November 7, 2024
File No. 27224254.00

Mr. Mick Leat
Iowa Department of Natural Resources
Land Quality Bureau
6200 Park Avenue
Des Moines, Iowa 50321

Subject: 2024 Annual Water Quality Report, Leachate Control System Performance Evaluation Report, and Landfill Gas Annual Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Dear Mick:

SCS Engineers has completed the required groundwater monitoring and statistical evaluation at the Alter Highway 22 Monofill (Monofill) for the 2024 reporting year. Our services were performed in general accordance with Iowa Administrative Code (IAC) 567-115.26(4), the closure permit requirements for implementation of the Hydrologic Monitoring System Plan (HMSP), and subsequent permit amendments. Please find enclosed a copy of the 2024 Annual Water Quality Report for the Monofill.

Additionally, evaluations of the leachate control system and landfill gas monitoring program for the Monofill are included in accordance with IAC 567-115.26. The 2024 Leachate Control System Performance Evaluation Report and Landfill Gas Annual Report for the Monofill are included as Appendices F and G, respectively, to the Annual Water Quality Report.

If you have any questions about these reports, please contact us as noted below.

Sincerely,

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2024 Annual Water Quality Report, Leachate Control System Performance Evaluation Report, and Landfill Gas Annual Report

Alter Highway 22 Monofill
Solid Waste Permit No. 82-SDP-04-89C

Prepared for:

Alter Trading Corporation

SCS ENGINEERS

27224254.00 | November 2024

1690 All-State Court, Suite 100
West Des Moines, Iowa 50265
515-631-6160

CERTIFICATION

Prepared by: _____ Date: 11/5/2024

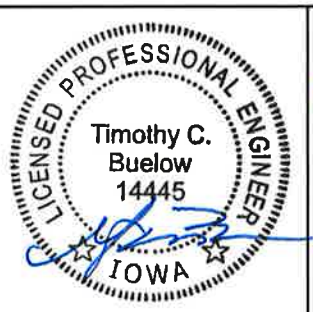
Typed: Semir Omerovic

Reviewed by: _____ Date: 11/5/2024

Typed: Nathan Ohrt

Certification page (115.26(8)"d")

An annual report summarizing the effect of the facility on groundwater and surface water quality shall be submitted to the department each year. The summary is to be prepared by an engineer registered in the state of Iowa.



I hereby certify that this engineering document was prepared by me or under my direct personal supervision and that I am a duly licensed Professional Engineer under the laws of the State of Iowa.

_____ Date: 11/5/2024

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.

EXECUTIVE SUMMARY

ES.1 PERIOD OF REPORT COVERAGE

SCS Engineers (SCS), on behalf of the Alter Trading Corporation, has completed the required groundwater sampling for the Alter Trading Corporation Highway 22 Monofill (Monofill). The purpose of this Annual Water Quality Report (AWQR) is to document and statistically evaluate the groundwater sampling results since the 2023 AWQR up to and including the June 2024 annual sampling event. This AWQR was prepared in accordance with the requirements of Iowa Administrative Code (IAC) 567-115.26, the site permit, and current requirements for implementation of the Hydrologic Monitoring System Plan (HMSP).

ES.2 REPORT PRIORITY

The following summarizes report priorities associated with groundwater compliance at the Monofill:

- Department review urgency: Results of additional groundwater sampling for inorganic constituents and total extractable hydrocarbons required by DNR in the letter dated January 25, 2023, (Doc #105590) are discussed in Section 5.1.
- Department review impact on rules schedule: It is recommended to discontinue sampling for the supplement inorganic constituents and TEH required by the DNR letter dated January 25, 2023 (Doc #105590) as summarized in Table 2.
- Actions or activities on hold pending Department review or comment: In the letter dated January 25, 2023, (Doc #105590), DNR required additional groundwater sampling in 2023 and 2024 for inorganic constituents and total extractable hydrocarbons before evaluating whether the post-closure period or associated activities can be modified.
- Actions and/or permit amendments needed: None.

ES.3 SITE STATUS AND APPLICABLE RULES

- Monofill Status: Closed, Closure Permit
- Types of waste accepted: Industrial
- Applicable IAC rules: 567-115.26

ES.4 COMMENTS

- The following summarizes points of special emphasis: During the 2023 and 2024 annual sampling events the additional groundwater sampling for inorganic constituents and total extractable hydrocarbons resulted in minimal exceedances of regulatory action levels. Only one monitoring well/constituent pair exceeded regulatory action levels during both 2023 and 2024 annual sampling events. See section 6.1 for more details.

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Appendices

1.0 ACRONYMS/ABBREVIATIONS

AL = Action Level
CCV = Continuing Calibration Verification
CL = Control Limit - Mean plus Two Standard Deviations
DNR = Iowa Department of Natural Resources
DO = Dissolved Oxygen
GWPS = Groundwater Protection Standard
GWQAP = Groundwater Quality Assessment Plan
LEL = Lower Explosive Limit
LCL = Lower Confidence Limit
LCS = Laboratory Control Sample
LN = Lognormal
M+/-2SD = Mean Plus/Minus Two Standard Deviations
MCL = EPA Maximum Contaminant Level
MDL = Method Detection Limit
N = Normal
NC = No Change
NM = Not Measured
ORP = Oxidation-Reduction Potential
PL = Prediction Limit
QA = Quality Assurance
QC = Quality Control
RL = Reporting Limit
SWS = DNR Statewide Standard for a Protected Groundwater Source
SSI = Statistically Significant Increase Above Background
SSL = Statistically Significant Level Above Groundwater Protection Standard
SSS = Site-Specific Standard (Site-Specific GWPS)
TSS = Total Suspended Solids
UCL = Upper Confidence Limit
VOC = Volatile Organic Compound

2.0 SITE BACKGROUND

2.1 SITE LOCATION

The Alter Trading Corporation Highway 22 Monofill is depicted in Figure 1, Approved Monitoring Network. The Monofill property is located southeast of the intersection of Interstate 280 and Highway 22 (a.k.a. Rockingham Road) and is located in the NW ¼ of Section 8, Township 77 North, Range 3 East in Scott County, Iowa.

2.2 FACILITY

Background information regarding the Monofill was contained in the Remediation/Closure Plan dated March 2005 prepared by CPI Environmental Services, Inc. The following are excerpts from the report with additional supplemental information added as noted:

> *The Facility is approximately 117 acres in size. Approximately 12 acres has been used from the mid-to-late 1970's until the early 1990's for disposal of approximately 400,000 cubic yards* [also estimated to be 250,000 tons] *of automobile shredder fluff. The existing fill area consists of two unlined disposal phases (Phase 1 and Phase 2) separated by an east to southeast trending drainage ditch.*
>
> *Phase 1, the northern most portion of the Monofill, is approximately 4 acres in size and contains an approximate two-foot thick soil cover with vegetative growth. Phase 2 is approximately 8 acres in size and is located south of Phase 1. Phase 2 final cover consists of a two-foot thick layer of compacted clay followed by a two-foot thick soil layer with vegetation.*
>
> *In August 1995, the facility received a construction/operating permit (No. 82-SDP-4-89P) from IDNR to expand the disposal area south of Phase 2. The permit was issued following completion of the Final Permitting Document, prepared in 1995, that included an Engineering Design Report, Hydrogeologic Monitoring System Plan, Leachate Control Plan, Operations Plan and a Closure/Post-Closure Plan for the Facility. In the summer of 1996, construction of lined Cell 1 located south of Phase 2 was initiated. Improvements, including the installation of leachate extraction wells in Phases 1 and 2, placement of additional soil cover on Phase 1, and construction of final soil cover material on Phase 2, also were conducted during Cell 1 development.*
>
> *The facility's leachate collection system in Phase 1 and 2 is comprised of extraction wells. There are three extraction wells in Phase 1* [EW-6 through EW-8] *and five extraction wells in Phase 2* [EW-1 through EW-5, however, EW-1 was subsequently removed as part of landfill excavation activities]. *The wells are constructed of three-foot diameter perforated and non-perforated Contech-2000 corrugated PVC pipe. Permanent sump pumps are present in each well. Leachate pumped from the wells enters into three-inch diameter HDPE piping and is gravity drained to a pumping station located northwest of Phases 1 and 2. The pump station is connected via a 2-inch diameter polyethylene pipe to a City of Davenport sanitary sewer manhole at the intersection of Kimmel Drive and Highway 22. Generated leachate is treated at the City of Davenport's wastewater treatment plant under permit number 2005-03-003.*

The Hydrologic Monitoring System Plan (HMSP) monitoring network was revised after a Groundwater Quality Assessment Report (GWQAR) was submitted and approved by the DNR in September 2014. As part of the implementation of the GWQAR, the statistical process for assessing changes from background was modified to a method that could accommodate non-parametric data sets. The HMSP monitoring network revisions included abandonment of some monitoring wells, removal of some monitoring wells from the sampling program, and installation of new monitoring wells. The newly installed monitoring wells underwent the required first year quarterly sampling during the 2015 reporting period.

A new HMSP configuration was submitted to the DNR in the GWQAR (Table 1-1) and approved in Permit Amendment #6 dated September 15, 2014 (Doc # 81198).

2.3 GEOLOGY OF THE SITE

The site geology was divided into alluvial geology and bedrock geology. The subsections below contain descriptions of these two geologic units.

2.3.1 Alluvial Sediment Geology

Below is an excerpt of a description of the alluvial sediment geology from the Groundwater Quality Assessment Plan dated December 2004 prepared by CPI Environmental Services, Inc.

> *Alluvial sediments overlie bedrock and generally thicken toward the intermittent stream located between Phase I and Phase II of the Monofill. Alluvial sediments in the vicinity of the stream range from 20 feet at MW-8 to greater than 33 feet thick at MW-18. Alluvial sediments thin north of the stream with borings B-13 through B-15 (MW-7) indicating sediment thickness of 15 to 16 feet. Alluvial sediments thin south of the stream with boring B-20 (MW-9, MW-10, MW-11) through B-23 (located at the southern edge of Phase II) indicating sediment thickness of 4 to 6 feet. Alluvial sediments thicken from the southern edge of Phase II to the area of borings B-1 through B-10 where the average alluvial thickness is approximately 14 feet.*
>
> *Alluvial sediments generally are composed of silts and clays with interbedded silty sands and sand lenses.*

Below is an excerpt of the unconsolidated geology from the 1996 Annual Water Quality Summary Report dated December 1996, prepared by Foth & Van Dyke.

> *A hydrogeologic investigation was conducted at the site in 1991 by Shive-Hattery. The Hydrogeologic Investigation Report (HIR), dated November 8, 1991, was submitted to the IDNR for review. The geology of the site is comprised of alluvial sediments overlying shale, sandstone, and limestone. The alluvium is present across the entire site, ranging from 5 to 40 feet in thickness, and consists primarily of stratified sand, silt, and clay. The general direction of groundwater flow in the alluvium is southeasterly.*

2.3.2 Bedrock Geology

Below is an excerpt of a description of the bedrock geology from the Groundwater Quality Assessment Plan dated December 2004 prepared by CPI Environmental Services, Inc.

> *Based on some of the original assessment work conducted in 1991 and 1992, the bedrock surface below the Monofill is comprised of shale except at the southern edge of the Monofill where the bedrock surface is composed of sandstone (B-21,*

MW-22R, B-22/MW-12, B-25), siltstone (B-19), and interbedded conglomerate, sandstone and shale (B-24/MW-13, MW-14, and MW-15). In the area of borings B-1 through B-10 (south of the Monofill), alluvial sediments overlay shale.

Bedrock at the Monofill is composed of shale or interbedded sandstones, shales, and siltstones overlying limestone. Four borings are noted as extending into limestone: B-11, MW-21R, B-20, and B-24. At the northern edge of the Monofill, as defined by boring B-11 (MW-4, MW-5, MW-6) and MW-21R, approximately 41 to 50 feet of shale overlie limestone. At the southern edge of the Monofill, as defined by borings B-24 (MW-13, MW-14, MW-15) and B-20 (MW-9, MW-10, MW-11), approximately 28 to 62 feet of interbedded sandstones, shales, and siltstones overlie limestone. Bedrock overlying limestone thickens from the west to the east.

According to the IDNR's Open File Map 98-7, the surface bedrock at the Monofill is composed of the Pennsylvanian-aged Cherokee Group and Caseyville formation. Primary lithologies in the Cherokee Group and Caseyville formation are reported as gray shale and sandstone with secondary lithologies of black shale, siltstone, and coal and minor lithologies including conglomerate. Lithologies reported for the Cherokee Group and Caseyville formation correspond to lithologies described in site boring logs down to the top of limestone.

Limestone below the Monofill is likely from the Devonian-aged Cedar Valley Group, which is mined at the Linwood Mine and LaFarge Corporation's Davenport Cement Plant located approximately two to three miles southwest of the Monofill.

Below is an excerpt of the bedrock geology from the 1996 Annual Water Quality Summary Report dated December 1996, prepared by Foth & Van Dyke.

The uppermost bedrock beneath most of the site is shale ranging in thickness from 45 feet across the northern portion of the site to less than 10 feet across the southern portion. Interbedded sandstone and shale comprise the uppermost bedrock beneath the southern-most portion of the site. Underlying the shale and sandstone units is highly fractured limestone. The shale unit acts as an aquitard which separates the alluvial sediments from the underlying limestone across the northern two-thirds of the site. Across the southern one-third of the site, the alluvial, sandstone, and limestone units appear to be hydraulically connected. The general direction of groundwater flow in the limestone is northeasterly. A potential karst feature has been reported in the eastern portion of the site.

2.4 HYDROLOGY OF THE SITE

The site hydrogeology was divided into alluvial hydrogeology and bedrock hydrogeology. The subsections below contain descriptions of these two hydrogeologic units.

2.4.1 Alluvial Hydrogeology

Below is an excerpt of a description of the alluvial hydrogeology from the Groundwater Quality Assessment Plan dated December 2004 prepared by CPI Environmental Services, Inc.

Groundwater levels in wells screened in the alluvial deposits were plotted to establish the water table surface in the alluvium. Groundwater measurements were

collected on October 5 and 6, 2004 from monitoring wells MW-2, MW-3, MW-4, MW-7 and MW-9 and were used to construct the water table surface illustrated in Figure 3. [Figure 3 from the referenced report is not included in this report.] *It may be significant to note that wells screening both the upper and the base of the alluvium were used to estimate the groundwater surface. Using the upper and basal wells may cause vertical gradients within the alluvium to influence the interpretation of the generalized hydraulic gradient of the alluvium.*

Groundwater in the alluvium generally moves to the southwest, which corresponds to surface topography, the intermittent stream flow, and the location of the Mississippi River. From boring logs, preferential pathways in the alluvium may be sand and gravel lenses with a thickness of one foot or less, such as those identified in boring logs for MW-4, MW-7, and MW-9.

Based on the water table surface in Figure 3, the estimated gradient of groundwater flow to the southwest in the alluvium is 0.01 ft./ft. Hydraulic conductivity testing was performed by others during the 1990-1991 studies and measured values for monitoring wells MW-4, MW-7, and MW-9 of 2.89 x 10^{-4}, 8.35 x 10^{-4} and 2.70 x 10^{-3} cm/sec, respectively, for a mean hydraulic conductivity value of 1.27 x 10^{-3} cm/sec. Applying Darcy's equation, groundwater is calculated to move through the alluvium beneath both Phase 1 and Phase 2 of the Monofill (a width of approximately 920 feet) at a rate of 3 gallons per minute.

2.4.2 Bedrock Hydrogeology

Below is an excerpt of a description of the bedrock hydrogeology from the Groundwater Quality Assessment Plan dated December 2004 prepared by CPI Environmental Services, Inc.

Water levels in wells verifiably screened in limestone, i.e., wells with well logs and well construction information, were plotted to establish the potentiometric surface in the limestone bedrock. Wells verifiably screened in limestone included MW-6, MW-11, and MW-15 during the initial site assessments. Groundwater flow direction in the limestone for 1991 through 1992 is reported to be to the northeast, contrary to surface features and other apparent influencing factors, making MW-15 the original upgradient limestone well. Monitoring well MW-15 was abandoned due to construction of the newer lined cell and replaced with MW-106, believed to screen the shale or sandstone layer based on well depth.

Wells MW-1, MW-10, and MW-106 appear to screen the shale or sandstone zones and are assumed to represent a similar hydrogeologic zone. October 2004 groundwater elevations for the non-limestone bedrock (shale/sandstone) suggest that groundwater flow in this zone is to the southeast, as depicted in potentiometric surface presented in Figure 4. [Figure 4 from the referenced report is not included in this report.] *Monitoring well MW-10 screens much deeper than MW-1 or MW-106 and the groundwater elevation in MW-10, which is very similar to the groundwater elevation in MW-11, may be influenced by the deeper (limestone) groundwater regime. The hydraulic gradient in the non-limestone bedrock wells is estimated to be 0.049* [ft/ft]*. Sufficient data do not exist to estimate groundwater flow volumes through the shale or sandstone layers.*

Monitoring well MW-21R was installed in 1996, and boring and well construction information for the well were reviewed. Monitoring well MW-21R has a similar total depth and geology to MW-6 and MW-11 and is screened in limestone from approximately 75 to 85 feet below ground surface. A potentiometric surface for the limestone in October 2004 was constructed from groundwater levels collected from MW-6, MW-11, and MW-21R, as illustrated in Figure 5. [Figure 5 from the referenced report is not included in this report.] *Groundwater flow direction in the limestone is approximately west/southwest with a hydraulic gradient of 0.008* [ft/ft].

There is no obvious reason for the groundwater flow direction in 1991 to be to the northeast and the present flow direction to be generally to the southeast in shallow bedrock and west/southwest in the deeper limestone. [It should be noted that the discrepancy noted in the previous sentence is the result of a misinterpretation of the groundwater contour maps. The 1991 Shive-Hattery map and the 2004 CPI Environmental map are oriented 180^{o} opposite each other. The groundwater flow direction depicted on the 1991 map is in fact to the west/southwest in the deeper limestone, which is consistent with the 2004 deeper limestone groundwater flow direction.] *At present, the upgradient shallow bedrock well is MW-1, and the upgradient limestone well is MW-21R, both located near the eastern corner of Phase 1. Mean hydraulic conductivity values to the bedrock were measured by others in 1991 as 3.80 x 10^{-7} [cm/sec] for the shale, 2.93 x 10^{-4} [cm/sec] for the sandstone and 4.97 x 10^{-6} cm/sec for the limestone. Applying Darcy's equation, groundwater is calculated to move through the limestone beneath both Phase 1 and Phase 2 of the Monofill (a width of approximately 920 feet) at a rate of 0.009 gallons per minute.*

3.0 FIGURES DISCUSSION

The following figures are attached.

3.1 FIGURE 1 – APPROVED MONITORING NETWORK

The Landfill property and hydrologic monitoring system plan (HMSP) network are depicted in **Figure 1**. **Figure 1** indicates the locations of each monitoring well and its respective monitoring program as of the beginning of this reporting period.

3.2 FIGURE 2 – AQUIFER (ALLUVIAL) GROUNDWATER CONTOURS

A groundwater contour map based on water levels measured in the Alluvial Aquifer during the June 2024 annual groundwater sampling event is included as **Figure 2**. **Figure 2** indicates a generally southeasterly groundwater flow direction towards the Mississippi River. Leachate levels and elevations are discussed in the Leachate Control System Performance Evaluation Report in **Appendix F**.

3.3 FIGURE 3 – AQUIFER (BEDROCK) GROUNDWATER CONTOURS

A groundwater contour map based on water levels measured in the Bedrock Aquifer during the June 2024 annual groundwater sampling event is included as **Figure 3**. **Figure 3** indicates a generally easterly groundwater flow direction towards the Mississippi River.

4.0 QA/QC SUMMARY

Date indicates the date(s) of sampling.

4.1 JUNE 13, 2024 (2024 ANNUAL SAMPLING EVENT)

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

5.0 DATA EVALUATION

Statistical evaluation in accordance with the Groundwater Quality Assessment Report dated March 31, 2014 (Doc #79942) and approved by DNR in Permit Amendment #6 dated September 15, 2014 (Doc #81198) was conducted for the groundwater analytical data collected during the 2024 annual sampling event. The statistical evaluation for samples collected during the 2024 annual sampling event is located in Appendix D of this report.

5.1 DATA EVALUATION

Groundwater monitoring for the Monofill consists of samples from one monitoring well along the northeast side (MW-7R), one monitoring well along the east side (MW-8R), one monitoring well along the southeast side (MW-9), and one monitoring well along the southwest side (MW-23). The three upgradient monitoring points are located along the northwest side of the Monofill.

The benzene concentration in monitoring well MW-9 was measured at 6.48 µg/L during the 2024 sampling event which exceeded the action level of 5 µg/L. The concentration of arsenic detected in monitoring well MW-9 during the 2024 sampling event was slightly higher than the level detected in the 2023 sampling event. The level of chloride detected in monitoring well MW-9 was higher than the level detected during the 2023 sampling event, but lower than the level detected during the 2022 sampling event.

A total of twelve prediction limit exceedances were measured based on 2024 sampling results as listed in Table 1 compared to nine prediction limit exceedances based on 2023 sampling results reported in the 2023 AWQR. Half of the prediction limit exceedances detected from 2024 sampling results were attributed to monitoring well MW-9.

Exceedances of the arsenic action level were measured in upgradient monitoring well MW-4 and downgradient monitoring well MW-9 during the 2024 sampling event. These two monitoring wells have regularly exceeded the action levels for arsenic since sampling for total arsenic began in 2017 and when sampling for dissolved arsenic was being conducted prior to 2017.

Additional sampling for inorganic constituents and total extractable hydrocarbons occurred during the 2024 sampling event as required by DNR in the letter dated January 25, 2023 (Doc #105590). Of the monitoring well-constituent pairs sampled, only three detections exceeded statewide standards for a protected groundwater source. The concentration of cobalt measured in monitoring wells MW-3, MW-7R, and MW-9 were 0.0024 mg/L, 0.00258 mg/L, and 0.00228 mg/L, respectively, which were just above the statewide standard of 0.0021 mg/L. It should be noted that monitoring well MW-3 is an upgradient monitoring well. The remaining monitoring well/constituent pairs were all below the statewide standards for a protected groundwater source.

5.2 TRENDING IN MONITORING WELLS

Statistically significant decreasing trends at a 99% confidence level (α=0.01) were identified in three monitoring well/constituent pairs by Mann-Kendall analysis during this reporting period. Statistically significant increasing trends at a 99% confidence level (α=0.01) were identified in two monitoring well/constituent pairs by Mann-Kendall analysis during this reporting period. The trend analysis is included in Attachment E of Appendix D of this report. The statistically significant trends were as follows:

Monitoring Point	Constituent	Trend
MW-4	Chloride	Decreasing
MW-5	Chloride	Decreasing
MW-9	pH	Decreasing
MW-23	Chemical Oxygen Demand	Increasing
MW-23	Nitrogen, Ammonia	Increasing

Although not necessarily statistically significant, the Mann-Kendall statistics can provide an indication of general trending in the data. Trend indications for wells in the monitoring program are shown in the table below. The statistics used to develop the general trending differ from the Mann-Kendall statistics used in the diagnostics section of the statistical evaluation in that a much lower trend threshold is applied for the general trending information (α=0.20 versus α=0.01). Trends classified as decreasing or increasing exhibited a statistically significant trend with 80% confidence using the most recent eight data points. Trends classified as stable did not exhibit a statistically significant trend with 80% confidence using the eight most recent data points. A summary of Mann-Kendall statistics by constituent in each monitoring point is included in Table 10 of this report.

Trending in Monitoring Wells				
Monitoring Well	**Decreasing Trends**	**Stable Trends**	**Increasing Trends**	**Number of Constituents Analyzed**
MW-3 (u)	12.50%	75.00%	12.50%	8
MW-4 (u)	25.00%	50.00%	25.00%	8
MW-5 (u)	37.50%	50.00%	12.50%	8
MW-7R	28.57%	57.14%	14.29%	7
MW-8R	28.57%	42.86%	28.57%	7
MW-9	11.11%	33.33%	55.56%	9
MW-23	14.29%	57.14%	28.57%	7
Site Wide	**22.22%**	**51.85%**	**25.93%**	**54**

(u) indicates an upgradient monitoring point.

Review of the Mann-Kendall statistics indicated that approximately 74% of the Mann-Kendall statistics were considered stable or decreasing following the 2024 annual statistical evaluation with six of the decreasing trends being pH. There were fourteen monitoring well/constituent pairs with generally increasing trends. The monitoring well/constituent pairs with increasing trends and decreasing pH trends are discussed in the following table.

Monitoring Well	Constituent Name	Comments
MW-3 (u)	Nitrogen, Ammonia	Based on six actual detections and two J flag detections. Highest concentration of 0.909 mg/L measured in 2024.
MW-3 (u)	pH (decreasing)	Based on eight measurements. Range of pH measurements between 6.57 and 7.52 S.U.
MW-4 (u)	COD	Based on six actual detections and two non-detects. Highest concentration is 29.3 mg/L measured in 2024.

Monitoring Well	Constituent Name	Comments
MW-4 (u)	Nitrogen, Ammonia	Based on four actual detections and four J flag detections. Highest concentration is 0.515 mg/L measured in 2022.
MW-4 (u)	pH (decreasing)	Based on eight measurements. Range of pH measurements between 6.87 and 7.95 S.U.
MW-5 (u)	COD	Based on two actual detections and six non-detections. Highest concentration of 48.8 mg/L measured in 2024.
MW-7R	Iron	Based on six actual detections and two J flag detections. Highest concentration of 8.53 mg/L measured in 2022. Monitoring well MW-7R had the highest measured turbidity of the wells sampled during this reporting period.
MW-7R	pH (decreasing)	Based on eight measurements. Range of pH measurements between 6.96 and 7.61 S.U.
MW-8R	Chloride	Based on eight actual detections. Highest concentration of 209 mg/L measured in 2023. These detections were below the historical maximum of 237 mg/L measured in 2015.
MW-8R	Nitrogen, Ammonia	Based on two J flag detections and six non-detections. Highest J flag concentration of 0.268 mg/L measured in 2024. The two J flag detections are the two most recent detections.
MW-8R	pH (decreasing)	Based on eight measurements. Range of pH measurements between 6.60 and 7.41 S.U.
MW-9	COD	Based on the last eight detections. Highest concentration of 1220 mg/L measured in 2024.
MW-9	Nitrogen, Ammonia	Based on eight actual detections. Highest concentration of 3.28 mg/L measured in 2023.
MW-9	Specific Conductance	Based on eight measurements. Highest measurement of 6028 µS/cm measured in 2024.
MW-9	Total Organic Halogens	Based on eight actual detections. Highest concentration of 1.56 mg/L measured in 2024.
MW-9	pH (decreasing)	Based on eight measurements. Range of pH measurements between 6.79 and 7.38 S.U.
MW-23	COD	Based on eight actual detections. Highest concentration of 119 mg/L measured in 2024.
MW-23	Nitrogen, Ammonia	Based on eight actual detections. Highest concentration of 4.0 mg/L measured in 2023.
MW-23	pH (decreasing)	Based on eight measurements. Range of pH measurements between 6.42 and 7.4 S.U.

Of the 13 increasing trends at 80% confidence level and the six decreasing trends for pH at 80% confidence level, six monitoring well/constituent pair trends were associated with the upgradient monitoring wells. None of the monitoring well/constituent pairs found to be increasing at an 80% confidence level exceeded regulatory action levels for the respective constituent concentrations during the 2024 sampling event. The pH values of the six monitoring well/constituent pairs found to be decreasing at an 80% confidence level were all neutral to circumneutral. Overall, a generally continued stability to improvement of groundwater quality at the site was noted.

6.0 RECOMMENDATIONS

6.1 SITE IMPACT ON GROUNDWATER

Concentrations of the majority of analyzed parameters in groundwater at the Monofill remain stable to decreasing. Overall, a generally continued stability of groundwater quality at the site was noted.

Results of the supplemental inorganic constituents and total extractable hydrocarbons required by DNR in the letter dated January 25, 2023, (Doc #105590) collected during the 2023 and 2024 annual sampling events resulted in minimal exceedances of the regulatory action levels. The regulatory action level for cobalt was exceeded at monitoring well MW-9 during both 2023 and 2024 sampling events and at monitoring wells MW-3 and MW-7R during the 2024 sampling event. The regulatory action level for thallium was only exceeded at monitoring wells MW-3 and MW-4 during the 2023 sampling event. The regulatory action level for TEH-Waste Oil was only exceeded at monitoring well MW-9 during the 2023 sampling event and was equal to the regulatory action level at monitoring well MW-7R during the 2023 sampling event. It should be noted that monitoring wells MW-3 and MW-4 are designated as upgradient monitoring wells.

In all cases, exceedances of the regulatory action levels for the supplemental parameters detected during the 2023 and 2024 sampling events were not significantly above the regulatory action levels for the respective constituents and only one monitoring well/constituent pair was detected above the regulatory action level in both sampling events (MW-9/Cobalt), though only slightly above in both cases.

6.2 PROPOSED MONITORING

The groundwater monitoring program is summarized in Table 1. It is recommended to discontinue sampling for the supplement inorganic constituents and TEH required by the DNR letter dated January 25, 2023 (Doc #105590) as summarized in Table 2.

6.3 PROPOSED MONITORING WELL CHANGES

Monitoring well performance is summarized in Table 4. No proposed changes to the monitoring wells are recommended at this time.

Tables

Table 1
Monitoring Program Summary
2024 Annual Water Quality Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Monitoring Well	Formation[1]	Current Monitoring Program	Change for Next Sampling Event	Prediction Limit Exceedances	Total Number of Samples in Each Monitoring Program Since January 1, 2018		
					Routine	Supplemental	Remedial Action
MW-3	Lean Clay/Silty Lean Clay/Sandy Lean Clay	Background	None	N/A	8	-	-
MW-4	Sand/Clay	Background	None	N/A	8	-	-
MW-5	Sand/Clay/Gravel	Background	None	N/A	8	-	-
MW-7R	Sandy Silty Clay/Sand and Gravel	Detection	None	COD, Specific Conductance	8	-	-
MW-8R	Sandy Silty Clay/Sand	Detection	None	COD	8	-	-
MW-9	Sand/Shale	Detection	None	Benzene, COD, Chloride, Nitrogen-Ammonia, Specific Conductance, Total Organic Halogens	8	-	-
MW-23	Sandy Silty Clay/Sand	Detection	None	COD, Nitrogen-Ammonia, Specific Conductance	8	-	-

Notes:
[1] Obtained from screened interval on boring logs.

