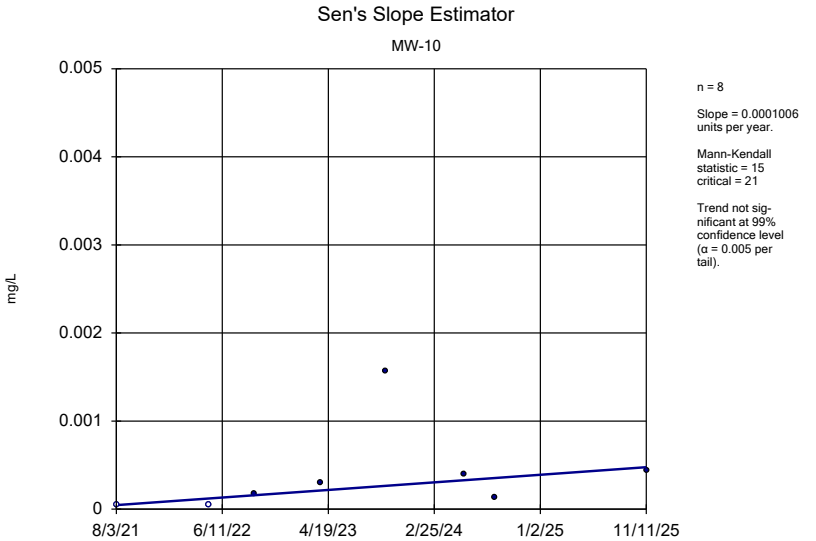
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



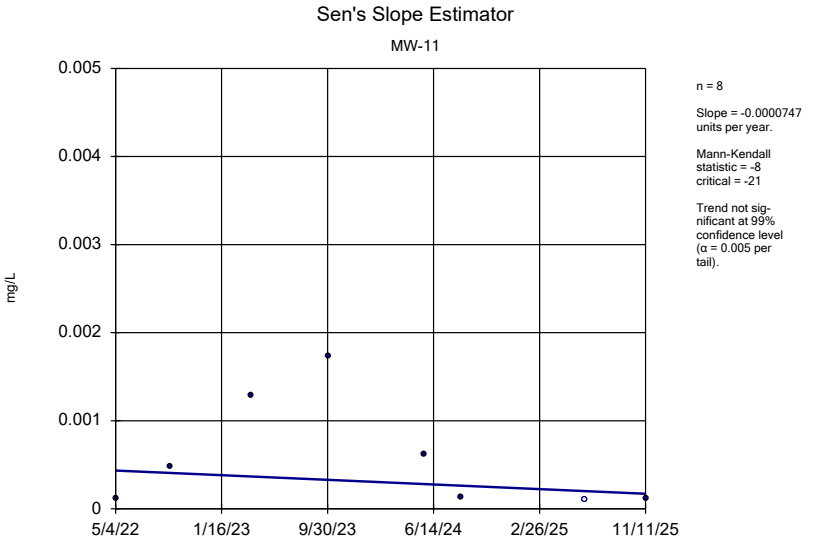
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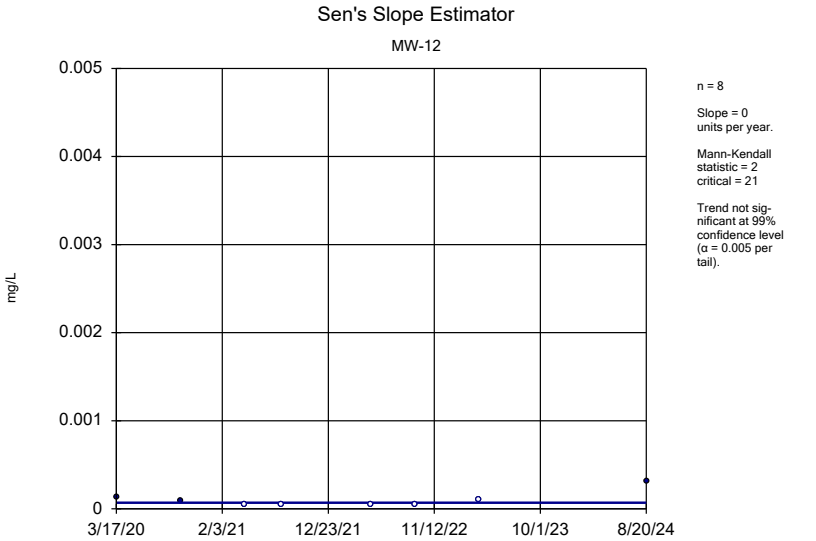
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



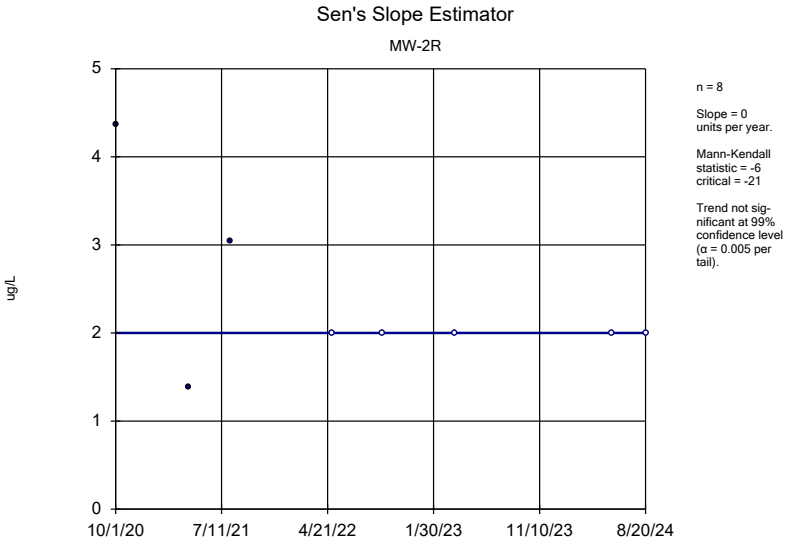
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



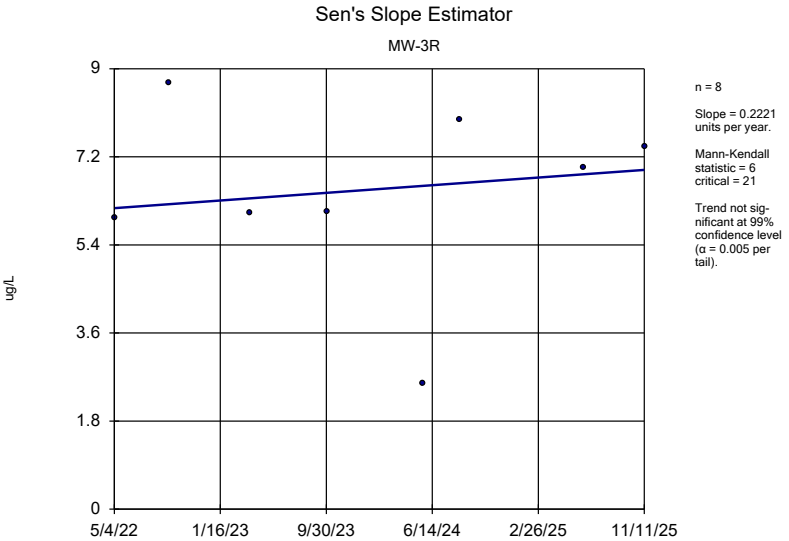
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



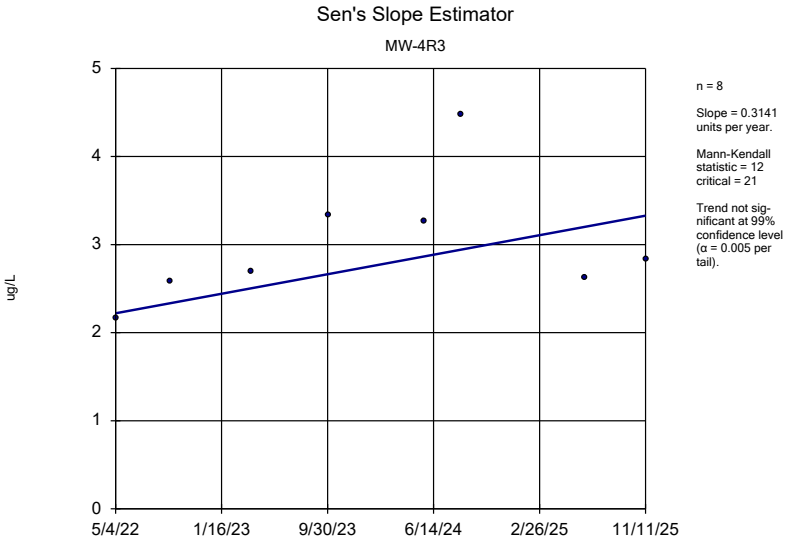
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



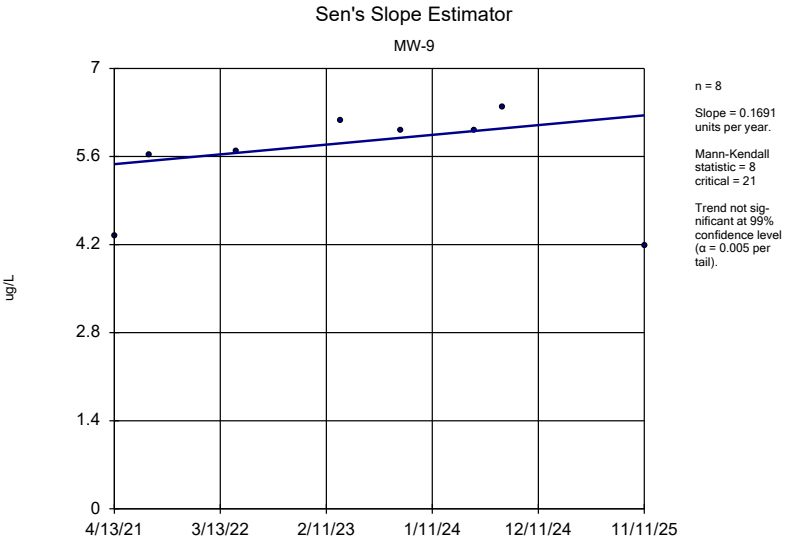
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



Constituent: Chloroethane Analysis Run 12/9/2025 3:28 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



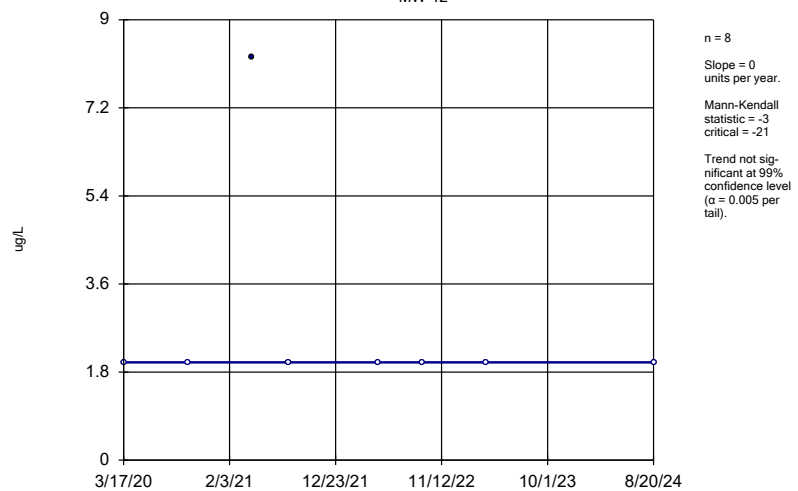
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



Constituent: Chloroethane Analysis Run 12/9/2025 3:28 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Sen's Slope Estimator

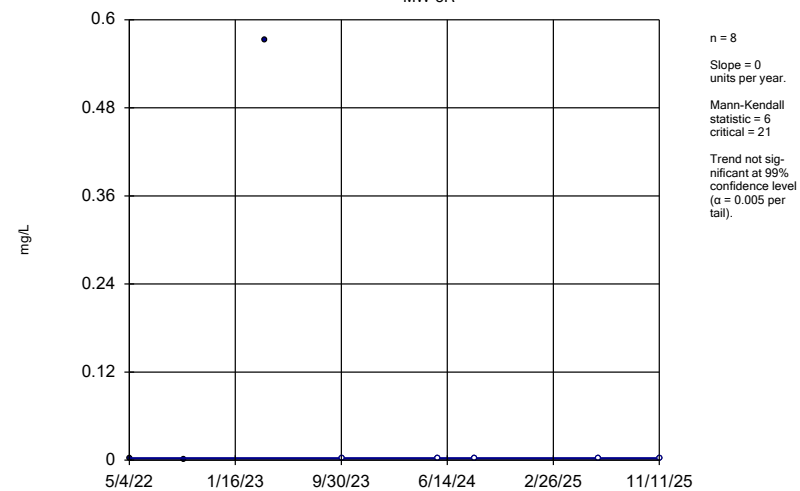
MW-12



Constituent: Chloroethane Analysis Run 12/9/2025 3:28 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Sen's Slope Estimator

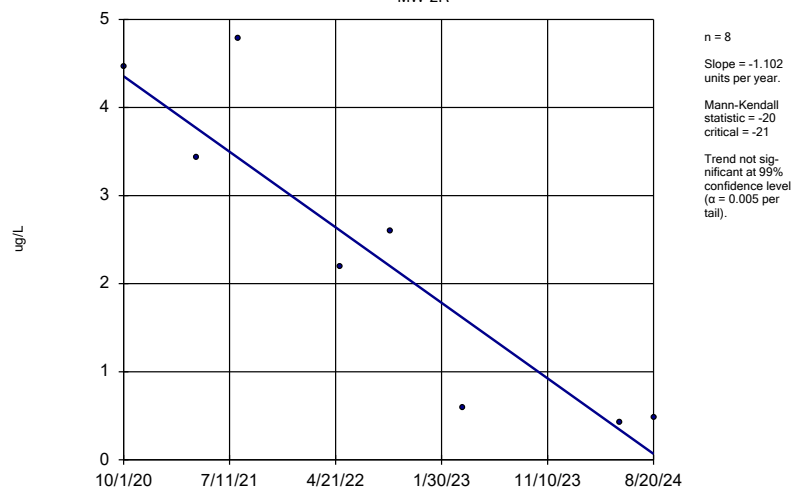
MW-3R



Constituent: Chromium Analysis Run 12/9/2025 3:28 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Sen's Slope Estimator

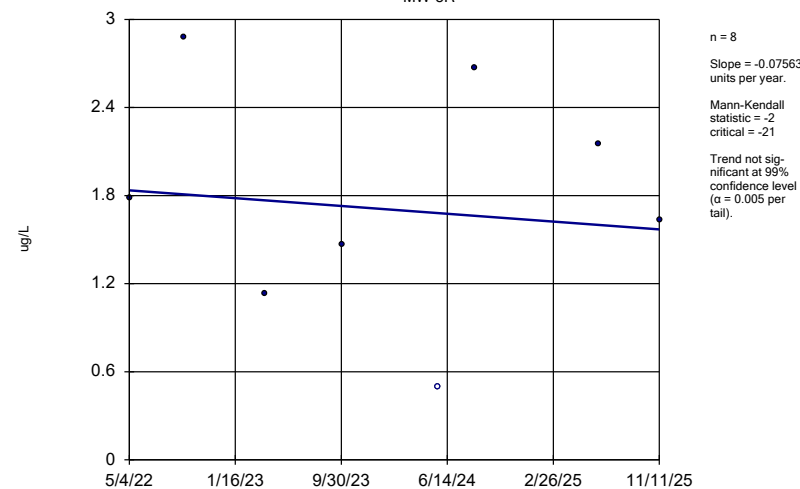
MW-2R



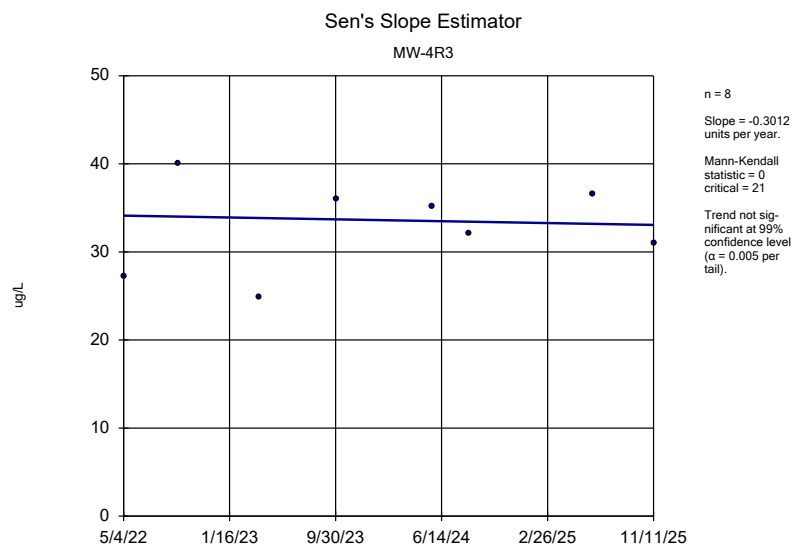
Constituent: cis-1,2-Dichloroethene Analysis Run 12/9/2025 3:28 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Sen's Slope Estimator

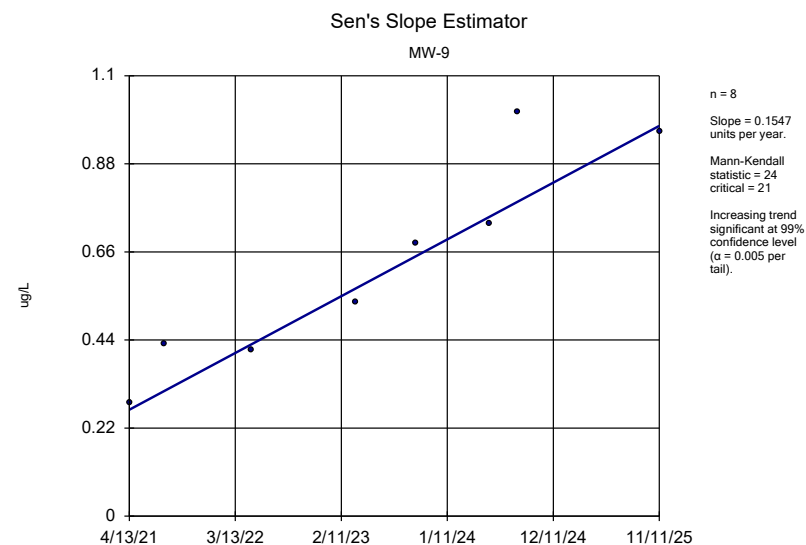
MW-3R



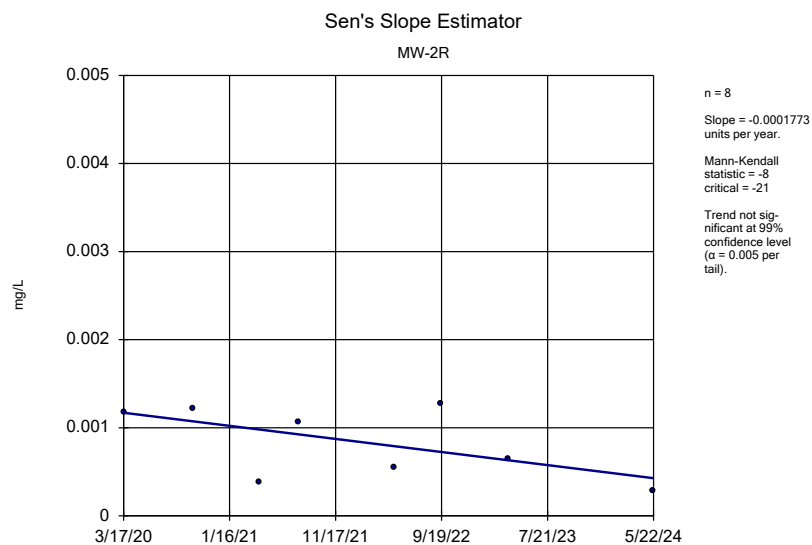
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



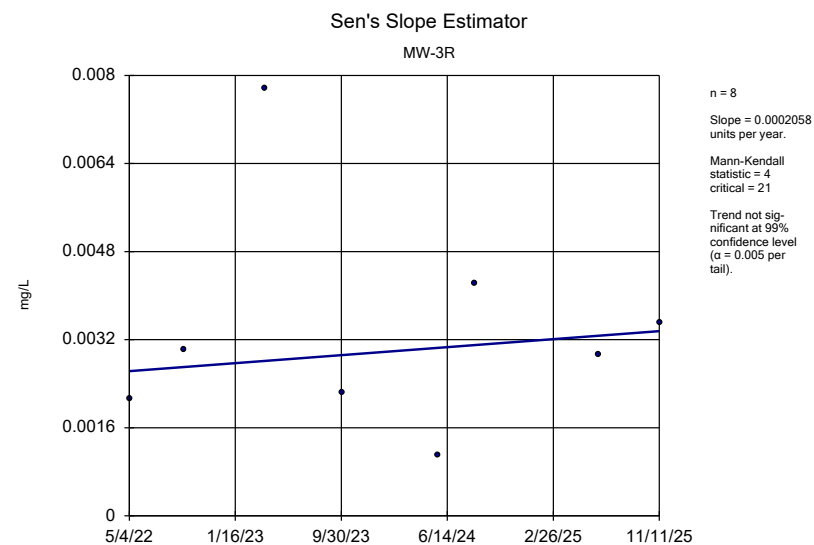
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



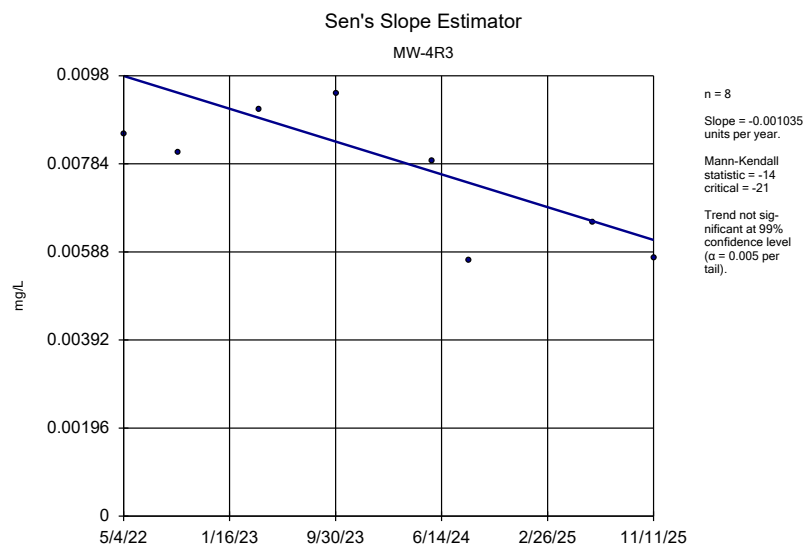
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



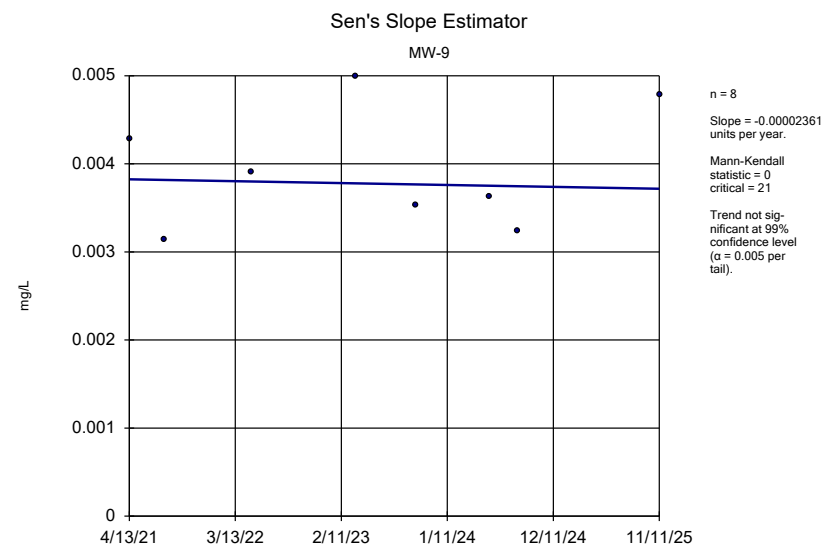
Constituent: Cobalt Analysis Run 12/9/2025 3:29 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



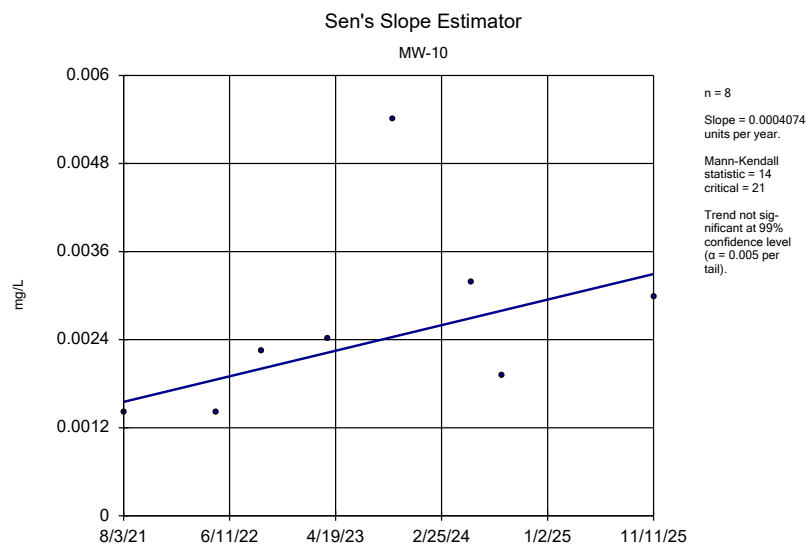
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



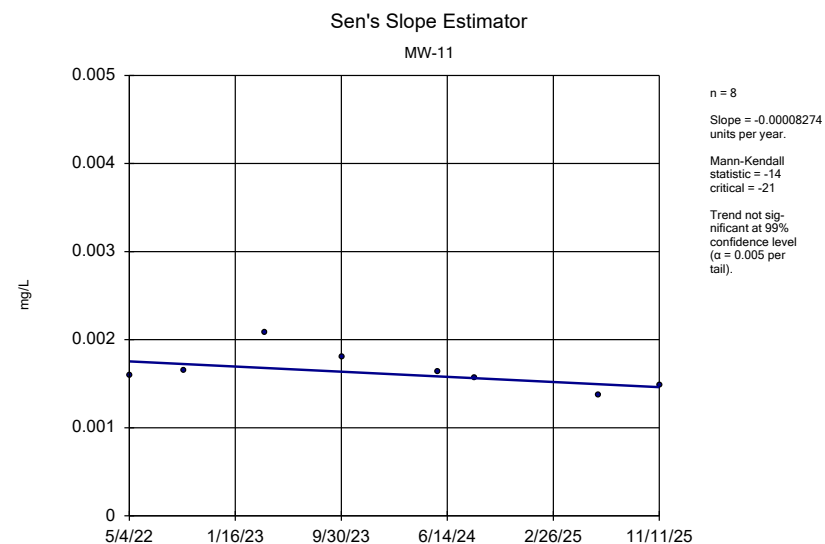
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



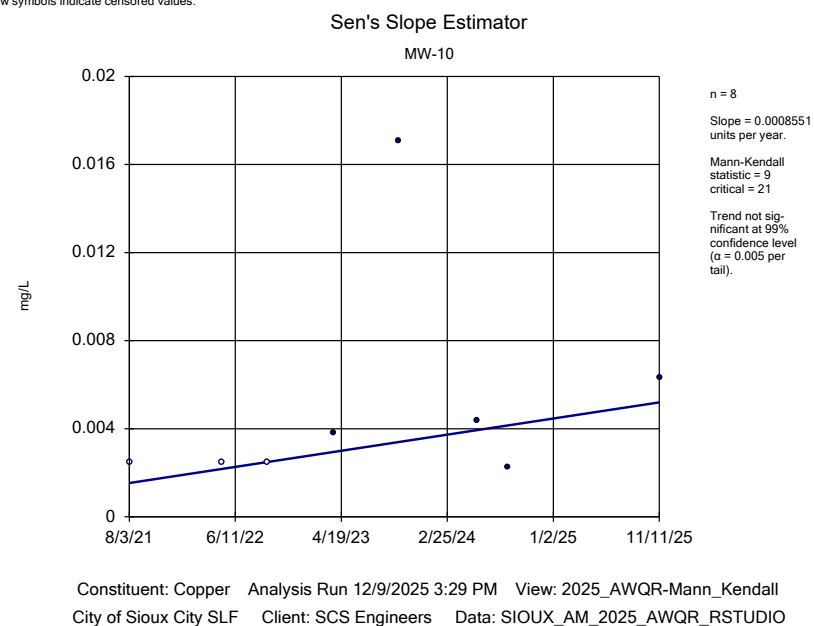
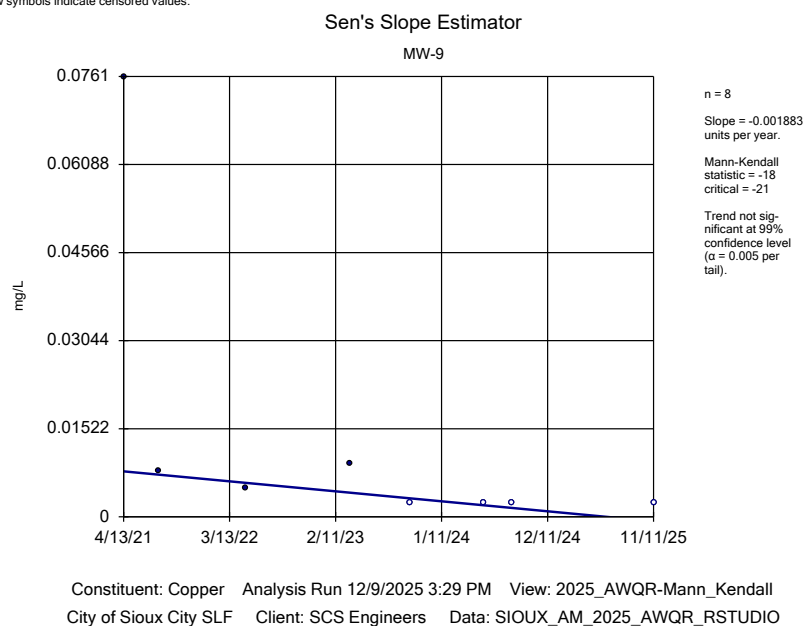
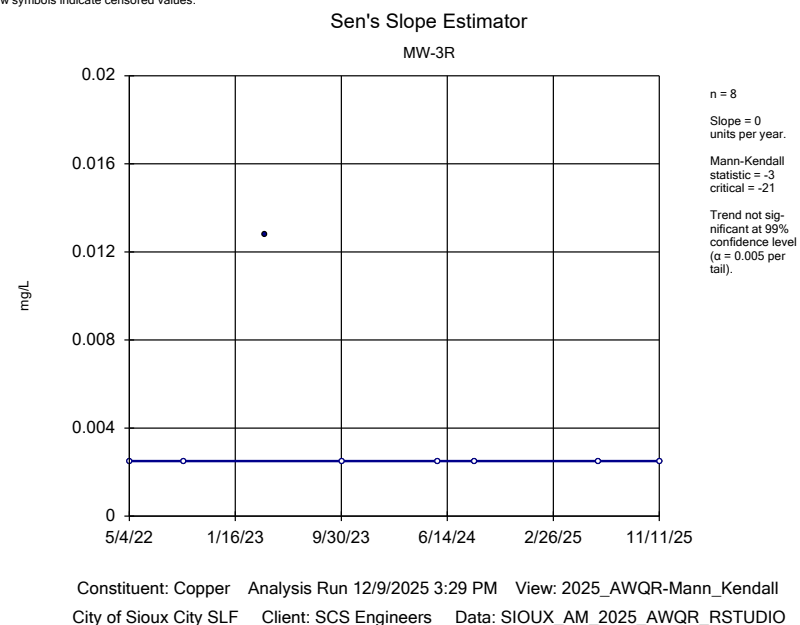
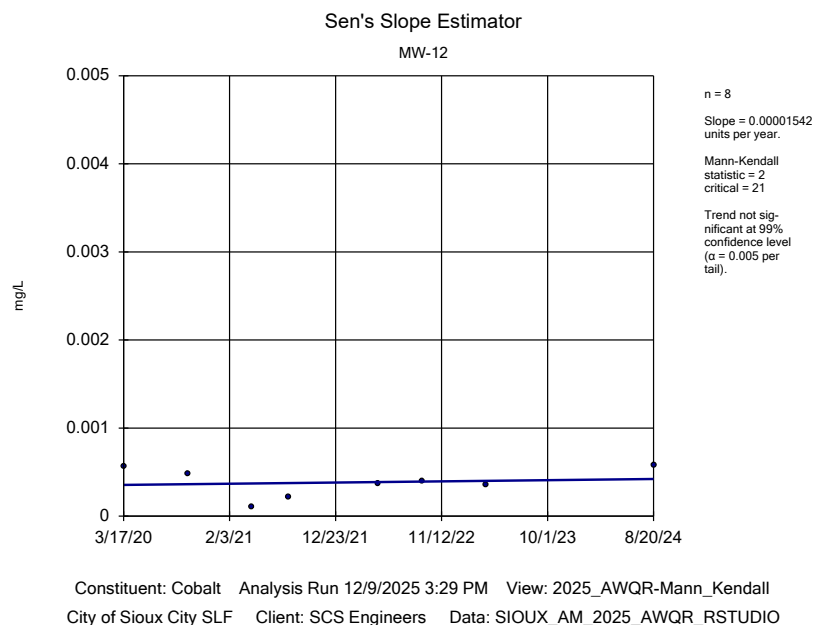
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

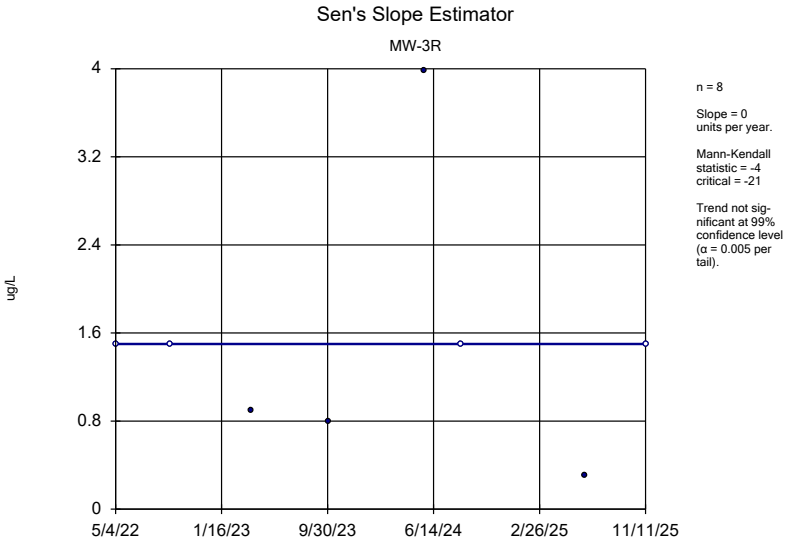


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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

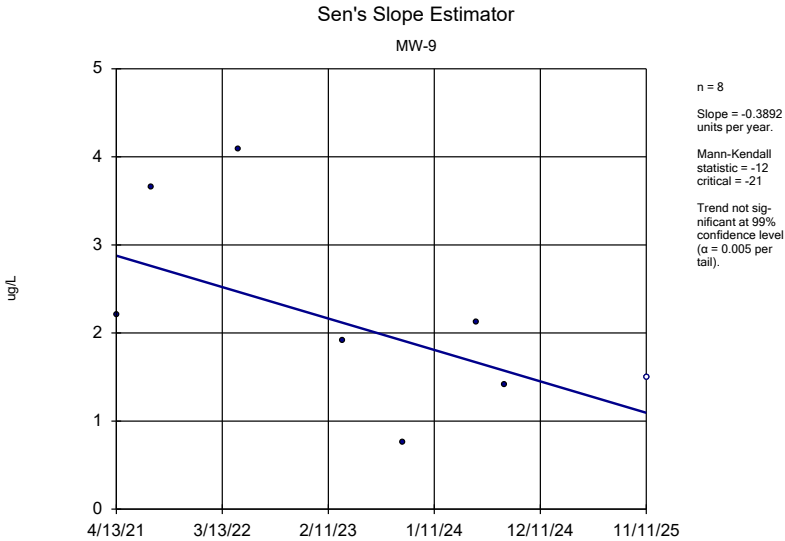


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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

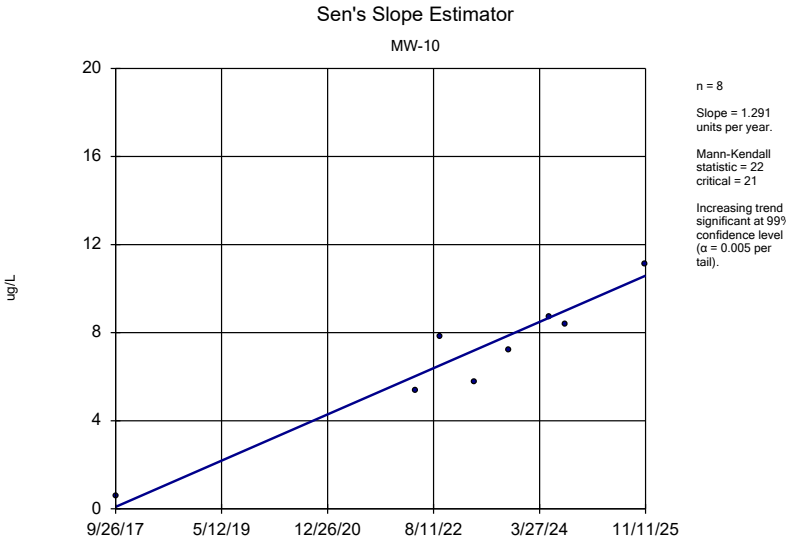




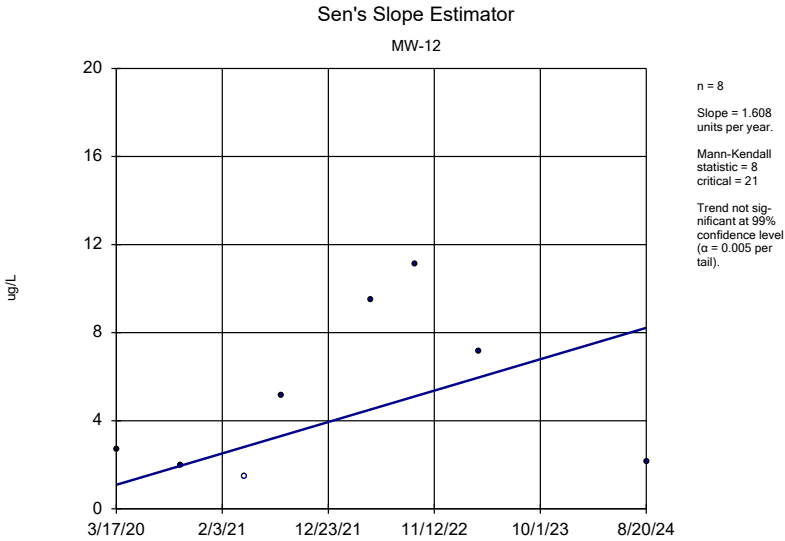
Constituent: Dichlorodifluoromethane Analysis Run 12/9/2025 3:29 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