Table 2
Monitoring Program Implementation Schedule
2024 Annual Water Quality Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Monitoring Well	Recent Sampling Dates and Constituents	Upcoming Sampling Dates and Constituents
	6/13/2024	2025 Annual Event
MW-3	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Antimony, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc, Total Extractable Hydrocarbons, Total Suspended Solids	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Total Suspended Solids
MW-4	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Antimony, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc, Total Extractable Hydrocarbons, Total Suspended Solids	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Total Suspended Solids
MW-5	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Antimony, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc, Total Extractable Hydrocarbons, Total Suspended Solids	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Total Suspended Solids
MW-7R	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Antimony, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc, Total Extractable Hydrocarbons, Total Suspended Solids	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Total Suspended Solids
MW-8R	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Antimony, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc, Total Extractable Hydrocarbons, Total Suspended Solids	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Total Suspended Solids
MW-9	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Antimony, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc, Total Extractable Hydrocarbons, Total Suspended Solids	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Total Suspended Solids
MW-23	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Antimony, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc, Total Extractable Hydrocarbons, Total Suspended Solids	Ammonia-Nitrogen, COD, Chloride, pH, Specific Conductance, Iron, Arsenic, Total Organic Halogens; Total Suspended Solids

Notes: None

Table 3
Monitoring Well Maintenance and Performance Re-Evaluation Schedule
2024 Annual Water Quality Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Compliance with:	2022	2023	2024	2025
567 IAC 114.21(2)"a" high and low water levels (annually)	Completed	Completed	Included	Scheduled
567 IAC 114.21(2)"b" changes in the hydrologic setting and flow paths	Completed	Completed	Included	Scheduled
567 IAC 114.21(2)"c" well depths	Completed	Completed	Included	Scheduled
567 IAC 114.21(2)"d" well recharge rates [1]		Completed		Scheduled

Notes:
[1] In-situ permeability testing was replaced with biennial well recharge rate evaluation in DNR correspondence dated November 7, 2016 (Doc# 87656)

Table 4
Monitoring Well Performance and Maintenance Summary
2024 Annual Water Quality Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Well	Top of Casing	Top of Screen	Total Depth		Date of Measurement 6/13/2024	Maximum Depth Discrepancy (ft)
MW-3	573.30	566.10	21.0	Groundwater Level (ft)	7.19	0.5
				Groundwater Elevation (Ft MSL)	566.11	
				Measured Well Depth (ft)	20.5	
				Submerged screen	Y	
MW-4	567.79	557.90	14.9	Groundwater Level (ft)	5.73	0.6
				Groundwater Elevation (Ft MSL)	562.06	
				Measured Well Depth (ft)	14.3	
				Submerged screen	Y	
MW-5	567.74	548.20	24.5	Groundwater Level (ft)	4.33	2.9
				Groundwater Elevation (Ft MSL)	563.41	
				Measured Well Depth (ft)	21.6	
				Submerged screen	Y	
MW-7R	558.26	552.70	12.6	Groundwater Level (ft)	4.75	2.0
				Groundwater Elevation (Ft MSL)	553.51	
				Measured Well Depth (ft)	10.6	
				Submerged screen	Y	
MW-8R	557.94	552.20	12.8	Groundwater Level (ft)	4.34	1.0
				Groundwater Elevation (Ft MSL)	553.60	
				Measured Well Depth (ft)	11.8	
				Submerged screen	Y	
MW-9	556.50	549.50	12.0	Groundwater Level (ft)	3.55	0.3
				Groundwater Elevation (Ft MSL)	552.95	
				Measured Well Depth (ft)	11.7	
				Submerged screen	Y	
MW-23	572.48	554.90	29.5	Groundwater Level (ft)	17.18	1.4
				Groundwater Elevation (Ft MSL)	555.30	
				Measured Well Depth (ft)	28.1	
				Submerged screen	Y	

Comments:

1) Measured well depths were within 1.0 foot of the installed depth with the following exceptions:
MW-5, MW-7R, MW-8R and MW-23: These monitoring wells were measured between 1.0 and 2.9 ft shallower than when originally installed, but they have measured shallow consistently over the last several years. In addition, since the monitoring wells produce sufficient groundwater for sampling it is likely that the wells are functioning properly.

Table 5
Background and GWPS Summary
2024 Annual Water Quality Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Constituent	Units	Samples	Detections	Min	Max	Mean	Background Level	Statistical Test	Action Level	Source
Inorganics										
Arsenic	mg/L	30	20	0.000675	0.206	0.0187	0.206	PL (NP)	0.01 mg/L	MCL/SWS
Chemical Oxygen Demand	mg/L	175	32	2.5	48.8	7.28	48.8	PL (NP)	-	-
Chloride	mg/L	176	175	0.05	284.0	128.55	273.5	PL (P)	-	-
Iron	mg/L	30	29	0.121	95.75	8.34	107.9	PL (P)	-	-
Nitrogen, Ammonia	mg/L	176	74	0.086	0.909	0.181	0.909	PL (NP)	30.0 mg/L	HAL
pH	S.U.	168	168	6.38	8.91	7.27	8.276	PL (P)	-	-
Specific Conductance	µS/cm	168	168	600	2250	1157	2240	PL (NP)	-	-
Total Organic Halogens	mg/L	100	70	0.005	0.584	0.045	0.584	PL (NP)	-	-

Notes:

1) Background levels based on calculated prediction limits or reporting limit, as applicable.

Acronyms/Abbreviations:

RL = Reporting Limit
GWPS = Groundwater Protection Standard
SSS = Site-Specific GWPS
SWS = Statewide Standard
SD = Standard Deviation
MCL = EPA Maximum Contaminant Level
PL = Prediction Limits
HAL = Health Advisory Level
DWA = Drinking Water Advisory

Comments:

1) **Water quality results and effectiveness of the statistical data evaluation criteria**: Statistical evaluations consist of prediction limits.
2) **Changes to the previous statistical method during reporting period:** None.

Table 6

Summary of Well/Detected Constituent Pairs With No Immediately Preceding Prediction Limit Exceedances

2024 Annual Water Quality Report

Alter Highway 22 Monofill

Permit No. 82-SDP-04-89C

2024 Sampling Event

Well	Constituent	Units	Most Recent Result	Background Standard
MW-7R	Specific Conductance	µS/cm	2510	2240
MW-8R	COD	mg/L	69.9	48.8
MW-9	Chloride	mg/L	640	273.5

Note: Tables include prediction limit exceedances identified during the 2024 sampling event that were not identified as prediction limit exceedances in the previous year.

Comments:

1) **Problems with the current HMSP network:** None.
2) **Schedule to implement remedies:** Not applicable.
3) **Alternative constituent or sample frequency changes:** None.
4) **Significant changes to prediction limits:** None.

Table 7
Summary Table of Ongoing and Newly Identified Prediction Limit Exceedances
2024 Annual Water Quality Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Key

	Denotes ongoing prediction limit exceedances or double quantifications (as applicable) that were identified as such during this reporting period and the previous reporting period.
	Denotes newly identified prediction limit exceedances or duble quantifications (as applicable) in the 2024 reporting period. Newly identified is defined as occuring at least once in the current reporting period but not in the immediately preceeding reporting period.

Well	Constituent	Units	Most Recent Result	Background Standard	Action Level/ Statewide Standard
MW-7R	COD	mg/L	112	48.8	-
	Specific Conductance	µS/cm	2510	2240	-
MW-8R	COD	mg/L	69.9	48.8	-
MW-9	Benzene	µg/L	6.48	<5 µg/L	5
	COD	mg/L	1220	48.8	-
	Chloride	mg/L	640	273.5	
	Nitrogen-Ammonia	mg/L	2.89	0.909	30
	Specific Conductance	µS/cm	6,155	2,240	-
	Total Organic Halogens	mg/L	1.56	0.584	-
MW-23	COD	mg/L	119	48.8	-
	Nitrogen-Ammonia	mg/L	4	0.909	30
	Specific Conductance	µS/cm	2,447	2,240	-

Notes: None

Comments:

1) **Problems with the current HMSP network:** None.
2) **Proposed remedies:** None.
3) **Alternative constituent or sample frequency changes:** None.
4) **Plume delineation strategies:** Not Applicable.
5) **Property owner notifications:** Not applicable.

Table 8
Summary of Groundwater Chemistry
2024 Annual Water Quality Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

The Summary of Groundwater Chemistry is located in Appendix C.

Table 9
Historical Control Limit and Action Level Exceedances
2024 Annual Water Quality Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Key

	Prediction Limit Exceedance/Double Quantification (as applicable)
X	Action Level Exceedance

Well	Constituent	2021	2022	2023	2024
MW-4 (u)	Arsenic	**X**	**X**	**X**	**X**
MW-7R	COD				
	Specific Conductance				
MW-8R	COD				
MW-9	Arsenic	**X**	**X**	**X**	**X**
	Benzene				**X**
	Chloride				
	COD				
	Nitrogen-Ammonia				
	Specific Conductance				
	Total Organic Halogens				
MW-23	COD				
	Iron				
	Nitrogen-Ammonia				
	Specific Conductance				

Notes:

1) (u) denotes upgradient monitoring well
2) Tables does not include action level exceedances of supplemental parameters required by the DNR letter dated January 25, 2023 (Doc # 105590) for the 2023 and 2024 sampling events.

Comments: None

Table 10
Groundwater Quality Assessment Plan Trend Analysis
2024 Annual Water Quality Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Monitoring Well	Constituent Name	Calculated Statistic		
		Decreasing Trend	Stable Trend	Increasing Trend
MW-3	Arsenic		5	
	Chemical Oxygen Demand		8	
	Chloride		-11	
	Iron		8	
	Nitrogen, Ammonia			14
	pH	-18		
	Specific Conductance		-8	
	Total Organic Halogens		6	
MW-4	Arsenic		6	
	Chemical Oxygen Demand			17
	Chloride	-24		
	Iron		2	
	Nitrogen, Ammonia			14
	pH	-16		
	Specific Conductance		-8	
	Total Organic Halogens		12	
MW-5	Arsenic		7	
	Chemical Oxygen Demand			18
	Chloride	-24		
	Iron	-18		
	Nitrogen, Ammonia		5	
	pH		-8	
	Specific Conductance	-17		
	Total Organic Halogens		8	
MW-7R	Chemical Oxygen Demand		-10	
	Chloride	-18		
	Iron			14
	Nitrogen, Ammonia		11	
	pH	-13		
	Specific Conductance		-12	
	Total Organic Halogens		4	
MW-8R	Chemical Oxygen Demand		2	
	Chloride			16
	Iron	-20		
	Nitrogen, Ammonia			13
	pH	-14		
	Specific Conductance		10	
	Total Organic Halogens		8	
MW-9	Arsenic		4	
	Benzene			14
	Chemical Oxygen Demand			14
	Chloride		3	
	Iron		6	
	Nitrogen, Ammonia			21
	pH	-22		
	Specific Conductance			14
	Total Organic Halogens			18
MW-23	Chemical Oxygen Demand			24
	Chloride		-12	
	Iron		2	
	Nitrogen, Ammonia			26
	pH	-14		
	Specific Conductance		-4	
	Total Organic Halogens		-2	

Notes:
Trending was evaluated using Mann-Kendall analysis at 80% confidence (a = 0.2) for the entire historical dataset.

Figures

HMSP Monitoring Points	
Monitoring Point	Monitoring Program
MW-3	Background
MW-4	Background
MW-5	Background
MW-7R	Detection
MW-8R	Detection
MW-9	Detection
MW-23	Detection
MW-101	Detection

Approved Monitoring Network

Figure 1

Legend

- HMSP Monitoring Point
- Approximate Monitoring Well Location
- Approximate Leachate Monitoring Location
- Approximate Waste Boundary
- Approximate Waste Excavation Boundary
- Approximate Property Boundary

Alter Trading Corporation
Davenport, Iowa
Project No: 27224254.00
Drawing Date:
November 2024

N
W
E
S

0 155 310 620 Feet

SCS ENGINEERS
environmental consultants and contractors

Aquifer (Alluvial) Groundwater Contours

Figure 2

Legend

- Alluvial Aquifer Groundwater Contours Based on Measurments Taken June 13, 2024
- Approximate Monitoring Well Location
- Approximate Leachate Monitoring Location
- Approximate Waste Boundary
- Approximate Waste Excavation Boundary
- Approximate Property Boundary

Alter Trading Corporation
Davenport, Iowa
Project No: 27224254.00
Drawing Date:
November 2024

N W E S

0 155 310 620 Feet

SCS ENGINEERS
environmental consultants and contractors

Aquifer (Bedrock) Groundwater Contours

Figure 3

SCS ENGINEERS
environmental consultants and contractors

Legend

- Bedrock Aquifer Groundwater Contours Based on Measurments Take June 13, 2024
- Approximate Monitoring Well Location
- Approximate Leachate Monitoring Location
- Approximate Waste Boundary
- Approximate Waste Excavation Boundary
- Approximate Property Boundary

Alter Trading Corporation
Davenport, Iowa
Project No: 27224254.00
Drawing Date:
November 2024

N
W E
S

0 155 310 620
Feet

Appendix A

Field Sampling Forms

FORM FOR GROUNDWATER SAMPLING

Project:	**ALTER**		
Monitoring Well/Piezometer ID:	**MW-3**	Date:	**6/13/2024**
Gradient:	Up	Sampler:	Tyler Stirling

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	20.5
Initial Static Water Level (feet):	7.19
Initial Groundwater Elevation (ft-amsl):	566.11
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
11:16 AM	Purging start time.						
11:19 AM	18.0	1.4	1493.6	6.51	125.3	32.4	
11:22 AM	18.4	1.1	1495.4	6.57	81.1	42.9	
11:25 AM	18.9	0.9	1491.2	6.61	42.1	50.9	
11:28 AM	18.8	0.8	1500.8	6.66	20.5	57.4	
11:31 AM	19.3	0.8	1492.7	6.69	6.9	32.4	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.9
Was well pumped/bailed dry?	No
Total Amount of Time Purged (minutes:seconds):	15:00
Average Purge Rate (mL/min):	126.67

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

Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**ALTER**		
Monitoring Well/Piezometer ID:	**MW-4**	Date:	**6/13/2024**
Gradient:	Up	Sampler:	Tyler Stirling

A. MW/PIEZOMETER CONDITIONS

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

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

Measured Well Total Depth (feet):	14.3
Initial Static Water Level (feet):	5.73
Initial Groundwater Elevation (ft-amsl):	562.06
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
12:34 PM	Purging start time.						
12:37 PM	16.7	1.1	1508.7	6.95	-101.2	25.4	
12:40 PM	16.8	0.6	1513.2	6.93	-114.5	404.0	
12:43 PM	16.7	0.5	1510.9	6.93	-117.6	115.0	
12:46 PM	16.8	0.4	1510.1	6.93	-118.7	113.8	
	Parameters stabilized, sample collected.						

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

D. WELL MAINTENANCE

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

Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**ALTER**		
Monitoring Well/Piezometer ID:	**MW-5**	Date:	**6/13/2024**
Gradient:	Up	Sampler:	Tyler Stirling

A. MW/PIEZOMETER CONDITIONS

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

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

Measured Well Total Depth (feet):	21.6
Initial Static Water Level (feet):	4.33
Initial Groundwater Elevation (ft-amsl):	563.41
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
11:58 AM	Purging start time.						
12:01 PM	16.4	5.8	1144.2	7.38	96.6	48.8	
12:04 PM	16.7	5.2	1147.6	7.34	98.7	45.0	
12:07 PM	16.3	4.8	1157.7	7.28	101.3	38.9	
12:10 PM	16.4	4.5	1163.4	7.26	101.6	35.3	
	Parameters stabilized, sample collected.						

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

D. WELL MAINTENANCE

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

Additional Comments:	Color: Clear, visible orange TSS flakes in samples Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**ALTER**		
Monitoring Well/Piezometer ID:	**MW-7R**	Date:	**6/13/2024**
Gradient:	Down	Sampler:	Tyler Stirling

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	10.6
Initial Static Water Level (feet):	4.75
Initial Groundwater Elevation (ft-amsl):	553.51
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
1:46 PM	Purging start time.						
1:49 PM	15.7	0.8	2524.4	6.98	84.8	1172.5	
1:52 PM	15.8	0.5	2466.0	6.96	74.1	404.0	
1:55 PM	16.0	0.4	2434.4	6.96	66.8	402.8	
1:58 PM	15.7	0.3	2383.4	6.96	61.8	476.7	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.9
Was well pumped/bailed dry?	Yes
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	158.33

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

Additional Comments:	Color: Cloudy brown. Lighter brown color in samples. Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**ALTER**		
Monitoring Well/Piezometer ID:	**MW-8R**	Date:	**6/13/2024**
Gradient:	Down	Sampler:	Tyler Stirling

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	11.8
Initial Static Water Level (feet):	4.34
Initial Groundwater Elevation (ft-amsl):	553.57
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
3:51 PM	Purging start time.						
3:54 PM	16.2	1.2	1816.0	6.74	28.9	38.5	
3:57 PM	16.4	0.7	1773.8	6.69	30.4	36.9	
4:00 PM	16.6	0.6	1741.4	6.68	30.3	36.5	
4:03 PM	16.4	0.4	1722.3	6.67	30.1	36.8	
	Parameters stabilized, sample collected.						

Quantity of Water Removed from Well (liters):	1.7
Was well pumped/bailed dry?	Yes
Total Amount of Time Purged (minutes:seconds):	12:00
Average Purge Rate (mL/min):	141.67

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

Additional Comments:	Color: Clear Odor: None

FORM FOR GROUNDWATER SAMPLING

Project:	**ALTER**		
Monitoring Well/Piezometer ID:	**MW-9**	Date:	**6/13/2024**
Gradient:	Down	Sampler:	Tyler Stirling

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	11.7
Initial Static Water Level (feet):	3.55
Initial Groundwater Elevation (ft-amsl):	552.95
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
3:05 PM	Purging start time.						
3:08 PM	18.3	0.8	5830.7	6.79	-84.0	35.4	
3:11 PM	19.7	0.5	5860.4	6.80	-106.6	33.0	
3:14 PM	20.7	0.4	5908.6	6.79	-117.2	22.0	
3:17 PM	20.6	0.3	6028.9	6.79	-122.8	24.2	
	Parameters stabilized, sample collected.						

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

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

Additional Comments:	Color: Golden Odor: Moderate chemical smell

FORM FOR GROUNDWATER SAMPLING

Project:	**ALTER**		
Monitoring Well/Piezometer ID:	**MW-23**	Date:	**6/13/2024**
Gradient:	Down	Sampler:	Tyler Stirling

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

B. GROUNDWATER ELEVATION MEASUREMENT (+/- 0.01 foot, MSL)	
Measured Well Total Depth (feet):	28.1
Initial Static Water Level (feet):	17.18
Initial Groundwater Elevation (ft-amsl):	541.08
Equipment Used:	Dedicated Tubing – Peristaltic Pump

C. WELL PURGING

FIELD PARAMETERS [stabilization criteria] RECORD EVERY 3 MINUTES

Time	**Temperature (°C) 10%**	Dissolved Oxygen (mg/L)	**Specific Conductivity (µS/cm) +/- 10%**	**pH (S.U.) +/- 0.1**	ORP (mV)	Turbidity (FNU)	
2:29 PM	Purging start time.						
2:32 PM	18.6	0.7	2264.6	6.37	-103.4	36.4	
2:35 PM	20.0	0.4	2284.7	6.40	-124.1	36.4	
2:38 PM	19.9	0.4	2312.6	6.42	-132.5	51.9	
2:41 PM	19.7	0.3	2320.7	6.42	-136.7	83.4	
	Parameters stabilized, sample collected.						

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

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

Additional Comments:	Color: Clear, with visible black suspended solids in samples Odor: Very strong sulfur smell

Appendix B-1

Laboratory Analytical Data Sheets

eurofins | Environment Testing

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

ANALYTICAL REPORT

PREPARED FOR

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

Generated 7/15/2024 1:05:35 PM Revision 1

JOB DESCRIPTION

Alter H22 Landfill 2024 GW Sampling

JOB NUMBER

310-283697-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

myEOL

Job Notes

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

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

Authorization

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Revision 1

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

Table of Contents

Job Narrative
310-283697-1

REVISION

The report being provided is a revision of the original report sent on 7/11/2024. The report (revision 1) is being revised due to client requested TOX results be reported without TOX Results 1, 2 and Dup.

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers are applied to indicate exceptions. Noncompliant quality control (QC) is further explained in narrative comments.

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

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

Receipt
The samples were received on 6/14/2024 5:00 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 6.8°C and 10.1°C.

Receipt Exceptions
The following samples were received at the laboratory outside the required temperature criteria: MW-3 (310-283697-1), MW-4 (310-283697-2), MW-5 (310-283697-3), MW-7R (310-283697-4), MW-8R (310-283697-5), MW-9 (310-283697-6), MW-23 (310-283697-7), MW-D (310-283697-8) and Trip Blank (310-283697-9). This does not meet regulatory requirements. The client was contacted regarding this issue, and the laboratory was instructed to proceed with analysis.

GC/MS VOA
Method 8260D: The following samples were collected in a properly preserved vial; however, the pH was outside the required criteria when verified by the laboratory. The sample was analyzed within the 7-day holding time specified for unpreserved samples: MW-9 (310-283697-6).

Method 8260D: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: MW-9 (310-283697-6). Elevated reporting limits (RLs) are provided.

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

Diesel Range Organics
Method OA2: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with preparation batch 310-425050. The laboratory control sample (LCS) was performed in duplicate (LCSD) to provide precision data for this batch.

Method OA2: The method blank for preparation batch 310-425050 and analytical batch 310-425506 contained Total Extractable Hydrocarbons above the method detection limit. This target analyte concentration was less than the reporting limit (RL) in the method blank; therefore, re-extraction and/or re-analysis of samples was not performed.

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

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

Metals
Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: MW-9 (310-283697-6). The sample(s) was preserved to the appropriate pH in the laboratory.

Method 6020B: The laboratory control sample (LCS) for 310-426660 recovered outside control limits for the following analytes: Thallium. These analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported. MW-3 (310-283697-1), MW-4 (310-283697-2), MW-5 (310-283697-3), MW-7R (310-283697-4), MW-8R (310-283697-5), MW-9 (310-283697-6), MW-23 (310-283697-7) and MW-D (310-283697-8)

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

General Chemistry
Method 9020B: Breakthrough exceeded 10% for the following samples:MW-3 (310-283697-1), MW-4 (310-283697-2), MW-7R (310-283697-4), MW-8R (310-283697-5) and (410-175708-E-2-A).

Method 9020B: Breakthrough exceeded 10% for the following samples:MW-9 (310-283697-6), MW-23 (310-283697-7) and MW-D (310-283697-8).

Method 9020B: Sample duplicate results are outside 20% RPD requirement. Reanalysis was performed with concurring results. The data has been reported.

MW-D (310-283697-8)

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

Sample Summary

Client: SCS Engineers
Job ID: 310-283697-1
Project/Site: Alter H22 Landfill 2024 GW Sampling

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-283697-1	MW-3	Water	06/13/24 11:31	06/14/24 17:00
310-283697-2	MW-4	Water	06/13/24 12:46	06/14/24 17:00
310-283697-3	MW-5	Water	06/13/24 12:10	06/14/24 17:00
310-283697-4	MW-7R	Water	06/13/24 13:58	06/14/24 17:00
310-283697-5	MW-8R	Water	06/13/24 16:03	06/14/24 17:00
310-283697-6	MW-9	Water	06/13/24 15:18	06/14/24 17:00
310-283697-7	MW-23	Water	06/13/24 14:42	06/14/24 17:00
310-283697-8	MW-D	Water	06/13/24 12:46	06/14/24 17:00
310-283697-9	Trip Blank	Water	06/13/24 00:00	06/14/24 17:00

Detection Summary

Client: SCS Engineers
Job ID: 310-283697-1
Project/Site: Alter H22 Landfill 2024 GW Sampling

Client Sample ID: MW-3 — Lab Sample ID: 310-283697-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Extractable Hydrocarbons	159	J B Z	463	70.5	ug/L	1		OA-2	Total/NA
Chloride	141		5.00	2.25	mg/L	5		9056A	Total/NA
Arsenic	0.00443		0.00200	0.000530	mg/L	1		6020B	Total/NA
Iron	2.35		0.100	0.0360	mg/L	1		6020B	Total/NA
Barium	0.177		0.00200	0.000660	mg/L	1		6020B	Total/NA
Lead	0.00264		0.000500	0.000260	mg/L	1		6020B	Total/NA
Cobalt	0.00240		0.000500	0.000170	mg/L	1		6020B	Total/NA
Ammonia as N	0.909		0.500	0.210	mg/L	1		350.1	Total/NA
Total Suspended Solids	4.50		1.88	1.39	mg/L	1		I-3765-85	Total/NA

Client Sample ID: MW-4 — Lab Sample ID: 310-283697-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Extractable Hydrocarbons	145	J B Z	472	71.8	ug/L	1		OA-2	Total/NA
Chloride	156		5.00	2.25	mg/L	5		9056A	Total/NA
Arsenic	0.0196		0.00200	0.000530	mg/L	1		6020B	Total/NA
Iron	6.44		0.100	0.0360	mg/L	1		6020B	Total/NA
Barium	0.307		0.00200	0.000660	mg/L	1		6020B	Total/NA
Lead	0.000289	J	0.000500	0.000260	mg/L	1		6020B	Total/NA
Cobalt	0.000930		0.000500	0.000170	mg/L	1		6020B	Total/NA
Ammonia as N	0.216	J	0.500	0.210	mg/L	1		350.1	Total/NA
Halogens, Total Organic	25.7	J	40.0	14.0	ug/L	1		9020B	Total/NA
Total Suspended Solids	10.7		5.00	3.70	mg/L	1		I-3765-85	Total/NA
Chemical Oxygen Demand	27.7		25.0	24.0	mg/L	5		SM 5220D	Total/NA

Client Sample ID: MW-5 — Lab Sample ID: 310-283697-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Extractable Hydrocarbons	170	J B Z	500	76.1	ug/L	1		OA-2	Total/NA
Chloride	113		10.0	4.50	mg/L	10		9056A	Total/NA
Iron	0.931		0.100	0.0360	mg/L	1		6020B	Total/NA
Barium	0.160		0.00200	0.000660	mg/L	1		6020B	Total/NA
Halogens, Total Organic	29.4	J	40.0	14.0	ug/L	1		9020B	Total/NA
Total Suspended Solids	7.00		3.00	2.22	mg/L	1		I-3765-85	Total/NA
Chemical Oxygen Demand	48.8		25.0	24.0	mg/L	5		SM 5220D	Total/NA

Client Sample ID: MW-7R — Lab Sample ID: 310-283697-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel	305	J	326	82.7	ug/L	1		OA-2	Total/NA
Chloride	30.9		5.00	2.25	mg/L	5		9056A	Total/NA
Arsenic	0.000918	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Iron	1.68		0.100	0.0360	mg/L	1		6020B	Total/NA
Cadmium	0.000206		0.000200	0.000100	mg/L	1		6020B	Total/NA
Barium	0.0812		0.00200	0.000660	mg/L	1		6020B	Total/NA
Nickel	0.0155		0.00500	0.00210	mg/L	1		6020B	Total/NA
Copper	0.00832		0.00500	0.00180	mg/L	1		6020B	Total/NA
Lead	0.00183		0.000500	0.000260	mg/L	1		6020B	Total/NA
Cobalt	0.00258		0.000500	0.000170	mg/L	1		6020B	Total/NA
Ammonia as N	0.329	J	0.500	0.210	mg/L	1		350.1	Total/NA
Halogens, Total Organic	88.1		40.0	14.0	ug/L	1		9020B	Total/NA
Total Suspended Solids	685		75.0	55.5	mg/L	1		I-3765-85	Total/NA

This Detection Summary does not include radiochemical test results.

Detection Summary

Client: SCS Engineers
Job ID: 310-283697-1
Project/Site: Alter H22 Landfill 2024 GW Sampling

Client Sample ID: MW-7R (Continued) — Lab Sample ID: 310-283697-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chemical Oxygen Demand	112		25.0	24.0	mg/L	5		SM 5220D	Total/NA

Client Sample ID: MW-8R — Lab Sample ID: 310-283697-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Extractable Hydrocarbons	148	J B Z	500	76.1	ug/L	1		OA-2	Total/NA
Chloride	181		5.00	2.25	mg/L	5		9056A	Total/NA
Arsenic	0.000642	J	0.00200	0.000530	mg/L	1		6020B	Total/NA
Iron	0.388		0.100	0.0360	mg/L	1		6020B	Total/NA
Cadmium	0.000109	J	0.000200	0.000100	mg/L	1		6020B	Total/NA
Barium	0.129		0.00200	0.000660	mg/L	1		6020B	Total/NA
Nickel	0.00570		0.00500	0.00210	mg/L	1		6020B	Total/NA
Cobalt	0.000941		0.000500	0.000170	mg/L	1		6020B	Total/NA
Ammonia as N	0.268	J	0.500	0.210	mg/L	1		350.1	Total/NA
Halogens, Total Organic	126		40.0	14.0	ug/L	1		9020B	Total/NA
Total Suspended Solids	6.75		1.88	1.39	mg/L	1		I-3765-85	Total/NA
Chemical Oxygen Demand	69.9		25.0	24.0	mg/L	5		SM 5220D	Total/NA

Client Sample ID: MW-9 — Lab Sample ID: 310-283697-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Benzene	6.48		5.00	2.20	ug/L	10		8260D	Total/NA
Diesel	11700		294	74.6	ug/L	1		OA-2	Total/NA
Motor Oil	7760		294	78.7	ug/L	1		OA-2	Total/NA
Chloride	640		20.0	9.00	mg/L	20		9056A	Total/NA
Arsenic	0.0975		0.00200	0.000530	mg/L	1		6020B	Total/NA
Iron	18.1		0.100	0.0360	mg/L	1		6020B	Total/NA
Barium	0.439		0.00200	0.000660	mg/L	1		6020B	Total/NA
Nickel	0.0643		0.00500	0.00210	mg/L	1		6020B	Total/NA
Vanadium	0.00441	J	0.00500	0.00110	mg/L	1		6020B	Total/NA
Lead	0.000341	J	0.000500	0.000260	mg/L	1		6020B	Total/NA
Chromium	0.00483	J	0.00500	0.00120	mg/L	1		6020B	Total/NA
Cobalt	0.00228		0.000500	0.000170	mg/L	1		6020B	Total/NA
Ammonia as N	2.89		0.500	0.210	mg/L	1		350.1	Total/NA
Halogens, Total Organic	1560		500	175	ug/L	1		9020B	Total/NA
Total Suspended Solids	50.0		30.0	22.2	mg/L	1		I-3765-85	Total/NA
Chemical Oxygen Demand	1220		250	240	mg/L	50		SM 5220D	Total/NA

Client Sample ID: MW-23 — Lab Sample ID: 310-283697-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Diesel	256	J	300	76.1	ug/L	1		OA-2	Total/NA
Chloride	99.1		10.0	4.50	mg/L	10		9056A	Total/NA
Arsenic	0.0209		0.00200	0.000530	mg/L	1		6020B	Total/NA
Iron	59.1		0.100	0.0360	mg/L	1		6020B	Total/NA
Barium	0.304		0.00200	0.000660	mg/L	1		6020B	Total/NA
Nickel	0.00347	J	0.00500	0.00210	mg/L	1		6020B	Total/NA
Vanadium	0.00265	J	0.00500	0.00110	mg/L	1		6020B	Total/NA
Lead	0.000270	J	0.000500	0.000260	mg/L	1		6020B	Total/NA
Cobalt	0.000814		0.000500	0.000170	mg/L	1		6020B	Total/NA
Ammonia as N	4.00		0.500	0.210	mg/L	1		350.1	Total/NA
Halogens, Total Organic	88.2		50.0	17.5	ug/L	1		9020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-23 (Continued) — Lab Sample ID: 310-283697-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Suspended Solids	146		30.0	22.2	mg/L	1		I-3765-85	Total/NA
Chemical Oxygen Demand	119		25.0	24.0	mg/L	5		SM 5220D	Total/NA

Client Sample ID: MW-D — Lab Sample ID: 310-283697-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Total Extractable Hydrocarbons	148	J B Z	472	71.8	ug/L	1		OA-2	Total/NA
Chloride	158		5.00	2.25	mg/L	5		9056A	Total/NA
Arsenic	0.0121		0.00200	0.000530	mg/L	1		6020B	Total/NA
Iron	4.83		0.100	0.0360	mg/L	1		6020B	Total/NA
Barium	0.305		0.00200	0.000660	mg/L	1		6020B	Total/NA
Cobalt	0.000965		0.000500	0.000170	mg/L	1		6020B	Total/NA
Ammonia as N	0.239	J	0.500	0.210	mg/L	1		350.1	Total/NA
Halogens, Total Organic	93.6		40.0	14.0	ug/L	1		9020B	Total/NA
Total Suspended Solids	12.0		7.50	5.55	mg/L	1		I-3765-85	Total/NA
Chemical Oxygen Demand	29.3		25.0	24.0	mg/L	5		SM 5220D	Total/NA

Client Sample ID: Trip Blank — Lab Sample ID: 310-283697-9

No Detections.