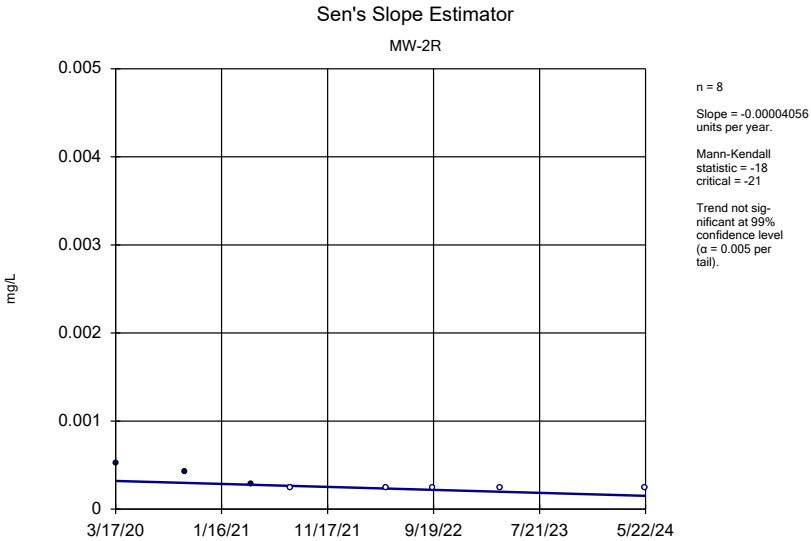
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



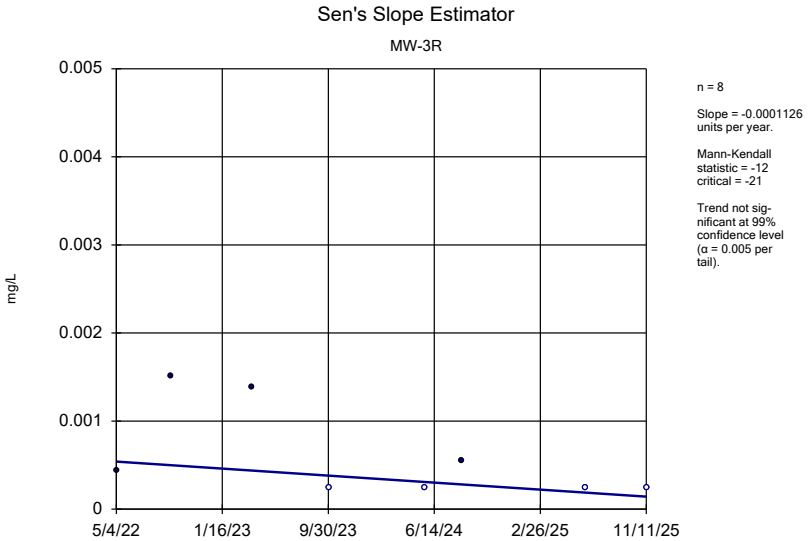
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



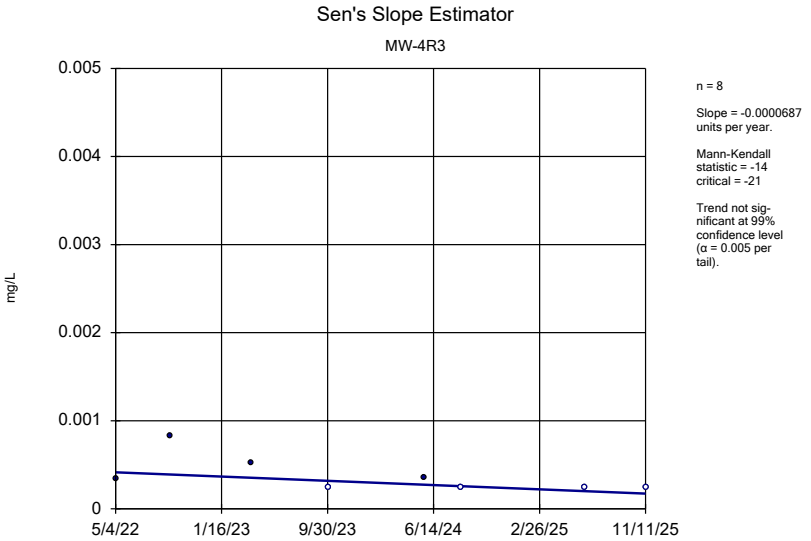
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



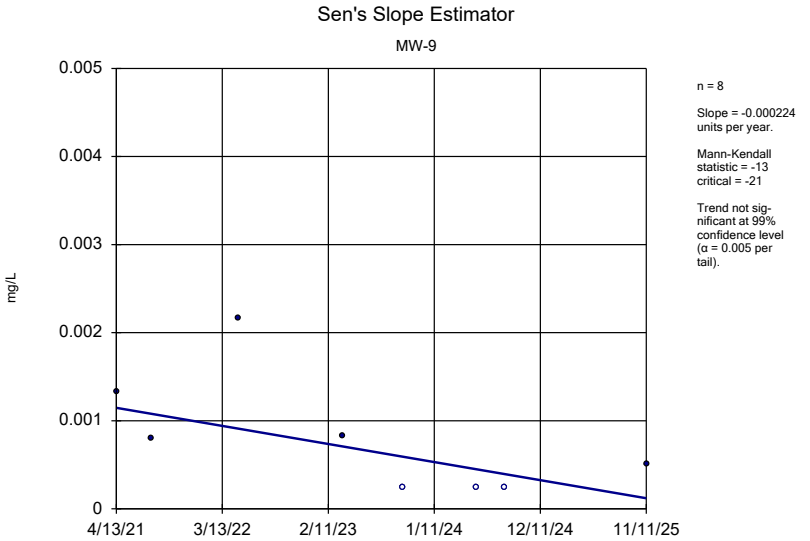
Constituent: Lead Analysis Run 12/9/2025 3:29 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



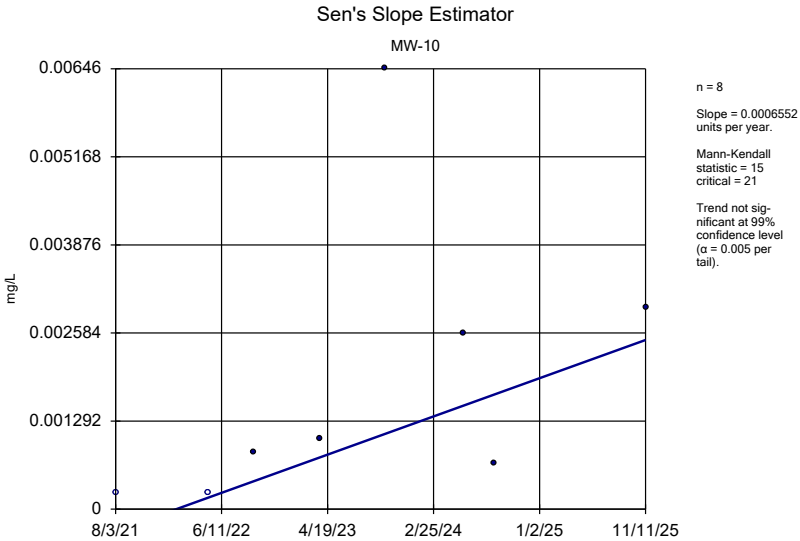
Constituent: Lead Analysis Run 12/9/2025 3:29 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



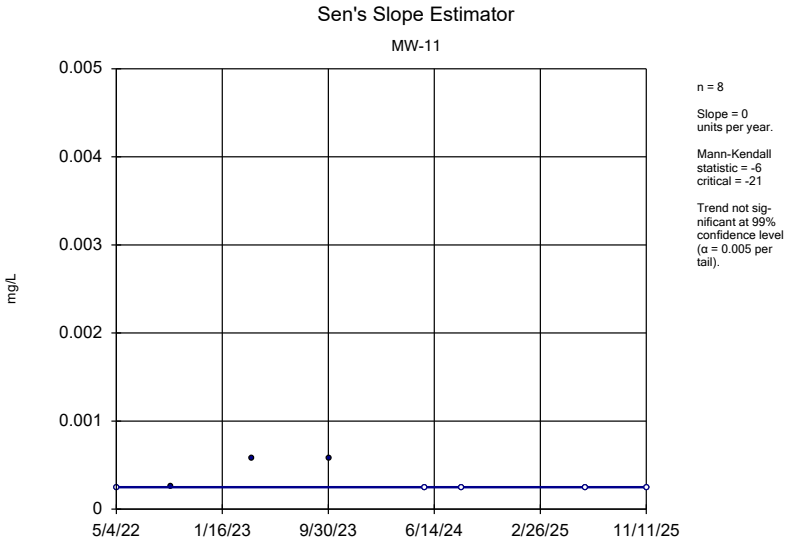
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



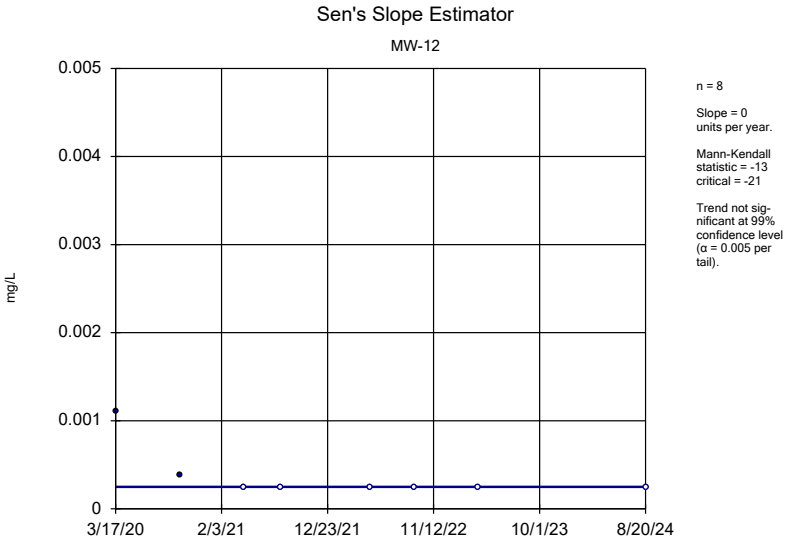
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



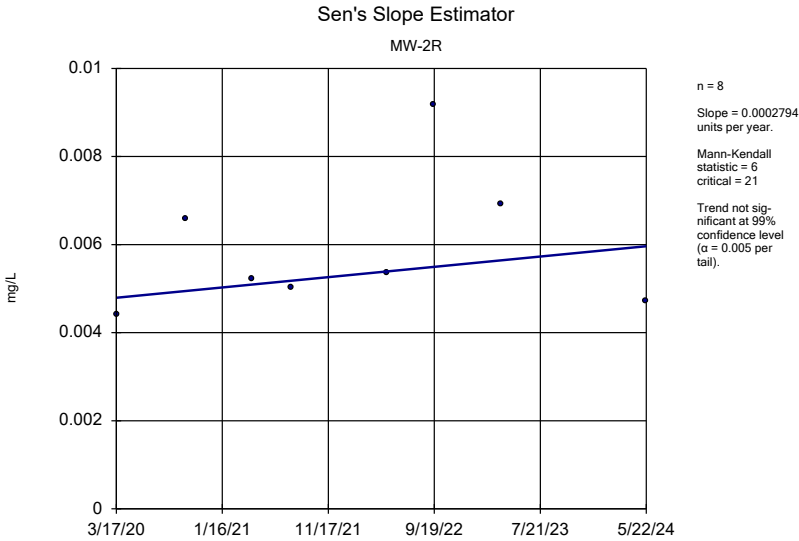
Constituent: Lead Analysis Run 12/9/2025 3:29 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



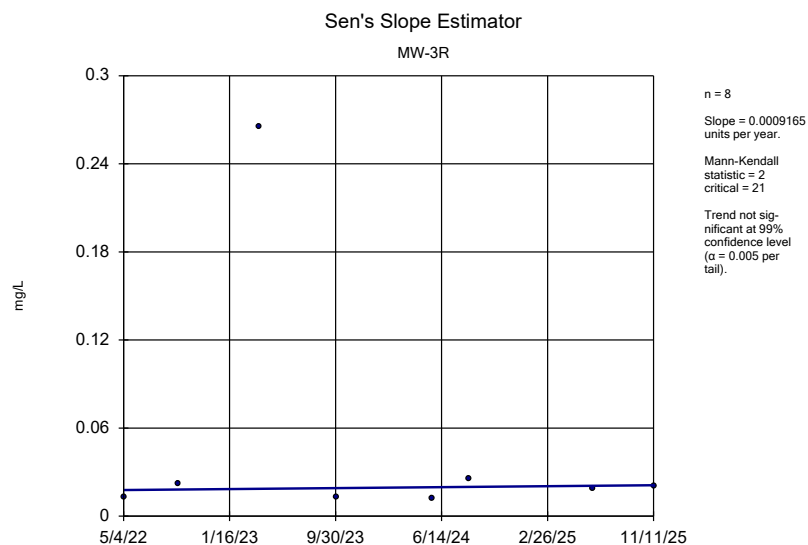
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City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



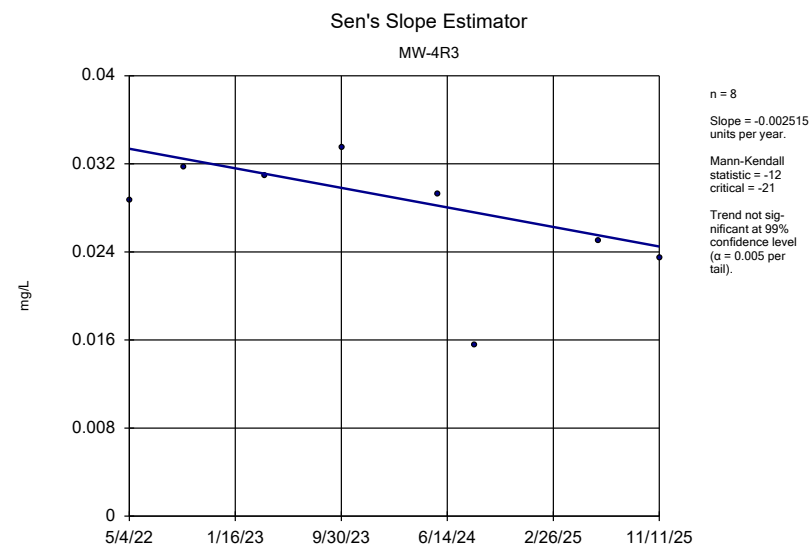
Constituent: Lead Analysis Run 12/9/2025 3:29 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



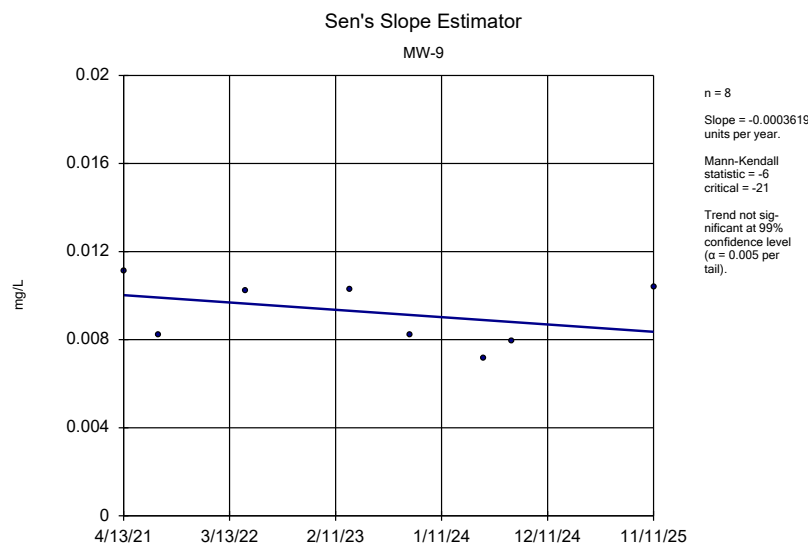
Constituent: Nickel Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



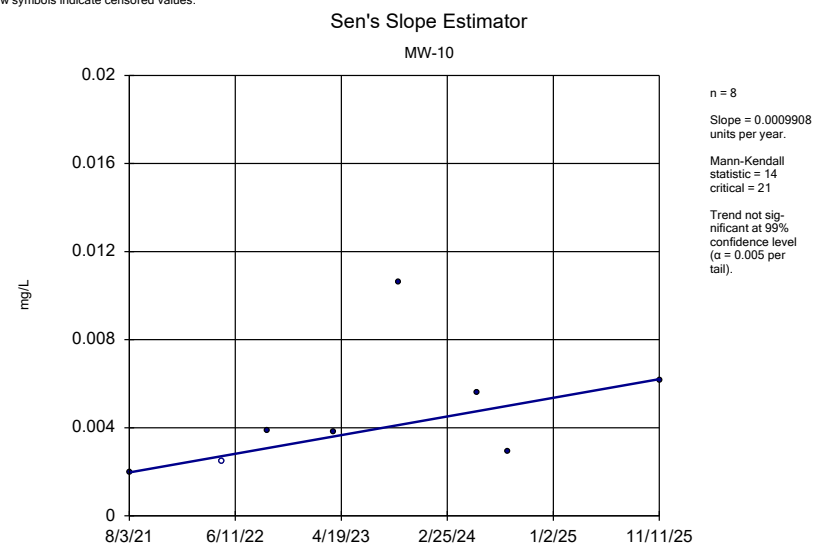
Constituent: Nickel Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



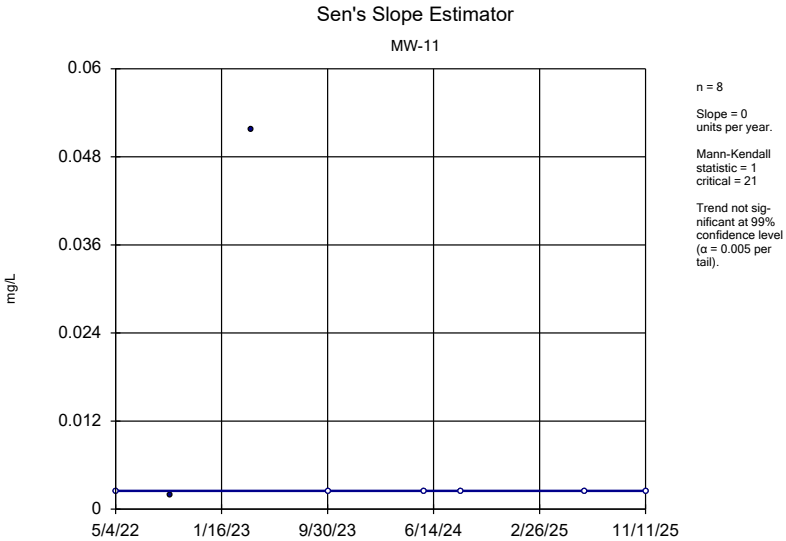
Constituent: Nickel Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



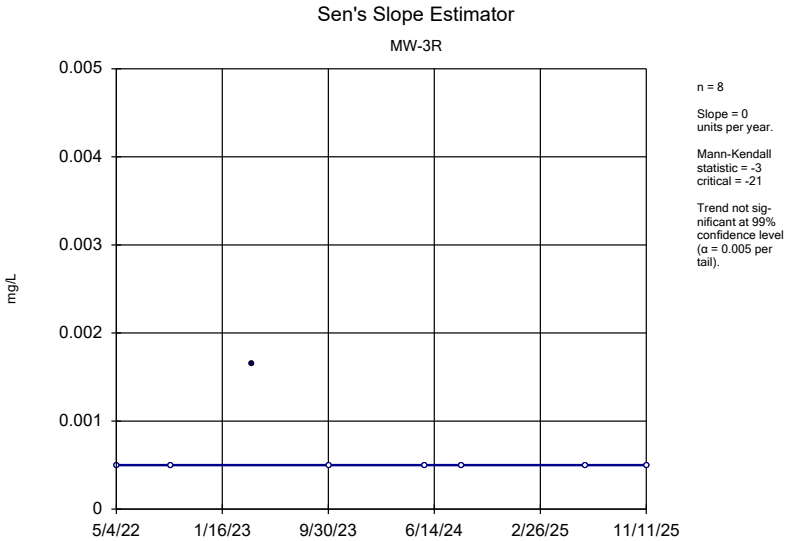
Constituent: Nickel Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



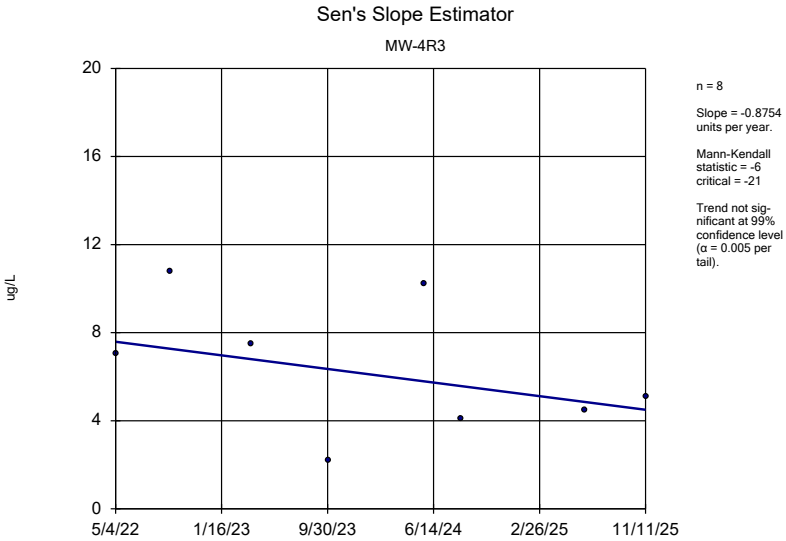
Constituent: Nickel Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



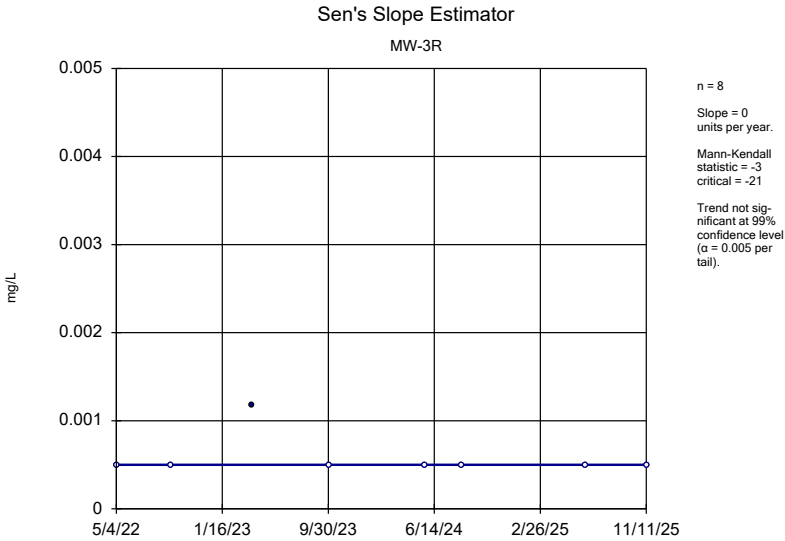
Constituent: Selenium Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



Constituent: Silver Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



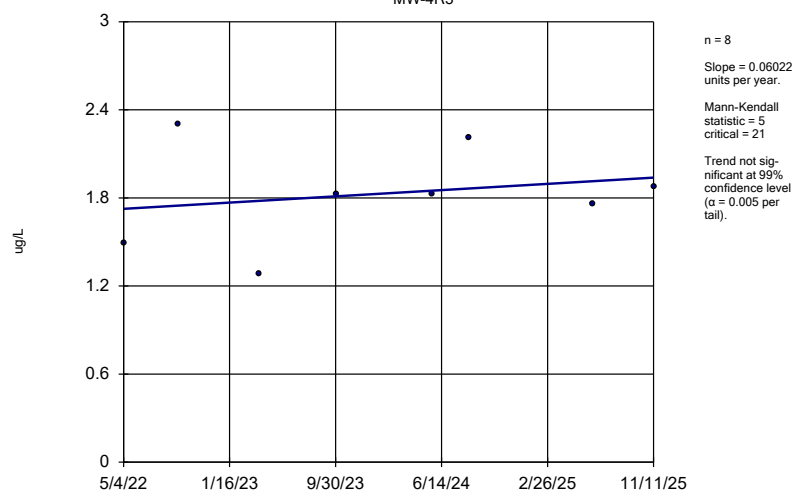
Constituent: Tetrachloroethene Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



Constituent: Thallium Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Sen's Slope Estimator

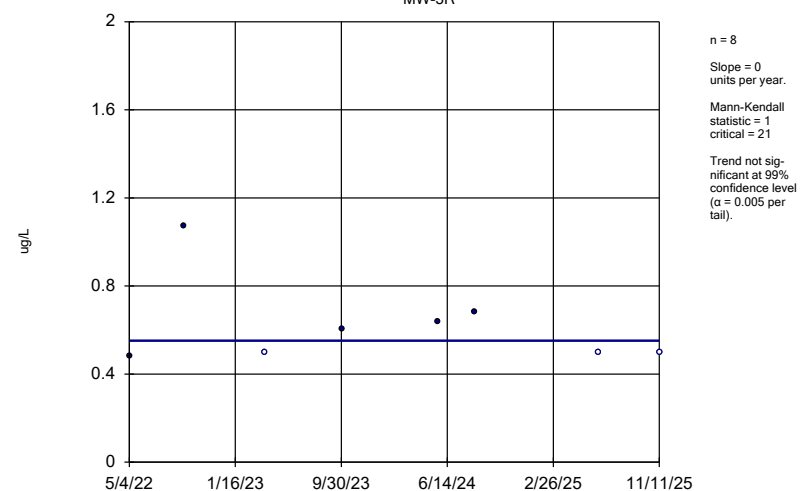
MW-4R3



Constituent: trans-1,2-Dichloroethene Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendal
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Sen's Slope Estimator

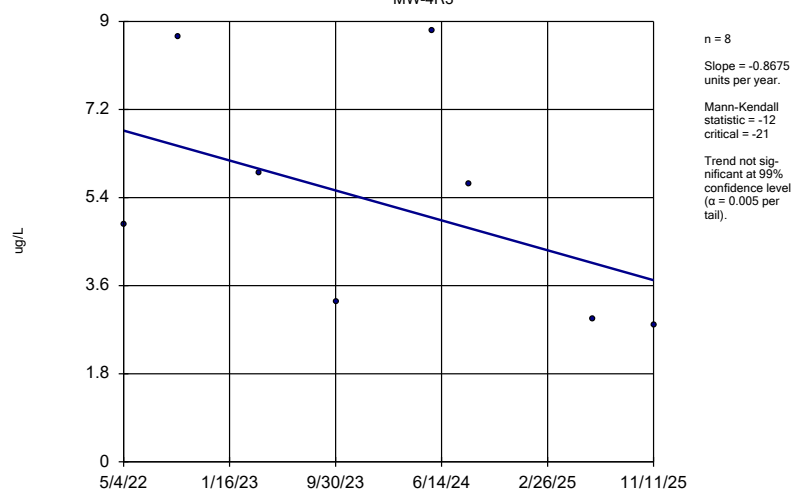
MW-3R



Constituent: Trichloroethene Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Sen's Slope Estimator

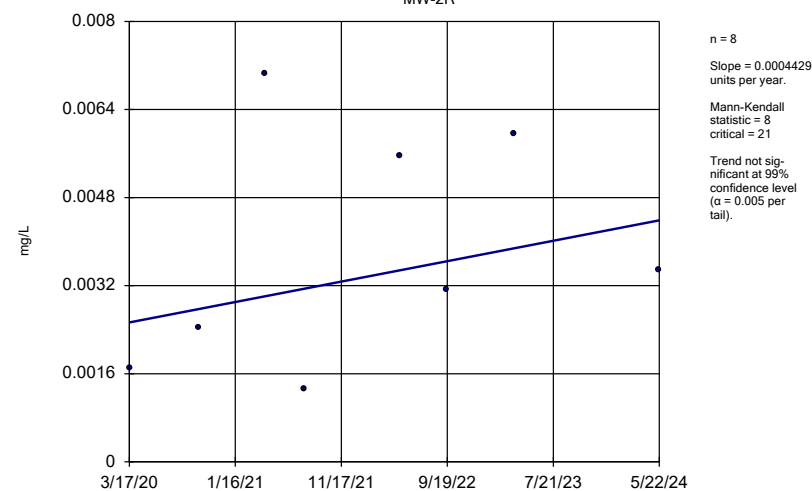
MW-4R3



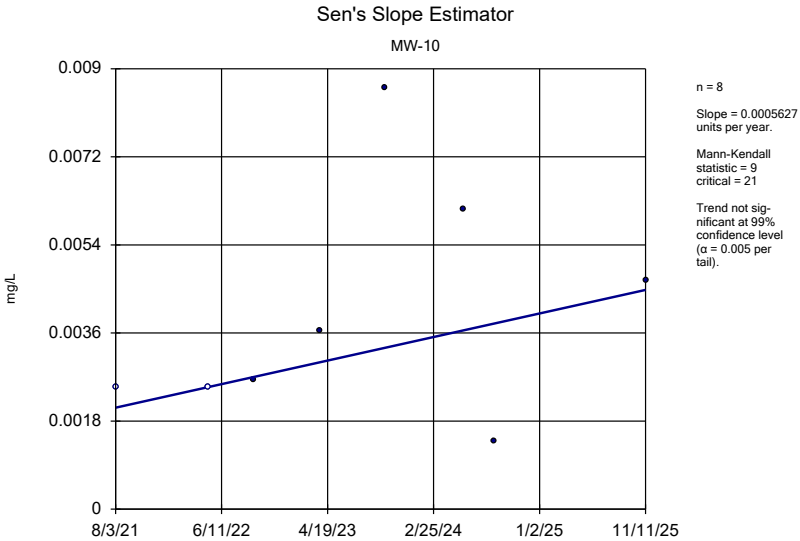
Constituent: Trichloroethene Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Sen's Slope Estimator

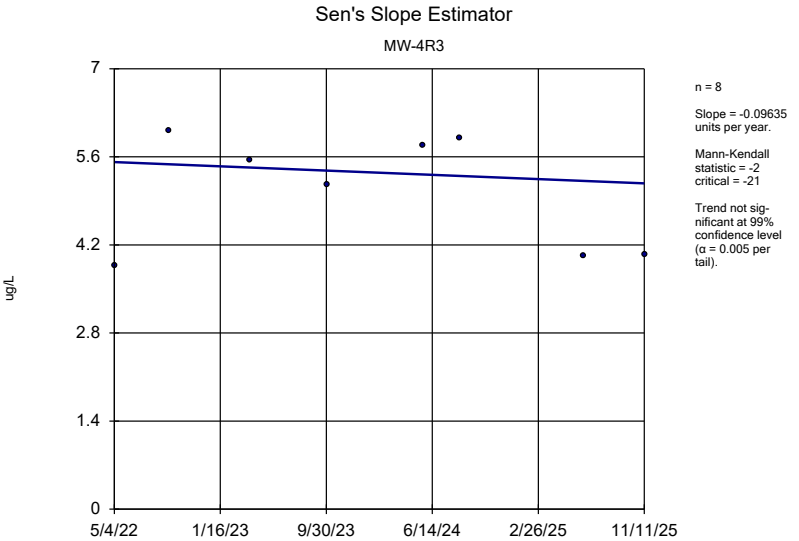
MW-2R



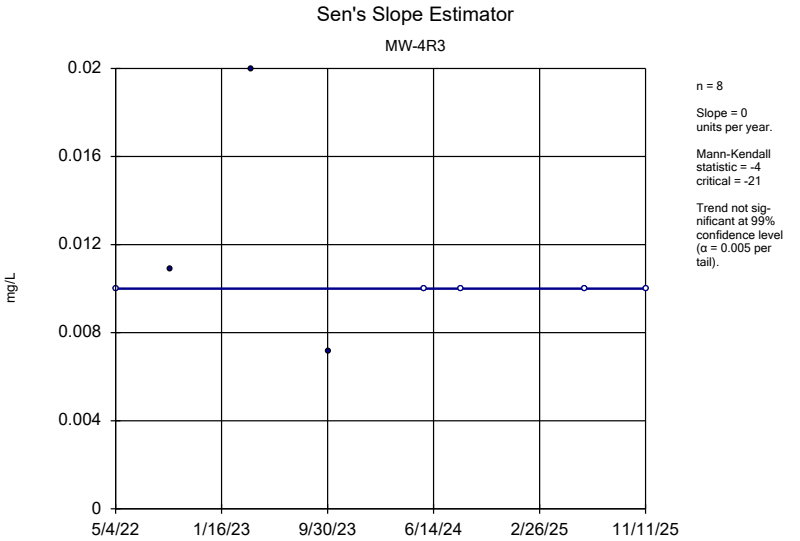
Constituent: Vanadium Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



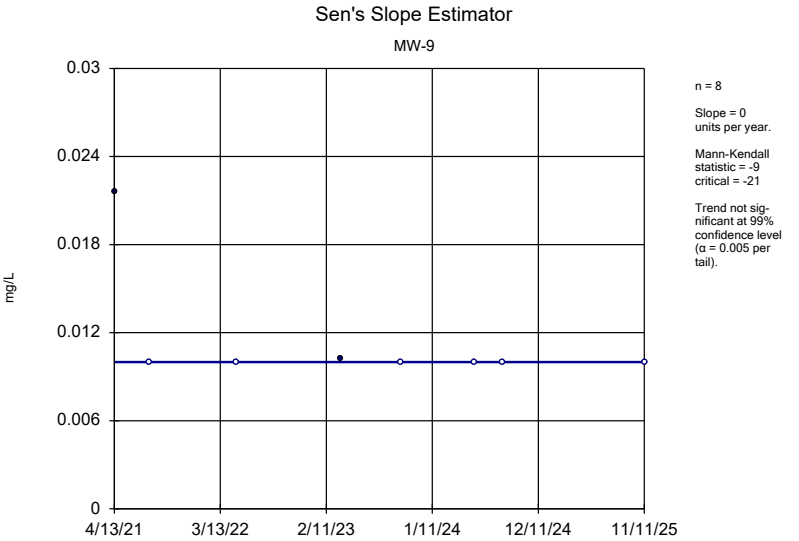
Constituent: Vanadium Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



Constituent: Vinyl Chloride Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

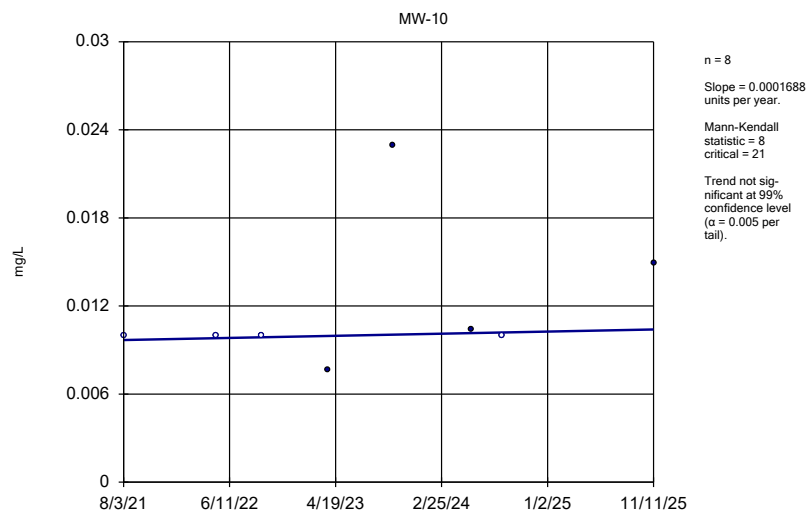


Constituent: Zinc Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



Constituent: Zinc Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Sen's Slope Estimator



Constituent: Zinc Analysis Run 12/9/2025 3:30 PM View: 2025_AWQR-Mann_Kendall
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Confidence Interval Summary Table and Graphs

Confidence Interval

City of Sioux City SLF

Client: SCS Engineers

Data: SIOUX_AM_2025_AWQR_RSTUDIO

Printed 12/9/2025, 3:49 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
1,1-Dichloroethane (ug/L)	MW-2R	13.67	2.093	140	No	8	0	No	0.01	Param.
1,1-Dichloroethane (ug/L)	MW-3R	82.4	51.15	140	No	8	0	No	0.01	Param.
1,1-Dichloroethane (ug/L)	MW-4R3	101.4	72.3	140	No	8	0	No	0.01	Param.
1,1-Dichloroethane (ug/L)	MW-9	31.72	18.43	140	No	8	0	No	0.01	Param.
1,2-Dichloropropane (ug/L)	MW-4R3	1.351	0.7825	5	No	8	0	No	0.01	Param.
Acetone (ug/L)	MW-3R	10.6	4.51	6300	No	8	62.5	No	0.004	NP (normality)
Acetone (ug/L)	MW-4R3	20.9	3.66	6300	No	8	62.5	No	0.004	NP (normality)
Acetone (ug/L)	MW-9	37.2	5	6300	No	8	50	No	0.004	NP (normality)
Antimony (mg/L)	MW-11	0.00211	0.001	0.006	No	8	87.5	No	0.004	NP (NDs)
Antimony (mg/L)	MW-12	0.00417	0.0005	0.006	No	8	87.5	No	0.004	NP (NDs)
Arsenic (mg/L)	MW-3R	0.001919	0.001271	0.01	No	8	0	No	0.01	Param.
Arsenic (mg/L)	MW-4R3	0.002463	0.001477	0.01	No	8	0	No	0.01	Param.
Arsenic (mg/L)	MW-9	0.003102	0.00106	0.01	No	8	0	No	0.01	Param.
Arsenic (mg/L)	MW-12	0.00255	0.000781	0.01	No	8	25	No	0.004	NP (normality)
Barium (mg/L)	MW-2R	0.6429	0.5008	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-3R	0.8155	0.596	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-4R3	1.41	1.188	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-9	0.6321	0.5451	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-10	0.2874	0.2403	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-11	0.09861	0.08974	2	No	8	0	No	0.01	Param.
Barium (mg/L)	MW-12	0.6946	0.577	2	No	8	0	No	0.01	Param.
Benzene (ug/L)	MW-3R	0.8321	0.5284	5	No	8	25	No	0.01	Param.
Benzene (ug/L)	MW-4R3	0.7548	0.2654	5	No	8	12.5	No	0.01	Param.
Benzene (ug/L)	MW-9	0.4984	0.3755	5	No	8	37.5	No	0.01	Param.
Cadmium (mg/L)	MW-2R	0.0006507	0.00005282	0.005	No	8	25	No	0.01	Param.
Cadmium (mg/L)	MW-3R	0.000305	0.00005	0.005	No	8	62.5	No	0.004	NP (normality)
Cadmium (mg/L)	MW-4R3	0.000159	0.000094	0.005	No	8	62.5	No	0.004	NP (normality)
Cadmium (mg/L)	MW-9	0.0001922	0.00007017	0.005	No	8	37.5	No	0.01	Param.
Cadmium (mg/L)	MW-10	0.00157	0.00005	0.005	No	8	25	No	0.004	NP (normality)
Cadmium (mg/L)	MW-11	0.001231	0	0.005	No	8	12.5	No	0.01	Param.
Cadmium (mg/L)	MW-12	0.000311	0.00005	0.005	No	8	62.5	No	0.004	NP (normality)
Chloroethane (ug/L)	MW-2R	4.37	1.38	2800	No	8	62.5	No	0.004	NP (normality)
Chloroethane (ug/L)	MW-3R	8.433	4.494	2800	No	8	0	No	0.01	Param.
Chloroethane (ug/L)	MW-4R3	3.748	2.247	2800	No	8	0	No	0.01	Param.
Chloroethane (ug/L)	MW-9	6.439	4.669	2800	No	8	0	No	0.01	Param.
Chloroethane (ug/L)	MW-12	8.24	2	2800	No	8	87.5	No	0.004	NP (NDs)
Chromium (mg/L)	MW-3R	0.573	0.00127	0.1	No	8	62.5	No	0.004	NP (normality)
cis-1,2-Dichloroethene (ug/L)	MW-2R	4.25	0.4999	70	No	8	0	No	0.01	Param.
cis-1,2-Dichloroethene (ug/L)	MW-3R	2.609	0.9437	70	No	8	12.5	No	0.01	Param.
cis-1,2-Dichloroethene (ug/L)	MW-4R3	38.25	27.45	70	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-2R	0.001255	0.0004012	0.0021	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-3R	0.005501	0.001234	0.0021	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-4R3	0.009156	0.006074	0.0021	Yes	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-9	0.004667	0.003208	0.0021	Yes	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-10	0.004	0.001245	0.0021	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-11	0.001875	0.00142	0.0021	No	8	0	No	0.01	Param.
Cobalt (mg/L)	MW-12	0.0005544	0.0002088	0.0021	No	8	0	No	0.01	Param.
Copper (mg/L)	MW-3R	0.0128	0.0025	1.3	No	8	87.5	No	0.004	NP (NDs)
Copper (mg/L)	MW-9	0.0761	0.0025	1.3	No	8	50	No	0.004	NP (normality)
Copper (mg/L)	MW-10	0.0171	0.00223	1.3	No	8	37.5	No	0.004	NP (normality)