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-3
Date Collected: 06/13/24 11:31
Date Received: 06/14/24 17:00

Lab Sample ID: 310-283697-1
Matrix: Water

Method: Iowa DNR OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	<278		278	159	ug/L		06/20/24 08:00	06/25/24 12:59	1
Diesel	<278		278	70.5	ug/L		06/20/24 08:00	06/25/24 12:59	1
Motor Oil	<278		278	74.4	ug/L		06/20/24 08:00	06/25/24 12:59	1
Total Extractable Hydrocarbons	**159**	**J B Z**	463	70.5	ug/L		06/20/24 08:00	06/25/24 12:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*92*		*17 - 120*	*06/20/24 08:00*	*06/25/24 12:59*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**141**		5.00	2.25	mg/L			06/18/24 16:24	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00443**		0.00200	0.000530	mg/L		06/18/24 09:00	07/08/24 14:37	1
Iron	**2.35**		0.100	0.0360	mg/L		06/18/24 09:00	07/08/24 14:37	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		06/18/24 09:00	07/08/24 14:37	1
Antimony	<0.00200		0.00200	0.00100	mg/L		06/18/24 09:00	07/10/24 19:47	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		06/18/24 09:00	07/08/24 14:37	1
Barium	**0.177**		0.00200	0.000660	mg/L		06/18/24 09:00	07/08/24 14:37	1
Thallium	<0.00100	*+	0.00100	0.000570	mg/L		06/18/24 09:00	07/08/24 14:37	1
Nickel	<0.00500		0.00500	0.00210	mg/L		06/18/24 09:00	07/08/24 14:37	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		06/18/24 09:00	07/08/24 14:37	1
Silver	<0.00100		0.00100	0.000500	mg/L		06/18/24 09:00	07/08/24 14:37	1
Copper	<0.00500		0.00500	0.00180	mg/L		06/18/24 09:00	07/08/24 14:37	1
Lead	**0.00264**		0.000500	0.000260	mg/L		06/18/24 09:00	07/08/24 14:37	1
Zinc	<0.0200		0.0200	0.00970	mg/L		06/18/24 09:00	07/08/24 14:37	1
Selenium	<0.00500		0.00500	0.00140	mg/L		06/18/24 09:00	07/08/24 14:37	1
Chromium	<0.00500		0.00500	0.00120	mg/L		06/18/24 09:00	07/08/24 14:37	1
Cobalt	**0.00240**		0.000500	0.000170	mg/L		06/18/24 09:00	07/08/24 14:37	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	**0.909**		0.500	0.210	mg/L		06/20/24 08:26	06/20/24 21:36	1
Halogens, Total Organic (SW846 9020B)	<40.0		40.0	14.0	ug/L		06/24/24 13:59	06/24/24 17:43	1
Total Suspended Solids (USGS I-3765-85)	**4.50**		1.88	1.39	mg/L			06/19/24 10:41	1
Chemical Oxygen Demand (SM 5220D)	<25.0		25.0	24.0	mg/L			06/19/24 10:57	5

Client Sample ID: MW-4
Date Collected: 06/13/24 12:46
Date Received: 06/14/24 17:00

Lab Sample ID: 310-283697-2
Matrix: Water

Method: Iowa DNR OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	<283		283	162	ug/L		06/20/24 08:00	06/25/24 13:11	1
Diesel	<283		283	71.8	ug/L		06/20/24 08:00	06/25/24 13:11	1
Motor Oil	<283		283	75.8	ug/L		06/20/24 08:00	06/25/24 13:11	1
Total Extractable Hydrocarbons	**145**	**J B Z**	472	71.8	ug/L		06/20/24 08:00	06/25/24 13:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*72*		*17 - 120*	*06/20/24 08:00*	*06/25/24 13:11*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**156**		5.00	2.25	mg/L			06/18/24 12:45	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0196**		0.00200	0.000530	mg/L		06/18/24 09:00	07/08/24 14:41	1
Iron	**6.44**		0.100	0.0360	mg/L		06/18/24 09:00	07/08/24 14:41	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		06/18/24 09:00	07/08/24 14:41	1
Antimony	<0.00200		0.00200	0.00100	mg/L		06/18/24 09:00	07/10/24 19:49	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		06/18/24 09:00	07/08/24 14:41	1
Barium	**0.307**		0.00200	0.000660	mg/L		06/18/24 09:00	07/08/24 14:41	1
Thallium	<0.00100	*+	0.00100	0.000570	mg/L		06/18/24 09:00	07/08/24 14:41	1
Nickel	<0.00500		0.00500	0.00210	mg/L		06/18/24 09:00	07/08/24 14:41	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		06/18/24 09:00	07/08/24 14:41	1
Silver	<0.00100		0.00100	0.000500	mg/L		06/18/24 09:00	07/08/24 14:41	1
Copper	<0.00500		0.00500	0.00180	mg/L		06/18/24 09:00	07/08/24 14:41	1
Lead	**0.000289**	**J**	0.000500	0.000260	mg/L		06/18/24 09:00	07/08/24 14:41	1
Zinc	<0.0200		0.0200	0.00970	mg/L		06/18/24 09:00	07/08/24 14:41	1
Selenium	<0.00500		0.00500	0.00140	mg/L		06/18/24 09:00	07/08/24 14:41	1
Chromium	<0.00500		0.00500	0.00120	mg/L		06/18/24 09:00	07/08/24 14:41	1
Cobalt	**0.000930**		0.000500	0.000170	mg/L		06/18/24 09:00	07/08/24 14:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	**0.216**	**J**	0.500	0.210	mg/L		06/20/24 11:28	06/21/24 00:08	1
Halogens, Total Organic (SW846 9020B)	**25.7**	**J**	40.0	14.0	ug/L		06/24/24 13:59	06/24/24 19:11	1
Total Suspended Solids (USGS I-3765-85)	**10.7**		5.00	3.70	mg/L			06/19/24 11:01	1
Chemical Oxygen Demand (SM 5220D)	**27.7**		25.0	24.0	mg/L			06/19/24 10:57	5

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2024 GW Sampling

Job ID: 310-283697-1

Client Sample ID: MW-5

Date Collected: 06/13/24 12:10
Date Received: 06/14/24 17:00

Lab Sample ID: 310-283697-3

Matrix: Water

Method: Iowa DNR OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	<300		300	172	ug/L		06/20/24 08:00	06/25/24 13:26	1
Diesel	<300		300	76.1	ug/L		06/20/24 08:00	06/25/24 13:26	1
Motor Oil	<300		300	80.3	ug/L		06/20/24 08:00	06/25/24 13:26	1
Total Extractable Hydrocarbons	**170**	**J B Z**	500	76.1	ug/L		06/20/24 08:00	06/25/24 13:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*80*		*17 - 120*	*06/20/24 08:00*	*06/25/24 13:26*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**113**		10.0	4.50	mg/L			06/18/24 12:58	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		06/18/24 09:00	07/08/24 14:44	1
Iron	**0.931**		0.100	0.0360	mg/L		06/18/24 09:00	07/08/24 14:44	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		06/18/24 09:00	07/08/24 14:44	1
Antimony	<0.00200		0.00200	0.00100	mg/L		06/18/24 09:00	07/10/24 19:51	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		06/18/24 09:00	07/08/24 14:44	1
Barium	**0.160**		0.00200	0.000660	mg/L		06/18/24 09:00	07/08/24 14:44	1
Thallium	<0.00100	*+	0.00100	0.000570	mg/L		06/18/24 09:00	07/08/24 14:44	1
Nickel	<0.00500		0.00500	0.00210	mg/L		06/18/24 09:00	07/08/24 14:44	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		06/18/24 09:00	07/08/24 14:44	1
Silver	<0.00100		0.00100	0.000500	mg/L		06/18/24 09:00	07/08/24 14:44	1
Copper	<0.00500		0.00500	0.00180	mg/L		06/18/24 09:00	07/08/24 14:44	1
Lead	<0.000500		0.000500	0.000260	mg/L		06/18/24 09:00	07/08/24 14:44	1
Zinc	<0.0200		0.0200	0.00970	mg/L		06/18/24 09:00	07/08/24 14:44	1
Selenium	<0.00500		0.00500	0.00140	mg/L		06/18/24 09:00	07/08/24 14:44	1
Chromium	<0.00500		0.00500	0.00120	mg/L		06/18/24 09:00	07/08/24 14:44	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		06/18/24 09:00	07/08/24 14:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	<0.500		0.500	0.210	mg/L		06/20/24 08:26	06/20/24 21:37	1
Halogens, Total Organic (SW846 9020B)	**29.4**	**J**	40.0	14.0	ug/L		06/24/24 13:59	06/24/24 20:02	1
Total Suspended Solids (USGS I-3765-85)	**7.00**		3.00	2.22	mg/L			06/19/24 11:01	1
Chemical Oxygen Demand (SM 5220D)	**48.8**		25.0	24.0	mg/L			06/19/24 10:57	5

Client Sample ID: MW-7R
Date Collected: 06/13/24 13:58
Date Received: 06/14/24 17:00

Lab Sample ID: 310-283697-4
Matrix: Water

Method: Iowa DNR OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	<326		326	187	ug/L		06/20/24 08:00	06/25/24 13:42	1
Diesel	**305**	**J**	326	82.7	ug/L		06/20/24 08:00	06/25/24 13:42	1
Motor Oil	<326		326	87.3	ug/L		06/20/24 08:00	06/25/24 13:42	1
Total Extractable Hydrocarbons	<543		543	82.7	ug/L		06/20/24 08:00	06/25/24 13:42	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*82*		*17 - 120*	*06/20/24 08:00*	*06/25/24 13:42*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**30.9**		5.00	2.25	mg/L			06/18/24 13:10	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.000918**	**J**	0.00200	0.000530	mg/L		06/18/24 09:00	07/08/24 14:48	1
Iron	**1.68**		0.100	0.0360	mg/L		06/18/24 09:00	07/08/24 14:48	1
Cadmium	**0.000206**		0.000200	0.000100	mg/L		06/18/24 09:00	07/08/24 14:48	1
Antimony	<0.00200		0.00200	0.00100	mg/L		06/18/24 09:00	07/10/24 19:54	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		06/18/24 09:00	07/08/24 14:48	1
Barium	**0.0812**		0.00200	0.000660	mg/L		06/18/24 09:00	07/08/24 14:48	1
Thallium	<0.00100	*+	0.00100	0.000570	mg/L		06/18/24 09:00	07/08/24 14:48	1
Nickel	**0.0155**		0.00500	0.00210	mg/L		06/18/24 09:00	07/08/24 14:48	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		06/18/24 09:00	07/08/24 14:48	1
Silver	<0.00100		0.00100	0.000500	mg/L		06/18/24 09:00	07/08/24 14:48	1
Copper	**0.00832**		0.00500	0.00180	mg/L		06/18/24 09:00	07/08/24 14:48	1
Lead	**0.00183**		0.000500	0.000260	mg/L		06/18/24 09:00	07/08/24 14:48	1
Zinc	<0.0200		0.0200	0.00970	mg/L		06/18/24 09:00	07/08/24 14:48	1
Selenium	<0.00500		0.00500	0.00140	mg/L		06/18/24 09:00	07/08/24 14:48	1
Chromium	<0.00500		0.00500	0.00120	mg/L		06/18/24 09:00	07/08/24 14:48	1
Cobalt	**0.00258**		0.000500	0.000170	mg/L		06/18/24 09:00	07/08/24 14:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	**0.329**	**J**	0.500	0.210	mg/L		06/20/24 09:22	06/20/24 22:44	1
Halogens, Total Organic (SW846 9020B)	**88.1**		40.0	14.0	ug/L		06/24/24 13:59	06/25/24 06:34	1
Total Suspended Solids (USGS I-3765-85)	**685**		75.0	55.5	mg/L			06/19/24 11:01	1
Chemical Oxygen Demand (SM 5220D)	**112**		25.0	24.0	mg/L			06/19/24 10:57	5

Client Sample ID: MW-8R
Date Collected: 06/13/24 16:03
Date Received: 06/14/24 17:00

Lab Sample ID: 310-283697-5
Matrix: Water

Method: Iowa DNR OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	<300		300	172	ug/L		06/20/24 08:00	06/25/24 13:56	1
Diesel	<300		300	76.1	ug/L		06/20/24 08:00	06/25/24 13:56	1
Motor Oil	<300		300	80.3	ug/L		06/20/24 08:00	06/25/24 13:56	1
Total Extractable Hydrocarbons	**148**	**J B Z**	500	76.1	ug/L		06/20/24 08:00	06/25/24 13:56	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*75*		*17 - 120*	*06/20/24 08:00*	*06/25/24 13:56*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**181**		5.00	2.25	mg/L			06/18/24 13:23	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.000642**	**J**	0.00200	0.000530	mg/L		06/18/24 09:00	07/08/24 14:51	1
Iron	**0.388**		0.100	0.0360	mg/L		06/18/24 09:00	07/08/24 14:51	1
Cadmium	**0.000109**	**J**	0.000200	0.000100	mg/L		06/18/24 09:00	07/08/24 14:51	1
Antimony	<0.00200		0.00200	0.00100	mg/L		06/18/24 09:00	07/10/24 19:56	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		06/18/24 09:00	07/08/24 14:51	1
Barium	**0.129**		0.00200	0.000660	mg/L		06/18/24 09:00	07/08/24 14:51	1
Thallium	<0.00100	*+	0.00100	0.000570	mg/L		06/18/24 09:00	07/08/24 14:51	1
Nickel	**0.00570**		0.00500	0.00210	mg/L		06/18/24 09:00	07/08/24 14:51	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		06/18/24 09:00	07/08/24 14:51	1
Silver	<0.00100		0.00100	0.000500	mg/L		06/18/24 09:00	07/08/24 14:51	1
Copper	<0.00500		0.00500	0.00180	mg/L		06/18/24 09:00	07/08/24 14:51	1
Lead	<0.000500		0.000500	0.000260	mg/L		06/18/24 09:00	07/08/24 14:51	1
Zinc	<0.0200		0.0200	0.00970	mg/L		06/18/24 09:00	07/08/24 14:51	1
Selenium	<0.00500		0.00500	0.00140	mg/L		06/18/24 09:00	07/08/24 14:51	1
Chromium	<0.00500		0.00500	0.00120	mg/L		06/18/24 09:00	07/08/24 14:51	1
Cobalt	**0.000941**		0.000500	0.000170	mg/L		06/18/24 09:00	07/08/24 14:51	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	**0.268**	**J**	0.500	0.210	mg/L		06/20/24 13:23	06/21/24 01:18	1
Halogens, Total Organic (SW846 9020B)	**126**		40.0	14.0	ug/L		06/24/24 13:59	06/25/24 07:20	1
Total Suspended Solids (USGS I-3765-85)	**6.75**		1.88	1.39	mg/L			06/19/24 11:01	1
Chemical Oxygen Demand (SM 5220D)	**69.9**		25.0	24.0	mg/L			06/19/24 10:57	5

Client Sample ID: MW-9
Date Collected: 06/13/24 15:18
Date Received: 06/14/24 17:00

Lab Sample ID: 310-283697-6
Matrix: Water

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	**6.48**		5.00	2.20	ug/L			06/18/24 09:27	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*107*		*73 - 130*		*06/18/24 09:27*	*10*
Toluene-d8 (Surr)	*102*		*80 - 120*		*06/18/24 09:27*	*10*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/18/24 09:27*	*10*

Method: Iowa DNR OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	<294		294	169	ug/L		06/20/24 08:00	06/25/24 14:12	1
Diesel	**11700**		294	74.6	ug/L		06/20/24 08:00	06/25/24 14:12	1
Motor Oil	**7760**		294	78.7	ug/L		06/20/24 08:00	06/25/24 14:12	1
Total Extractable Hydrocarbons	<490		490	74.6	ug/L		06/20/24 08:00	06/25/24 14:12	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*84*		*17 - 120*	*06/20/24 08:00*	*06/25/24 14:12*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**640**		20.0	9.00	mg/L			06/18/24 13:35	20

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0975**		0.00200	0.000530	mg/L		06/18/24 09:00	07/08/24 14:55	1
Iron	**18.1**		0.100	0.0360	mg/L		06/18/24 09:00	07/08/24 14:55	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		06/18/24 09:00	07/08/24 14:55	1
Antimony	<0.00200		0.00200	0.00100	mg/L		06/18/24 09:00	07/10/24 19:58	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		06/18/24 09:00	07/08/24 14:55	1
Barium	**0.439**		0.00200	0.000660	mg/L		06/18/24 09:00	07/08/24 14:55	1
Thallium	<0.00100	*+	0.00100	0.000570	mg/L		06/18/24 09:00	07/08/24 14:55	1
Nickel	**0.0643**		0.00500	0.00210	mg/L		06/18/24 09:00	07/08/24 14:55	1
Vanadium	**0.00441**	**J**	0.00500	0.00110	mg/L		06/18/24 09:00	07/08/24 14:55	1
Silver	<0.00100		0.00100	0.000500	mg/L		06/18/24 09:00	07/08/24 14:55	1
Copper	<0.00500		0.00500	0.00180	mg/L		06/18/24 09:00	07/08/24 14:55	1
Lead	**0.000341**	**J**	0.000500	0.000260	mg/L		06/18/24 09:00	07/08/24 14:55	1
Zinc	<0.0200		0.0200	0.00970	mg/L		06/18/24 09:00	07/08/24 14:55	1
Selenium	<0.00500		0.00500	0.00140	mg/L		06/18/24 09:00	07/08/24 14:55	1
Chromium	**0.00483**	**J**	0.00500	0.00120	mg/L		06/18/24 09:00	07/08/24 14:55	1
Cobalt	**0.00228**		0.000500	0.000170	mg/L		06/18/24 09:00	07/08/24 14:55	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	**2.89**		0.500	0.210	mg/L		06/20/24 09:22	06/20/24 22:44	1
Halogens, Total Organic (SW846 9020B)	**1560**		500	175	ug/L		06/25/24 09:56	06/25/24 19:04	1
Total Suspended Solids (USGS I-3765-85)	**50.0**		30.0	22.2	mg/L			06/19/24 11:01	1
Chemical Oxygen Demand (SM 5220D)	**1220**		250	240	mg/L			06/19/24 10:57	50

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2024 GW Sampling

Job ID: 310-283697-1

Client Sample ID: MW-23

Date Collected: 06/13/24 14:42
Date Received: 06/14/24 17:00

Lab Sample ID: 310-283697-7

Matrix: Water

Method: Iowa DNR OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	<300		300	172	ug/L		06/20/24 08:00	06/25/24 14:28	1
Diesel	**256**	**J**	300	76.1	ug/L		06/20/24 08:00	06/25/24 14:28	1
Motor Oil	<300		300	80.3	ug/L		06/20/24 08:00	06/25/24 14:28	1
Total Extractable Hydrocarbons	<500		500	76.1	ug/L		06/20/24 08:00	06/25/24 14:28	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*84*		*17 - 120*	*06/20/24 08:00*	*06/25/24 14:28*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**99.1**		10.0	4.50	mg/L			06/18/24 13:48	10

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0209**		0.00200	0.000530	mg/L		06/18/24 09:00	07/09/24 15:18	1
Iron	**59.1**		0.100	0.0360	mg/L		06/18/24 09:00	07/08/24 15:13	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		06/18/24 09:00	07/08/24 15:13	1
Antimony	<0.00200		0.00200	0.00100	mg/L		06/18/24 09:00	07/10/24 20:00	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		06/18/24 09:00	07/08/24 15:13	1
Barium	**0.304**		0.00200	0.000660	mg/L		06/18/24 09:00	07/08/24 15:13	1
Thallium	<0.00100	*+	0.00100	0.000570	mg/L		06/18/24 09:00	07/08/24 15:13	1
Nickel	**0.00347**	**J**	0.00500	0.00210	mg/L		06/18/24 09:00	07/08/24 15:13	1
Vanadium	**0.00265**	**J**	0.00500	0.00110	mg/L		06/18/24 09:00	07/08/24 15:13	1
Silver	<0.00100		0.00100	0.000500	mg/L		06/18/24 09:00	07/08/24 15:13	1
Copper	<0.00500		0.00500	0.00180	mg/L		06/18/24 09:00	07/08/24 15:13	1
Lead	**0.000270**	**J**	0.000500	0.000260	mg/L		06/18/24 09:00	07/08/24 15:13	1
Zinc	<0.0200		0.0200	0.00970	mg/L		06/18/24 09:00	07/08/24 15:13	1
Selenium	<0.00500		0.00500	0.00140	mg/L		06/18/24 09:00	07/08/24 15:13	1
Chromium	<0.00500		0.00500	0.00120	mg/L		06/18/24 09:00	07/08/24 15:13	1
Cobalt	**0.000814**		0.000500	0.000170	mg/L		06/18/24 09:00	07/08/24 15:13	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	**4.00**		0.500	0.210	mg/L		06/25/24 09:20	06/25/24 20:26	1
Halogens, Total Organic (SW846 9020B)	**88.2**		50.0	17.5	ug/L		06/25/24 09:56	06/25/24 18:24	1
Total Suspended Solids (USGS I-3765-85)	**146**		30.0	22.2	mg/L			06/19/24 11:01	1
Chemical Oxygen Demand (SM 5220D)	**119**		25.0	24.0	mg/L			06/19/24 10:57	5

Client Sample ID: MW-D
Date Collected: 06/13/24 12:46
Date Received: 06/14/24 17:00

Lab Sample ID: 310-283697-8
Matrix: Water

Method: Iowa DNR OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	<283		283	162	ug/L		06/20/24 08:00	06/25/24 14:43	1
Diesel	<283		283	71.8	ug/L		06/20/24 08:00	06/25/24 14:43	1
Motor Oil	<283		283	75.8	ug/L		06/20/24 08:00	06/25/24 14:43	1
Total Extractable Hydrocarbons	**148**	**J B Z**	472	71.8	ug/L		06/20/24 08:00	06/25/24 14:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*83*		*17 - 120*	*06/20/24 08:00*	*06/25/24 14:43*	*1*

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**158**		5.00	2.25	mg/L			06/18/24 14:26	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.0121**		0.00200	0.000530	mg/L		06/18/24 09:00	07/09/24 15:29	1
Iron	**4.83**		0.100	0.0360	mg/L		06/18/24 09:00	07/08/24 15:17	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		06/18/24 09:00	07/08/24 15:17	1
Antimony	<0.00200		0.00200	0.00100	mg/L		06/18/24 09:00	07/10/24 20:12	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		06/18/24 09:00	07/08/24 15:17	1
Barium	**0.305**		0.00200	0.000660	mg/L		06/18/24 09:00	07/08/24 15:17	1
Thallium	<0.00100	*+	0.00100	0.000570	mg/L		06/18/24 09:00	07/08/24 15:17	1
Nickel	<0.00500		0.00500	0.00210	mg/L		06/18/24 09:00	07/08/24 15:17	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		06/18/24 09:00	07/08/24 15:17	1
Silver	<0.00100		0.00100	0.000500	mg/L		06/18/24 09:00	07/08/24 15:17	1
Copper	<0.00500		0.00500	0.00180	mg/L		06/18/24 09:00	07/08/24 15:17	1
Lead	<0.000500		0.000500	0.000260	mg/L		06/18/24 09:00	07/08/24 15:17	1
Zinc	<0.0200		0.0200	0.00970	mg/L		06/18/24 09:00	07/08/24 15:17	1
Selenium	<0.00500		0.00500	0.00140	mg/L		06/18/24 09:00	07/08/24 15:17	1
Chromium	<0.00500		0.00500	0.00120	mg/L		06/18/24 09:00	07/08/24 15:17	1
Cobalt	**0.000965**		0.000500	0.000170	mg/L		06/18/24 09:00	07/08/24 15:17	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N (EPA 350.1)	**0.239**	**J**	0.500	0.210	mg/L		06/25/24 09:20	06/25/24 20:28	1
Halogens, Total Organic (SW846 9020B)	**93.6**		40.0	14.0	ug/L		06/25/24 09:56	06/26/24 07:22	1
Total Suspended Solids (USGS I-3765-85)	**12.0**		7.50	5.55	mg/L			06/19/24 11:01	1
Chemical Oxygen Demand (SM 5220D)	**29.3**		25.0	24.0	mg/L			06/19/24 10:57	5

Client: SCS Engineers
Job ID: 310-283697-1
Project/Site: Alter H22 Landfill 2024 GW Sampling

Client Sample ID: Trip Blank
Lab Sample ID: 310-283697-9
Date Collected: 06/13/24 00:00
Matrix: Water
Date Received: 06/14/24 17:00

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500	0.220	ug/L			06/18/24 03:02	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*103*		*73 - 130*		*06/18/24 03:02*	*1*
Toluene-d8 (Surr)	*103*		*80 - 120*		*06/18/24 03:02*	*1*
4-Bromofluorobenzene (Surr)	*104*		*80 - 120*		*06/18/24 03:02*	*1*

Definitions/Glossary

Client: SCS Engineers
Job ID: 310-283697-1
Project/Site: Alter H22 Landfill 2024 GW Sampling

Qualifiers

GC Semi VOA

Qualifier	Qualifier Description
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.
Z	The chromatographic response does not resemble a typical fuel pattern.

Metals

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

General Chemistry

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

Glossary

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

Surrogate Summary

Client: SCS Engineers
Project/Site: Alter H22 Landfill 2024 GW Sampling

Job ID: 310-283697-1

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)		
		DBFM	TOL	BFB
Lab Sample ID	Client Sample ID	(73-130)	(80-120)	(80-120)
310-283697-6	MW-9	107	102	103
310-283697-9	Trip Blank	103	103	104
LCS 310-424777/6	Lab Control Sample	95	103	101
MB 310-424777/5	Method Blank	102	102	103

Surrogate Legend

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

Method: OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)
		OTCN
Lab Sample ID	Client Sample ID	(17-120)
310-283697-1	MW-3	92
310-283697-2	MW-4	72
310-283697-3	MW-5	80
310-283697-4	MW-7R	82
310-283697-5	MW-8R	75
310-283697-6	MW-9	84
310-283697-7	MW-23	84
310-283697-8	MW-D	83
LCS 310-425050/2-A	Lab Control Sample	80
LCSD 310-425050/3-A	Lab Control Sample Dup	93
MB 310-425050/1-A	Method Blank	81

Surrogate Legend

OTCN = n-Octacosane

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

Lab Sample ID: MB 310-424777/5
Matrix: Water
Analysis Batch: 424777

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<0.500		0.500	0.220	ug/L			06/18/24 01:09	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Dibromofluoromethane (Surr)	*102*		*73 - 130*		*06/18/24 01:09*	*1*
Toluene-d8 (Surr)	*102*		*80 - 120*		*06/18/24 01:09*	*1*
4-Bromofluorobenzene (Surr)	*103*		*80 - 120*		*06/18/24 01:09*	*1*

Lab Sample ID: LCS 310-424777/6
Matrix: Water
Analysis Batch: 424777

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	20.0	18.18		ug/L		91	72 - 124

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Dibromofluoromethane (Surr)	*95*		*73 - 130*
Toluene-d8 (Surr)	*103*		*80 - 120*
4-Bromofluorobenzene (Surr)	*101*		*80 - 120*

Method: OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC)

Lab Sample ID: MB 310-425050/1-A
Matrix: Water
Analysis Batch: 425506

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425050

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	<300		300	172	ug/L		06/20/24 08:00	06/25/24 09:53	1
Diesel	<300		300	76.1	ug/L		06/20/24 08:00	06/25/24 09:53	1
Motor Oil	<300		300	80.3	ug/L		06/20/24 08:00	06/25/24 09:53	1
Total Extractable Hydrocarbons	174.8	J Z	500	76.1	ug/L		06/20/24 08:00	06/25/24 09:53	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
n-Octacosane	*81*		*17 - 120*	*06/20/24 08:00*	*06/25/24 09:53*	*1*

Lab Sample ID: LCS 310-425050/2-A
Matrix: Water
Analysis Batch: 425506

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425050

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Diesel	4000	3371		ug/L		84	22 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
n-Octacosane	*80*		*17 - 120*

Method: OA-2 - Iowa - Extractable Petroleum Hydrocarbons (GC) (Continued)

Lab Sample ID: LCSD 310-425050/3-A
Matrix: Water
Analysis Batch: 425506

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 425050

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Diesel			4000	4225		ug/L		106	22 - 120	22	35

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
n-Octacosane	*93*		*17 - 120*

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-424998/3
Matrix: Water
Analysis Batch: 424998

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00	0.450	mg/L			06/18/24 09:24	1

Lab Sample ID: LCS 310-424998/4
Matrix: Water
Analysis Batch: 424998

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

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride			10.0	9.343		mg/L		93	90 - 110		

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-424818/1-A
Matrix: Water
Analysis Batch: 426660

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424818

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200	0.000530	mg/L		06/18/24 09:00	07/08/24 13:51	1
Iron	<0.100		0.100	0.0360	mg/L		06/18/24 09:00	07/08/24 13:51	1
Cadmium	<0.000200		0.000200	0.000100	mg/L		06/18/24 09:00	07/08/24 13:51	1
Beryllium	<0.00100		0.00100	0.000330	mg/L		06/18/24 09:00	07/08/24 13:51	1
Barium	<0.00200		0.00200	0.000660	mg/L		06/18/24 09:00	07/08/24 13:51	1
Thallium	<0.00100		0.00100	0.000570	mg/L		06/18/24 09:00	07/08/24 13:51	1
Nickel	<0.00500		0.00500	0.00210	mg/L		06/18/24 09:00	07/08/24 13:51	1
Vanadium	<0.00500		0.00500	0.00110	mg/L		06/18/24 09:00	07/08/24 13:51	1
Silver	<0.00100		0.00100	0.000500	mg/L		06/18/24 09:00	07/08/24 13:51	1
Copper	<0.00500		0.00500	0.00180	mg/L		06/18/24 09:00	07/08/24 13:51	1
Lead	<0.000500		0.000500	0.000260	mg/L		06/18/24 09:00	07/08/24 13:51	1
Zinc	<0.0200		0.0200	0.00970	mg/L		06/18/24 09:00	07/08/24 13:51	1
Selenium	<0.00500		0.00500	0.00140	mg/L		06/18/24 09:00	07/08/24 13:51	1
Chromium	<0.00500		0.00500	0.00120	mg/L		06/18/24 09:00	07/08/24 13:51	1
Cobalt	<0.000500		0.000500	0.000170	mg/L		06/18/24 09:00	07/08/24 13:51	1

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

Lab Sample ID: MB 310-424818/1-A
Matrix: Water
Analysis Batch: 426959

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 424818

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Antimony	<0.00200		0.00200	0.00100	mg/L		06/18/24 09:00	07/10/24 19:42	1

Lab Sample ID: LCS 310-424818/2-A
Matrix: Water
Analysis Batch: 426660

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424818

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Iron	0.200	0.1640		mg/L		82	80 - 120
Beryllium	0.100	0.07986		mg/L		80	80 - 120
Thallium	0.100	0.1627	*+	mg/L		163	80 - 120
Nickel	0.200	0.1605		mg/L		80	80 - 120
Silver	0.100	0.09104		mg/L		91	80 - 120
Copper	0.200	0.1607		mg/L		80	80 - 120
Chromium	0.100	0.08045		mg/L		80	80 - 120
Cobalt	0.100	0.08126		mg/L		81	80 - 120

Lab Sample ID: LCS 310-424818/2-A
Matrix: Water
Analysis Batch: 426777

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424818

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.1780		mg/L		89	80 - 120
Cadmium	0.100	0.08399		mg/L		84	80 - 120
Barium	0.100	0.08804		mg/L		88	80 - 120
Vanadium	0.100	0.08322		mg/L		83	80 - 120
Lead	0.200	0.1784		mg/L		89	80 - 120
Selenium	0.400	0.3430		mg/L		86	80 - 120

Lab Sample ID: LCS 310-424818/2-A
Matrix: Water
Analysis Batch: 426959

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 424818

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Antimony	0.200	0.1792		mg/L		90	80 - 120

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 310-425117/1-A
Matrix: Water
Analysis Batch: 425225

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425117

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	<0.500		0.500	0.210	mg/L		06/20/24 08:26	06/20/24 21:18	1

Lab Sample ID: LCS 310-425117/2-A
Matrix: Water
Analysis Batch: 425225

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425117

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia as N	4.00	4.090		mg/L		102	90 - 110

Method: 350.1 - Nitrogen, Ammonia

Lab Sample ID: MB 310-425142/1-A
Matrix: Water
Analysis Batch: 425225

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425142

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	<0.500		0.500	0.210	mg/L		06/20/24 09:22	06/20/24 21:41	1

Lab Sample ID: LCS 310-425142/2-A
Matrix: Water
Analysis Batch: 425225

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425142

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia as N	4.00	3.910		mg/L		98	90 - 110

Lab Sample ID: MB 310-425172/1-A
Matrix: Water
Analysis Batch: 425225

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425172

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	<0.500		0.500	0.210	mg/L		06/20/24 11:28	06/20/24 23:47	1

Lab Sample ID: LCS 310-425172/2-A
Matrix: Water
Analysis Batch: 425225

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425172

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia as N	4.00	3.846		mg/L		96	90 - 110

Lab Sample ID: MB 310-425191/1-A
Matrix: Water
Analysis Batch: 425225

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425191

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	<0.500		0.500	0.210	mg/L		06/20/24 13:23	06/21/24 00:09	1

Lab Sample ID: LCS 310-425191/2-A
Matrix: Water
Analysis Batch: 425225

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425191

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia as N	4.00	3.906		mg/L		98	90 - 110

Lab Sample ID: MB 310-425542/1-A
Matrix: Water
Analysis Batch: 425646

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 425542

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia as N	<0.500		0.500	0.210	mg/L		06/25/24 09:20	06/25/24 20:14	1

Lab Sample ID: LCS 310-425542/2-A
Matrix: Water
Analysis Batch: 425646

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 425542

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Ammonia as N	4.00	3.755		mg/L		94	90 - 110

Method: 9020B - Organic Halides, Total (TOX)

Lab Sample ID: MB 680-844109/1-A
Matrix: Water
Analysis Batch: 844110

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 844109

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	<40.0		40.0	14.0	ug/L		06/24/24 13:59	06/24/24 15:40	1

Lab Sample ID: LCS 680-844109/2-A
Matrix: Water
Analysis Batch: 844110

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 844109

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
TOX Result 1	400	410.4		ug/L		103	60 - 140
TOX Result 2	400	410.4		ug/L		103	60 - 140
TOX Dup	400	410.4		ug/L		103	60 - 140

Lab Sample ID: MB 680-844218/1-A
Matrix: Water
Analysis Batch: 844252

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 844218

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Halogens, Total Organic	<40.0		40.0	14.0	ug/L		06/25/24 09:56	06/25/24 14:55	1

Lab Sample ID: LCS 680-844218/2-A
Matrix: Water
Analysis Batch: 844252

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 844218

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
TOX Result 1	400	366.8		ug/L		92	60 - 140
TOX Result 2	400	366.8		ug/L		92	60 - 140
TOX Dup	400	366.8		ug/L		92	60 - 140

Lab Sample ID: 310-283697-8 MS
Matrix: Water
Analysis Batch: 844252

Client Sample ID: MW-D
Prep Type: Total/NA
Prep Batch: 844218

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
TOX Result 1	63.4		400	507.2		ug/L		111	60 - 140
TOX Result 2	124		400	507.2		ug/L		96	60 - 140
TOX Dup	93.6		400	507.2		ug/L		103	60 - 140

Lab Sample ID: 310-283697-8 MSD
Matrix: Water
Analysis Batch: 844252

Client Sample ID: MW-D
Prep Type: Total/NA
Prep Batch: 844218

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
TOX Result 1	63.4		400	530.2		ug/L		117	60 - 140	4	40
TOX Result 2	124		400	530.2		ug/L		102	60 - 140	4	40
TOX Dup	93.6		400	530.2		ug/L		109	60 - 140	4	40

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

Lab Sample ID: MB 310-425026/1
Matrix: Water
Analysis Batch: 425026

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	3.70	mg/L			06/19/24 10:41	1

Lab Sample ID: LCS 310-425026/2
Matrix: Water
Analysis Batch: 425026

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	110.0		mg/L		110	81 - 116		

Lab Sample ID: MB 310-425032/1
Matrix: Water
Analysis Batch: 425032

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	3.70	mg/L			06/19/24 11:01	1

Lab Sample ID: LCS 310-425032/2
Matrix: Water
Analysis Batch: 425032

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	110.0		mg/L		110	81 - 116		

Lab Sample ID: 310-283697-4 DU
Matrix: Water
Analysis Batch: 425032

Client Sample ID: MW-7R
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	685			755.0		mg/L				10	35

Method: SM 5220D - COD

Lab Sample ID: MB 310-425031/32
Matrix: Water
Analysis Batch: 425031

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<5.00		5.00	4.80	mg/L			06/19/24 10:57	1

Lab Sample ID: MB 310-425031/60
Matrix: Water
Analysis Batch: 425031

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chemical Oxygen Demand	<5.00		5.00	4.80	mg/L			06/19/24 10:57	1

Method: SM 5220D - COD (Continued)

Lab Sample ID: LCS 310-425031/33
Matrix: Water
Analysis Batch: 425031

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	131.2		mg/L		105	85 - 110

Lab Sample ID: LCS 310-425031/63
Matrix: Water
Analysis Batch: 425031

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chemical Oxygen Demand	125	122.4		mg/L		98	85 - 110

QC Association Summary

Client: SCS Engineers
Job ID: 310-283697-1
Project/Site: Alter H22 Landfill 2024 GW Sampling

GC/MS VOA

Analysis Batch: 424777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-6	MW-9	Total/NA	Water	8260D	
310-283697-9	Trip Blank	Total/NA	Water	8260D	
MB 310-424777/5	Method Blank	Total/NA	Water	8260D	
LCS 310-424777/6	Lab Control Sample	Total/NA	Water	8260D	

GC Semi VOA

Prep Batch: 425050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-1	MW-3	Total/NA	Water	3510C	
310-283697-2	MW-4	Total/NA	Water	3510C	
310-283697-3	MW-5	Total/NA	Water	3510C	
310-283697-4	MW-7R	Total/NA	Water	3510C	
310-283697-5	MW-8R	Total/NA	Water	3510C	
310-283697-6	MW-9	Total/NA	Water	3510C	
310-283697-7	MW-23	Total/NA	Water	3510C	
310-283697-8	MW-D	Total/NA	Water	3510C	
MB 310-425050/1-A	Method Blank	Total/NA	Water	3510C	
LCS 310-425050/2-A	Lab Control Sample	Total/NA	Water	3510C	
LCSD 310-425050/3-A	Lab Control Sample Dup	Total/NA	Water	3510C	

Analysis Batch: 425506

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-1	MW-3	Total/NA	Water	OA-2	425050
310-283697-2	MW-4	Total/NA	Water	OA-2	425050
310-283697-3	MW-5	Total/NA	Water	OA-2	425050
310-283697-4	MW-7R	Total/NA	Water	OA-2	425050
310-283697-5	MW-8R	Total/NA	Water	OA-2	425050
310-283697-6	MW-9	Total/NA	Water	OA-2	425050
310-283697-7	MW-23	Total/NA	Water	OA-2	425050
310-283697-8	MW-D	Total/NA	Water	OA-2	425050
MB 310-425050/1-A	Method Blank	Total/NA	Water	OA-2	425050
LCS 310-425050/2-A	Lab Control Sample	Total/NA	Water	OA-2	425050
LCSD 310-425050/3-A	Lab Control Sample Dup	Total/NA	Water	OA-2	425050

HPLC/IC

Analysis Batch: 424998

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-1	MW-3	Total/NA	Water	9056A	
310-283697-2	MW-4	Total/NA	Water	9056A	
310-283697-3	MW-5	Total/NA	Water	9056A	
310-283697-4	MW-7R	Total/NA	Water	9056A	
310-283697-5	MW-8R	Total/NA	Water	9056A	
310-283697-6	MW-9	Total/NA	Water	9056A	
310-283697-7	MW-23	Total/NA	Water	9056A	
310-283697-8	MW-D	Total/NA	Water	9056A	
MB 310-424998/3	Method Blank	Total/NA	Water	9056A	
LCS 310-424998/4	Lab Control Sample	Total/NA	Water	9056A	

QC Association Summary

Client: SCS Engineers
Job ID: 310-283697-1
Project/Site: Alter H22 Landfill 2024 GW Sampling

Metals

Prep Batch: 424818

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-1	MW-3	Total/NA	Water	3005A	
310-283697-2	MW-4	Total/NA	Water	3005A	
310-283697-3	MW-5	Total/NA	Water	3005A	
310-283697-4	MW-7R	Total/NA	Water	3005A	
310-283697-5	MW-8R	Total/NA	Water	3005A	
310-283697-6	MW-9	Total/NA	Water	3005A	
310-283697-7	MW-23	Total/NA	Water	3005A	
310-283697-8	MW-D	Total/NA	Water	3005A	
MB 310-424818/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-424818/2-A	Lab Control Sample	Total/NA	Water	3005A	

Analysis Batch: 426660

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-1	MW-3	Total/NA	Water	6020B	424818
310-283697-2	MW-4	Total/NA	Water	6020B	424818
310-283697-3	MW-5	Total/NA	Water	6020B	424818
310-283697-4	MW-7R	Total/NA	Water	6020B	424818
310-283697-5	MW-8R	Total/NA	Water	6020B	424818
310-283697-6	MW-9	Total/NA	Water	6020B	424818
310-283697-7	MW-23	Total/NA	Water	6020B	424818
310-283697-8	MW-D	Total/NA	Water	6020B	424818
MB 310-424818/1-A	Method Blank	Total/NA	Water	6020B	424818
LCS 310-424818/2-A	Lab Control Sample	Total/NA	Water	6020B	424818

Analysis Batch: 426777

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-7	MW-23	Total/NA	Water	6020B	424818
310-283697-8	MW-D	Total/NA	Water	6020B	424818
LCS 310-424818/2-A	Lab Control Sample	Total/NA	Water	6020B	424818

Analysis Batch: 426959

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-1	MW-3	Total/NA	Water	6020B	424818
310-283697-2	MW-4	Total/NA	Water	6020B	424818
310-283697-3	MW-5	Total/NA	Water	6020B	424818
310-283697-4	MW-7R	Total/NA	Water	6020B	424818
310-283697-5	MW-8R	Total/NA	Water	6020B	424818
310-283697-6	MW-9	Total/NA	Water	6020B	424818
310-283697-7	MW-23	Total/NA	Water	6020B	424818
310-283697-8	MW-D	Total/NA	Water	6020B	424818
MB 310-424818/1-A	Method Blank	Total/NA	Water	6020B	424818
LCS 310-424818/2-A	Lab Control Sample	Total/NA	Water	6020B	424818

General Chemistry

Analysis Batch: 425026

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-1	MW-3	Total/NA	Water	I-3765-85	
MB 310-425026/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-425026/2	Lab Control Sample	Total/NA	Water	I-3765-85	

General Chemistry

Analysis Batch: 425031

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-1	MW-3	Total/NA	Water	SM 5220D	
310-283697-2	MW-4	Total/NA	Water	SM 5220D	
310-283697-3	MW-5	Total/NA	Water	SM 5220D	
310-283697-4	MW-7R	Total/NA	Water	SM 5220D	
310-283697-5	MW-8R	Total/NA	Water	SM 5220D	
310-283697-6	MW-9	Total/NA	Water	SM 5220D	
310-283697-7	MW-23	Total/NA	Water	SM 5220D	
310-283697-8	MW-D	Total/NA	Water	SM 5220D	
MB 310-425031/32	Method Blank	Total/NA	Water	SM 5220D	
MB 310-425031/60	Method Blank	Total/NA	Water	SM 5220D	
LCS 310-425031/33	Lab Control Sample	Total/NA	Water	SM 5220D	
LCS 310-425031/63	Lab Control Sample	Total/NA	Water	SM 5220D	

Analysis Batch: 425032

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-2	MW-4	Total/NA	Water	I-3765-85	
310-283697-3	MW-5	Total/NA	Water	I-3765-85	
310-283697-4	MW-7R	Total/NA	Water	I-3765-85	
310-283697-5	MW-8R	Total/NA	Water	I-3765-85	
310-283697-6	MW-9	Total/NA	Water	I-3765-85	
310-283697-7	MW-23	Total/NA	Water	I-3765-85	
310-283697-8	MW-D	Total/NA	Water	I-3765-85	
MB 310-425032/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-425032/2	Lab Control Sample	Total/NA	Water	I-3765-85	
310-283697-4 DU	MW-7R	Total/NA	Water	I-3765-85	

Prep Batch: 425117

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-1	MW-3	Total/NA	Water	350.1	
310-283697-3	MW-5	Total/NA	Water	350.1	
MB 310-425117/1-A	Method Blank	Total/NA	Water	350.1	
LCS 310-425117/2-A	Lab Control Sample	Total/NA	Water	350.1	

Prep Batch: 425142

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-4	MW-7R	Total/NA	Water	350.1	
310-283697-6	MW-9	Total/NA	Water	350.1	
MB 310-425142/1-A	Method Blank	Total/NA	Water	350.1	
LCS 310-425142/2-A	Lab Control Sample	Total/NA	Water	350.1	

Prep Batch: 425172

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-2	MW-4	Total/NA	Water	350.1	
MB 310-425172/1-A	Method Blank	Total/NA	Water	350.1	
LCS 310-425172/2-A	Lab Control Sample	Total/NA	Water	350.1	

Prep Batch: 425191

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-5	MW-8R	Total/NA	Water	350.1	
MB 310-425191/1-A	Method Blank	Total/NA	Water	350.1	
LCS 310-425191/2-A	Lab Control Sample	Total/NA	Water	350.1	

General Chemistry

Analysis Batch: 425225

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-1	MW-3	Total/NA	Water	350.1	425117
310-283697-2	MW-4	Total/NA	Water	350.1	425172
310-283697-3	MW-5	Total/NA	Water	350.1	425117
310-283697-4	MW-7R	Total/NA	Water	350.1	425142
310-283697-5	MW-8R	Total/NA	Water	350.1	425191
310-283697-6	MW-9	Total/NA	Water	350.1	425142
MB 310-425117/1-A	Method Blank	Total/NA	Water	350.1	425117
MB 310-425142/1-A	Method Blank	Total/NA	Water	350.1	425142
MB 310-425172/1-A	Method Blank	Total/NA	Water	350.1	425172
MB 310-425191/1-A	Method Blank	Total/NA	Water	350.1	425191
LCS 310-425117/2-A	Lab Control Sample	Total/NA	Water	350.1	425117
LCS 310-425142/2-A	Lab Control Sample	Total/NA	Water	350.1	425142
LCS 310-425172/2-A	Lab Control Sample	Total/NA	Water	350.1	425172
LCS 310-425191/2-A	Lab Control Sample	Total/NA	Water	350.1	425191

Prep Batch: 425542

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-7	MW-23	Total/NA	Water	350.1	
310-283697-8	MW-D	Total/NA	Water	350.1	
MB 310-425542/1-A	Method Blank	Total/NA	Water	350.1	
LCS 310-425542/2-A	Lab Control Sample	Total/NA	Water	350.1	

Analysis Batch: 425646

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-7	MW-23	Total/NA	Water	350.1	425542
310-283697-8	MW-D	Total/NA	Water	350.1	425542
MB 310-425542/1-A	Method Blank	Total/NA	Water	350.1	425542
LCS 310-425542/2-A	Lab Control Sample	Total/NA	Water	350.1	425542

Prep Batch: 844109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-1	MW-3	Total/NA	Water	Carbon Trap	
310-283697-2	MW-4	Total/NA	Water	Carbon Trap	
310-283697-3	MW-5	Total/NA	Water	Carbon Trap	
310-283697-4	MW-7R	Total/NA	Water	Carbon Trap	
310-283697-5	MW-8R	Total/NA	Water	Carbon Trap	
MB 680-844109/1-A	Method Blank	Total/NA	Water	Carbon Trap	
LCS 680-844109/2-A	Lab Control Sample	Total/NA	Water	Carbon Trap	

Analysis Batch: 844110

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-1	MW-3	Total/NA	Water	9020B	844109
310-283697-2	MW-4	Total/NA	Water	9020B	844109
310-283697-3	MW-5	Total/NA	Water	9020B	844109
310-283697-4	MW-7R	Total/NA	Water	9020B	844109
310-283697-5	MW-8R	Total/NA	Water	9020B	844109
MB 680-844109/1-A	Method Blank	Total/NA	Water	9020B	844109
LCS 680-844109/2-A	Lab Control Sample	Total/NA	Water	9020B	844109

QC Association Summary

Client: SCS Engineers
Job ID: 310-283697-1
Project/Site: Alter H22 Landfill 2024 GW Sampling

General Chemistry

Prep Batch: 844218

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-6	MW-9	Total/NA	Water	Carbon Trap	
310-283697-7	MW-23	Total/NA	Water	Carbon Trap	
310-283697-8	MW-D	Total/NA	Water	Carbon Trap	
MB 680-844218/1-A	Method Blank	Total/NA	Water	Carbon Trap	
LCS 680-844218/2-A	Lab Control Sample	Total/NA	Water	Carbon Trap	
310-283697-8 MS	MW-D	Total/NA	Water	Carbon Trap	
310-283697-8 MSD	MW-D	Total/NA	Water	Carbon Trap	

Analysis Batch: 844252

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-283697-6	MW-9	Total/NA	Water	9020B	844218
310-283697-7	MW-23	Total/NA	Water	9020B	844218
310-283697-8	MW-D	Total/NA	Water	9020B	844218
MB 680-844218/1-A	Method Blank	Total/NA	Water	9020B	844218
LCS 680-844218/2-A	Lab Control Sample	Total/NA	Water	9020B	844218
310-283697-8 MS	MW-D	Total/NA	Water	9020B	844218
310-283697-8 MSD	MW-D	Total/NA	Water	9020B	844218

Lab Chronicle

Client: SCS Engineers
Job ID: 310-283697-1
Project/Site: Alter H22 Landfill 2024 GW Sampling

Client Sample ID: MW-3
Lab Sample ID: 310-283697-1
Date Collected: 06/13/24 11:31
Matrix: Water
Date Received: 06/14/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			425050	C3AA	EET CF	06/20/24 08:00
Total/NA	Analysis	OA-2		1	425506	V7YZ	EET CF	06/25/24 12:59
Total/NA	Analysis	9056A		5	424998	QTZ5	EET CF	06/18/24 16:24
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426660	NFT2	EET CF	07/08/24 14:37
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426959	NFT2	EET CF	07/10/24 19:47
Total/NA	Prep	350.1			425117	MQ8M	EET CF	06/20/24 08:26
Total/NA	Analysis	350.1		1	425225	ZJX4	EET CF	06/20/24 21:36
Total/NA	Prep	Carbon Trap			844109	CLJ	EET SAV	06/24/24 13:59
Total/NA	Analysis	9020B		1	844110	CLJ	EET SAV	06/24/24 17:43
Total/NA	Analysis	I-3765-85		1	425026	HE7K	EET CF	06/19/24 10:41
Total/NA	Analysis	SM 5220D		5	425031	ENB7	EET CF	06/19/24 10:57

Client Sample ID: MW-4
Lab Sample ID: 310-283697-2
Date Collected: 06/13/24 12:46
Matrix: Water
Date Received: 06/14/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			425050	C3AA	EET CF	06/20/24 08:00
Total/NA	Analysis	OA-2		1	425506	V7YZ	EET CF	06/25/24 13:11
Total/NA	Analysis	9056A		5	424998	QTZ5	EET CF	06/18/24 12:45
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426660	NFT2	EET CF	07/08/24 14:41
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426959	NFT2	EET CF	07/10/24 19:49
Total/NA	Prep	350.1			425172	MQ8M	EET CF	06/20/24 11:28
Total/NA	Analysis	350.1		1	425225	ZJX4	EET CF	06/21/24 00:08
Total/NA	Prep	Carbon Trap			844109	CLJ	EET SAV	06/24/24 13:59
Total/NA	Analysis	9020B		1	844110	CLJ	EET SAV	06/24/24 19:11
Total/NA	Analysis	I-3765-85		1	425032	HE7K	EET CF	06/19/24 11:01
Total/NA	Analysis	SM 5220D		5	425031	ENB7	EET CF	06/19/24 10:57

Client Sample ID: MW-5
Lab Sample ID: 310-283697-3
Date Collected: 06/13/24 12:10
Matrix: Water
Date Received: 06/14/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			425050	C3AA	EET CF	06/20/24 08:00
Total/NA	Analysis	OA-2		1	425506	V7YZ	EET CF	06/25/24 13:26
Total/NA	Analysis	9056A		10	424998	QTZ5	EET CF	06/18/24 12:58
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426660	NFT2	EET CF	07/08/24 14:44

Lab Chronicle

Client: SCS Engineers
Job ID: 310-283697-1
Project/Site: Alter H22 Landfill 2024 GW Sampling

Client Sample ID: MW-5
Lab Sample ID: 310-283697-3
Date Collected: 06/13/24 12:10
Matrix: Water
Date Received: 06/14/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426959	NFT2	EET CF	07/10/24 19:51
Total/NA	Prep	350.1			425117	MQ8M	EET CF	06/20/24 08:26
Total/NA	Analysis	350.1		1	425225	ZJX4	EET CF	06/20/24 21:37
Total/NA	Prep	Carbon Trap			844109	CLJ	EET SAV	06/24/24 13:59
Total/NA	Analysis	9020B		1	844110	CLJ	EET SAV	06/24/24 20:02
Total/NA	Analysis	I-3765-85		1	425032	HE7K	EET CF	06/19/24 11:01
Total/NA	Analysis	SM 5220D		5	425031	ENB7	EET CF	06/19/24 10:57

Client Sample ID: MW-7R
Lab Sample ID: 310-283697-4
Date Collected: 06/13/24 13:58
Matrix: Water
Date Received: 06/14/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			425050	C3AA	EET CF	06/20/24 08:00
Total/NA	Analysis	OA-2		1	425506	V7YZ	EET CF	06/25/24 13:42
Total/NA	Analysis	9056A		5	424998	QTZ5	EET CF	06/18/24 13:10
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426660	NFT2	EET CF	07/08/24 14:48
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426959	NFT2	EET CF	07/10/24 19:54
Total/NA	Prep	350.1			425142	MQ8M	EET CF	06/20/24 09:22
Total/NA	Analysis	350.1		1	425225	ZJX4	EET CF	06/20/24 22:44
Total/NA	Prep	Carbon Trap			844109	CLJ	EET SAV	06/24/24 13:59
Total/NA	Analysis	9020B		1	844110	CLJ	EET SAV	06/25/24 06:34
Total/NA	Analysis	I-3765-85		1	425032	HE7K	EET CF	06/19/24 11:01
Total/NA	Analysis	SM 5220D		5	425031	ENB7	EET CF	06/19/24 10:57

Client Sample ID: MW-8R
Lab Sample ID: 310-283697-5
Date Collected: 06/13/24 16:03
Matrix: Water
Date Received: 06/14/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			425050	C3AA	EET CF	06/20/24 08:00
Total/NA	Analysis	OA-2		1	425506	V7YZ	EET CF	06/25/24 13:56
Total/NA	Analysis	9056A		5	424998	QTZ5	EET CF	06/18/24 13:23
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426660	NFT2	EET CF	07/08/24 14:51
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426959	NFT2	EET CF	07/10/24 19:56
Total/NA	Prep	350.1			425191	MQ8M	EET CF	06/20/24 13:23
Total/NA	Analysis	350.1		1	425225	ZJX4	EET CF	06/21/24 01:18
Total/NA	Prep	Carbon Trap			844109	CLJ	EET SAV	06/24/24 13:59
Total/NA	Analysis	9020B		1	844110	CLJ	EET SAV	06/25/24 07:20

Lab Chronicle

Client: SCS Engineers
Job ID: 310-283697-1
Project/Site: Alter H22 Landfill 2024 GW Sampling

Client Sample ID: MW-8R
Lab Sample ID: 310-283697-5
Date Collected: 06/13/24 16:03
Matrix: Water
Date Received: 06/14/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	I-3765-85		1	425032	HE7K	EET CF	06/19/24 11:01
Total/NA	Analysis	SM 5220D		5	425031	ENB7	EET CF	06/19/24 10:57

Client Sample ID: MW-9
Lab Sample ID: 310-283697-6
Date Collected: 06/13/24 15:18
Matrix: Water
Date Received: 06/14/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		10	424777	FE5V	EET CF	06/18/24 09:27
Total/NA	Prep	3510C			425050	C3AA	EET CF	06/20/24 08:00
Total/NA	Analysis	OA-2		1	425506	V7YZ	EET CF	06/25/24 14:12
Total/NA	Analysis	9056A		20	424998	QTZ5	EET CF	06/18/24 13:35
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426660	NFT2	EET CF	07/08/24 14:55
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426959	NFT2	EET CF	07/10/24 19:58
Total/NA	Prep	350.1			425142	MQ8M	EET CF	06/20/24 09:22
Total/NA	Analysis	350.1		1	425225	ZJX4	EET CF	06/20/24 22:44
Total/NA	Prep	Carbon Trap			844218	CLJ	EET SAV	06/25/24 09:56
Total/NA	Analysis	9020B		1	844252	CLJ	EET SAV	06/25/24 19:04
Total/NA	Analysis	I-3765-85		1	425032	HE7K	EET CF	06/19/24 11:01
Total/NA	Analysis	SM 5220D		50	425031	ENB7	EET CF	06/19/24 10:57

Client Sample ID: MW-23
Lab Sample ID: 310-283697-7
Date Collected: 06/13/24 14:42
Matrix: Water
Date Received: 06/14/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			425050	C3AA	EET CF	06/20/24 08:00
Total/NA	Analysis	OA-2		1	425506	V7YZ	EET CF	06/25/24 14:28
Total/NA	Analysis	9056A		10	424998	QTZ5	EET CF	06/18/24 13:48
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426660	NFT2	EET CF	07/08/24 15:13
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426777	NFT2	EET CF	07/09/24 15:18
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426959	NFT2	EET CF	07/10/24 20:00
Total/NA	Prep	350.1			425542	MQ8M	EET CF	06/25/24 09:20
Total/NA	Analysis	350.1		1	425646	ZJX4	EET CF	06/25/24 20:26
Total/NA	Prep	Carbon Trap			844218	CLJ	EET SAV	06/25/24 09:56
Total/NA	Analysis	9020B		1	844252	CLJ	EET SAV	06/25/24 18:24
Total/NA	Analysis	I-3765-85		1	425032	HE7K	EET CF	06/19/24 11:01
Total/NA	Analysis	SM 5220D		5	425031	ENB7	EET CF	06/19/24 10:57

Lab Chronicle

Client: SCS Engineers
Job ID: 310-283697-1
Project/Site: Alter H22 Landfill 2024 GW Sampling

Client Sample ID: MW-D
Lab Sample ID: 310-283697-8
Date Collected: 06/13/24 12:46
Matrix: Water
Date Received: 06/14/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3510C			425050	C3AA	EET CF	06/20/24 08:00
Total/NA	Analysis	OA-2		1	425506	V7YZ	EET CF	06/25/24 14:43
Total/NA	Analysis	9056A		5	424998	QTZ5	EET CF	06/18/24 14:26
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426660	NFT2	EET CF	07/08/24 15:17
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426777	NFT2	EET CF	07/09/24 15:29
Total/NA	Prep	3005A			424818	DHM5	EET CF	06/18/24 09:00
Total/NA	Analysis	6020B		1	426959	NFT2	EET CF	07/10/24 20:12
Total/NA	Prep	350.1			425542	MQ8M	EET CF	06/25/24 09:20
Total/NA	Analysis	350.1		1	425646	ZJX4	EET CF	06/25/24 20:28
Total/NA	Prep	Carbon Trap			844218	CLJ	EET SAV	06/25/24 09:56
Total/NA	Analysis	9020B		1	844252	CLJ	EET SAV	06/26/24 07:22
Total/NA	Analysis	I-3765-85		1	425032	HE7K	EET CF	06/19/24 11:01
Total/NA	Analysis	SM 5220D		5	425031	ENB7	EET CF	06/19/24 10:57

Client Sample ID: Trip Blank
Lab Sample ID: 310-283697-9
Date Collected: 06/13/24 00:00
Matrix: Water
Date Received: 06/14/24 17:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	424777	FE5V	EET CF	06/18/24 03:02

Laboratory References:
EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

Accreditation/Certification Summary

Client: SCS Engineers
Job ID: 310-283697-1
Project/Site: Alter H22 Landfill 2024 GW Sampling