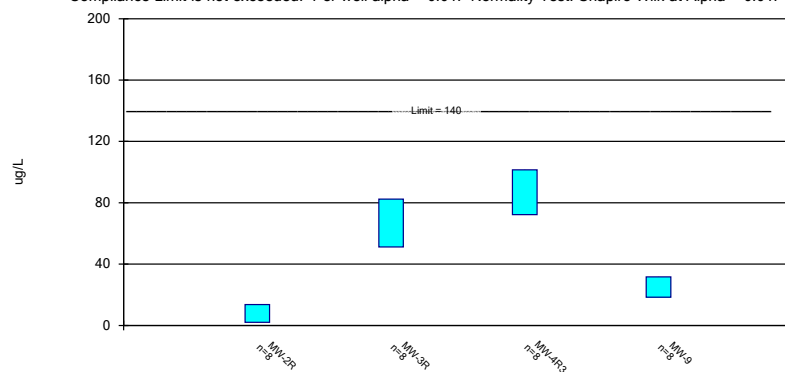
Confidence Interval

City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO Printed 12/9/2025, 3:49 PM

<u>Constituent</u>	<u>Well</u>	<u>Upper Lim.</u>	<u>Lower Lim.</u>	<u>Compliance</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Transform</u>	<u>Alpha</u>	<u>Method</u>
Dichlorodifluoromethane (ug/L)	MW-3R	2.268	0	1000	No	8	50	No	0.01	Param.
Dichlorodifluoromethane (ug/L)	MW-9	3.409	1.005	1000	No	8	12.5	No	0.01	Param.
Dichlorodifluoromethane (ug/L)	MW-12	9.094	1.216	1000	No	8	12.5	No	0.01	Param.
Lead (mg/L)	MW-2R	0.000522	0.00025	0.015	No	8	62.5	No	0.004	NP (normality)
Lead (mg/L)	MW-3R	0.00151	0.00025	0.015	No	8	50	No	0.004	NP (normality)
Lead (mg/L)	MW-4R3	0.000827	0.00025	0.015	No	8	50	No	0.004	NP (normality)
Lead (mg/L)	MW-9	0.001477	0.0003041	0.015	No	8	37.5	No	0.01	Param.
Lead (mg/L)	MW-10	0.003986	0	0.015	No	8	25	No	0.01	Param.
Lead (mg/L)	MW-11	0.00058	0.00025	0.015	No	8	62.5	No	0.004	NP (normality)
Lead (mg/L)	MW-12	0.00111	0.00025	0.015	No	8	75	No	0.004	NP (normality)
Nickel (mg/L)	MW-2R	0.007598	0.004262	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-3R	0.265	0.0123	0.1	No	8	0	No	0.004	NP (normality)
Nickel (mg/L)	MW-4R3	0.03341	0.02111	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-9	0.01074	0.007638	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	MW-10	0.007637	0.001718	0.1	No	8	12.5	No	0.01	Param.
Selenium (mg/L)	MW-11	0.0518	0.00198	0.1109	No	8	75	No	0.004	NP (normality)
Silver (mg/L)	MW-3R	0.00165	0.0005	0.1	No	8	87.5	No	0.004	NP (NDs)
Tetrachloroethene (ug/L)	MW-4R3	9.623	3.209	5	No	8	0	No	0.01	Param.
Thallium (mg/L)	MW-3R	0.00117	0.0005	0.002	No	8	87.5	No	0.004	NP (NDs)
trans-1,2-Dichloroethene (ug/L)	MW-4R3	2.179	1.466	100	No	8	0	No	0.01	Param.
Trichloroethene (ug/L)	MW-3R	1.07	0.482	5	No	8	37.5	No	0.004	NP (normality)
Trichloroethene (ug/L)	MW-4R3	7.912	2.813	5	No	8	0	No	0.01	Param.
Vanadium (mg/L)	MW-2R	0.00607	0.001599	0.035	No	8	0	No	0.01	Param.
Vanadium (mg/L)	MW-10	0.006516	0.001809	0.035	No	8	25	No	0.01	Param.
Vinyl Chloride (ug/L)	MW-4R3	6.012	4.073	2	Yes	8	0	No	0.01	Param.
Zinc (mg/L)	MW-4R3	0.02	0.00718	2	No	8	62.5	No	0.004	NP (normality)
Zinc (mg/L)	MW-9	0.0216	0.01	2	No	8	75	No	0.004	NP (normality)
Zinc (mg/L)	MW-10	0.0229	0.00763	2	No	8	50	No	0.004	NP (normality)

Parametric Confidence Interval

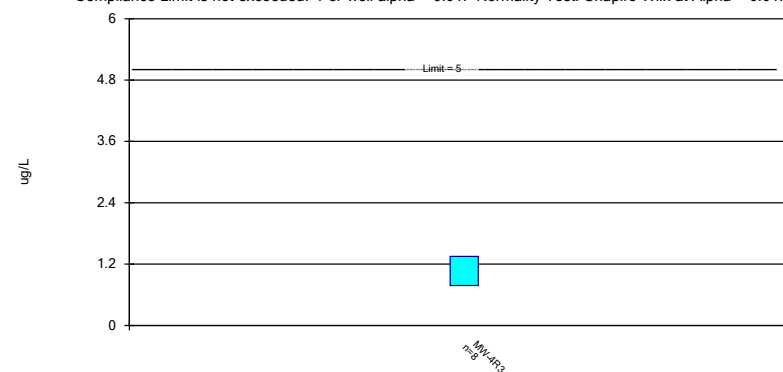
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: 1,1-Dichloroethane Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interva
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Parametric Confidence Interval

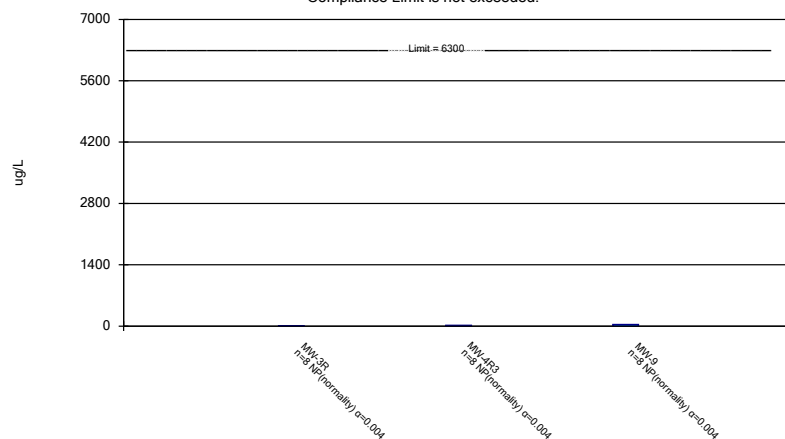
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: 1,2-Dichloropropane Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interv
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Non-Parametric Confidence Interval

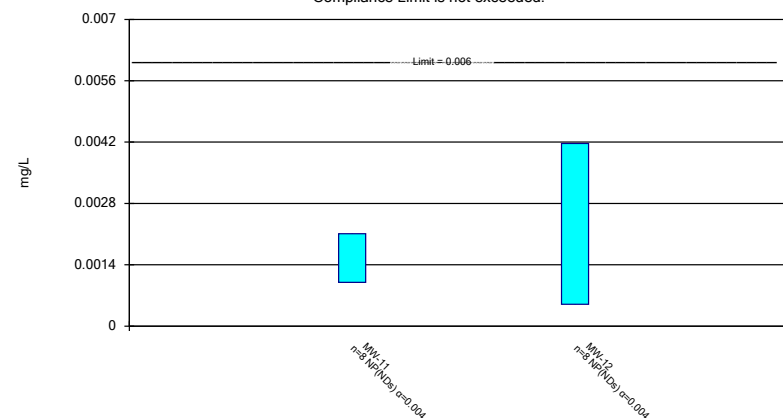
Compliance Limit is not exceeded.



Constituent: Acetone Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Non-Parametric Confidence Interval

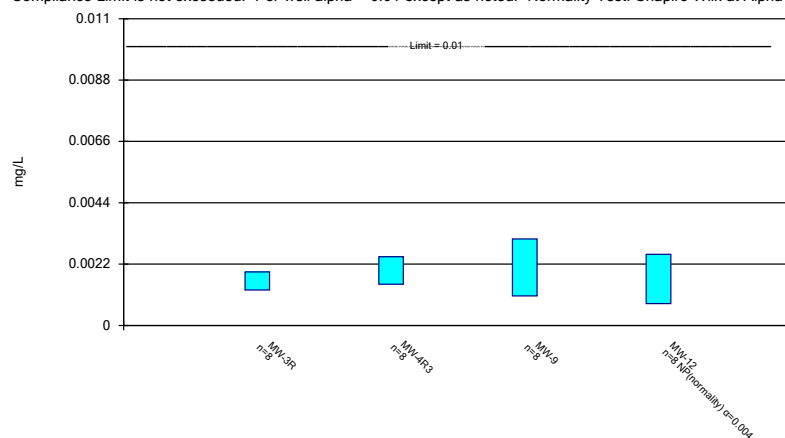
Compliance Limit is not exceeded.



Constituent: Antimony Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Parametric and Non-Parametric (NP) Confidence Interval

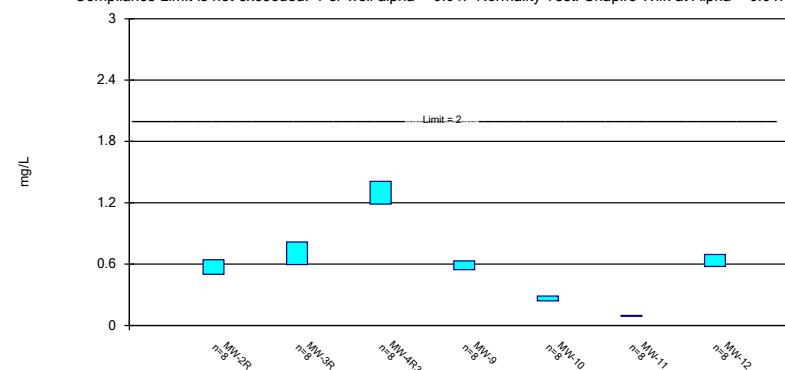
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Parametric Confidence Interval

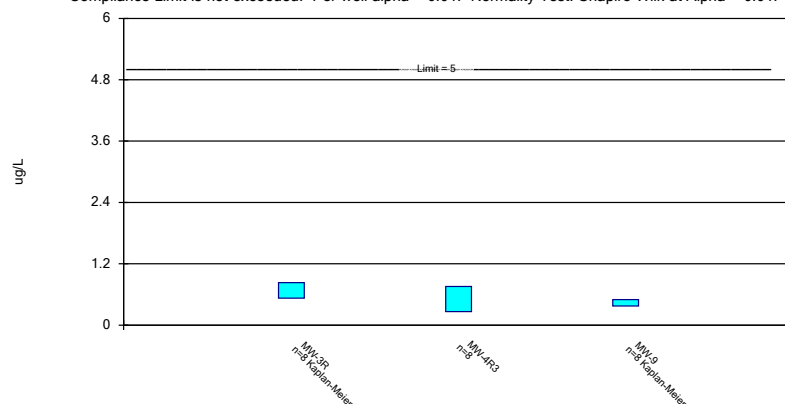
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Parametric Confidence Interval

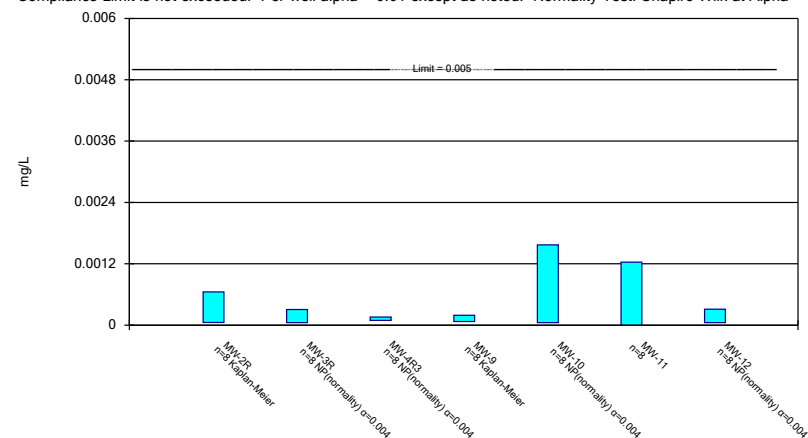
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Benzene Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Parametric and Non-Parametric (NP) Confidence Interval

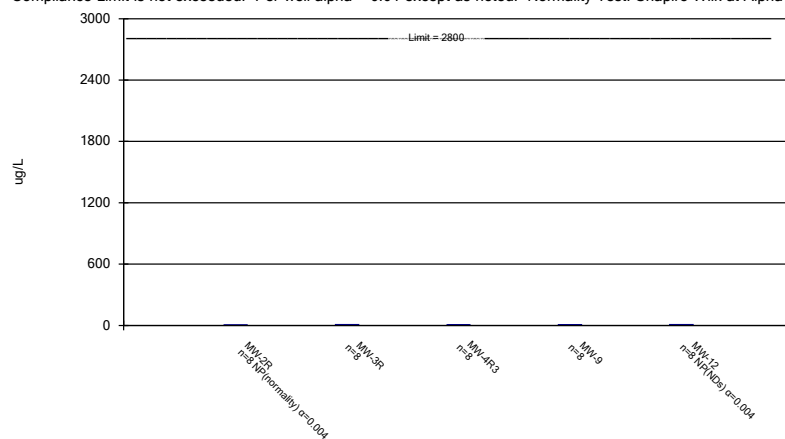
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cadmium Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Parametric and Non-Parametric (NP) Confidence Interval

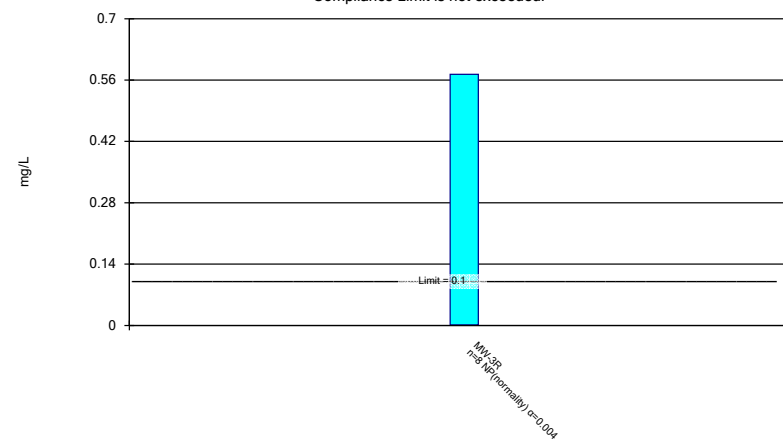
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Chloroethane Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Non-Parametric Confidence Interval

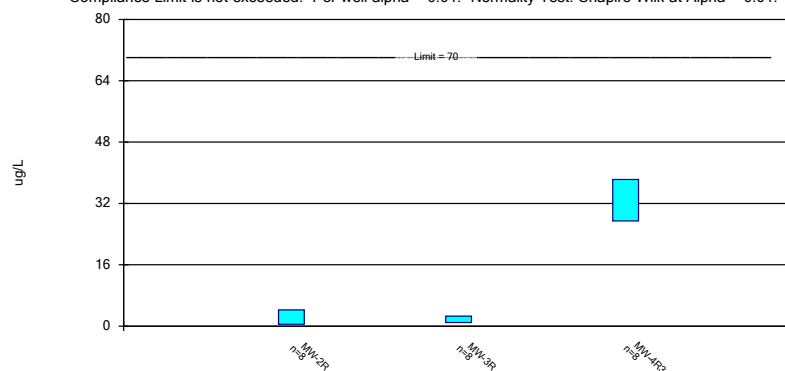
Compliance Limit is not exceeded.



Constituent: Chromium Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Parametric Confidence Interval

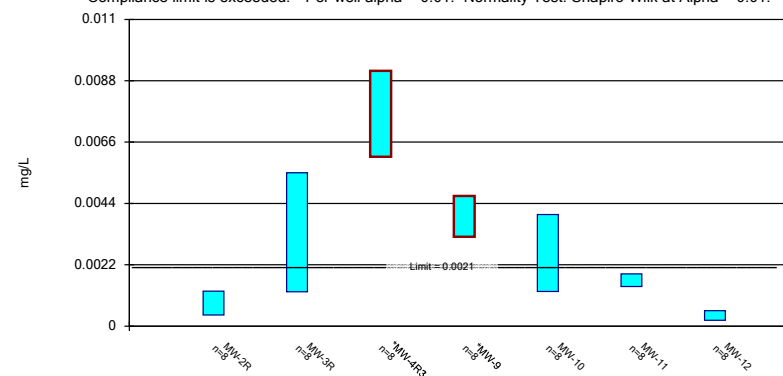
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: cis-1,2-Dichloroethene Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Inte
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Parametric Confidence Interval

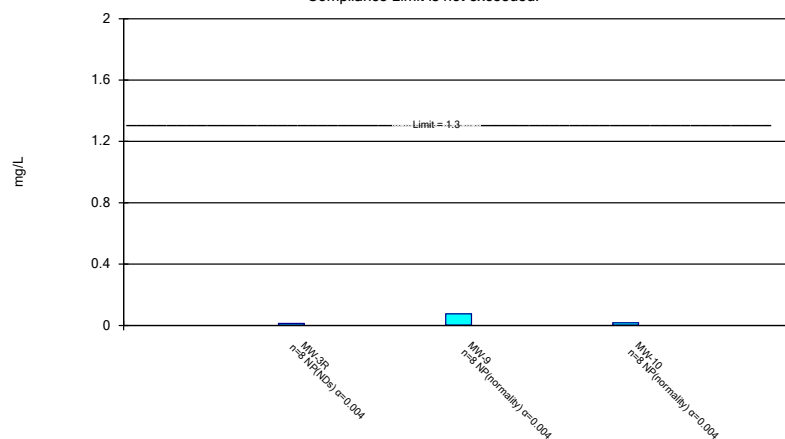
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Cobalt Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Non-Parametric Confidence Interval

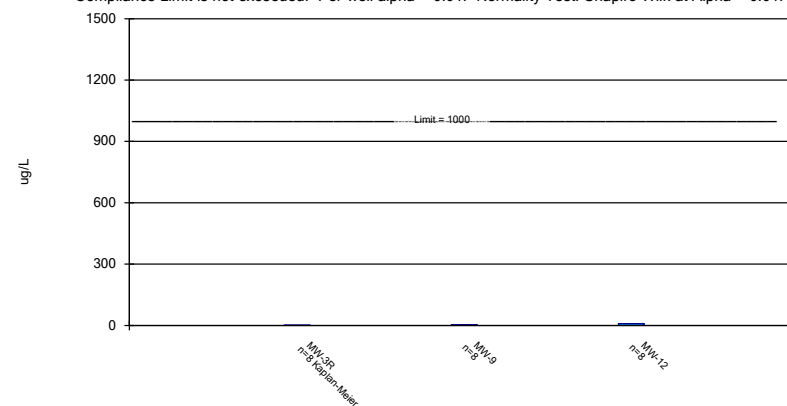
Compliance Limit is not exceeded.