Laboratory: Eurofins Cedar Falls

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

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

Laboratory: Eurofins Savannah

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

Authority	Program	Identification Number	Expiration Date
Iowa	State	353	07-01-25

Method Summary

Client: SCS Engineers
Job ID: 310-283697-1
Project/Site: Alter H22 Landfill 2024 GW Sampling

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET CF
OA-2	Iowa - Extractable Petroleum Hydrocarbons (GC)	Iowa DNR	EET CF
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
350.1	Nitrogen, Ammonia	EPA	EET CF
9020B	Organic Halides, Total (TOX)	SW846	EET SAV
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 5220D	COD	SM	EET CF
3005A	Preparation, Total Metals	SW846	EET CF
350.1	Distillation, Ammonia	EPA	EET CF
3510C	Liquid-Liquid Extraction (Separatory Funnel)	SW846	EET CF
5030B	Purge and Trap	SW846	EET CF
Carbon Trap	Carbon Trap Preparation	EPA-17	EET SAV

Protocol References:

EPA = US Environmental Protection Agency
EPA-17 = "Method 1650, Revision A, Adsorbable Organic Halides By Adsorption And Colormetric Titration," EPA, February 1992
Iowa DNR = Iowa Department of Natural Resources
SM = "Standard Methods For The Examination Of Water And Wastewater"
SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.
USGS = "Methods For Analysis Of Water And Fluvial Sediments", USGS, 1989

Laboratory References:

EET CF = Eurofins Cedar Falls, 3019 Venture Way, Cedar Falls, IA 50613, TEL (319)277-2401
EET SAV = Eurofins Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

eurofins | Environment Testing America

310-283697 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information			
Client. SCS			
City/State: CITY		STATE	Project:
Receipt Information			
Date/Time Received:	DATE 6 14-24	TIME 1700	Received By: MY

Delivery Type: ☐ UPS ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers			
Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 1 of 2
Cooler Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present? No	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☒ Yes	☐ No	*If yes:* Which VOA samples are in cooler? ↓

MW-9

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: R	Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 6.8	Corrected Temp (°C): 6.8

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:	Plastic 250 Nitric	9
Uncorrected Temp (°C):	12.9	11.4
Corrected Temp (°C):	12.9	11.4

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g., bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding If no, proceed with login

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: SCS

City/State: CITY | STATE | Project:

Receipt Information

Date/Time Received: DATE 6.14.24 | TIME 1700 | Received By: MM

Delivery Type: ~~☒ UPS~~ ☐ FedEx ☐ FedEx Ground ☐ US Mail ☐ Spee-Dee
☒ Lab Courier ☐ Lab Field Services ☐ Client Drop-off ☐ Other:_____

Condition of Cooler/Containers

Sample(s) received in Cooler?	☒ Yes	☐ No	*If yes:* Cooler ID:
Multiple Coolers?	☒ Yes	☐ No	*If yes:* Cooler # 2 of 2
Cooler Custody Seals Present?	☐ Yes	☒ No	*If yes:* Cooler custody seals intact? ☐ Yes ☐ No
Sample Custody Seals Present?	☐ Yes	☒ No	*If yes:* Sample custody seals intact? ☐ Yes ☐ No
Trip Blank Present?	☐ Yes	☒ No	*If yes:* Which VOA samples are in cooler? ↓

Temperature Record

Coolant: ☒ Wet ice ☐ Blue ice ☐ Dry ice ☐ Other:_____ ☐ NONE

Thermometer ID: R | Correction Factor (°C): 0

• **Temp Blank Temperature** – If no temp blank, or temp blank temperature above criteria, proceed to Sample Container Temperature

Uncorrected Temp (°C): 10.1 | Corrected Temp (°C): 10.1

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:	Plastic 250 Mitic →	→
Uncorrected Temp (°C):	12.5	11.6
Corrected Temp (°C):	12.5	11.6

Exceptions Noted

1) If temperature exceeds criteria, was sample(s) received same day of sampling? ☐ Yes ☐ No
   a) *If yes:* Is there evidence that the chilling process began? ☐ Yes ☐ No

2) If temperature is <0°C, are there obvious signs that the integrity of sample containers is compromised? (e.g , bulging septa, broken/cracked bottles, frozen solid?) ☐ Yes ☐ No

NOTE If yes, contact PM before proceeding. If no, proceed with login

Additional Comments

Eurofins TestAmerica, Cedar Falls
3019 Venture Way

Cedar Falls IA 50613-6907
phone 319.277.2401 fax 319.277.2425

Chain of Custody Record

eurofins

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Groundwater**

TestAmerica Laboratories Inc. d/b/a Eurofins TestAmerica

Client Contact	**Project Manager:**	**Site Contact:**	**Date**	COC No
Kevin Jensen - SCS Engineers	Email:	**Lab Contact:**	**Carrier:**	1 of 2 COCs
1690 All-State Court, Suite 100	**Analysis Turnaround Time**			Sampler:
West Des Moines, Iowa 50265	☐ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
515-631-6154	Other:			Walk-in Client:
kjensen@scsengineers.com	☐ 2 weeks			Lab Sampling
Project Name: Alter H22 Landfill 2024 GW Sampling	☐ 1 week			
Site: Alter Highway 22 Monofill	☐ 2 days			Job / SDG No
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Chloride	Ammonia-Nitrogen	Chemical Oxygen Demand	Total Organic Halogens	Total Iron	Total Arsenic	Total Suspended Solids	Benzene	Sample Specific Notes
MW-3	6/13/24	1131	G	w	7			X	X	X	X	X	X	X		
MW-4	6/13/24	1246	G		7			X	X	X	X	X	X	X		
MW-5	6/13/24	1210	G		7			X	X	X	X	X	X	X		
MW 7R	6/13/24	1356	G		7			X	X	X	X	X	X	X		
MW-8R	6/13/24	1603	G		7			X	X	X	X	X	X	X		
MW-9	6/13/24	1518	G		10			X	X	X	X	X	X	X	X	
MW-23	6/13/24	1442	G		7			X	X	X	X	X	X	X		
MW-D	6/13/24	1246	G	↓	7			X	X	X	X	X	X	X		
Trip Blank			G												X	

Preservation Used: 1= Ice, 2= HCl, 3= H_2SO_4, 4=HNO_3; 5=NaOH, 6= Other _____

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

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

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

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No.	Cooler Temp (°C) Obs'd._____ Corr'd._____	Therm ID No. _____

Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time:
Tyler Stirling	SCS	6/14/24 1400			
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company:	Date/Time:
					6/14/24 1700

Form No. CA-C-WI-002, Rev 4.23, dated 4/16/2019

Eurofins TestAmerica, Cedar Falls
3019 Venture Way

Cedar Falls IA 50613-6907
phone 319.277.2401 fax 319.277.2425

Chain of Custody Record

eurofins

Regulatory Program ☐ DW ☐ NPDES ☐ RCRA ☑ Other: **Groundwater**

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

Client Contact	Project Manager:	Site Contact:	Date	COC No
Kevin Jensen - SCS Engineers	Email:	Lab Contact:	Carrier:	2 of 2 COCs
1690 All-State Court, Suite 100	Cell			Sampler:
West Des Moines Iowa 50265	Analysis Turnaround Time: ☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only: Walk-in Client:
515-631-6154	Other:			Lab Sampling
kjensen@scsengineers.com	☐ 2 weeks			
Project Name: Alter H22 Landfill 2024 GW Sampling	☐ 1 week			Job / SDG No.
Site: Alter Highway 22 Monofill	☐ 2 days			
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	Total Antimony	Total Barium	Total Beryllium	Total Cadmium	Total Chromium	Total Cobalt	Total Copper	Total Lead	Total Nickel	Total Selenium	Total Silver	Total Thallium	Total Vanadium	Total Zinc	Total Extractable Hydrocarbons (OA-2)	Sample Specific Notes
MW-3	6/13/24	1131	G	W	7			X	X	X	X	X	X	X	X	X	X	X	X	X	X		
MW-4	6/13/24	1246	G		7			X	X	X	X	X	X	X	X	X	X	X	X	X	X		
MW-5	6/13/24	1210	G		7			X	X	X	X	X	X	X	X	X	X	X	X	X	X		
MW 7R	6/13/24	1356	G		7			X	X	X	X	X	X	X	X	X	X	X	X	X	X		
MW-8R	6/13/24	1603	G		7			X	X	X	X	X	X	X	X	X	X	X	X	X	X		
MW-9	6/13/24	1516	G		10			X	X	X	X	X	X	X	X	X	X	X	X	X	X		
MW-23	6/13/24	1442	G		7			X	X	X	X	X	X	X	X	X	X	X	X	X	X		
MW-D	6/13/24	1246	G	V	7			X	X	X	X	X	X	X	X	X	X	X	X	X	X		

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

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

☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

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

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No | Cooler Temp (°C) Obs'd._____ Corr'd:_____ Therm ID No._____

Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time:
Tyler Stirling	SCS	6/14/24 1400			
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time:
Relinquished by:	Company:	Date/Time	Received in Laboratory by:	Company:	Date/Time: 6/14/24 1700

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls, IA 50613
Phone: 319-277-2401 Fax: 319-277-2425

Chain of Custody Record

eurofins | Environment Testing

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Yang, Mary E	Carrier Tracking No(s):	COC No: 310-73511.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: Mary.Yang@ET.EurofinsUS.com	State of Origin: Iowa	Page: Page 1 of 1
Company: Eurofins Environment Testing Southeast L		Accreditations Required (See note): State - Iowa; State Program - Iowa		Job #: 310-283697-1
Address: 5102 LaRoche Avenue,	Due Date Requested: 6/27/2024	Analysis Requested		Preservation Codes: -
City: Savannah	TAT Requested (days):			
State, Zip: GA, 31404				
Phone: 912-354-7858(Tel) 912-352-0165(Fax)	PO #:			
Email:	WO #:			
Project Name: Alter H22 Landfill 2024 GW Sampling	Project #: 31002934			Other:
Site: 310-SCS Council Bluffs ASR Monofill	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	9020B/Carbon_Trap (MOD) Local Method	Total Number of containers	Special Instructions/Note:
			Preservation Code:						
MW-3 (310-283697-1)	6/13/24	11:31 Central		Water			X	2	
MW-4 (310-283697-2)	6/13/24	12:46 Central		Water			X	2	
MW-5 (310-283697-3)	6/13/24	12:10 Central		Water			X	2	
MW-7R (310-283697-4)	6/13/24	13:58 Central		Water			X	2	
MW-8R (310-283697-5)	6/13/24	16:03 Central		Water			X	2	
MW-9 (310-283697-6)	6/13/24	15:18 Central		Water			X	2	
MW-23 (310-283697-7)	6/13/24	14:42 Central		Water			X	2	
MW-D (310-283697-8)	6/13/24	12:46 Central		Water			X	2	

Note: Since laboratory accreditations are subject to change, Eurofins Environment Testing North Central, LLC places the ownership of method, analyte & accreditation compliance upon our subcontract laboratories. This sample shipment is forwarded under chain-of-custody. If the laboratory does not currently maintain accreditation in the State of Origin listed above for analysis/tests/matrix being analyzed, the samples must be shipped back to the Eurofins Environment Testing North Central, LLC laboratory or other instructions will be provided. Any changes to accreditation status should be brought to Eurofins Environment Testing North Central, LLC attention immediately. If all requested accreditations are current to date, return the signed Chain of Custody attesting to said compliance to Eurofins Environment Testing North Central, LLC.

Possible Hazard Identification	*Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)*
Unconfirmed	☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Deliverable Requested: I, II, III, IV, Other (specify) Primary Deliverable Rank: 2	Special Instructions/QC Requirements:
Empty Kit Relinquished by:	Date: Time: Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
	6/14/24 1230				
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
				6/18/24 1030	EUROFINS

Custody Seals Intact: Δ Yes Δ No	Custody Seal No.:	Cooler Temperature(s) °C and Other Remarks:
		1.8/1.9

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-283697-1
SDG Number:

Login Number: 283697
List Number: 1
Creator: Homolar, Dana J

List Source: Eurofins Cedar Falls

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

Login Sample Receipt Checklist

Client: SCS Engineers

Job Number: 310-283697-1
SDG Number:

Login Number: 283697
List Number: 2
Creator: Munro, Caroline

List Source: Eurofins Savannah
List Creation: 06/18/24 12:58 PM

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

Appendix B-2

Data Validation

Completed by: Semir Omerovic
Lab Report Date: 7/15/2024
Site Name: Alter Highway 22 Monofil
Lab Report Number: 310-283697-1

	OK	NO	N/A	NOTES
Sample Collection and Sample Handling				
Chain of Custody	X			
Temperature		X		The following samples were received at the laboratory outside the required temperature criteria: MW-3, MW-4, MW-5, MW-7R, MW-8R, MW-9, MW-23, MW-D, and Trip Blank. It should be noted that wet ice was present in the cooler.
Preservation	X			Method 6020B: The reference method requires samples to be preserved to a pH of <2. The following sample was received with insufficient preservation at a pH of >2: MW-9. The sample(s) was preserved to the appropriate pH in the laboratory.
Condition	X			
Reporting Limits		X		Method 8260D: The following volatiles sample was diluted due to foaming at the time of purging during the original sample analysis: MW-9. Elevated reporting limits (RLs) are provided.
Case Narrative	X			
Holding Times	X			
Analytical Sensitivty and Blanks				
Method Blank Detections	X			
Trip Blank Detections	X			No Detections
Accuracy				
ICV/CCV	X			
LCS/LCSD	X			Method 6020B: The laboratory control sample (LCS) for 310-426660 recovered outside control limits for the following analytes: Thallium. The analytes were biased high in the LCS and were not detected in the associated samples; therefore, the data have been reported.
MS/MSD	X			
Surrogates (organics only)	X			
Precision				
QA/QC Sample RPDs	X			
Field Duplicates	X			The duplicate was collected from MW-4 during the 2024 event. All parameters had <50% relative difference. Constituents with J flag concentrations were not considered fro duplicate sample comparisons.

Appendix C

Summary of Groundwater Chemistry

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Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Total Metals Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Antimony, mg/L (CAS NO - 7440-36-0)	6/8/2023	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	0.00167*	< 0.002
	6/8/2023	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	6/13/2024	N/A	< 0.002	N/A	N/A	N/A	N/A	N/A
Arsenic, mg/L (CAS NO - 7440-38-2)	3/28/2017	**0.00308**	**0.0656**	**0.00205**	N/A	N/A	**0.0644**	N/A
	8/24/2017	0.00139*	**0.0588**	< 0.002	N/A	N/A	**0.0754**	N/A
	5/2/2018	0.000926*	**0.0418**	0.000795*	N/A	N/A	**0.149**	N/A
	8/21/2018	0.00105*	**0.00802**	< 0.002	N/A	N/A	**0.0692**	N/A
	9/11/2019	**0.00289**	**0.0138**	< 0.002	N/A	N/A	**0.0831**	N/A
	3/4/2020	< 0.002	**0.0345**	< 0.002	N/A	N/A	**0.0551**	N/A
	6/2/2021	< 0.002	**0.0742**	< 0.002	N/A	N/A	**0.0711**	N/A
	7/13/2022	**0.00241**	**0.206**	< 0.002	N/A	N/A	N/A	N/A
	8/18/2022	N/A	N/A	N/A	N/A	N/A	**0.0934**	N/A
	6/8/2023	0.000675*	**0.0188**	< 0.002	0.000889*	0.000794*	**0.0824**	**0.0336**
	6/8/2023	N/A	**0.00935**	N/A	N/A	N/A	N/A	N/A
	6/13/2024	**0.00443**	**0.0121**	< 0.002	0.000918*	0.000642*	**0.0975**	**0.0209**
	6/13/2024	N/A	**0.0196**	N/A	N/A	N/A	N/A	N/A
Barium, mg/L (CAS NO - 7440-39-3)	6/8/2023	**0.177**	**0.312**	**0.163**	**0.0986**	**0.147**	**0.457**	**0.37**
	6/8/2023	N/A	**0.307**	N/A	N/A	N/A	N/A	N/A
	6/13/2024	**0.177**	**0.305**	**0.16**	**0.0812**	**0.129**	**0.439**	**0.304**
	6/13/2024	N/A	**0.307**	N/A	N/A	N/A	N/A	N/A
Beryllium, mg/L (CAS NO - 7440-41-7)	6/8/2023	< 0.001	< 0.001	< 0.001	0.000762*	< 0.001	< 0.001	< 0.001
	6/8/2023	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	6/13/2024	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A
Cadmium, mg/L (CAS NO - 7440-43-9)	6/8/2023	< 0.0002	< 0.0002	< 0.0002	**0.000653**	< 0.0002	< 0.0002	< 0.0002
	6/8/2023	N/A	< 0.0002	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.0002	< 0.0002	< 0.0002	**0.000206**	0.000109*	< 0.0002	< 0.0002
	6/13/2024	N/A	< 0.0002	N/A	N/A	N/A	N/A	N/A
Chromium, mg/L (CAS NO - 7440-47-3)	6/8/2023	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	**0.00501**	< 0.005
	6/8/2023	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00483*	< 0.005
	6/13/2024	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
Cobalt, mg/L (CAS NO - 7440-48-4)	6/8/2023	**0.00169**	**0.000981**	< 0.0005	**0.00182**	**0.00119**	**0.00295**	**0.000572**
	6/8/2023	N/A	**0.000971**	N/A	N/A	N/A	N/A	N/A
	6/13/2024	**0.0024**	**0.000965**	< 0.0005	**0.00258**	**0.000941**	**0.00228**	**0.000814**
	6/13/2024	N/A	**0.00093**	N/A	N/A	N/A	N/A	N/A
Copper, mg/L (CAS NO - 7440-50-8)	6/8/2023	< 0.005	< 0.005	< 0.005	**0.0136**	< 0.005	< 0.005	< 0.005
	6/8/2023	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.005	< 0.005	< 0.005	**0.00832**	< 0.005	< 0.005	< 0.005
	6/13/2024	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
Iron, mg/L (CAS NO - 7439-89-6)	3/28/2017	**4.53**	**14.5**	**26.9**	**0.414**	**2.27**	**18**	**64.1**
	3/28/2017	N/A	N/A	N/A	N/A	N/A	N/A	**69.3**
	8/24/2017	**0.955**	**9.91**	**6.39**	**0.359**	**2.35**	**12.3**	**55.4**
	5/2/2018	**0.645**	**21.9**	**3.88**	**0.686**	**5.37**	**22.2**	**67.9**
	5/2/2018	N/A	N/A	N/A	0.403*	N/A	N/A	N/A
	8/21/2018	**0.572**	**3.34**	**1.29**	0.224*	**2.19**	**9.56**	**48.2**
	8/21/2018	N/A	**3.07**	N/A	N/A	N/A	N/A	N/A
	9/11/2019	**2.07**	**4.29**	**2.25**	**0.538**	**3.99**	**6.3**	**56.2**
	9/11/2019	N/A	**3.91**	N/A	N/A	N/A	N/A	N/A
	3/4/2020	0.339*	**16.4**	**0.864**	**0.692**	**1.66**	**9.12**	**66.2**
	3/4/2020	N/A	N/A	**0.503**	N/A	N/A	N/A	N/A
	6/2/2021	**0.931**	**20.5**	**0.651**	**2.25**	**0.268**	**14.1**	**61.5**
	6/2/2021	N/A	**8.93**	N/A	N/A	N/A	N/A	N/A
	7/13/2022	**2.28**	**121**	< 0.5	**8.53**	**0.533**	N/A	**64.4**
	7/13/2022	N/A	**70.5**	N/A	N/A	N/A	N/A	N/A
	8/18/2022	N/A	N/A	N/A	N/A	N/A	**19.8**	N/A
	6/8/2023	**0.515**	**4.44**	**0.121**	**2.2**	**0.432**	**20.8**	**66.4**
	6/8/2023	N/A	**6.39**	N/A	N/A	N/A	N/A	N/A
	6/13/2024	**2.35**	**4.83**	**0.931**	**1.68**	**0.388**	**18.1**	**59.1**
	6/13/2024	N/A	**6.44**	N/A	N/A	N/A	N/A	N/A

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Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Total Metals Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Lead, mg/L (CAS NO - 7439-92-1)	6/8/2023	< 0.0005	< 0.0005	< 0.0005	**0.00221**	< 0.0005	0.000423*	< 0.0005
	6/8/2023	N/A	< 0.0005	N/A	N/A	N/A	N/A	N/A
	6/13/2024	**0.00264**	< 0.0005	< 0.0005	**0.00183**	< 0.0005	0.000341*	0.00027*
	6/13/2024	N/A	0.000289*	N/A	N/A	N/A	N/A	N/A
Nickel, mg/L (CAS NO - 7440-02-0)	6/8/2023	< 0.005	< 0.005	< 0.005	**0.00916**	0.00416*	**0.0715**	< 0.005
	6/8/2023	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.005	< 0.005	< 0.005	**0.0155**	**0.0057**	**0.0643**	0.00347*
	6/13/2024	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
Selenium, mg/L (CAS NO - 7782-49-2)	6/8/2023	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00155*	< 0.005
	6/8/2023	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005
	6/13/2024	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
Silver, mg/L (CAS NO - 7440-22-4)	6/8/2023	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	6/8/2023	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	6/13/2024	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A
Thallium, mg/L (CAS NO - 7440-28-0)	6/8/2023	**0.00468**	< 0.001	0.000688*	0.000288*	< 0.001	< 0.001	< 0.001
	6/8/2023	N/A	**0.00631**	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001	< 0.001
	6/13/2024	N/A	< 0.001	N/A	N/A	N/A	N/A	N/A
Vanadium, mg/L (CAS NO - 7440-62-2)	6/8/2023	< 0.005	< 0.005	< 0.005	0.00148*	< 0.005	0.0043*	0.00177*
	6/8/2023	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.005	< 0.005	< 0.005	< 0.005	< 0.005	0.00441*	0.00265*
	6/13/2024	N/A	< 0.005	N/A	N/A	N/A	N/A	N/A
Zinc, mg/L (CAS NO - 7440-66-6)	6/8/2023	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	6/8/2023	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02	< 0.02
	6/13/2024	N/A	< 0.02	N/A	N/A	N/A	N/A	N/A
Total Suspended Solids, mg/L (CAS NO - TSS)	6/13/2024	**4.5**	**12**	**7**	**685**	**6.75**	**50**	**146**
	6/13/2024	N/A	**10.7**	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

Alter Highway 22 Monofill (82-SDP-04-89C)

Appendix I VOC Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Benzene, ug/L (CAS NO - 71-43-2)	4/1/2003	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	9/1/2003	N/A	N/A	N/A	N/A	N/A	**10**	N/A
	4/1/2004	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	10/1/2004	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	4/1/2005	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	10/1/2005	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	4/1/2006	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	9/1/2006	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	4/1/2007	N/A	N/A	N/A	N/A	N/A	**3**	N/A
	10/1/2007	20000	N/A	N/A	N/A	N/A	< 2.5	N/A
	4/1/2008	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	10/1/2008	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	4/1/2009	N/A	N/A	N/A	N/A	N/A	< 0.5	N/A
	10/1/2009	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	4/1/2010	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	10/1/2010	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	10/1/2011	N/A	N/A	N/A	N/A	N/A	< 12.5	N/A
	4/26/2012	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	9/27/2012	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	4/10/2013	N/A	N/A	N/A	N/A	N/A	**1.44**	N/A
	10/24/2013	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	10/21/2014	N/A	N/A	N/A	< 0.5	< 0.5	1.1*	< 0.5
	3/25/2015	N/A	N/A	N/A	< 0.5	< 0.5	N/A	< 0.5
	4/28/2015	N/A	N/A	N/A	< 0.5	< 0.5	2.72*	< 0.5
	8/24/2015	N/A	N/A	N/A	< 0.5	< 0.5	N/A	< 0.5
	10/8/2015	N/A	N/A	N/A	< 0.5	< 0.5	2.85*	< 0.5
	4/8/2016	N/A	N/A	N/A	N/A	N/A	2.85*	N/A
	8/30/2016	N/A	N/A	N/A	N/A	N/A	3.46*	N/A
	3/28/2017	N/A	N/A	N/A	N/A	N/A	**3.34**	N/A
	8/24/2017	N/A	N/A	N/A	N/A	N/A	2.06*	N/A
	5/2/2018	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	8/21/2018	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	9/11/2019	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	3/4/2020	N/A	N/A	N/A	N/A	N/A	< 5	N/A
	6/2/2021	N/A	N/A	N/A	N/A	N/A	**1.15**	N/A
	8/18/2022	N/A	N/A	N/A	N/A	N/A	**2.95**	N/A
	6/8/2023	N/A	N/A	N/A	N/A	N/A	4.7*	N/A
	6/13/2024	N/A	N/A	N/A	N/A	N/A	**6.48**	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

Alter Highway 22 Monofill (82-SDP-04-89C)

Other Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Nitrogen, Ammonia, mg/L (CAS NO - 7664-41-7)	7/1/1991	N/A	< 0.2	< 0.2	N/A	N/A	**0.9**	N/A
	11/1/1991	< 0.2	< 0.2	< 0.2	N/A	N/A	**0.9**	N/A
	1/1/1992	< 0.2	< 0.2	< 0.2	N/A	N/A	**18**	N/A
	4/1/1992	< 0.2	< 0.2	< 0.2	N/A	N/A	**2.2**	N/A
	10/1/1992	< 0.2	< 0.2	< 0.2	N/A	N/A	**0.55**	N/A
	5/1/1993	< 0.2	< 0.2	**0.23**	N/A	N/A	**0.94**	N/A
	10/1/1993	< 0.2	**0.56**	**0.37**	N/A	N/A	**0.43**	N/A
	4/1/1994	**0.32**	< 0.2	**0.2**	N/A	N/A	**1**	N/A
	10/1/1994	< 0.2	< 0.2	< 0.2	N/A	N/A	**0.37**	N/A
	5/1/1995	N/A	< 0.2	**0.2**	N/A	N/A	**1.4**	N/A
	9/1/1995	**0.36**	< 0.2	**0.25**	N/A	N/A	**2**	N/A
	4/1/1996	< 0.2	< 0.2	**0.24**	N/A	N/A	**12**	N/A
	10/1/1996	**0.27**	N/A	N/A	N/A	N/A	**1.1**	N/A
	10/1/1997	< 0.2	< 0.2	**0.35**	N/A	N/A	**1.3**	N/A
	5/1/1998	< 0.2	< 0.2	< 0.2	N/A	N/A	**0.64**	N/A
	10/1/1998	< 0.2	< 0.2	**0.22**	N/A	N/A	**1.7**	N/A
	4/1/1999	< 0.2	< 0.2	**0.2**	N/A	N/A	**1.4**	N/A
	10/1/1999	**0.23**	< 0.2	**0.34**	N/A	N/A	**0.66**	N/A
	4/1/2000	**0.2**	< 0.2	**0.37**	N/A	N/A	**1.55**	N/A
	10/1/2000	< 0.2	< 0.2	**0.24**	N/A	N/A	**1.61**	N/A
	4/1/2001	< 0.2	< 0.2	< 0.2	N/A	N/A	**0.82**	N/A
	10/1/2001	< 0.2	< 0.2	< 0.2	N/A	N/A	**1.29**	N/A
	4/1/2002	< 0.2	< 0.2	**0.21**	N/A	N/A	**1.28**	N/A
	10/1/2002	< 0.2	< 0.2	< 0.2	N/A	N/A	**1.4**	N/A
	4/1/2003	< 0.2	< 0.2	**0.25**	N/A	N/A	**1.26**	N/A
	9/1/2003	**0.39**	< 0.2	**0.32**	N/A	N/A	**3.03**	N/A
	4/1/2004	< 0.2	< 0.2	**0.25**	N/A	N/A	**1.54**	N/A
	10/1/2004	< 0.2	< 0.2	< 0.2	N/A	N/A	< 0.2	N/A
	4/1/2005	< 0.2	< 0.2	**0.28**	N/A	N/A	**1.37**	N/A
	10/1/2005	N/A	< 0.2	< 0.2	N/A	N/A	**1.79**	N/A
	4/1/2006	< 0.2	< 0.2	**0.29**	N/A	N/A	**3.03**	N/A
	9/1/2006	**0.55**	< 0.2	**0.32**	N/A	N/A	**2.06**	N/A
	4/1/2007	< 0.2	< 0.2	**0.219**	N/A	N/A	**1.6**	N/A
	10/1/2007	**0.31**	< 0.2	**0.33**	N/A	N/A	**0.21**	N/A
	4/1/2008	< 0.2	< 0.2	**0.328**	N/A	N/A	**1.59**	N/A
	10/1/2008	< 0.2	< 0.2	< 0.2	N/A	N/A	**1.08**	N/A
	4/1/2009	< 0.2	< 0.2	**0.232**	N/A	N/A	**1.41**	N/A
	10/1/2009	< 0.2	< 0.2	**0.268**	N/A	N/A	**1.8**	N/A
	4/1/2010	< 0.2	< 0.2	< 0.2	N/A	N/A	**1.48**	N/A
	10/1/2010	< 0.2	< 0.2	< 0.2	N/A	N/A	**1.4**	N/A
	4/1/2011	< 0.2	< 0.2	**0.23**	N/A	N/A	N/A	N/A
	10/1/2011	**0.276**	< 0.2	**0.256**	N/A	N/A	**1.63**	N/A
	4/26/2012	< 0.2	< 0.2	< 0.2	N/A	N/A	**1.45**	N/A
	9/27/2012	N/A	< 0.2	**0.336**	N/A	N/A	**1.63**	N/A
	4/10/2013	< 0.2	< 0.2	< 0.2	N/A	N/A	**1.11**	N/A
	10/24/2013	N/A	**0.131**	**0.309**	N/A	N/A	**2.08**	N/A
	10/21/2014	0.152*	**0.201**	0.089*	0.1*	0.083*	**1.22**	**1.23**
	10/21/2014	N/A	N/A	**0.332**	N/A	N/A	N/A	N/A
	3/25/2015	N/A	N/A	N/A	**0.22**	< 0.2	N/A	**1.13**
	4/28/2015	0.102*	**0.2**	**0.401**	< 0.2	< 0.2	**0.853**	**1.1**
	8/24/2015	N/A	N/A	N/A	< 0.2	**0.223**	N/A	**1.2**
	10/8/2015	0.086*	0.154*	**0.474**	< 0.2	0.089*	**1.63**	**1.15**
	4/8/2016	< 0.2	0.174*	**0.363**	< 0.2	< 0.2	**1.57**	**1.41**
	4/8/2016	N/A	N/A	N/A	< 0.2	N/A	N/A	N/A
	8/30/2016	0.109*	0.186*	**0.291**	< 0.2	< 0.2	**2.06**	**1.52**
	8/30/2016	N/A	N/A	N/A	N/A	< 0.2	N/A	N/A
	3/28/2017	**0.511**	0.142*	< 0.2	< 0.2	< 0.2	**1.24**	**1.36**
	3/28/2017	N/A	N/A	N/A	N/A	N/A	N/A	**1.47**
	8/24/2017	**0.677**	0.177*	**0.3**	< 0.2	< 0.2	**1.48**	**1.42**