Constituent: Copper Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Parametric Confidence Interval

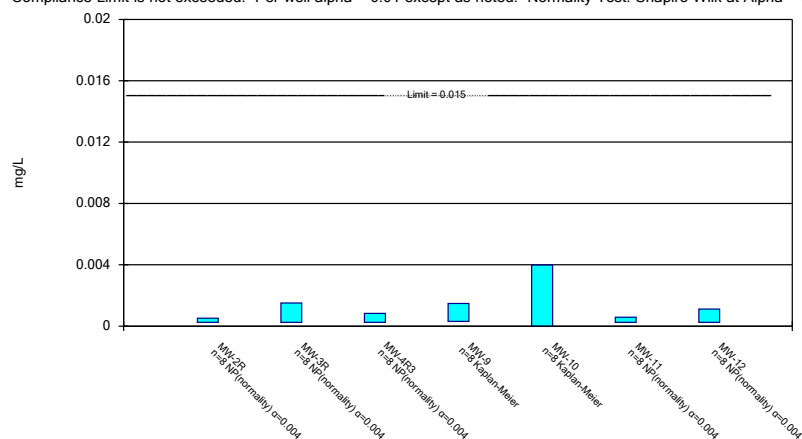
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Dichlorodifluoromethane Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_In
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Parametric and Non-Parametric (NP) Confidence Interval

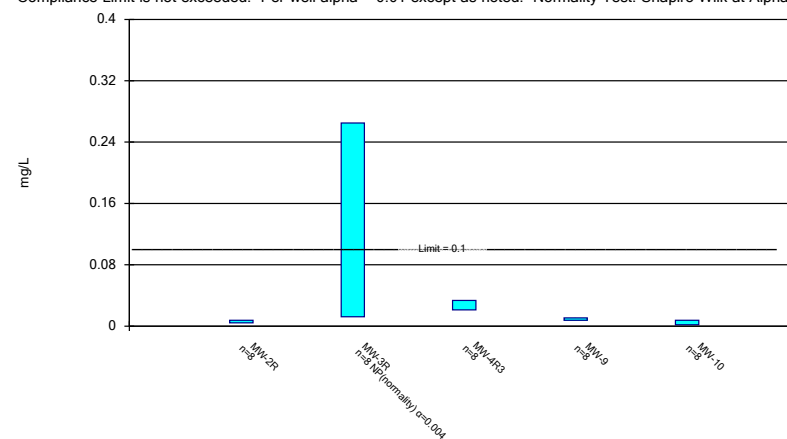
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Lead Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Parametric and Non-Parametric (NP) Confidence Interval

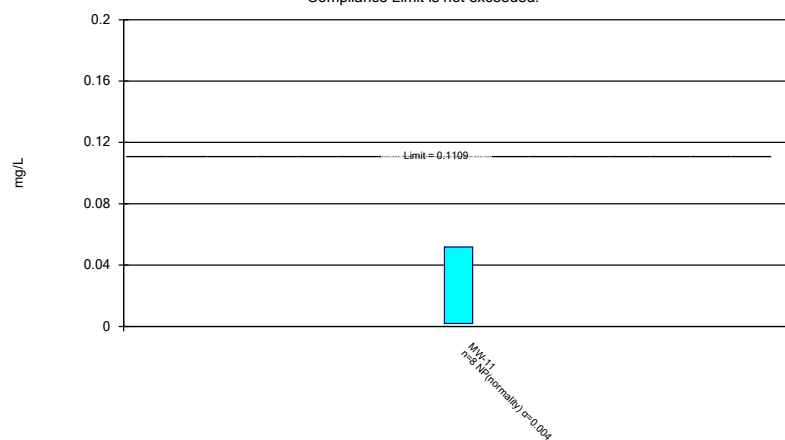
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Nickel Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Non-Parametric Confidence Interval

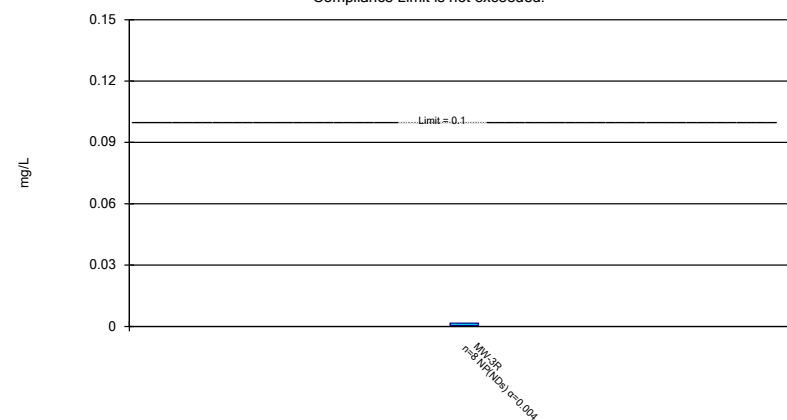
Compliance Limit is not exceeded.



Constituent: Selenium Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Non-Parametric Confidence Interval

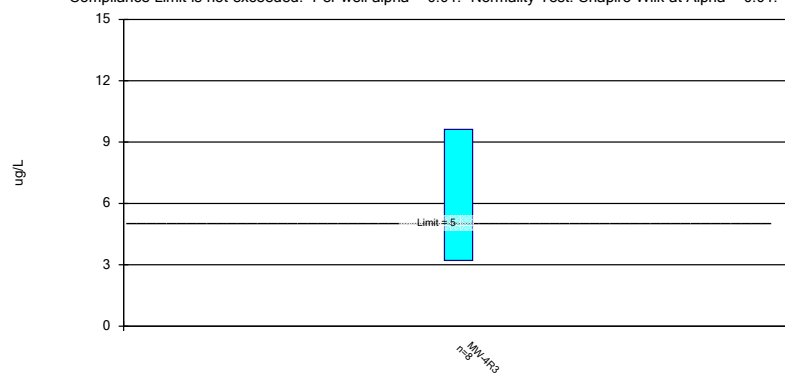
Compliance Limit is not exceeded.



Constituent: Silver Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Parametric Confidence Interval

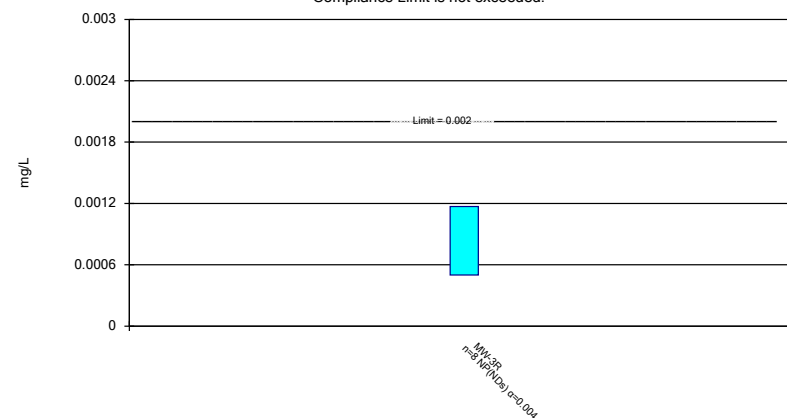
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



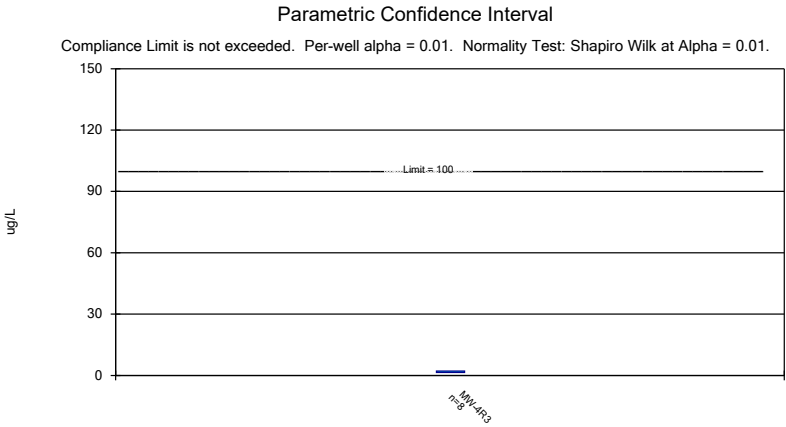
Constituent: Tetrachloroethene Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Non-Parametric Confidence Interval

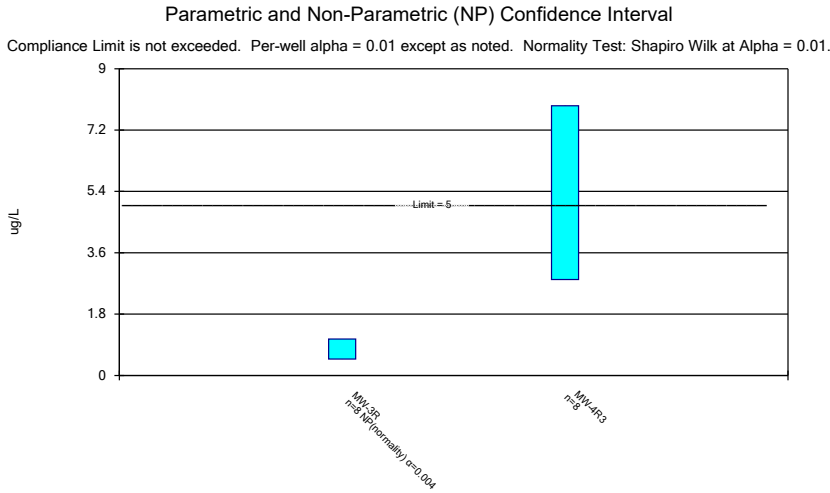
Compliance Limit is not exceeded.



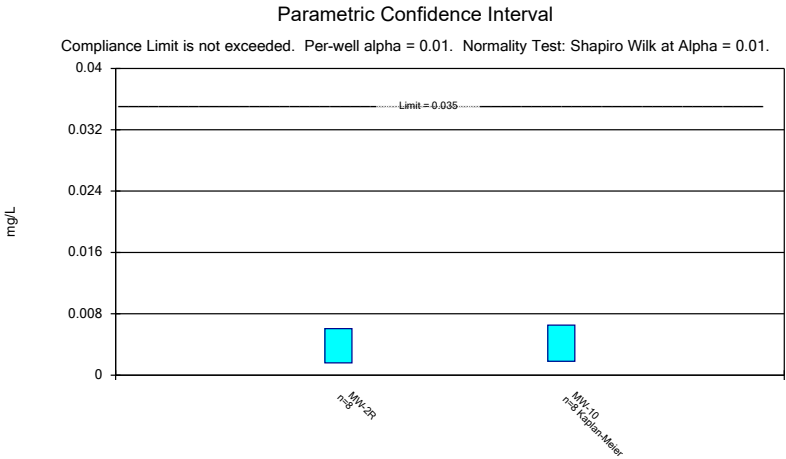
Constituent: Thallium Analysis Run 12/9/2025 3:46 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



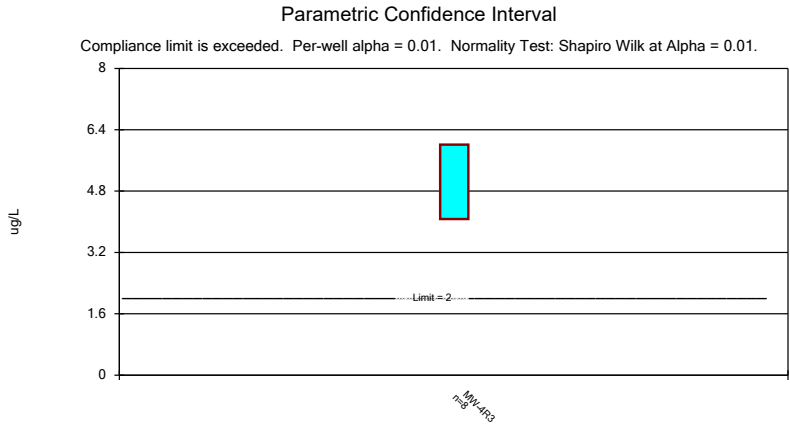
Constituent: trans-1,2-Dichloroethene Analysis Run 12/9/2025 3:47 PM View: 2025_AWQR-Confidence_I
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



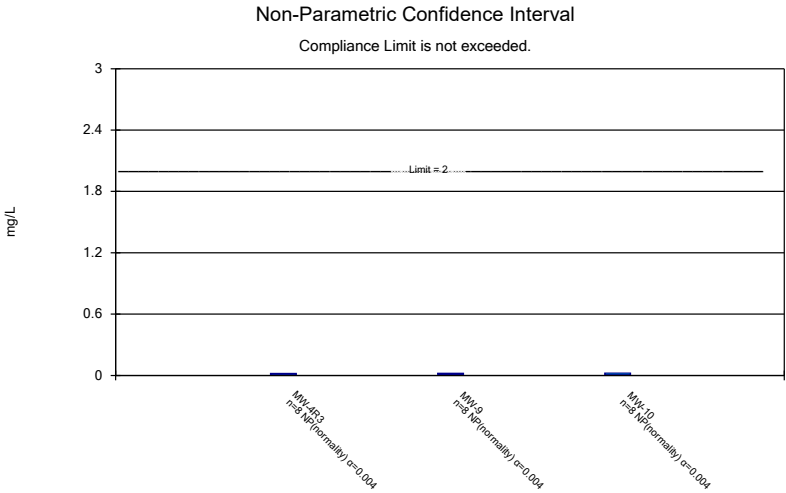
Constituent: Trichloroethene Analysis Run 12/9/2025 3:47 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



Constituent: Vanadium Analysis Run 12/9/2025 3:47 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



Constituent: Vinyl Chloride Analysis Run 12/9/2025 3:47 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO



Constituent: Zinc Analysis Run 12/9/2025 3:47 PM View: 2025_AWQR-Confidence_Interval
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Theil-Sen Confidence Bands Table and Graphs

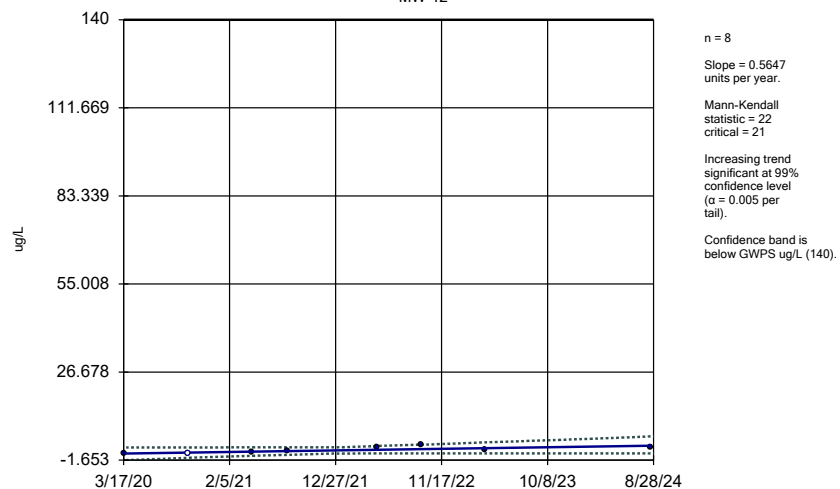
Theil Sen/Trend Test

City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO Printed 12/9/2025, 3:56 PM

<u>Constituent</u>	<u>Well</u>	<u>Slope</u>	<u>Calc.</u>	<u>Critical</u>	<u>Sig.</u>	<u>N</u>	<u>%NDs</u>	<u>Alpha</u>	<u>Method</u>
1,1-Dichloroethane (ug/L)	MW-12	0.5647	22	21	Yes	8	12.5	0.01	NP
cis-1,2-Dichloroethene (ug/L)	MW-9	0.1547	24	21	Yes	8	0	0.01	NP
Dichlorodifluoromethane (ug/L)	MW-10	1.291	22	21	Yes	8	0	0.01	NP

Sen's Slope and 99% Confidence Band

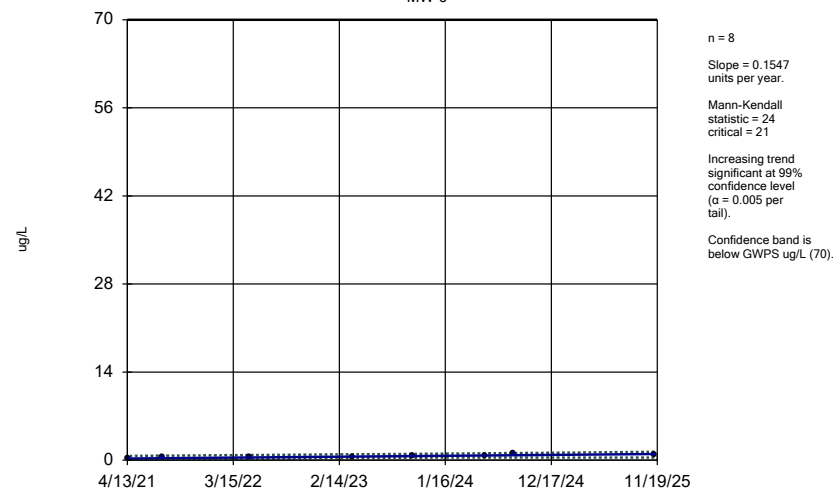
MW-12



Constituent: 1,1-Dichloroethane Analysis Run 12/9/2025 3:55 PM View: 2025_AWQR-Theil_Sen
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Sen's Slope and 99% Confidence Band

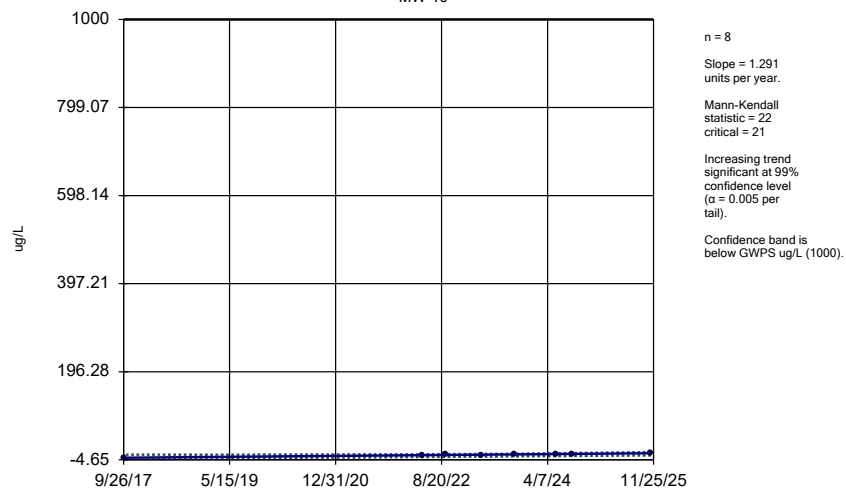
MW-9



Constituent: cis-1,2-Dichloroethene Analysis Run 12/9/2025 3:55 PM View: 2025_AWQR-Theil_Sen
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Sen's Slope and 99% Confidence Band

MW-10



Constituent: Dichlorodifluoromethane Analysis Run 12/9/2025 3:55 PM View: 2025_AWQR-Theil_Sen
City of Sioux City SLF Client: SCS Engineers Data: SIOUX_AM_2025_AWQR_RSTUDIO

Appendix E

2025 Leachate Control System Performance Evaluation Report

Leachate Management Summary
2025 Leachate Control System Performance Evaluation Report
Sioux City Sanitary Landfill
Permit No. 97-SDP-03-81C

Month	Unlined Cells - Column Thickness (ft)									Discharged to Off-Site Treatment (gal)	Leachate Manhole Column Thickness (ft)	Precipitation ⁽³⁾ (in)
	C-16	C-25	C-27	C-29	C-30 ⁽¹⁾	LP-6	LP-10	LP-11	LP-12			
June 2025	Dry	6.6	6.1	14.6	NA	Dry	Dry	Dry	Dry	0	0.02	4.64
November 2025	14.2	12.5	Dry	Dry	NA	Dry	Dry	Dry	Dry		0.12	1.25
Reporting Period Total Precipitation:												29.50

Notes:

- 1) The total well depth for C-30 since 2021 noted that the well is kinked approximately 56 feet below ground surface.
- 2) A camera survey of the leachate lines was completed on April 20, 2020 by PipeTech. The pipeline inspection reports for LP-6, LP-10, LP-11, and LP-12 were included in the 2020 Leachate Control System Performance Evaluation Report. The end of pipe caps were observed for LP-10, LP-11, and LP-12. The LP-6 pipe was able to be surveyed 89 feet into the pipe prior to having to abandon the survey due to an obstruction; however, pipe perforation was observed 87.7 feet into the survey. It should be noted that the other leachate piezometer pipes had between 12-15' of perforated piping before the end of pipe caps were observed.
- 3) Precipitation data obtained from the Iowa State University Iowa Environmental Mesonet ([https://mesonet.agron.iastate.edu/ASOS/reports/mon_prec.php?year=2024/\[2025\]](https://mesonet.agron.iastate.edu/ASOS/reports/mon_prec.php?year=2024/[2025])).

Comments:

Reporting Period: November 2024 - November 2025.

Recommended Changes to Leachate Collection System: None.

Maintenance Performed on Leachate Collection System: None.

Last Date of Cleaning and Inspection: June 2019; in addition lines were flushed during the April 2020 camera survey.

Date for Next Cleaning and Inspection: Leachate line cleaning and inspection are not required (Doc #106568).

Volume of Leachate Recirculated: Leachate in not recirculated.

Volume of Leachate Treated On-Site: Leachate is not treated on-site.

Volume of Leachate Treated Off-Site: None.

Leachate Quality Testing Results: As leachate was not hauled during this reporting period, leachate testing was not performed.

Graphs of the "C" monitoring points are attached. The "LP" leachate piezometers are consistently dry.

C-16 - The leachate piezometer was dry since the 2022 reporting period through June 2025, but had a thickness of 14.2 feet measured in November 2025. The November 2025 measurement may be anomalous.

C-25 - The leachate column thickness in C-25 was within the historical range during this reporting period.

C-27 - The leachate column thickness in C-27 was within the historical range during this reporting period

C-29 - The leachate column thickness in C-29 had a historical high measured in June 2025 and was dry in November 2025 during this reporting period. Either or both of these measurements may be anomalous.

C-30 - This leachate piezometer has been damaged since 2019 and cannot be measured. Replacement of the piezometer is not recommended.



Path: C:\Users\bmadsen\OneDrive
User: bmadsen
Date Saved: 4/22/2025 9:51 AM
SCS Engineers\Desktop\GIS\Map\Sioux City Sanitary Landfill\Sioux City Sanitary Landfill.aprx

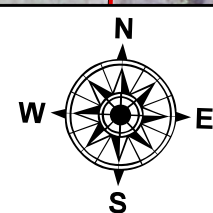


Leachate Control System

Legend

- | | | |
|---------------------------|-------------------------------|------------------------------------|
| Leachate Monitoring Point | Monitoring Well | Located Waste Boundary |
| Leachate Manhole | Landfill Gas Monitoring Point | Interpolated Waste Boundary |
| Leachate Piezometer | Groundwater Piezometer | Approximate Waste Boundary |
| Gas Relief Well | Approximate Property Boundary | Approximate Easement Area Boundary |

City of Sioux City Sanitary
Landfill
Sioux City, Iowa
Project No: 27225426.00
Drawing Date: December
2025



0 160 320 640 Feet

Figure 1

ATTACHMENT A
LEACHATE COLUMN THICKNESSES AND ELEVATIONS
SIOUX CITY LANDFILL
PERMIT NO. 97-SDP-03-81C
PROJECT NO. 27225426.00

Date Measured	Piezometer Information									
	Label	C-16	C-25	C-27	C-29	C-30	LP-6	LP-10	LP-11	LP-12
	Top of Casing	1401.94	1409.52	1409.28	1409.08	1407.06	NA	NA	NA	NA
	Well Depth	90.02	95.08	95.00	94.96	94.96	13.10	13.50	13.60	12.50
January-08	Column Thickness	< 1 foot	8.8	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.24	NA	NA	NA	NA	NA	NA	NA
February-08	Column Thickness	< 1 foot	8.7	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.14	NA	NA	NA	NA	NA	NA	NA
March-08	Column Thickness	< 1 foot	8.8	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.24	NA	NA	NA	NA	NA	NA	NA
April-08	Column Thickness	< 1 foot	8.8	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.24	NA	NA	NA	NA	NA	NA	NA
May-08	Column Thickness	< 1 foot	8.7	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.14	NA	NA	NA	NA	NA	NA	NA
June-08	Column Thickness	< 1 foot	8.9	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.34	NA	NA	NA	NA	NA	NA	NA
July-08	Column Thickness	< 1 foot	8.8	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.24	NA	NA	NA	NA	NA	NA	NA
August-08	Column Thickness	< 1 foot	8.9	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.34	NA	NA	NA	NA	NA	NA	NA
September-08	Column Thickness	< 1 foot	9.0	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.44	NA	NA	NA	NA	NA	NA	NA
October-08	Column Thickness	< 1 foot	8.7	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.14	NA	NA	NA	NA	NA	NA	NA
November-08	Column Thickness	< 1 foot	8.8	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.24	NA	NA	NA	NA	NA	NA	NA
December-08	Column Thickness	< 1 foot	9.1	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.54	NA	NA	NA	NA	NA	NA	NA
January-09	Column Thickness	< 1 foot	9.2	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.64	NA	NA	NA	NA	NA	NA	NA
February-09	Column Thickness	< 1 foot	9.1	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.54	NA	NA	NA	NA	NA	NA	NA
March-09	Column Thickness	< 1 foot	9.3	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.74	NA	NA	NA	NA	NA	NA	NA
April-09	Column Thickness	< 1 foot	9.2	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.64	NA	NA	NA	NA	NA	NA	NA
May-09	Column Thickness	< 1 foot	9.4	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.84	NA	NA	NA	NA	NA	NA	NA
June-09	Column Thickness	< 1 foot	9.0	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.44	NA	NA	NA	NA	NA	NA	NA
July-09	Column Thickness	< 1 foot	9.0	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.44	NA	NA	NA	NA	NA	NA	NA
August-09	Column Thickness	< 1 foot	8.9	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.34	NA	NA	NA	NA	NA	NA	NA
September-09	Column Thickness	< 1 foot	9.2	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.64	NA	NA	NA	NA	NA	NA	NA
October-09	Column Thickness	< 1 foot	9.3	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.74	NA	NA	NA	NA	NA	NA	NA
November-09	Column Thickness	< 1 foot	9.4	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.84	NA	NA	NA	NA	NA	NA	NA
December-09	Column Thickness	< 1 foot	9.2	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.64	NA	NA	NA	NA	NA	NA	NA
January-10	Column Thickness	< 1 foot	8.7	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1323.14	NA	NA	NA	NA	NA	NA	NA
February-10	Column Thickness	< 1 foot	8.4	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.84	NA	NA	NA	NA	NA	NA	NA
March-10	Column Thickness	< 1 foot	8.0	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.44	NA	NA	NA	NA	NA	NA	NA
April-10	Column Thickness	< 1 foot	8.2	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.64	NA	NA	NA	NA	NA	NA	NA
May-10	Column Thickness	< 1 foot	8.1	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.54	NA	NA	NA	NA	NA	NA	NA
June-10	Column Thickness	< 1 foot	7.5	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1321.94	NA	NA	NA	NA	NA	NA	NA
July-10	Column Thickness	< 1 foot	8.0	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.44	NA	NA	NA	NA	NA	NA	NA
August-10	Column Thickness	< 1 foot	8.5	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.94	NA	NA	NA	NA	NA	NA	NA

ATTACHMENT A
LEACHATE COLUMN THICKNESSES AND ELEVATIONS
SIOUX CITY LANDFILL
PERMIT NO. 97-SDP-03-81C
PROJECT NO. 27225426.00

Date Measured	Piezometer Information									
	Label	C-16	C-25	C-27	C-29	C-30	LP-6	LP-10	LP-11	LP-12
	Top of Casing	1401.94	1409.52	1409.28	1409.08	1407.06	NA	NA	NA	NA
	Well Depth	90.02	95.08	95.00	94.96	94.96	13.10	13.50	13.60	12.50
September-10	Column Thickness	< 1 foot	8.1	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.54	NA	NA	NA	NA	NA	NA	NA
October-10	Column Thickness	< 1 foot	8.2	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.64	NA	NA	NA	NA	NA	NA	NA
November-10	Column Thickness	< 1 foot	8.3	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.74	NA	NA	NA	NA	NA	NA	NA
December-10	Column Thickness	< 1 foot	8.1	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.54	NA	NA	NA	NA	NA	NA	NA
January-11	Column Thickness	< 1 foot	8.1	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.54	NA	NA	NA	NA	NA	NA	NA
February-11	Column Thickness	< 1 foot	8.4	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.84	NA	NA	NA	NA	NA	NA	NA
March-11	Column Thickness	< 1 foot	7.8	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.24	NA	NA	NA	NA	NA	NA	NA
April-11	Column Thickness	< 1 foot	8.2	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.64	NA	NA	NA	NA	NA	NA	NA
May-11	Column Thickness	< 1 foot	8.0	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.44	NA	NA	NA	NA	NA	NA	NA
June-11	Column Thickness	< 1 foot	7.5	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1321.94	NA	NA	NA	NA	NA	NA	NA
July-11	Column Thickness	< 1 foot	7.2	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1321.64	NA	NA	NA	NA	NA	NA	NA
August-11	Column Thickness	< 1 foot	7.4	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1321.84	NA	NA	NA	NA	NA	NA	NA
September-11	Column Thickness	< 1 foot	7.5	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1321.94	NA	NA	NA	NA	NA	NA	NA
October-11	Column Thickness	< 1 foot	7.4	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1321.84	NA	NA	NA	NA	NA	NA	NA
November-11	Column Thickness	< 1 foot	7.2	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1321.64	NA	NA	NA	NA	NA	NA	NA
December-11	Column Thickness	< 1 foot	7.0	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1321.44	NA	NA	NA	NA	NA	NA	NA
January-12	Column Thickness	< 1 foot	8.3	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.74	NA	NA	NA	NA	NA	NA	NA
February-12	Column Thickness	< 1 foot	8.4	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.84	NA	NA	NA	NA	NA	NA	NA
March-12	Column Thickness	< 1 foot	8.2	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.64	NA	NA	NA	NA	NA	NA	NA
April-12	Column Thickness	< 1 foot	6.0	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1320.44	NA	NA	NA	NA	NA	NA	NA
May-12	Column Thickness	< 1 foot	6.0	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1320.44	NA	NA	NA	NA	NA	NA	NA
June-12	Column Thickness	< 1 foot	5.0	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1319.44	NA	NA	NA	NA	NA	NA	NA
July-12	Column Thickness	< 1 foot	5.5	< 1 foot	< 1 foot	< 1 foot	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1319.94	NA	NA	NA	NA	NA	NA	NA
August-12	Column Thickness	< 1 foot	4.0	< 1 foot	< 1 foot	1.1	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1318.44	NA	NA	1313.20	NA	NA	NA	NA
September-12	Column Thickness	< 1 foot	5.0	< 1 foot	< 1 foot	1.2	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1319.44	NA	NA	1313.30	NA	NA	NA	NA
October-12	Column Thickness	< 1 foot	4.0	< 1 foot	< 1 foot	1.2	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1318.44	NA	NA	1313.30	NA	NA	NA	NA
November-12	Column Thickness	< 1 foot	6.0	< 1 foot	< 1 foot	1.2	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1320.44	NA	NA	1313.30	NA	NA	NA	NA
December-12	Column Thickness	< 1 foot	5.5	< 1 foot	< 1 foot	1.1	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1319.94	NA	NA	1313.20	NA	NA	NA	NA
June-13	Column Thickness	Dry	10.6	1.9	0.3	1.5	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1325.02	1316.18	1314.38	1313.56	NA	NA	NA	NA
October-13	Column Thickness	Dry	8.3	1.0	0.4	Dry	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1322.77	1315.28	1314.55	NA	NA	NA	NA	NA
March-14	Column Thickness	Dry	0.2	1.0	0.2	0.0	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1314.63	1315.25	1314.33	1312.15	NA	NA	NA	NA
September-14	Column Thickness	Dry	12.8	5.9	Dry	7.0	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1327.23	1320.18	NA	1319.08	NA	NA	NA	NA
March-15	Column Thickness	3.0	NM	4.4	2.4	8.5	Dry	Dry	Dry	Dry
	Leachate Elevation	1314.95	NM	1318.64	1316.55	1320.60	NA	NA	NA	NA
October-15	Column Thickness	3.1	NM	4.3	2.4	9.0	Dry	Dry	Dry	Dry
	Leachate Elevation	1315.01	NM	1318.60	1316.56	1321.15	NA	NA	NA	NA

ATTACHMENT A
LEACHATE COLUMN THICKNESSES AND ELEVATIONS
SIOUX CITY LANDFILL
PERMIT NO. 97-SDP-03-81C
PROJECT NO. 27225426.00

Date Measured	Piezometer Information									
	Label	C-16	C-25	C-27	C-29	C-30	LP-6	LP-10	LP-11	LP-12
	Top of Casing	1401.94	1409.52	1409.28	1409.08	1407.06	NA	NA	NA	NA
	Well Depth	90.02	95.08	95.00	94.96	94.96	13.10	13.50	13.60	12.50
April-16	Column Thickness	3.6	13.3	4.6	2.8	9.7	Dry	Dry	Dry	Dry
	Leachate Elevation	1315.52	1327.74	1318.88	1316.94	1321.82	NA	NA	NA	NA
August-16	Column Thickness	Dry	11.1	6.0	8.0	13.7	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1325.52	1320.28	1322.08	1325.76	NA	NA	NA	NA
March-17	Column Thickness	1.9	4.2	3.2	4.1	4.0	Dry	Dry	Dry	Dry
	Leachate Elevation	1313.82	1318.63	1317.47	1318.21	1316.13	NA	NA	NA	NA
September-17	Column Thickness	1.9	3.9	3.4	1.4	12.2	Dry	Dry	Dry	Dry
	Leachate Elevation	1313.80	1318.35	1317.64	1315.56	1324.32	NA	NA	NA	NA
March-18	Column Thickness	2.2	12.6	3.9	2.4	14.9	Dry	Dry	Dry	Dry
	Leachate Elevation	1314.12	1327.03	1318.17	1316.49	1326.95	NA	NA	NA	NA
August-18	Column Thickness	Dry	20.3	4.9	Dry	10.3	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1334.72	1319.18	NA	1322.41	NA	NA	NA	NA
May-19	Column Thickness	4.2	13.8	5.2	3.2	11.7	Dry	Dry	Dry	Dry
	Leachate Elevation	1316.07	1328.22	1319.47	1317.31	1323.76	NA	NA	NA	NA
October-19	Column Thickness	4.9	Dry	3.8	4.0	Dry	Dry	Dry	Dry	Dry
	Leachate Elevation	1316.82	NA	1318.08	1318.08	NA	NA	NA	NA	NA
March-20*	Column Thickness	13.2	81.6	22.0	3.3	NA	Dry	Dry	Dry	Dry
	Leachate Elevation	1325.14	1396.02	1336.28	1317.38	NA	NA	NA	NA	NA
October-20	Column Thickness	3.8	13.5	5.3	3.4	NA	Dry	Dry	Dry	Dry
	Leachate Elevation	1315.71	1327.93	1319.58	1317.48	NA	NA	NA	NA	NA
April-21	Column Thickness	3.8	14.1	5.4	4.4	NA	Dry	Dry	Dry	Dry
	Leachate Elevation	1315.74	1328.53	1319.66	1318.49	NA	NA	NA	NA	NA
August-21	Column Thickness	3.8	13.5	5.4	3.4	NA	Dry	Dry	Dry	Dry
	Leachate Elevation	1315.74	1327.96	1319.68	1317.50	NA	NA	NA	NA	NA
May-22	Column Thickness	Dry	14.1	5.5	3.5	NA	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1328.52	1319.80	1317.60	NA	NA	NA	NA	NA
September-22	Column Thickness	Dry	13.3	5.5	3.5	NA	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1327.79	1319.81	1317.64	NA	NA	NA	NA	NA
March-23	Column Thickness	Dry	14.5	Dry	Dry	NA	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1328.92	NA	NA	NA	NA	NA	NA	NA
October-23	Column Thickness	Dry	Dry	9.6	3.2	NA	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	NA	1323.86	1317.29	NA	NA	NA	NA	NA
May-24	Column Thickness	Dry	Dry	5.5	3.2	NA	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	NA	1319.81	1317.27	NA	NA	NA	NA	NA
August-24	Column Thickness	Dry	Dry	5.0	3.2	NA	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	NA	1319.26	1317.30	NA	NA	NA	NA	NA
June-25	Column Thickness	Dry	6.6	6.1	14.6	NA	Dry	Dry	Dry	Dry
	Leachate Elevation	NA	1321.02	1320.35	1328.73	NA	NA	NA	NA	NA
November-25	Column Thickness	14.2	12.5	Dry	Dry	NA	Dry	Dry	Dry	Dry
	Leachate Elevation	1326.10	1326.98	NA	NA	NA	NA	NA	NA	NA

Notes:

Elevations in feet above mean sea level.

Leachate levels measured within 1 foot of the bottom of the well are considered dry.

Top of Casing elevations and well depths from 2012 Leachate and Methane Gas Monitoring Report, Five States Engineering.

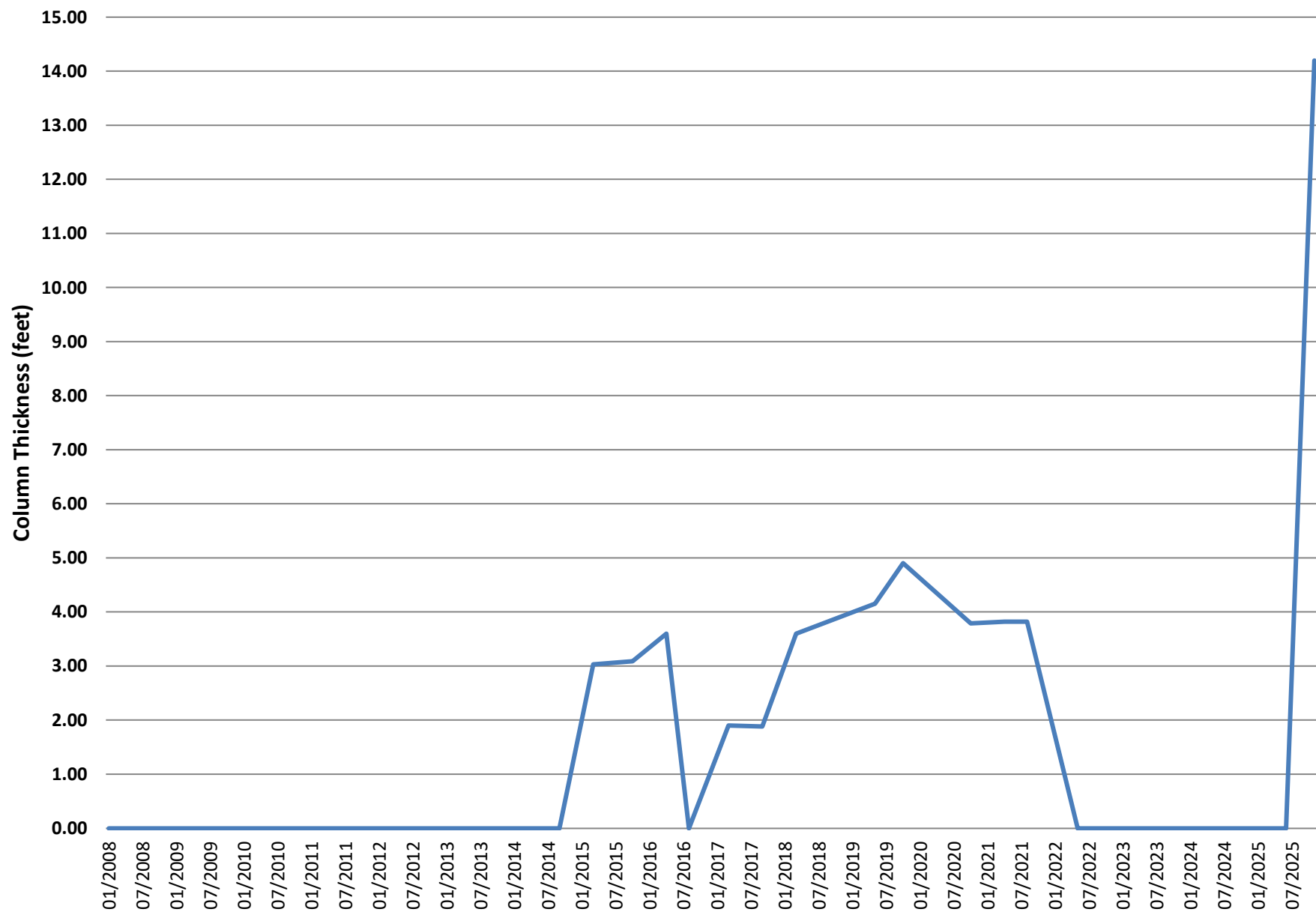
NA = Not Available, NM = Not Measured

Beginning with the 2013 data leachate elevations were calculated based on installed well TOC minus measured liquid level. Column thickness was calculated from liquid elevation minus installed bottom of well elevation.