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Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Other Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Nitrogen, Ammonia, mg/L (CAS NO - 7664-41-7)	5/2/2018	0.163*	< 0.2	< 0.2	< 0.2	< 0.2	**1.31**	**1.26**
	5/2/2018	N/A	N/A	N/A	< 0.2	N/A	N/A	N/A
	8/21/2018	**0.215**	0.176*	< 0.2	< 0.2	< 0.2	**1.57**	**1.41**
	8/21/2018	N/A	**0.215**	N/A	N/A	N/A	N/A	N/A
	9/11/2019	**0.63**	0.151*	0.173*	< 0.2	< 0.2	**1.38**	**2**
	9/11/2019	N/A	0.135*	N/A	N/A	N/A	N/A	N/A
	3/4/2020	0.127*	0.118*	< 0.2	< 0.2	< 0.2	**1.38**	**1.57**
	3/4/2020	N/A	N/A	< 0.2	N/A	N/A	N/A	N/A
	6/2/2021	**0.596**	0.181*	< 0.2	< 0.2	< 0.2	**1.66**	**2.01**
	6/2/2021	N/A	0.171*	N/A	N/A	N/A	N/A	N/A
	7/13/2022	**0.469**	**0.515**	< 0.2	0.122*	< 0.2	N/A	**3.39**
	7/13/2022	N/A	**0.311**	N/A	N/A	N/A	N/A	N/A
	8/18/2022	N/A	N/A	N/A	N/A	N/A	**2.59**	N/A
	6/8/2023	**0.614**	**0.233**	< 0.2	< 0.2	0.101*	**3.28**	**3.71**
	6/8/2023	N/A	**0.3**	N/A	N/A	N/A	N/A	N/A
	6/13/2024	**0.909**	0.216*	< 0.5	0.329*	0.268*	**2.89**	**4**
	6/13/2024	N/A	0.239*	N/A	N/A	N/A	N/A	N/A
Chemical Oxygen Demand, mg/L (CAS NO - COD)	7/1/1991	N/A	**19**	**13**	N/A	N/A	**920**	N/A
	11/1/1991	**10**	**8**	**16**	N/A	N/A	**1000**	N/A
	1/1/1992	**12**	< 5	**12**	N/A	N/A	**1200**	N/A
	4/1/1992	**5**	**10**	< 5	N/A	N/A	**1200**	N/A
	10/1/1992	< 5	< 5	< 5	N/A	N/A	**1400**	N/A
	5/1/1993	**13**	**19**	**11**	N/A	N/A	**1200**	N/A
	10/1/1993	**29**	**11**	**8**	N/A	N/A	**870**	N/A
	4/1/1994	**19**	**6.3**	**7.7**	N/A	N/A	**1000**	N/A
	10/1/1994	**5.2**	< 5	< 5	N/A	N/A	**1100**	N/A
	5/1/1995	N/A	< 5	< 5	N/A	N/A	**1000**	N/A
	9/1/1995	< 5	< 5	< 5	N/A	N/A	**1500**	N/A
	4/1/1996	< 5	**7.6**	< 5	N/A	N/A	**1300**	N/A
	10/1/1996	**15**	N/A	N/A	N/A	N/A	**1600**	N/A
	10/1/1997	< 5	**28**	< 5	N/A	N/A	**700**	N/A
	5/1/1998	**11**	**15**	< 5	N/A	N/A	**910**	N/A
	10/1/1998	< 5	**16**	< 5	N/A	N/A	**60**	N/A
	4/1/1999	< 5	**5.3**	< 5	N/A	N/A	**1200**	N/A
	10/1/1999	< 5	< 5	**5.8**	N/A	N/A	**1300**	N/A
	4/1/2000	**5**	**6.1**	**5**	N/A	N/A	**1300**	N/A
	10/1/2000	< 5	< 5	< 5	N/A	N/A	**1400**	N/A
	4/1/2001	< 5	**7.3**	< 5	N/A	N/A	N/A	N/A
	10/1/2001	**6.2**	**7.2**	< 5	N/A	N/A	**640**	N/A
	4/1/2002	**9.8**	**5.7**	**17**	N/A	N/A	**900**	N/A
	10/1/2002	**10**	**13**	**9.4**	N/A	N/A	**840**	N/A
	4/1/2003	**5.3**	< 5	**5.8**	N/A	N/A	**1100**	N/A
	9/1/2003	< 5	< 5	< 5	N/A	N/A	**1190**	N/A
	4/1/2004	**8.1**	**6.4**	< 5	N/A	N/A	**1320**	N/A
	10/1/2004	< 5	< 5	< 5	N/A	N/A	**830**	N/A
	4/1/2005	< 5	< 5	< 5	N/A	N/A	**1100**	N/A
	10/1/2005	N/A	< 5	< 5	N/A	N/A	**1240**	N/A
	4/1/2006	< 5	**6.7**	**6.5**	N/A	N/A	**1240**	N/A
	9/1/2006	< 5	< 5	< 5	N/A	N/A	**1470**	N/A
	4/1/2007	**13.8**	**9.4**	**6.9**	N/A	N/A	**951**	N/A
	10/1/2007	N/A	**5.6**	< 5	N/A	N/A	**1260**	N/A
	4/1/2008	**9.3**	**9.5**	< 5	N/A	N/A	**1220**	N/A
	10/1/2008	**8.6**	**8**	**5**	N/A	N/A	**742**	N/A
	4/1/2009	< 5	< 5	< 5	N/A	N/A	**496**	N/A
	10/1/2009	**5.3**	< 5	< 5	N/A	N/A	N/A	N/A
	4/1/2010	**5.8**	< 5	< 5	N/A	N/A	**1160**	N/A
	10/1/2010	**13.4**	**9.1**	**7**	N/A	N/A	**714**	N/A
	4/1/2011	**6.1**	**23.2**	**8.4**	N/A	N/A	N/A	N/A
	10/1/2011	< 5	< 5	< 5	N/A	N/A	**1460**	N/A
	4/26/2012	< 5	< 5	< 5	N/A	N/A	**869**	N/A
	9/27/2012	N/A	**6**	< 5	N/A	N/A	**772**	N/A
	4/10/2013	**6.9**	**5.9**	< 5	N/A	N/A	**753**	N/A
	10/24/2013	N/A	< 5	< 5	N/A	N/A	**343**	N/A

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Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Other Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Chemical Oxygen Demand, mg/L (CAS NO - COD)	10/21/2014	11.2	3.5*	8.2	120	29.5	356	71.9
	10/21/2014	N/A	N/A	< 5	N/A	N/A	N/A	N/A
	3/25/2015	N/A	N/A	N/A	115	19.8	N/A	47.6
	4/28/2015	33.7	20.7	< 5	102	16.5	885	42.7
	8/24/2015	N/A	N/A	N/A	37.2	110	N/A	45.4
	10/8/2015	8.08	9.11	13.9	117	24.2	985	43.1
	4/8/2016	6.22	11.1	4.61*	93.8	112	938	77.1
	4/8/2016	N/A	N/A	N/A	91.6	N/A	N/A	N/A
	8/30/2016	12.9	10.9	8.17	103	14.3	83.8	75.7
	8/30/2016	N/A	N/A	N/A	N/A	21.3	N/A	N/A
	3/28/2017	< 5	< 5	< 5	77.8	15.4	693	56.9
	3/28/2017	N/A	N/A	N/A	N/A	N/A	N/A	54.7
	8/24/2017	16.3	32.5	38	112	43.4	601	68.8
	5/2/2018	< 5	< 5	< 5	86.8	13.9	484	63.6
	5/2/2018	N/A	N/A	N/A	90.6	N/A	N/A	N/A
	8/21/2018	< 5	< 5	< 5	71.3	20.9	462	56.1
	8/21/2018	N/A	< 5	N/A	N/A	N/A	N/A	N/A
	9/11/2019	11.4	10.1	< 10	87.8	23.2	267	62.6
	9/11/2019	N/A	10.1	N/A	N/A	N/A	N/A	N/A
	3/4/2020	4.87*	4.87*	< 5	68.4	20	312	63.8
	3/4/2020	N/A	N/A	< 5	N/A	N/A	N/A	N/A
	6/2/2021	< 5	6.02	< 10	69.7	22.6	387	67.3
	6/2/2021	N/A	10.6	N/A	N/A	N/A	N/A	N/A
	7/13/2022	11.2	15	10.9	57.7	17.3	N/A	72
	7/13/2022	N/A	7.8	N/A	N/A	N/A	N/A	N/A
	8/18/2022	N/A	N/A	N/A	N/A	N/A	493	N/A
	6/8/2023	< 5	< 5	< 10	54.2	< 10	1160	85.9
	6/8/2023	N/A	< 10	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 25	27.7	48.8	112	69.9	1220	119
	6/13/2024	N/A	29.3	N/A	N/A	N/A	N/A	N/A
Chloride, mg/L (CAS NO - 16887-00-6)	7/1/1991	N/A	51	83	N/A	N/A	1000	N/A
	11/1/1991	110	47	82	N/A	N/A	1000	N/A
	1/1/1992	100	53	88	N/A	N/A	1100	N/A
	4/1/1992	92	44	89	N/A	N/A	930	N/A
	10/1/1992	79	51	85	N/A	N/A	1100	N/A
	5/1/1993	67	53	90	N/A	N/A	1300	N/A
	10/1/1993	70	55	90	N/A	N/A	1200	N/A
	4/1/1994	73	61	90	N/A	N/A	1000	N/A
	10/1/1994	63	56	86	N/A	N/A	780	N/A
	5/1/1995	N/A	64	95	N/A	N/A	760	N/A
	9/1/1995	66	63	92	N/A	N/A	1100	N/A
	4/1/1996	84	72	98	N/A	N/A	810	N/A
	10/1/1996	67	N/A	N/A	N/A	N/A	1200	N/A
	10/1/1997	76	66	130	N/A	N/A	450	N/A
	5/1/1998	61	69	100	N/A	N/A	530	N/A
	10/1/1998	100	70	110	N/A	N/A	630	N/A
	4/1/1999	63	74	120	N/A	N/A	650	N/A
	10/1/1999	73	80	120	N/A	N/A	700	N/A
	4/1/2000	61.3	81	111	N/A	N/A	907	N/A
	10/1/2000	117	94.3	136	N/A	N/A	1470	N/A
	4/1/2001	79.7	96.6	126	N/A	N/A	946	N/A
	10/1/2001	150	96	120	N/A	N/A	110	N/A
	4/1/2002	88.1	92.8	110	N/A	N/A	584	N/A
	10/1/2002	106	101	115	N/A	N/A	777	N/A
	4/1/2003	101	95.8	107	N/A	N/A	741	N/A
	9/1/2003	93.5	107	116	N/A	N/A	800	N/A
	4/1/2004	130	109	114	N/A	N/A	863	N/A
	10/1/2004	126	113	105	N/A	N/A	966	N/A
	4/1/2005	165	133	111	N/A	N/A	688	N/A
	10/1/2005	N/A	136	109	N/A	N/A	788	N/A

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Other Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Chloride, mg/L (CAS NO - 16887-00-6)	4/1/2006	184	147	109	N/A	N/A	861	N/A
	9/1/2006	103	157	106	N/A	N/A	943	N/A
	4/1/2007	204	162	106	N/A	N/A	821	N/A
	10/1/2007	< 0.1	166	99.9	N/A	N/A	861	N/A
	4/1/2008	243	184	106	N/A	N/A	730	N/A
	10/1/2008	284	185	106	N/A	N/A	514	N/A
	4/1/2009	185	211	107	N/A	N/A	747	N/A
	10/1/2009	120	194	111	N/A	N/A	379	N/A
	4/1/2010	123	232	107	N/A	N/A	616	N/A
	10/1/2010	98.4	235	111	N/A	N/A	595	N/A
	4/1/2011	181	222	109	N/A	N/A	N/A	N/A
	10/1/2011	126	234	122	N/A	N/A	704	N/A
	4/26/2012	134	218	106	N/A	N/A	465	N/A
	9/27/2012	N/A	232	109	N/A	N/A	475	N/A
	4/10/2013	189	213	106	N/A	N/A	454	N/A
	10/24/2013	N/A	217	113	N/A	N/A	406	N/A
	10/21/2014	232	185	115	105	175	277	132
	10/21/2014	N/A	N/A	107	N/A	N/A	N/A	N/A
	3/25/2015	N/A	N/A	N/A	64.3	237	N/A	145
	4/28/2015	218	199	167	64	237	469	146
	8/24/2015	N/A	N/A	N/A	46.2	174	N/A	171
	10/8/2015	186	192	189	55.9	163	532	145
	4/8/2016	150	188	207	45.8	153	483	217
	4/8/2016	N/A	N/A	N/A	48.9	N/A	N/A	N/A
	8/30/2016	136	177	223	46.9	100	586	230
	8/30/2016	N/A	N/A	N/A	N/A	98.5	N/A	N/A
	3/28/2017	171	225	236	90.9	164	478	211
	3/28/2017	N/A	N/A	N/A	N/A	N/A	N/A	214
	8/24/2017	154	207	211	56.8	146	276	168
	5/2/2018	150	196	204	66.4	123	242	192
	5/2/2018	N/A	N/A	N/A	67.5	N/A	N/A	N/A
	8/21/2018	151	185	200	70.6	163	242	162
	8/21/2018	N/A	187	N/A	N/A	N/A	N/A	N/A
	9/11/2019	148	175	185	51.4	143	131	96.4
	9/11/2019	N/A	174	N/A	N/A	N/A	N/A	N/A
	3/4/2020	150	169	182	41.1	162	185	71
	3/4/2020	N/A	N/A	189	N/A	N/A	N/A	N/A
	6/2/2021	146	161	158	24.8	153	228	83.5
	6/2/2021	N/A	163	N/A	N/A	N/A	N/A	N/A
	7/13/2022	149	144	129	23	206	N/A	88.3
	7/13/2022	N/A	146	N/A	N/A	N/A	N/A	N/A
	8/18/2022	N/A	N/A	N/A	N/A	N/A	654	N/A
	6/8/2023	150	159	61.5	23.7	209	171	51.8
	6/8/2023	N/A	158	N/A	N/A	N/A	N/A	N/A
	6/13/2024	141	156	113	30.9	181	640	99.1
	6/13/2024	N/A	158	N/A	N/A	N/A	N/A	N/A
pH, S.U. (CAS NO - PH)	7/1/1991	N/A	7.3	7.1	N/A	N/A	6.8	N/A
	11/1/1991	6.8	7.2	6.9	N/A	N/A	6.7	N/A
	1/1/1992	6.9	6.9	6.9	N/A	N/A	6.5	N/A
	4/1/1992	7	6.8	6.8	N/A	N/A	6.9	N/A
	10/1/1992	7.5	7.6	8.1	N/A	N/A	6.9	N/A
	5/1/1993	7	7	7	N/A	N/A	N/A	N/A
	4/1/1994	7.4	7.5	8.2	N/A	N/A	7.2	N/A
	10/1/1994	7.4	7.7	7.5	N/A	N/A	6.9	N/A
	5/1/1995	7.8	7.7	7.7	N/A	N/A	6.8	N/A
	9/1/1995	7.5	7.5	7.6	N/A	N/A	7	N/A
	1/1/1996	6.98	N/A	N/A	N/A	N/A	N/A	N/A
	4/1/1996	7.1	7.6	7.32	N/A	N/A	6.88	N/A
	10/1/1996	7.05	N/A	N/A	N/A	N/A	6.74	N/A

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Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Other Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
pH, S.U. (CAS NO - PH)	10/1/1997	6.9	7.02	7.01	N/A	N/A	6.76	N/A
	10/1/1998	7.3	7.2	7.2	N/A	N/A	6.9	N/A
	4/1/1999	7.15	7.37	7.52	N/A	N/A	7.08	N/A
	10/1/1999	6.91	7.08	7.07	N/A	N/A	6.73	N/A
	4/1/2000	7.01	7.01	6.99	N/A	N/A	7.06	N/A
	10/1/2000	6.89	7.05	7.13	N/A	N/A	6.7	N/A
	4/1/2001	6.81	6.85	6.83	N/A	N/A	6.76	N/A
	10/1/2001	6.96	7.1	7.14	N/A	N/A	6.98	N/A
	4/1/2002	6.61	7.24	7.34	N/A	N/A	6.88	N/A
	10/1/2002	6.95	7.02	7.13	N/A	N/A	6.89	N/A
	4/1/2003	7.09	7.22	7.11	N/A	N/A	7.28	N/A
	9/1/2003	6.64	7.3	6.98	N/A	N/A	6.94	N/A
	4/1/2004	7.13	7.35	7.35	N/A	N/A	6.85	N/A
	10/1/2004	6.38	6.65	6.41	N/A	N/A	6	N/A
	4/1/2005	6.84	7.17	7.64	N/A	N/A	6.78	N/A
	10/1/2005	N/A	7.03	7.38	N/A	N/A	7.01	N/A
	4/1/2006	7.02	7.38	7.17	N/A	N/A	6.95	N/A
	9/1/2006	7.78	7.35	7.54	N/A	N/A	7.31	N/A
	4/1/2007	7.03	7.26	7.21	N/A	N/A	6.38	N/A
	10/1/2007	16.44	7.11	7.15	N/A	N/A	6.67	N/A
	4/1/2008	7.28	7.52	7.49	N/A	N/A	6.96	N/A
	10/1/2008	7.08	7.37	7.45	N/A	N/A	7.18	N/A
	4/1/2009	7.1	7.5	7.38	N/A	N/A	6.9	N/A
	10/1/2009	N/A	12.8	N/A	N/A	N/A	6.99	N/A
	4/1/2010	6.51	7.23	7.74	N/A	N/A	7.59	N/A
	10/1/2010	6.98	7.26	7.24	N/A	N/A	6.88	N/A
	4/1/2011	7.1	7.22	7.54	N/A	N/A	N/A	N/A
	10/1/2011	7.5	7.26	8.05	N/A	N/A	6.99	N/A
	4/26/2012	6.62	6.74	7.7	N/A	N/A	6.75	N/A
	9/27/2012	N/A	7.8	7.9	N/A	N/A	7.93	N/A
	4/10/2013	7.95	7.8	7.99	N/A	N/A	8	N/A
	10/24/2013	N/A	7.8	7.95	N/A	N/A	8.1	N/A
	10/21/2014	8.51	8.73	8.91	8.35	9.05	8.2	9.75
	3/25/2015	N/A	N/A	N/A	7.83	7.8	N/A	7.4
	4/28/2015	7.17	7.32	7.09	7.47	7.15	7.631	6.81
	8/24/2015	N/A	N/A	N/A	7.45	7.13	N/A	7.35
	10/8/2015	7.29	7.48	7.31	7.43	7.08	7.33	7
	4/8/2016	7.25	7.32	7.25	7.34	7.29	7.13	6.73
	8/30/2016	7.11	7.26	7.18	7.31	6.85	6.99	6.9
	3/28/2017	7.08	7.28	7.47	7.35	6.99	7.23	6.79
	8/24/2017	7.01	7.17	7.48	7.21	7.19	7.17	6.71
	5/2/2018	7.52	7.95	7.74	7.61	7.01	7.36	6.7
	8/21/2018	7.44	7.58	7.52	7.35	7.41	7.32	7.4
	9/11/2019	7.03	7.22	7.51	7.07	6.74	7.38	6.67
	3/4/2020	6.89	7.06	7.66	7.02	6.78	7.24	6.56
	6/2/2021	6.84	7.07	7.23	7.14	6.7	7.13	6.56
	7/13/2022	6.57	6.87	7.2	7.05	6.6	N/A	6.42
	8/18/2022	N/A	N/A	N/A	N/A	N/A	6.83	N/A
	6/8/2023	7.13	7.37	7.8	7.35	6.95	7.09	6.82
	6/13/2024	6.69	6.93	7.26	6.96	6.67	6.79	6.42
Specific Conductance, umhos/cm (CAS NO - SC)	7/1/1991	N/A	840	860	N/A	N/A	N/A	N/A
	11/1/1991	800	610	670	N/A	N/A	N/A	N/A
	1/1/1992	820	610	670	N/A	N/A	N/A	N/A
	4/1/1992	1100	820	870	N/A	N/A	N/A	N/A
	10/1/1992	1200	1000	910	N/A	N/A	N/A	N/A
	5/1/1993	1100	900	1000	N/A	N/A	N/A	N/A
	4/1/1994	700	N/A	N/A	N/A	N/A	N/A	N/A
	10/1/1994	1000	900	800	N/A	N/A	N/A	N/A
	5/1/1995	600	700	700	N/A	N/A	N/A	N/A
	9/1/1995	1120	1070	1080	N/A	N/A	N/A	N/A
	1/1/1996	1040	N/A	N/A	N/A	N/A	N/A	N/A
	4/1/1996	1050	1020	960	N/A	N/A	N/A	N/A
	10/1/1996	1060	N/A	N/A	N/A	N/A	N/A	N/A
	10/1/1997	1080	980	970	N/A	N/A	N/A	N/A
	5/1/1998	800	900	900	N/A	N/A	N/A	N/A

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Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Other Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Specific Conductance, umhos/cm (CAS NO - SC)	10/1/1998	2250	1450	2050	N/A	N/A	N/A	N/A
	4/1/1999	1140	1240	1260	N/A	N/A	N/A	N/A
	10/1/1999	1120	1090	1100	N/A	N/A	N/A	N/A
	4/1/2000	1050	1035	1110	N/A	N/A	N/A	N/A
	10/1/2000	1120	1000	1160	N/A	N/A	10	N/A
	4/1/2001	1050	1140	1110	N/A	N/A	N/A	N/A
	10/1/2001	1030	1060	1010	N/A	N/A	N/A	N/A
	4/1/2002	1040	1120	10.8	N/A	N/A	4060	N/A
	10/1/2002	1370	1240	1130	N/A	N/A	4640	N/A
	4/1/2003	1590	1170	1110	N/A	N/A	5610	N/A
	9/1/2003	1210	1160	1120	N/A	N/A	4660	N/A
	4/1/2004	1270	1080	1010	N/A	N/A	5560	N/A
	10/1/2004	1220	1050	980	N/A	N/A	4480	N/A
	4/1/2005	1240	1190	1000	N/A	N/A	5020	N/A
	10/1/2005	N/A	1340	1120	N/A	N/A	5760	N/A
	4/1/2006	1440	1340	1113	N/A	N/A	6130	N/A
	9/1/2006	10.61	1510	1060	N/A	N/A	6900	N/A
	4/1/2007	1080	970	780	N/A	N/A	5640	N/A
	10/1/2007	N/A	1240	980	N/A	N/A	5170	N/A
	4/1/2008	1620	1440	1120	N/A	N/A	5450	N/A
	10/1/2008	1650	1310	1010	N/A	N/A	4230	N/A
	4/1/2009	1250	1350	1020	N/A	N/A	5070	N/A
	10/1/2009	1010	N/A	900	N/A	N/A	2910	N/A
	4/1/2010	950	1190	740	N/A	N/A	3450	N/A
	10/1/2010	1070	1430	990	N/A	N/A	3870	N/A
	4/1/2011	220	1940	1070	N/A	N/A	N/A	N/A
	10/1/2011	1200	1550	1080	N/A	N/A	6120	N/A
	4/26/2012	1226	1527	970	N/A	N/A	5610	N/A
	9/27/2012	N/A	1450	1010	N/A	N/A	4960	N/A
	4/10/2013	1015	1430	1020	N/A	N/A	500	N/A
	10/24/2013	N/A	1423	1015	N/A	N/A	499	N/A
	10/21/2014	1550	1454	1100	1020	1750	800	1623
	3/25/2015	N/A	N/A	N/A	2656	1739	N/A	1765
	4/28/2015	1289	1317	1234	2366	1559	2640	1772
	8/24/2015	N/A	N/A	N/A	2314	1331	N/A	1636
	10/8/2015	1183	1215	1168	2360	1384	1874	1562
	4/8/2016	1217	1498	1458	2223	1305	4936	2660
	8/30/2016	1276	1457	1593	2635	1390	5948	2444
	3/28/2017	999	1113	1047	1586	1027	3559	2033
	8/24/2017	1382	1514	1367	2677	2481	3387	2455
	5/2/2018	1523	1586	1337	2422	1013	3322	2727
	8/21/2018	1423	1394	1216	1857	1583	3179	2092
	9/11/2019	1132.6	1200	1132.4	2233.5	1601.8	2212.1	1906.8
	3/4/2020	1354	1367	1216	1984	1642	2988	2341
	6/2/2021	1330.1	1328.7	1192	1747.9	1499.3	3162.4	2201.5
	7/13/2022	1257	1258.2	1043	1612	1621.4	N/A	2001.3
	8/18/2022	N/A	N/A	N/A	N/A	N/A	5097.6	N/A
	6/8/2023	1246.4	1250.4	1023.3	1579.8	1427.7	5226.9	2014.3
	6/13/2024	1492.7	1510.1	1163.4	2383.4	1722.3	6028.9	2320.7
Total Organic Halogens, mg/L (CAS NO - TOX)	7/1/1991	N/A	0.09	0.01	N/A	N/A	0.06	N/A
	11/1/1991	N/A	0.1	N/A	N/A	N/A	N/A	N/A
	1/1/1992	N/A	0.11	N/A	N/A	N/A	N/A	N/A
	4/1/1992	N/A	0.12	N/A	N/A	N/A	N/A	N/A
	10/1/1992	< 0.01	0.13	0.03	N/A	N/A	0.02	N/A
	5/1/1993	N/A	0.14	N/A	N/A	N/A	N/A	N/A
	10/1/1993	0.01	0.15	< 0.01	N/A	N/A	0.42	N/A
	4/1/1994	0.03	0.16	0.02	N/A	N/A	N/A	N/A
	10/1/1994	N/A	0.17	N/A	N/A	N/A	1.26	N/A
	9/1/1995	< 0.01	< 0.01	< 0.01	N/A	N/A	0.74	N/A
	10/1/1996	0.02	N/A	N/A	N/A	N/A	2.06	N/A
	10/1/1997	< 0.01	< 0.01	< 0.01	N/A	N/A	0.73	N/A
	10/1/1998	0.02	< 0.01	< 0.01	N/A	N/A	1.68	N/A
	10/1/1999	< 0.01	< 0.01	< 0.01	N/A	N/A	1.51	N/A
	10/1/2000	0.03	< 0.01	0.02	N/A	N/A	0.82	N/A
	10/1/2001	0.02	< 0.01	< 0.01	N/A	N/A	0.64	N/A

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Summary of Groundwater Chemistry

Alter Highway 22 Monofill (82-SDP-04-89C)

Other Constituents	Sample Date	MW-3 UPG	MW-4 UPG	MW-5 UPG	MW-7R DNG	MW-8R DNG	MW-9 DNG	MW-23 DNG
Total Organic Halogens, mg/L (CAS NO - TOX)	10/1/2002	**0.05**	**0.03**	**0.02**	N/A	N/A	**1.3**	N/A
	9/1/2003	**0.03**	< 0.01	< 0.01	N/A	N/A	**1.32**	N/A
	10/1/2004	**0.04**	**0.02**	**0.02**	N/A	N/A	**1.3**	N/A
	4/1/2005	N/A	N/A	< 0.01	N/A	N/A	N/A	N/A
	10/1/2005	N/A	< 0.01	< 0.01	N/A	N/A	**1.57**	N/A
	4/1/2006	N/A	N/A	N/A	N/A	N/A	**1.68**	N/A
	9/1/2006	**0.1**	**0.01**	< 0.01	N/A	N/A	**1.74**	N/A
	10/1/2007	6.88	< 0.01	< 0.01	N/A	N/A	**1.58**	N/A
	10/1/2008	**0.0264**	< 0.01	< 0.01	N/A	N/A	**0.728**	N/A
	10/1/2009	**0.0219**	N/A	< 0.01	N/A	N/A	**0.962**	N/A
	10/1/2010	**0.0238**	**0.0197**	**0.0238**	N/A	N/A	**6.82**	N/A
	10/1/2011	**0.0125**	**0.0105**	< 0.01	N/A	N/A	**1.48**	N/A
	9/27/2012	N/A	**0.584**	**0.019**	N/A	N/A	**0.682**	N/A
	10/24/2013	N/A	**0.125**	**0.0206**	N/A	N/A	**0.481**	N/A
	10/21/2014	**0.147**	**0.124**	**0.0429**	**0.143**	**0.109**	**0.669**	**0.0836**
	10/21/2014	N/A	N/A	**0.0798**	N/A	N/A	N/A	N/A
	10/8/2015	**0.0969**	**0.0761**	0.017*	**0.0738**	**0.0951**	**0.964**	**0.194**
	8/30/2016	0.0193*	0.0196*	0.0229*	**0.0708**	**0.11**	**0.92**	**0.22**
	8/30/2016	N/A	N/A	N/A	N/A	**0.0763**	N/A	N/A
	8/24/2017	0.015*	< 0.03	0.0212*	0.0178*	**0.0506**	**0.125**	N/A
	8/21/2018	0.0212*	0.0199*	0.0145*	**0.055**	**0.0557**	**0.201**	**0.248**
	8/21/2018	N/A	0.018*	N/A	N/A	N/A	N/A	N/A
	9/11/2019	**0.0123**	**0.042**	**0.0503**	**0.137**	**0.206**	**0.127**	**0.488**
	9/11/2019	N/A	**0.107**	N/A	N/A	N/A	N/A	N/A
	3/4/2020	0.0353*	0.0392*	**0.127**	**0.103**	**0.0953**	**0.102**	**0.132**
	3/4/2020	N/A	N/A	**0.124**	N/A	N/A	N/A	N/A
	6/2/2021	**0.0918**	**0.105**	**0.0454**	**0.0792**	**0.149**	**0.467**	**0.301**
	6/2/2021	N/A	**0.184**	N/A	N/A	N/A	N/A	N/A
	7/13/2022	**0.0702**	**0.0743**	**0.0555**	**0.0769**	**0.131**	N/A	**0.384**
	7/13/2022	N/A	**0.125**	N/A	N/A	N/A	N/A	N/A
	8/18/2022	N/A	N/A	N/A	N/A	N/A	**1.34**	N/A
	6/8/2023	0.0193*	**0.152**	0.0282*	**0.0561**	**0.123**	**1.24**	**0.271**
	6/8/2023	N/A	0.0245*	N/A	N/A	N/A	N/A	N/A
	6/13/2024	< 0.04	**0.0936**	0.0294*	**0.0881**	**0.126**	**1.56**	**0.0882**
	6/13/2024	N/A	0.0257*	N/A	N/A	N/A	N/A	N/A
Total Extractable Hydrocarbons, mg/L (CAS NO - TEH)	6/8/2023	0.104*	0.0835*	0.104*	**0.73**	0.123*	**15.6**	0.143*
	6/8/2023	N/A	0.0961*	N/A	N/A	N/A	N/A	N/A
	6/13/2024	0.159*	0.145*	0.17*	<0.543	0.148*	<0.49	<0.5
	6/13/2024	N/A	0.148*	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 Report

STATISTICAL METHODOLOGY

Statistical Method

The approved Groundwater Assessment Plan Update (Doc #79942) proposed the use of parametric and non-parametric prediction limits for statistical evaluation in lieu of the control limits required by Iowa Administrative Code 567-115. Prediction limits are the recommended approach of the "Statistical Analysis of Groundwater Monitoring Data at RCRA Facilities - Unified Guidance," as published by the United States Environmental Protection Agency. Prediction limits were used for the statistical evaluation during this reporting period.