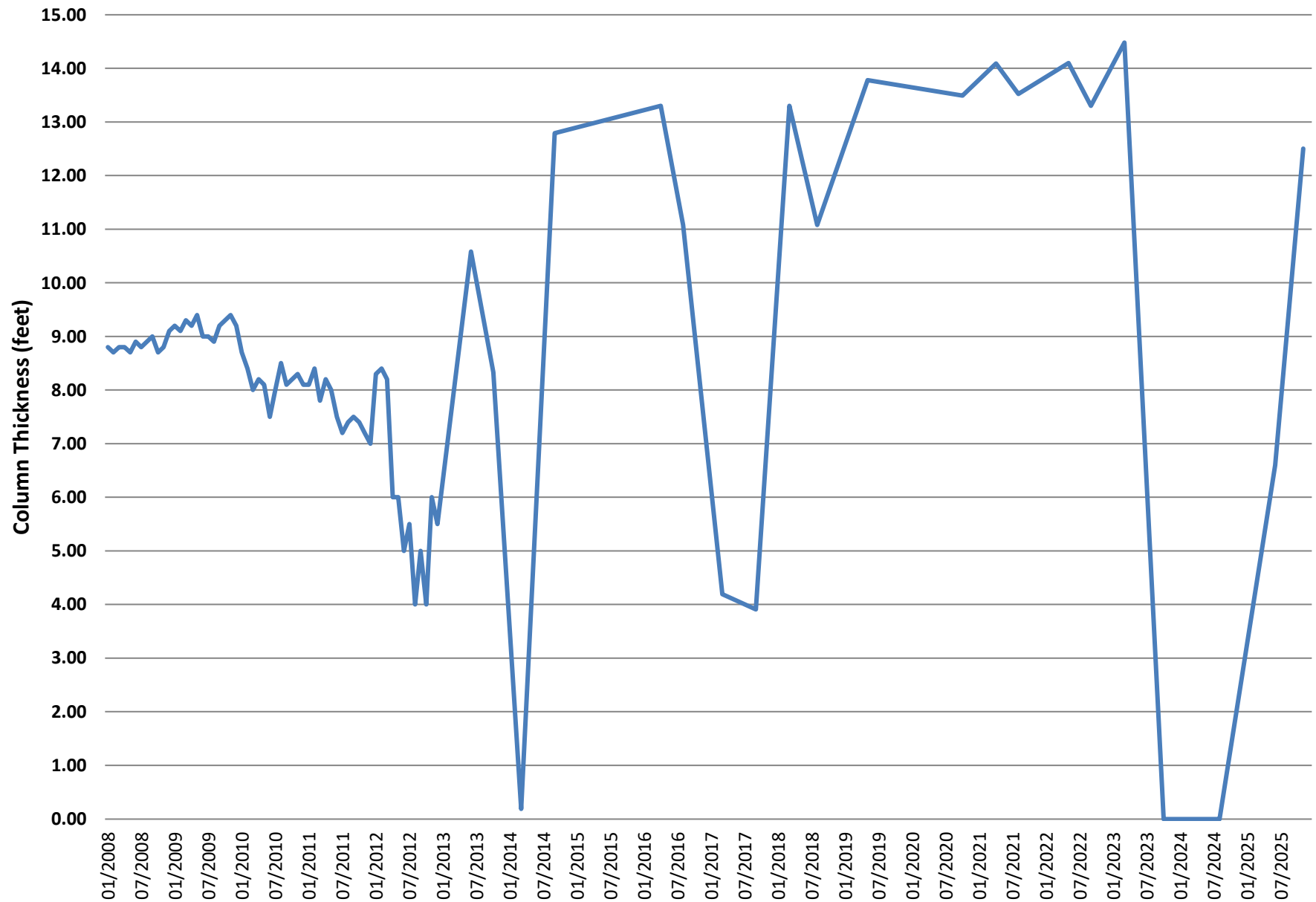
* - The March 2020 measurement was estimated due to problems with the leachate meter in the field. The C-16, C-25, and C-27 measurements are not included on the graphs.

Obstruction confirmed in C-30 during 2021 events.

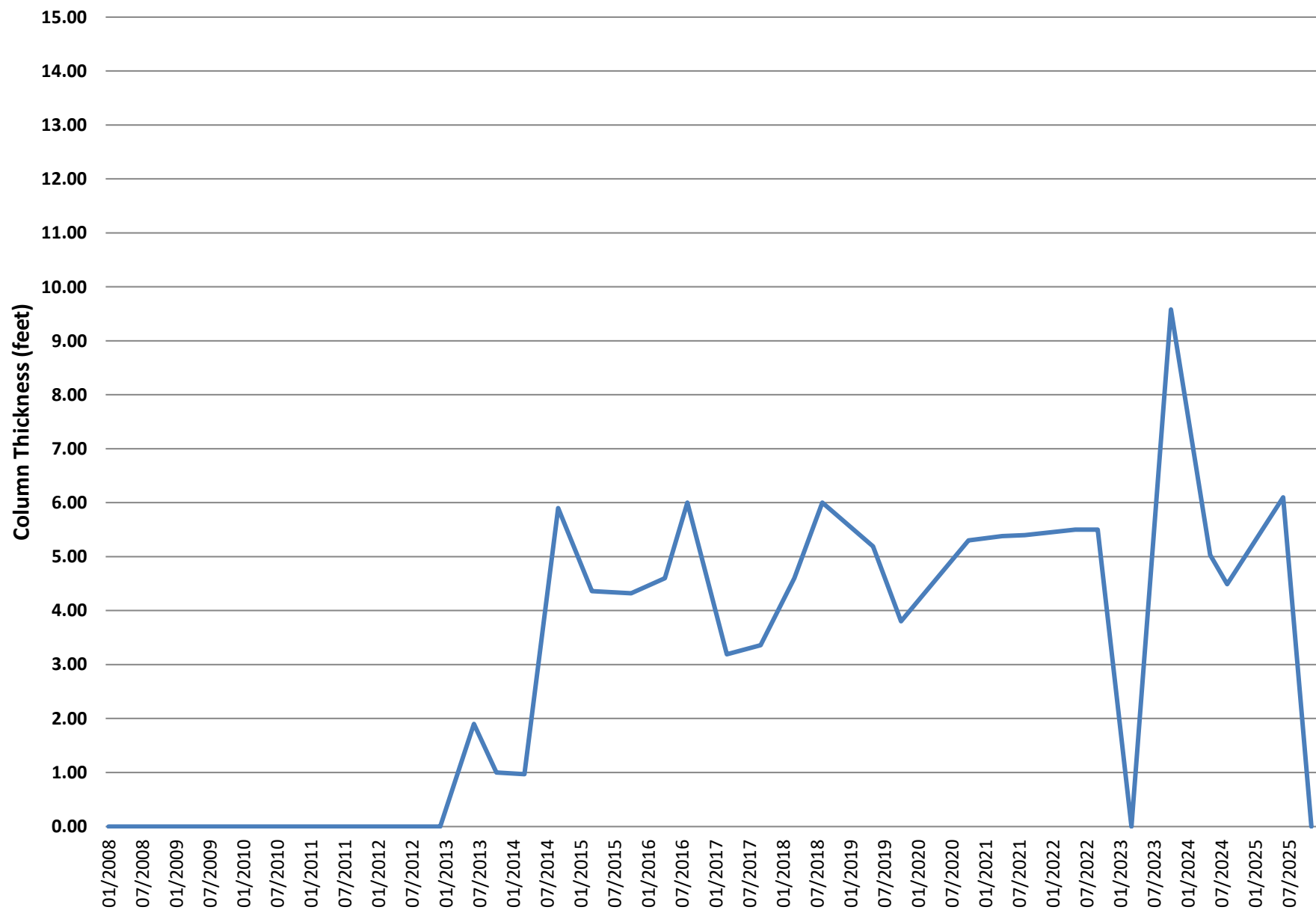
C-16 Historical Leachate Column Thickness



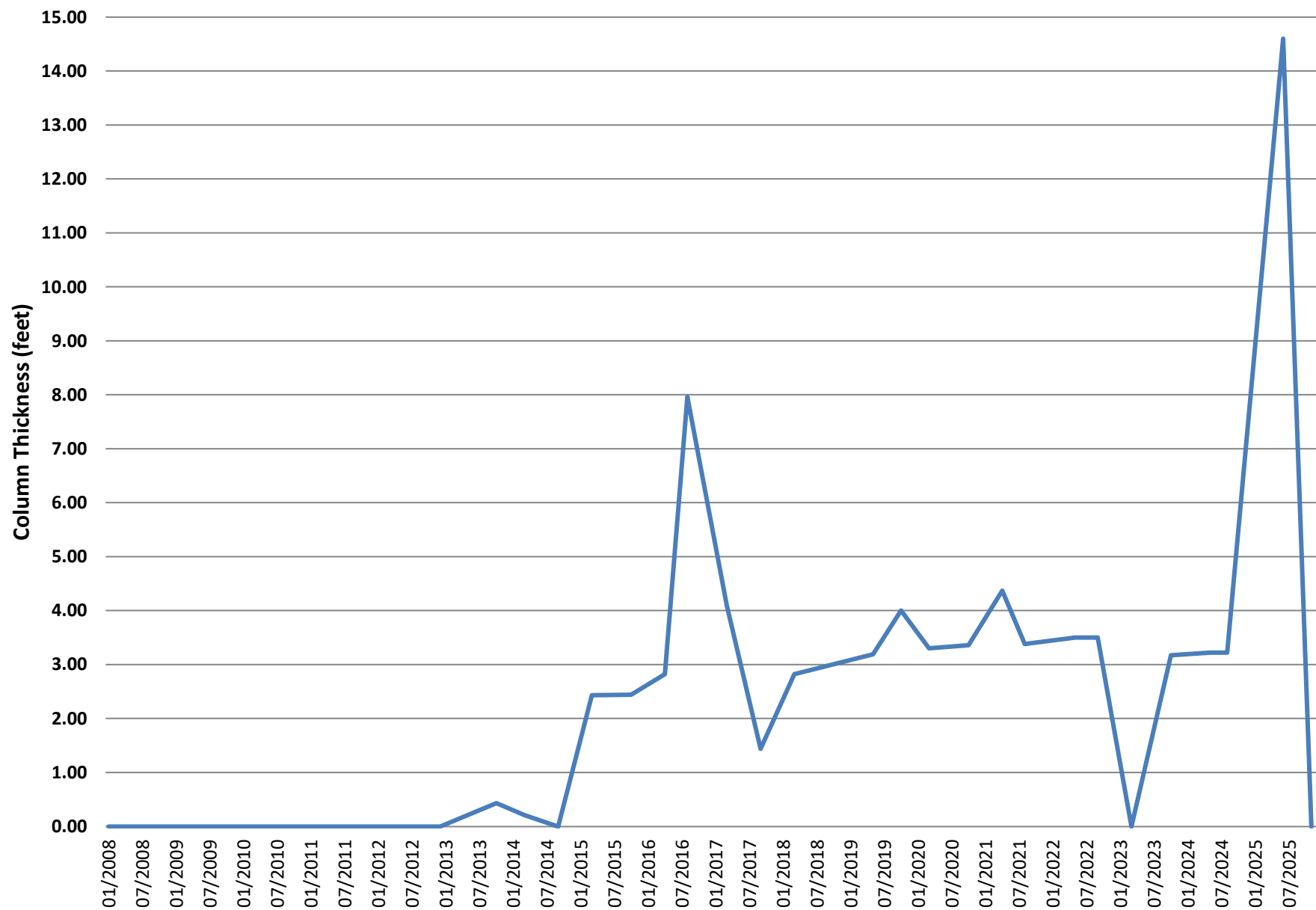
C-25 Historical Leachate Column Thickness



C-27 Historical Leachate Column Thickness



C-29 Historical Leachate Column Thickness



Appendix F

2025 Landfill Gas Annual Report

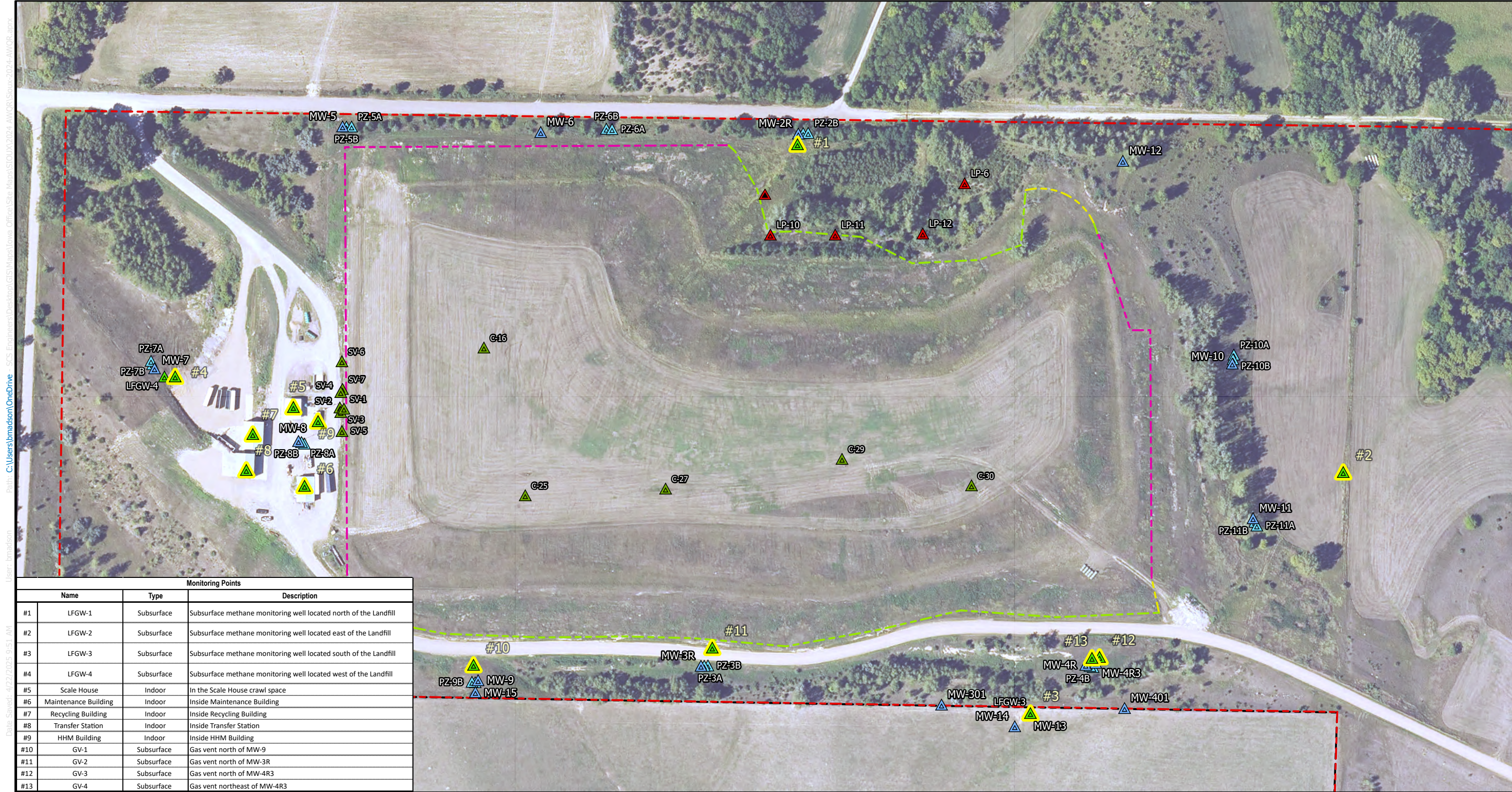
Gas Monitoring Summary
2025 Gas Monitoring Report
Sioux City Sanitary Landfill
Permit No. 97-SDP-03-81C

Monitoring Points											
Name		Type	Description	3/17/2025	S (Y/N)	6/18/2025	S (Y/N)	8/28/2025	S (Y/N)	11/11/2025	S (Y/N)
Gas Monitoring Plan Points											
#1	LFGW-1	Subsurface	Subsurface methane monitoring well located north of the Landfill	0%	N	0%	N	0%	N	0%	N
#2	LFGW-2	Subsurface	Subsurface methane monitoring well located east of the Landfill	0%	N	0%		0%	N	0%	N
#3	LFGW-3	Subsurface	Subsurface methane monitoring well located south of the Landfill	0%	N	0%	N	0%	N	0%	N
#4	LFGW-4	Subsurface	Subsurface methane monitoring well located west of the Landfill	0%	N	0%	N	0%	N	0%	N
#5	Scale House	Indoor	In the Scale House crawl space	0%		0%		2%		0%	
#6	Maintenance Building	Indoor	Inside Maintenance Building	0%		0%		0%		0%	
#7	Recycling Building	Indoor	Inside Recycling Building	0%		0%		0%		0%	
#8	Transfer Station	Indoor	Inside Transfer Station	0%		0%		0%		0%	
#9	HHM Building	Indoor	Inside HHM Building	0%		0%		0%		0%	
Subsurface Methane Vents											
#10	GV-1	Subsurface	Gas vent north of MW-9	1%		0%		60%		0%	
#11	GV-2	Subsurface	Gas vent north of MW-3R	51%		0%		1%		0%	
#12	GV-3	Subsurface	Gas vent north of MW-4R3	12%		0%		1%		0%	
#13	GV-4	Subsurface	Gas vent northeast of MW-4R3	25%		0%		0%		0%	

Notes:

S(Y/N): Was screen submerged, yes or no or blank is non-applicable

There were no action level exceedances during this reporting period.

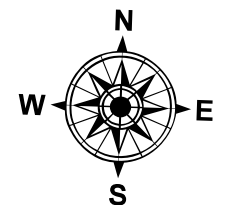


Methane Monitoring Network

Legend

- Methane Monitoring Locations
- Gas Relief Well
- Monitoring Well
- Leachate Piezometer
- Leachate Manhole
- Groundwater Piezometer
- Approximate Property Boundary
- Located Waste Boundary
- Interpolated Waste Boundary
- Approximate Waste Boundary
- Approximate Easement Area Boundary

City of Sioux City Sanitary
Landfill
Sioux City, Iowa
Project No: 27225426.00
Drawing Date: December
2025



0 160 320 640
Feet

Figure 1

Appendix G

Standards History Graphs