Diagnostic and Exploratory Evaluations and Tests of Assumptions

The statistical program includes diagnostic and exploratory evaluations and statistical tests of assumptions, as appropriate, including the following:

- Time series plots
- Shapiro-Wilk test for normality
- Ohio EPA Method for Outliers

Management of Non-Detect Data

Non-detect values in the dataset are managed using simple substitution or the Kaplan-Meier estimator. If less than 15% of the data are non-detects, simple substitution is used, where non-detect values are assigned a concentration of one-half (½) of the practical quantification limit (PQL). If greater than 15% but less than 50% of the data are non-detects, the Kaplan-Meier estimator is used to define the distribution for the dataset. If non-detects comprise greater than 50% of the available data, non-parametric statistical methods are used.

Management of Outliers

Background datasets are evaluated for outliers using the Ohio EPA Method as included in the statistical software program Sanitas™ and described below, which included the use of Dixon's, Rosner's, and Tukey's outlier tests, as appropriate based on the diagnostic tests, for the datasets containing less than 75% of the measured concentrations below the practical quantification limit (PQL).

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.

- Parametric datasets with $n < 20$ are evaluated using Dixon's outlier test.
- Parametric datasets with $n \geq 20$ are evaluated using Rosner's outlier test.
- Non-parametric datasets are evaluated using Tukey's outlier test.

In accordance with the Ohio EPA Method, if a statistically significant outlier is not found using the above tests, but the highest value data point exceeds the second highest data point by an order of magnitude, the highest point is considered an outlier.

Management of Data (ND data ≥ 75%)

If greater than or equal to 75% of the background dataset is less than the PQL, outliers are statistically evaluated using the following guidelines.

- Single detection ≥ PQL:
  - If ≥ 50% of the background dataset has detections ≥ method detection limit (MDL), any value ≥ two times PQL of background is considered an outlier.
  - If < 50% of the background dataset has detections ≥ MDL, any value ≥ PQL of background is considered an outlier.
- Two or more detections ≥ PQL:
  - If ≥ 50% of the background dataset has detections ≥ MDL, any value ≥ three times PQL of background is considered an outlier.
  - If < 50% of the background dataset has detections ≥ MDL, any value ≥ two times the PQL of background is considered an outlier.

Interwell Prediction Limits

Interwell prediction limits were selected as the appropriate statistical method for the determination of constituents statistically above background. Prediction limits are established using the process below. Data from the most recent sampling events is compared to the prediction limits for the determination of constituents above background.

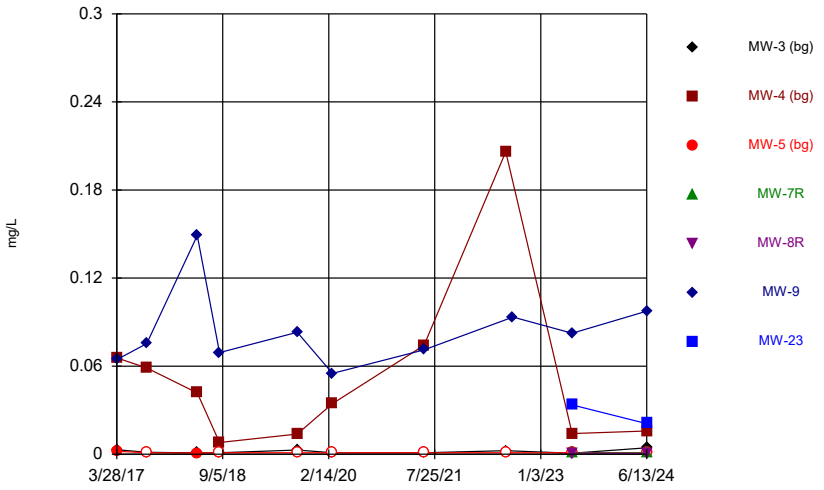
- If the dataset has a normal distribution (or can be transformed to a normal distribution using Ladder of Powers) and has less than 50% non-detects, parametric interwell prediction limits are calculated if at least five data sets have been collected.
- If the dataset does not have a normal distribution (and cannot be transformed to a normal distribution using Ladder of Powers) or has greater than 50% non-detects, non-parametric interwell prediction limits are calculated if at least five data sets have been collected.

Attachment A

Time Series Graphs

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. EPA
Hollow symbols indicate censored values.

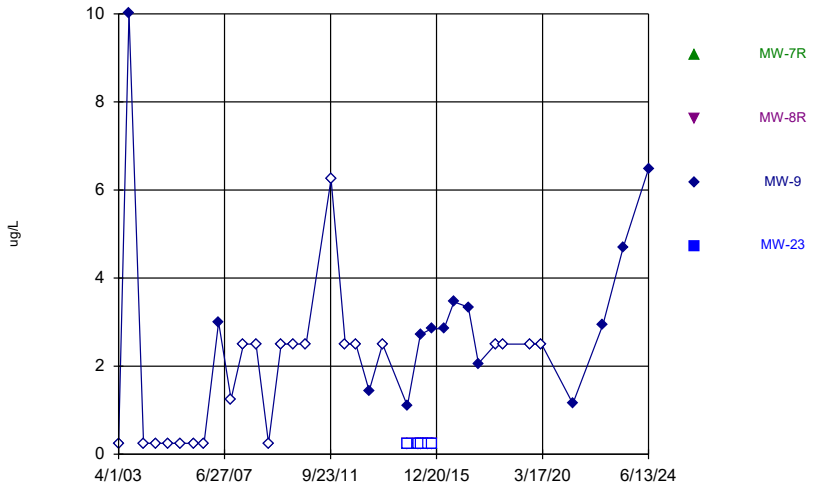
Time Series



Constituent: Arsenic Analysis Run 8/21/2024 4:19 PM View: 2024AWQR - Time Series
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. EPA
Hollow symbols indicate censored values.

Time Series



Constituent: Benzene Analysis Run 8/21/2024 4:19 PM View: 2024AWQR - Time Series
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

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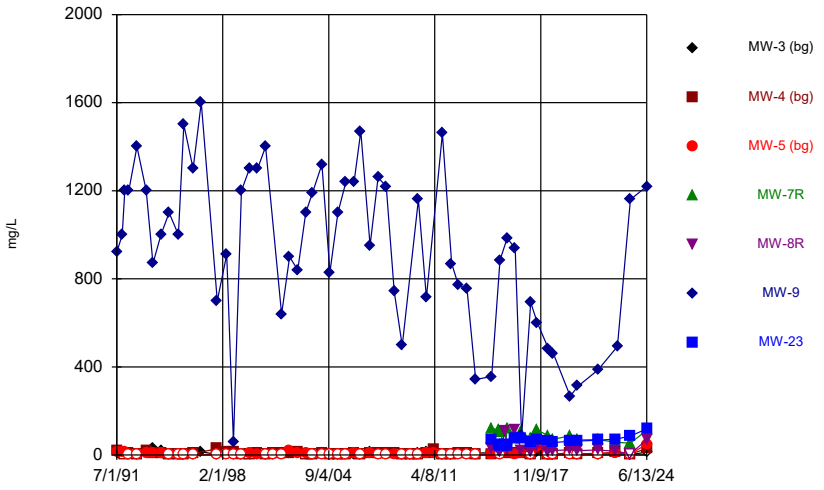
Hollow symbols indicate censored values.

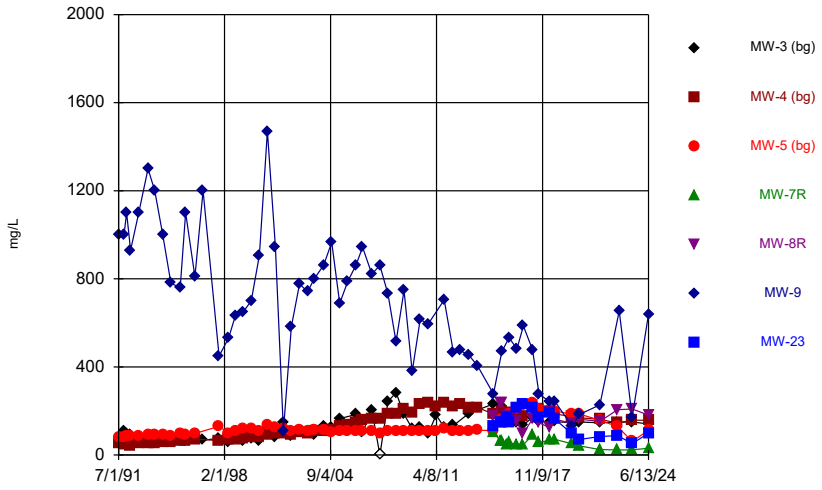
Time Series



Constituent: Chemical Oxygen Demand Analysis Run 8/21/2024 4:19 PM View: 2024AWQR - Time Series
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. EPA
Hollow symbols indicate censored values.

Time Series



Constituent: Chloride Analysis Run 8/21/2024 4:19 PM View: 2024AWQR - Time Series
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

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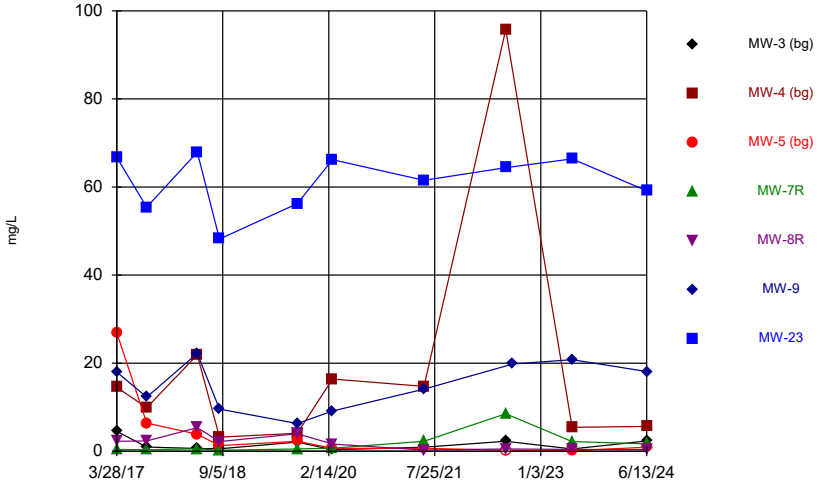
Hollow symbols indicate censored values.

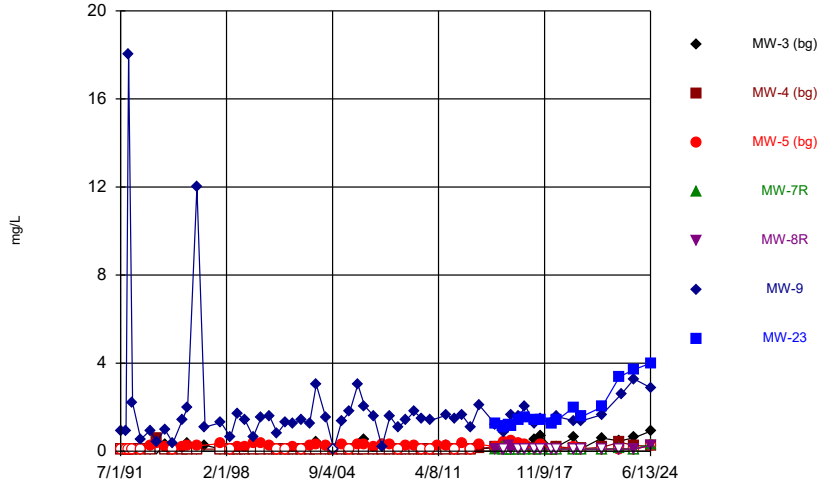
Time Series



Constituent: Iron Analysis Run 8/21/2024 4:19 PM View: 2024AWQR - Time Series
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. EPA
Hollow symbols indicate censored values.

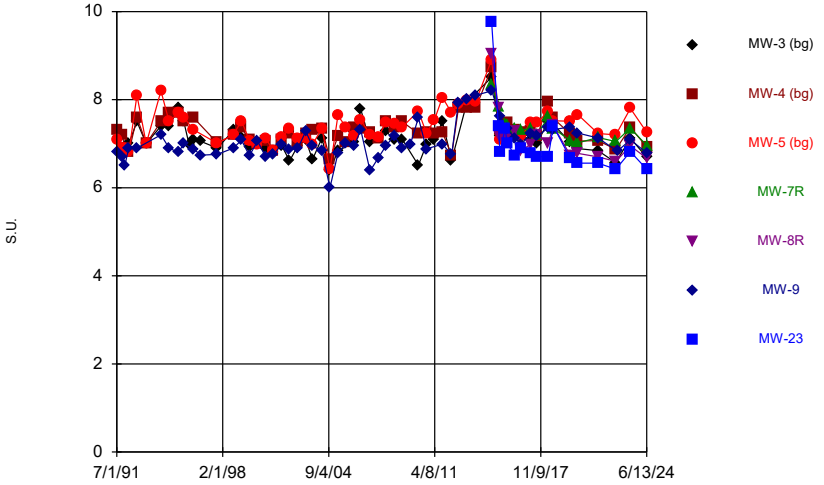
Time Series



Constituent: Nitrogen, Ammonia Analysis Run 8/21/2024 4:19 PM View: 2024AWQR - Time Series
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. EPA

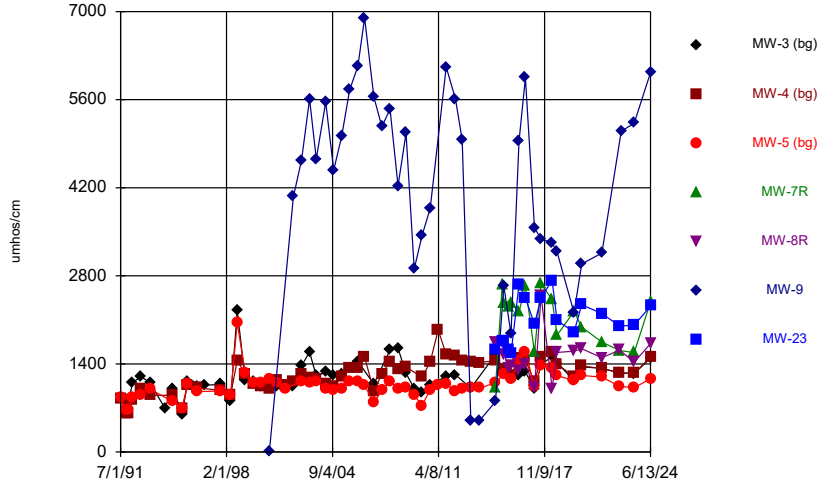
Time Series



Constituent: pH Analysis Run 8/21/2024 4:19 PM View: 2024AWQR - Time Series
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. EPA

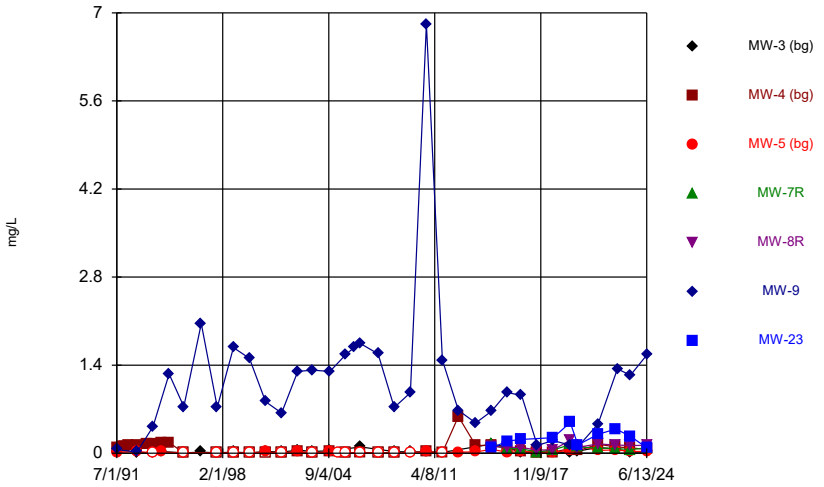
Time Series



Constituent: Specific Conductance Analysis Run 8/21/2024 4:19 PM View: 2024AWQR - Time Series
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Hollow symbols indicate censored values.

Time Series



Constituent: Total Organic Halogens Analysis Run 8/21/2024 4:19 PM View: 2024AWQR - Time Series

ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Attachment B

Normality Test

Shapiro-Wilk Normality Test

Constituent: Arsenic Analysis Run 8/21/2024 4:36 PM View: 2024AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 10, alpha = 0.01)				
	no	0.8474	0.781	Yes
	square root	0.8817	0.781	Yes
	square	0.7557	0.781	No
	cube root	0.891	0.781	Yes
	cube	0.6534	0.781	No
	natural log	0.9062	0.781	Yes
	x^4	0.5656	0.781	No
	x^5	0.501	0.781	No
	x^6	0.4566	0.781	No
MW-4 (bg) (n = 10, alpha = 0.01)				
	no	0.7272	0.781	No
	square root	0.8786	0.781	Yes
	square	0.4944	0.781	No
	cube root	0.9162	0.781	Yes
	cube	0.408	0.781	No
	natural log	0.9553	0.781	Yes
	x^4	0.3799	0.781	No
	x^5	0.3707	0.781	No
	x^6	0.3676	0.781	No
MW-5 (bg) (n = 10, alpha = 0.01)				
	no	0.4834	0.781	No
	square root	0.5119	0.781	No
	square	0.4379	0.781	No
	cube root	0.5221	0.781	No
	cube	0.4077	0.781	No
	natural log	0.5432	0.781	No
	x^4	0.3892	0.781	No
	x^5	0.3785	0.781	No
	x^6	0.3726	0.781	No
Pooled Background (bg) (n = 30, alpha = 0.01)				
	no	0.5021	0.9	No
	square root	0.6928	0.9	No
	square	0.2791	0.9	No
	cube root	0.7475	0.9	No
	cube	0.2148	0.9	No
	natural log	0.8182	0.9	No
	x^4	0.196	0.9	No
	x^5	0.1901	0.9	No
	x^6	0.1882	0.9	No

Shapiro-Wilk Normality Test

Constituent: Chemical Oxygen Demand Analysis Run 8/21/2024 4:36 PM View: 2024AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 55 - Shapiro-Francia used, alpha = 0.01)				
	no	0.7564	0.94	No
	square root	0.8563	0.94	No
	square	0.4656	0.94	No
	cube root	0.8722	0.94	No
	cube	0.2892	0.94	No
	natural log	0.8798	0.94	No
	x^4	0.2129	0.94	No
	x^5	0.1781	0.94	No
	x^6	0.1597	0.94	No
MW-4 (bg) (n = 60 - Shapiro-Francia used, alpha = 0.01)				
	no	0.7719	0.945	No
	square root	0.8666	0.945	No
	square	0.5465	0.945	No
	cube root	0.8854	0.945	No
	cube	0.402	0.945	No
	natural log	0.8994	0.945	No
	x^4	0.3213	0.945	No
	x^5	0.2718	0.945	No
	x^6	0.2382	0.945	No
MW-5 (bg) (n = 60 - Shapiro-Francia used, alpha = 0.01)				
	no	0.4867	0.945	No
	square root	0.6565	0.945	No
	square	0.2472	0.945	No
	cube root	0.7015	0.945	No
	cube	0.17	0.945	No
	natural log	0.7596	0.945	No
	x^4	0.1432	0.945	No
	x^5	0.1298	0.945	No
	x^6	0.1207	0.945	No
Pooled Background (bg) (n = 175: Chi-Squared used, alpha = 0.05)				
	no	261.3	14.07	No
	square root	276	14.07	No
	square	545.4	14.07	No
	cube root	260.3	14.07	No
	cube	1205	14.07	No
	natural log	265.6	14.07	No
	x^4	1328	14.07	No
	x^5	1401	14.07	No
	x^6	1420	14.07	No

Shapiro-Wilk Normality Test

Constituent: Chloride Analysis Run 8/21/2024 4:36 PM View: 2024AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 56 - Shapiro-Francia used, alpha = 0.01)				
	no	0.9604	0.942	Yes
	square root	0.9115	0.942	No
	square	0.8356	0.942	No
	cube root	0.8059	0.942	No
	cube	0.6727	0.942	No
	natural log	0.386	0.942	No
	x^4	0.5248	0.942	No
	x^5	0.41	0.942	No
	x^6	0.3269	0.942	No
MW-4 (bg) (n = 60 - Shapiro-Francia used, alpha = 0.01)				
	no	0.9364	0.945	No
	square root	0.9339	0.945	No
	square	0.9171	0.945	No
	cube root	0.9307	0.945	No
	cube	0.8779	0.945	No
	natural log	0.9209	0.945	No
	x^4	0.8304	0.945	No
	x^5	0.7817	0.945	No
	x^6	0.7353	0.945	No
MW-5 (bg) (n = 60 - Shapiro-Francia used, alpha = 0.01)				
	no	0.797	0.945	No
	square root	0.843	0.945	No
	square	0.7035	0.945	No
	cube root	0.8572	0.945	No
	cube	0.6218	0.945	No
	natural log	0.8827	0.945	No
	x^4	0.5556	0.945	No
	x^5	0.5022	0.945	No
	x^6	0.458	0.945	No
Pooled Background (bg) (n = 176: Chi-Squared used, alpha = 0.05)				
	no	31.5	14.07	No
	square root	10.82	14.07	Yes
	square	80.59	14.07	No
	cube root	14.23	14.07	No
	cube	255.6	14.07	No
	natural log	70.36	14.07	No
	x^4	261.3	14.07	No
	x^5	287.9	14.07	No
	x^6	633.4	14.07	No

Shapiro-Wilk Normality Test

Constituent: Iron Analysis Run 8/21/2024 4:36 PM View: 2024AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 10, alpha = 0.01)				
	no	0.8203	0.781	Yes
	square root	0.8993	0.781	Yes
	square	0.6371	0.781	No
	cube root	0.919	0.781	Yes
	cube	0.5068	0.781	No
	natural log	0.9454	0.781	Yes
	x^4	0.4366	0.781	No
	x^5	0.4013	0.781	No
	x^6	0.3837	0.781	No
MW-4 (bg) (n = 10, alpha = 0.01)				
	no	0.5714	0.781	No
	square root	0.7516	0.781	No
	square	0.4102	0.781	No
	cube root	0.8177	0.781	Yes
	cube	0.375	0.781	No
	natural log	0.9229	0.781	Yes
	x^4	0.3678	0.781	No
	x^5	0.3664	0.781	No
	x^6	0.366	0.781	No
MW-5 (bg) (n = 10, alpha = 0.01)				
	no	0.5572	0.781	No
	square root	0.7738	0.781	No
	square	0.4035	0.781	No
	cube root	0.8623	0.781	Yes
	cube	0.3739	0.781	No
	natural log	0.9839	0.781	Yes
	x^4	0.3677	0.781	No
	x^5	0.3664	0.781	No
	x^6	0.3661	0.781	No
Pooled Background (bg) (n = 30, alpha = 0.01)				
	no	0.4638	0.9	No
	square root	0.7668	0.9	No
	square	0.2391	0.9	No
	cube root	0.8707	0.9	No
	cube	0.1985	0.9	No
	natural log	0.9849	0.9	Yes
	x^4	0.1899	0.9	No
	x^5	0.1879	0.9	No
	x^6	0.1874	0.9	No

Shapiro-Wilk Normality Test

Constituent: Nitrogen, Ammonia Analysis Run 8/21/2024 4:36 PM View: 2024AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 56 - Shapiro-Francia used, alpha = 0.01)				
	no	0.635	0.942	No
	square root	0.6801	0.942	No
	square	0.5098	0.942	No
	cube root	0.6912	0.942	No
	cube	0.3846	0.942	No
	natural log	0.7076	0.942	No
	x^4	0.2879	0.942	No
	x^5	0.2214	0.942	No
	x^6	0.1778	0.942	No
MW-4 (bg) (n = 60 - Shapiro-Francia used, alpha = 0.01)				
	no	0.4357	0.945	No
	square root	0.5075	0.945	No
	square	0.2902	0.945	No
	cube root	0.5279	0.945	No
	cube	0.198	0.945	No
	natural log	0.5613	0.945	No
	x^4	0.152	0.945	No
	x^5	0.1287	0.945	No
	x^6	0.1156	0.945	No
MW-5 (bg) (n = 60 - Shapiro-Francia used, alpha = 0.01)				
	no	0.8832	0.945	No
	square root	0.8712	0.945	No
	square	0.8497	0.945	No
	cube root	0.8639	0.945	No
	cube	0.7471	0.945	No
	natural log	0.8457	0.945	No
	x^4	0.6159	0.945	No
	x^5	0.4914	0.945	No
	x^6	0.389	0.945	No
Pooled Background (bg) (n = 176: Chi-Squared used, alpha = 0.05)				
	no	486.2	14.07	No
	square root	482.8	14.07	No
	square	581	14.07	No
	cube root	484.8	14.07	No
	cube	604.3	14.07	No
	natural log	493.1	14.07	No
	x^4	1198	14.07	No
	x^5	1336	14.07	No
	x^6	1391	14.07	No

Shapiro-Wilk Normality Test

Constituent: pH Analysis Run 8/21/2024 4:36 PM View: 2024AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 54 - Shapiro-Francia used, alpha = 0.01)				
	no	0.9079	0.939	No
	square root	0.9188	0.939	No
	square	0.8829	0.939	No
	cube root	0.9222	0.939	No
	cube	0.8539	0.939	No
	natural log	0.9287	0.939	No
	x^4	0.8214	0.939	No
	x^5	0.7858	0.939	No
	x^6	0.7477	0.939	No
MW-4 (bg) (n = 57 - Shapiro-Francia used, alpha = 0.01)				
	no	0.8992	0.944	No
	square root	0.9116	0.944	No
	square	0.8711	0.944	No
	cube root	0.9155	0.944	No
	cube	0.8387	0.944	No
	natural log	0.9229	0.944	No
	x^4	0.8023	0.944	No
	x^5	0.7625	0.944	No
	x^6	0.7199	0.944	No
MW-5 (bg) (n = 57 - Shapiro-Francia used, alpha = 0.01)				
	no	0.9347	0.944	No
	square root	0.9434	0.944	No
	square	0.9134	0.944	No
	cube root	0.946	0.944	Yes
	cube	0.887	0.944	No
	natural log	0.9507	0.944	Yes
	x^4	0.8558	0.944	No
	x^5	0.8203	0.944	No
	x^6	0.7811	0.944	No
Pooled Background (bg) (n = 168: Chi-Squared used, alpha = 0.05)				
	no	15.33	14.07	No
	square root	15.33	14.07	No
	square	19.14	14.07	No
	cube root	12.36	14.07	Yes
	cube	22.48	14.07	No
	natural log	12.36	14.07	Yes
	x^4	23.67	14.07	No
	x^5	36.4	14.07	No
	x^6	55.33	14.07	No

Shapiro-Wilk Normality Test

Constituent: Specific Conductance Analysis Run 8/21/2024 4:36 PM View: 2024AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 54 - Shapiro-Francia used, alpha = 0.01)				
	no	0.9049	0.939	No
	square root	0.9351	0.939	No
	square	0.7814	0.939	No
	cube root	0.9396	0.939	Yes
	cube	0.6159	0.939	No
	natural log	0.9397	0.939	Yes
	x^4	0.4593	0.939	No
	x^5	0.338	0.939	No
	x^6	0.2541	0.939	No
MW-4 (bg) (n = 57 - Shapiro-Francia used, alpha = 0.01)				
	no	0.9733	0.944	Yes
	square root	0.9612	0.944	Yes
	square	0.9554	0.944	Yes
	cube root	0.9539	0.944	Yes
	cube	0.8889	0.944	No
	natural log	0.9345	0.944	No
	x^4	0.7877	0.944	No
	x^5	0.6692	0.944	No
	x^6	0.5508	0.944	No
MW-5 (bg) (n = 57 - Shapiro-Francia used, alpha = 0.01)				
	no	0.8455	0.944	No
	square root	0.8939	0.944	No
	square	0.6983	0.944	No
	cube root	0.9052	0.944	No
	cube	0.5301	0.944	No
	natural log	0.9202	0.944	No
	x^4	0.3874	0.944	No
	x^5	0.2853	0.944	No
	x^6	0.2181	0.944	No
Pooled Background (bg) (n = 168: Chi-Squared used, alpha = 0.05)				
	no	14.02	14.07	Yes
	square root	16.64	14.07	No
	square	28.9	14.07	No
	cube root	13.67	14.07	Yes
	cube	73.31	14.07	No
	natural log	15.1	14.07	No
	x^4	180.3	14.07	No
	x^5	298	14.07	No
	x^6	408.5	14.07	No

Shapiro-Wilk Normality Test

Constituent: Total Organic Halogens Analysis Run 8/21/2024 4:36 PM View: 2024AWQR - Normality
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Well	Transformation	Calculated	Critical	Normal
MW-3 (bg) (n = 29, alpha = 0.01)				
	no	0.7509	0.898	No
	square root	0.8825	0.898	No
	square	0.5405	0.898	No
	cube root	0.9166	0.898	Yes
	cube	0.4173	0.898	No
	natural log	0.945	0.898	Yes
	x^4	0.3383	0.898	No
	x^5	0.2865	0.898	No
	x^6	0.253	0.898	No
MW-4 (bg) (n = 37, alpha = 0.01)				
	no	0.6344	0.914	No
	square root	0.8523	0.914	No
	square	0.277	0.914	No
	cube root	0.8795	0.914	No
	cube	0.1927	0.914	No
	natural log	0.8696	0.914	No
	x^4	0.1739	0.914	No
	x^5	0.1693	0.914	No
	x^6	0.1682	0.914	No
MW-5 (bg) (n = 34, alpha = 0.01)				
	no	0.6838	0.908	No
	square root	0.8244	0.908	No
	square	0.3835	0.908	No
	cube root	0.8465	0.908	No
	cube	0.2555	0.908	No
	natural log	0.8502	0.908	No
	x^4	0.2084	0.908	No
	x^5	0.1898	0.908	No
	x^6	0.1818	0.908	No
Pooled Background (bg) (n = 100: Chi-Squared used, alpha = 0.05)				
	no	115.2	14.07	No
	square root	74.4	14.07	No
	square	555.4	14.07	No
	cube root	57.6	14.07	No
	cube	768.6	14.07	No
	natural log	61.4	14.07	No
	x^4	880.2	14.07	No
	x^5	880.2	14.07	No
	x^6	880.2	14.07	No

Attachment C

Outliers

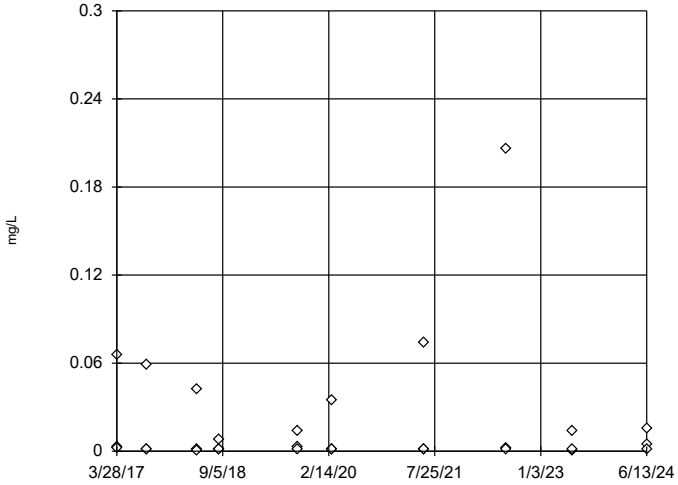
BG Outlier Analysis

ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master Printed 8/22/2024, 9:24 AM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Normality Test
Arsenic (mg/L)	MW-3,MW-4,MW-5	No	n/a	n/a w/combined bg	NP (nrm)/OH	NaN	30	0.01874	0.04105	ShapiroWilk
Chemical Oxygen Demand (mg/L)	**MW-3,MW-4,MW-5**	**Yes**	**12,13,13,13,29,19,15,15,13.8,13.4,33.7,12.9,16.3,**	**n/a w/combined bg**	**NP (n)/OH**	**NaN**	**175**	**7.29**	**7.227**	**ChiSquared**
Chloride (mg/L)	**MW-3,MW-4,MW-5**	**Yes**	**243,284,232,232,232,218,218,211,211,235,222,234,2**	**n/a w/combined bg**	**NP (n)/OH**	**NaN**	**176**	**128.5**	**52.73**	**ChiSquared**
Iron (mg/L)	MW-5,MW-3,MW-4	No	n/a	n/a w/combined bg	EPA/OH	0.05	30	8.335	17.88	ShapiroWilk
Nitrogen, Ammonia (mg/L)	**MW-3,MW-4,MW-5**	**Yes**	**0.32,0.32,0.32,0.36,0.39,0.55,0.31,0.511,0.677,0.**	**n/a w/combined bg**	**NP (n)/OH**	**NaN**	**176**	**0.1814**	**0.1356**	**ChiSquared**
pH (S.U.)	**MW-3,MW-4,MW-5**	**Yes**	**8.51,8.73,8.91**	**n/a w/combined bg**	**NP (n)/OH**	**NaN**	**168**	**7.266**	**0.3923**	**ChiSquared**
Specific Conductance (umhos/cm)	**MW-3,MW-4,MW-5**	**Yes**	**2250,1590,1620,1650,1940,2050,1593**	**n/a w/combined bg**	**NP (n)/OH**	**NaN**	**168**	**1157**	**255.7**	**ChiSquared**
Total Organic Halogens (mg/L)	**MW-3,MW-4,MW-5**	**Yes**	**0.1,0.1,0.147,0.0969,0.0918,0.09,0.11,0.12,0.13,0**	**n/a w/combined bg**	**NP (nrm)/OH**	**NaN**	**100**	**0.04506**	**0.07018**	**ChiSquared**

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-3,MW-4,MW-5



n = 30

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).

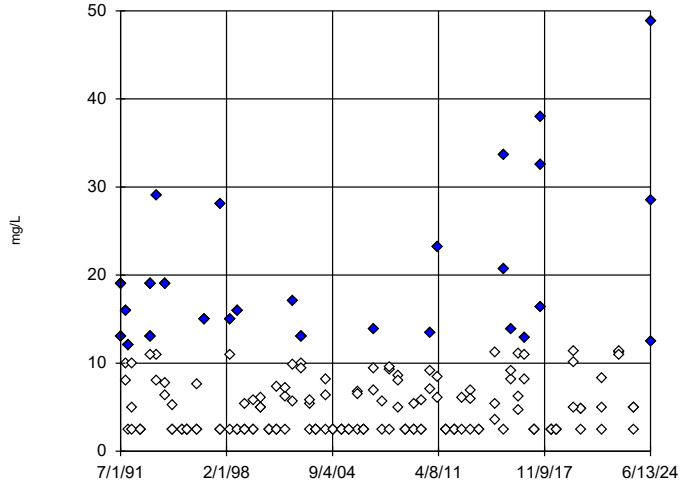
High cutoff = 49.77, low cutoff = 3.0e-7, based on IQR multiplier of 3.

Constituent: Arsenic Analysis Run 8/22/2024 9:16 AM View: 2024AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. UG

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-3,MW-4,MW-5



n = 175

Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the maximum sample size was exceeded.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 11.97, low cutoff = -11.41, based on IQR multiplier of 3.

Constituent: Chemical Oxygen Demand Analysis Run 8/22/2024 9:16 AM View: 2024AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

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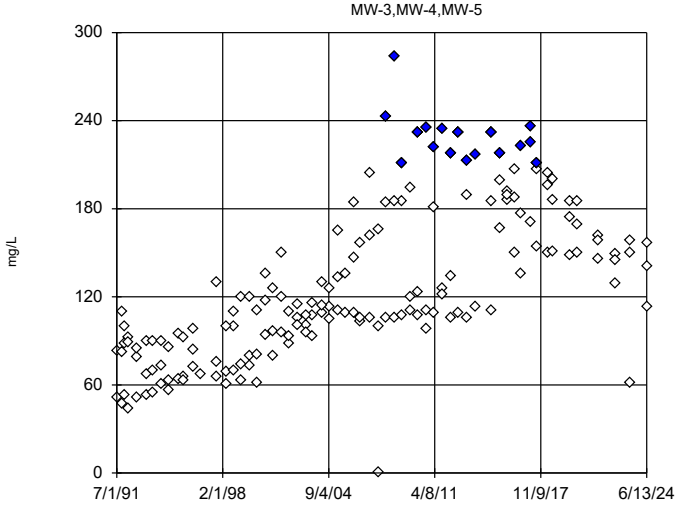
Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-3,MW-4,MW-5



n = 176

Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the maximum sample size was exceeded.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 209.1, low cutoff = -198.8, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 8/22/2024 9:16 AM View: 2024AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

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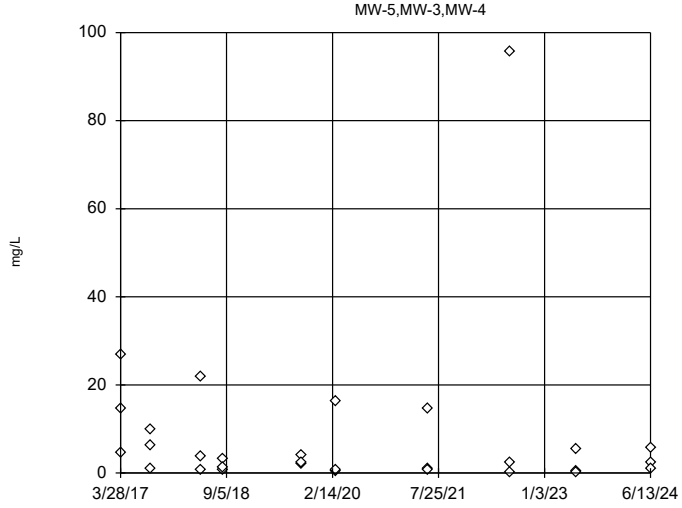
EPA Screening (suspected outliers for Rosner's Test)

MW-5,MW-3,MW-4



n = 30

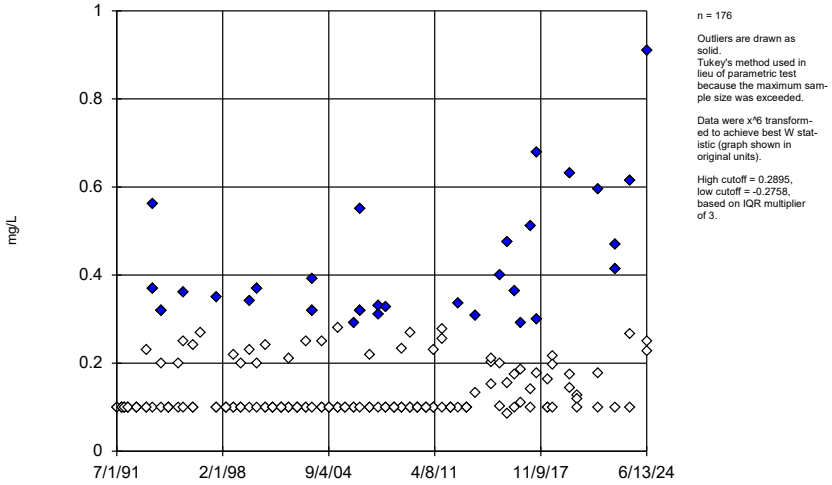
Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 8.335, std. dev. 17.88, critical Tn 2.745

Normality test used:
Shapiro Wilk@alpha = 0.1
Calculated = 0.9849
Critical = 0.939 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Iron Analysis Run 8/22/2024 9:16 AM View: 2024AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-3,MW-4,MW-5



n = 176

Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the maximum sample size was exceeded.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2895, low cutoff = -0.2758, based on IQR multiplier of 3.

Constituent: Nitrogen, Ammonia Analysis Run 8/22/2024 9:16 AM View: 2024AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

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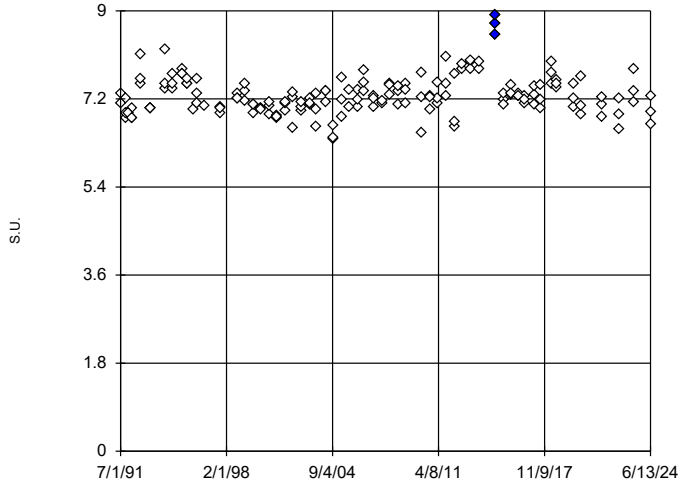
Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-3,MW-4,MW-5



n = 168

Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the maximum sample size was exceeded.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.412, low cutoff = -6.208, based on IQR multiplier of 3.

Constituent: pH Analysis Run 8/22/2024 9:16 AM View: 2024AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

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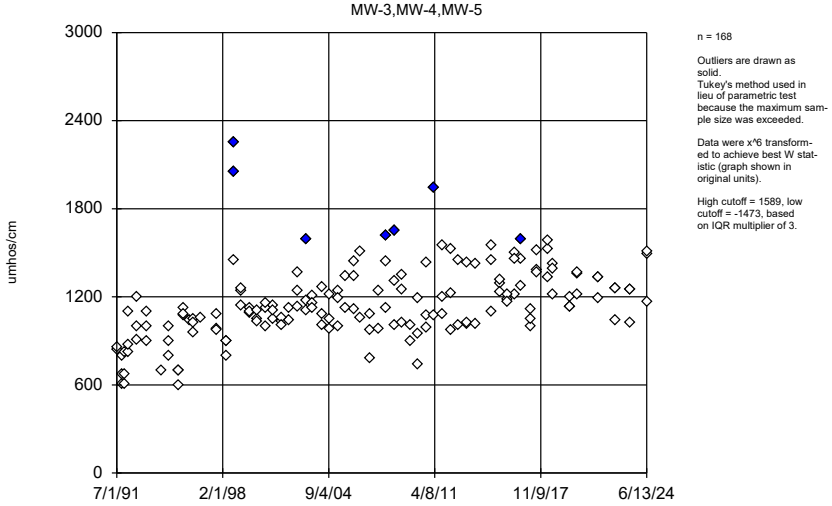
Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-3,MW-4,MW-5



n = 168

Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the maximum sample size was exceeded.

Data were x^6 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1589, low cutoff = -1473, based on IQR multiplier of 3.

Constituent: Specific Conductance Analysis Run 8/22/2024 9:16 AM View: 2024AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

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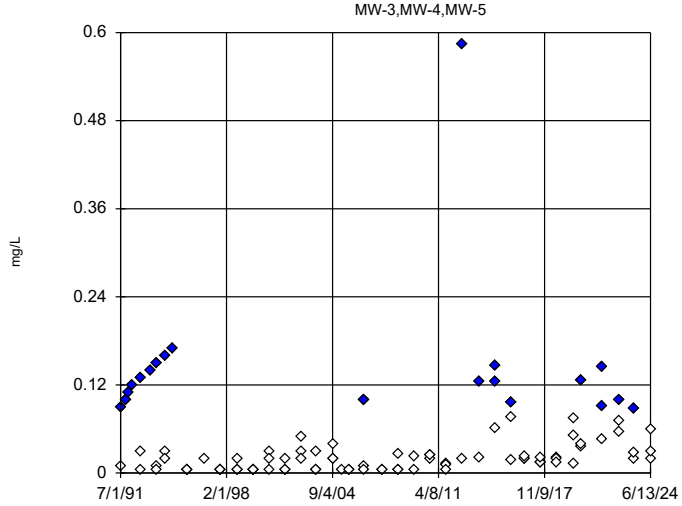
Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm, Pooled Background

MW-3,MW-4,MW-5



n = 100

Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the Chi Squared normality test failed at the 0.1 alpha level.

Data were x^4 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.08158, low cutoff = -0.07592, based on IQR multiplier of 3.

Constituent: Total Organic Halogens Analysis Run 8/22/2024 9:16 AM View: 2024AWQR - Outliers
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Attachment D

Prediction Limits

Prediction Limit

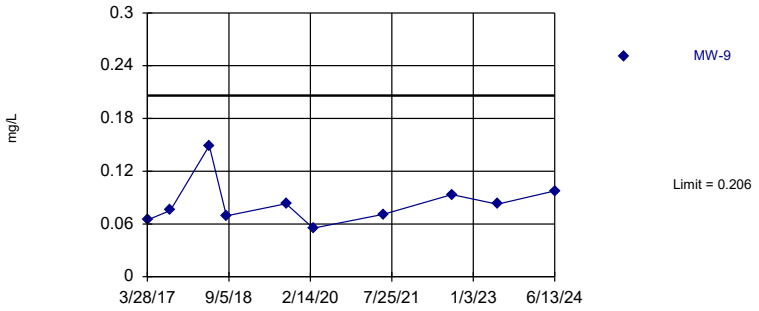
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master Printed 8/22/2024, 9:47 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Wells	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MW-9	0.206	n/a	6/13/2024	0.0975	No	30	MW-3,MW-5,MW-4	n/a	n/a	33.33	n/a	n/a	0.03226	NP Inter (normality)
Chemical Oxygen Demand (mg/L)	**MW-7R**	**48.8**	**n/a**	**6/13/2024**	**112**	**Yes**	**175**	**MW-3,MW-4,MW-5**	**n/a**	**n/a**	**47.43**	**n/a**	**n/a**	**0.005634**	**NP Inter (normality)**
Chemical Oxygen Demand (mg/L)	**MW-8R**	**48.8**	**n/a**	**6/13/2024**	**69.9**	**Yes**	**175**	**MW-3,MW-4,MW-5**	**n/a**	**n/a**	**47.43**	**n/a**	**n/a**	**0.005634**	**NP Inter (normality)**
Chemical Oxygen Demand (mg/L)	**MW-9**	**48.8**	**n/a**	**6/13/2024**	**1220**	**Yes**	**175**	**MW-3,MW-4,MW-5**	**n/a**	**n/a**	**47.43**	**n/a**	**n/a**	**0.005634**	**NP Inter (normality)**
Chemical Oxygen Demand (mg/L)	**MW-23**	**48.8**	**n/a**	**6/13/2024**	**119**	**Yes**	**175**	**MW-3,MW-4,MW-5**	**n/a**	**n/a**	**47.43**	**n/a**	**n/a**	**0.005634**	**NP Inter (normality)**
Chloride (mg/L)	MW-7R	273.5	n/a	6/13/2024	30.9	No	176	MW-3,MW-4,MW-5	11.08	2.407	0.5682	None	sqrt(x)	0.0125	Param Inter
Chloride (mg/L)	MW-8R	273.5	n/a	6/13/2024	181	No	176	MW-3,MW-4,MW-5	11.08	2.407	0.5682	None	sqrt(x)	0.0125	Param Inter
Chloride (mg/L)	**MW-9**	**273.5**	**n/a**	**6/13/2024**	**640**	**Yes**	**176**	**MW-3,MW-4,MW-5**	**11.08**	**2.407**	**0.5682**	**None**	**sqrt(x)**	**0.0125**	**Param Inter**
Chloride (mg/L)	MW-23	273.5	n/a	6/13/2024	99.1	No	176	MW-3,MW-4,MW-5	11.08	2.407	0.5682	None	sqrt(x)	0.0125	Param Inter
Iron (mg/L)	MW-7R	107.9	n/a	6/13/2024	1.68	No	30	MW-3,MW-4,MW-5	0.9447	1.555	3.333	None	ln(x)	0.0125	Param Inter
Iron (mg/L)	MW-8R	107.9	n/a	6/13/2024	0.388	No	30	MW-3,MW-4,MW-5	0.9447	1.555	3.333	None	ln(x)	0.0125	Param Inter
Iron (mg/L)	MW-9	107.9	n/a	6/13/2024	18.1	No	30	MW-3,MW-4,MW-5	0.9447	1.555	3.333	None	ln(x)	0.0125	Param Inter
Iron (mg/L)	MW-23	107.9	n/a	6/13/2024	59.1	No	30	MW-3,MW-4,MW-5	0.9447	1.555	3.333	None	ln(x)	0.0125	Param Inter
Nitrogen, Ammonia (mg/L)	MW-7R	0.909	n/a	6/13/2024	0.329J	No	176	MW-3,MW-4,MW-5	n/a	n/a	57.95	n/a	n/a	0.005602	NP Inter (NDs)
Nitrogen, Ammonia (mg/L)	MW-8R	0.909	n/a	6/13/2024	0.268J	No	176	MW-3,MW-4,MW-5	n/a	n/a	57.95	n/a	n/a	0.005602	NP Inter (NDs)
Nitrogen, Ammonia (mg/L)	**MW-9**	**0.909**	**n/a**	**6/13/2024**	**2.89**	**Yes**	**176**	**MW-3,MW-4,MW-5**	**n/a**	**n/a**	**57.95**	**n/a**	**n/a**	**0.005602**	**NP Inter (NDs)**
Nitrogen, Ammonia (mg/L)	**MW-23**	**0.909**	**n/a**	**6/13/2024**	**4**	**Yes**	**176**	**MW-3,MW-4,MW-5**	**n/a**	**n/a**	**57.95**	**n/a**	**n/a**	**0.005602**	**NP Inter (NDs)**
pH (S.U.)	MW-7R	8.276	6.311	6/13/2024	7.077	No	168	MW-3,MW-4,MW-5	2.695	0.07196	0	None	sqrt(x)	0.00625	Param Inter Deseas
pH (S.U.)	MW-8R	8.276	6.311	6/13/2024	6.787	No	168	MW-3,MW-4,MW-5	2.695	0.07196	0	None	sqrt(x)	0.00625	Param Inter Deseas
pH (S.U.)	MW-9	8.276	6.311	6/13/2024	6.907	No	168	MW-3,MW-4,MW-5	2.695	0.07196	0	None	sqrt(x)	0.00625	Param Inter Deseas
pH (S.U.)	MW-23	8.276	6.311	6/13/2024	6.537	No	168	MW-3,MW-4,MW-5	2.695	0.07196	0	None	sqrt(x)	0.00625	Param Inter Deseas
Specific Conductance (umhos/cm)	**MW-7R**	**2240**	**n/a**	**6/13/2024**	**2510**	**Yes**	**168**	**MW-3,MW-5,MW-4**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.005865**	**NP Inter (normality) Deseas**
Specific Conductance (umhos/cm)	MW-8R	2240	n/a	6/13/2024	1849	No	168	MW-3,MW-5,MW-4	n/a	n/a	0	n/a	n/a	0.005865	NP Inter (normality) Deseas
Specific Conductance (umhos/cm)	**MW-9**	**2240**	**n/a**	**6/13/2024**	**6155**	**Yes**	**168**	**MW-3,MW-5,MW-4**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.005865**	**NP Inter (normality) Deseas**
Specific Conductance (umhos/cm)	**MW-23**	**2240**	**n/a**	**6/13/2024**	**2447**	**Yes**	**168**	**MW-3,MW-5,MW-4**	**n/a**	**n/a**	**0**	**n/a**	**n/a**	**0.005865**	**NP Inter (normality) Deseas**
Total Organic Halogens (mg/L)	MW-7R	0.584	n/a	6/13/2024	0.0881	No	100	MW-3,MW-4,MW-5	n/a	n/a	30	n/a	n/a	0.009757	NP Inter (normality)
Total Organic Halogens (mg/L)	MW-8R	0.584	n/a	6/13/2024	0.126	No	100	MW-3,MW-4,MW-5	n/a	n/a	30	n/a	n/a	0.009757	NP Inter (normality)
Total Organic Halogens (mg/L)	**MW-9**	**0.584**	**n/a**	**6/13/2024**	**1.56**	**Yes**	**100**	**MW-3,MW-4,MW-5**	**n/a**	**n/a**	**30**	**n/a**	**n/a**	**0.009757**	**NP Inter (normality)**
Total Organic Halogens (mg/L)	MW-23	0.584	n/a	6/13/2024	0.0882	No	100	MW-3,MW-4,MW-5	n/a	n/a	30	n/a	n/a	0.009757	NP Inter (normality)

Within Limit

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Shapiro Wilk normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 30 background values. 33.33% NDs. Report alpha = 0.03226. Most recent point compared to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

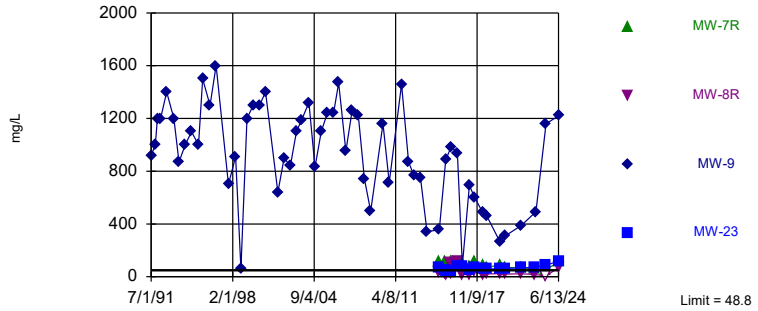
Constituent: Arsenic Analysis Run 8/22/2024 9:44 AM View: 2024AWQR - PredictionLimit
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Hollow symbols indicate censored values.

Exceeds Limit: MW-7R, MW-8R, MW-9, MW-23

Prediction Limit

Interwell Non-parametric



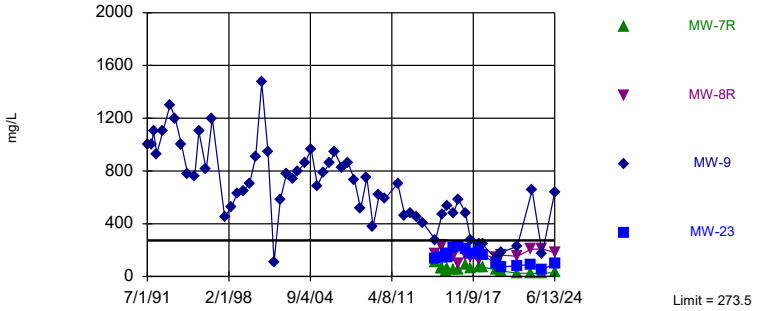
Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 175 background values. 47.43% NDs. Report alpha = 0.02235. Individual comparison alpha = 0.005634. Most recent point for each compliance well compared to limit. Seasonality was not detected with 95% confidence.

Constituent: Chemical Oxygen Demand Analysis Run 8/22/2024 9:44 AM View: 2024AWQR - PredictionLi
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Exceeds Limit: MW-9

Prediction Limit

Interwell Parametric



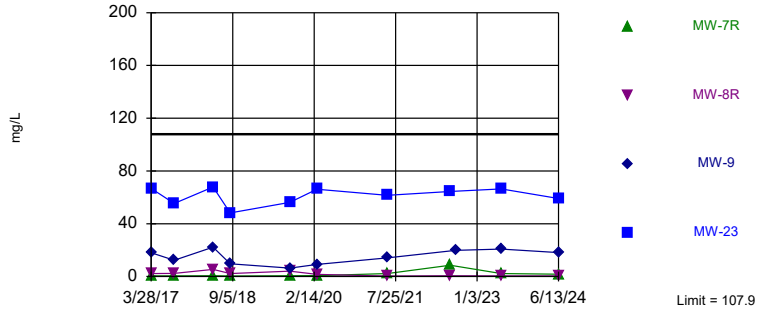
Background Data Summary (based on square root transformation): Mean=11.08, Std. Dev.=2.407, n=176, 0.5682% NDs. Seasonality was not detected with 95% confidence. Normality test: Chi Squared @alpha = 0.05, calculated = 10.82, critical = 14.07. Report alpha = 0.05. Individual comparison alpha = 0.0125. Most recent point for each compliance well compared to limit.

Constituent: Chloride Analysis Run 8/22/2024 9:44 AM View: 2024AWQR - PredictionLimit
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Within Limit

Prediction Limit

Interwell Parametric



Background Data Summary (based on natural log transformation): Mean=0.9447, Std. Dev.=1.555, n=30, 3.333% NDs. Insufficient data to test for seasonality; not deseasonalized. Normality test: Shapiro Wilk @alpha = 0.05, calculated = 0.9849, critical = 0.927. Report alpha = 0.05. Individual comparison alpha = 0.0125. Most recent point for each compliance well compared to limit.

Constituent: Iron Analysis Run 8/22/2024 9:44 AM View: 2024AWQR - PredictionLimit
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

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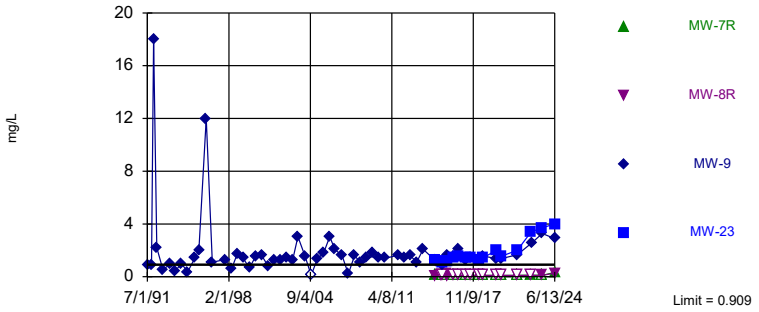
Hollow symbols indicate censored values.

Exceeds Limit: MW-9, MW-23

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 176 background values. 57.95% NDs. Report alpha = 0.02222. Individual comparison alpha = 0.005602. Most recent point for each compliance well compared to limit. Seasonality was not detected with 95% confidence.

Constituent: Nitrogen, Ammonia Analysis Run 8/22/2024 9:44 AM View: 2024AWQR - PredictionLimit
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

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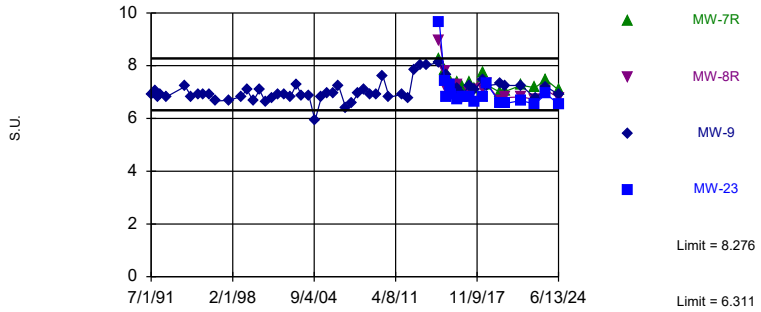
Within Limits

Prediction Limit

Interwell Parametric



Background Data Summary (based on square root transformation): Mean=2.695, Std. Dev.=0.07196, n=168. Seasonality was detected with 95% confidence and data were deseasonalized. Normality test: Chi Squared @alpha = 0.05, calculated = 14.02, critical = 14.07. Report alpha = 0.05. Individual comparison alpha = 0.00625. Most recent point for each compliance well compared to limit.

Constituent: pH Analysis Run 8/22/2024 9:44 AM View: 2024AWQR - PredictionLimit
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

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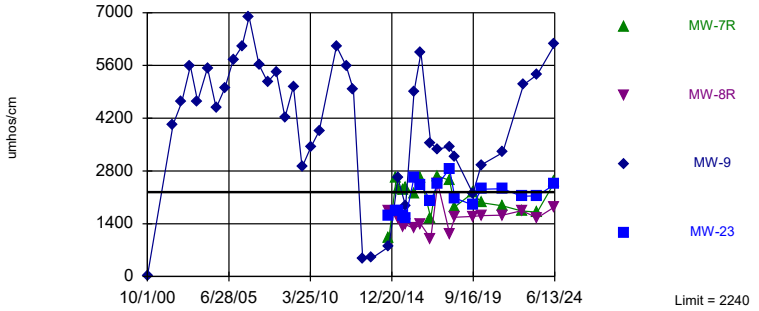
Exceeds Limit: MW-7R, MW-9, MW-23

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 168 background values. Report alpha = 0.02326. Individual comparison alpha = 0.005865. Most recent point for each compliance well compared to limit. Data were deseasonalized.

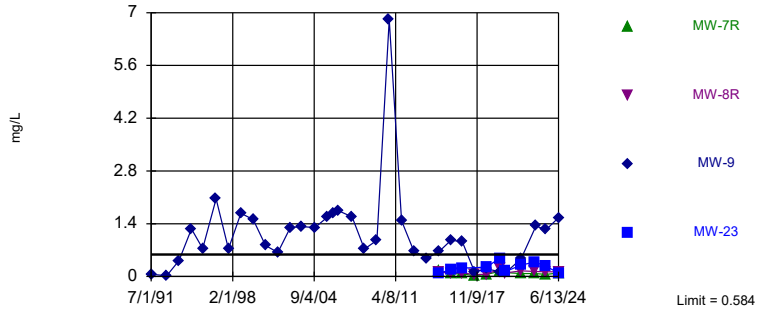
Constituent: Specific Conductance Analysis Run 8/22/2024 9:44 AM View: 2024AWQR - PredictionLimit
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Sanitas™ v.9.6.37 Software licensed to SCS Engineers. EPA

Exceeds Limit: MW-9

Prediction Limit

Interwell Non-parametric



Non-parametric test used in lieu of parametric prediction limit because the Chi Squared normality test showed the data to be non-normal at the 0.05 alpha level. Limit is highest of 100 background values. 30% NDs. Report alpha = 0.03846. Individual comparison alpha = 0.009757. Most recent point for each compliance well compared to limit. Insufficient data to test for seasonality; data will not be deseasonalized.

Constituent: Total Organic Halogens Analysis Run 8/22/2024 9:44 AM View: 2024AWQR - PredictionLimit
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER Sanitas Master

Attachment E

Trend Test (α=0.01)

Trend Test

ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR Printed 8/22/2024, 12:09 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Alpha	Method
Arsenic (mg/L)	MW-3 (bg)	0.0001819	5	21	No	8	25	0.01	NP
Arsenic (mg/L)	MW-4 (bg)	0.001304	6	21	No	8	0	0.01	NP
Arsenic (mg/L)	MW-5 (bg)	0	7	21	No	8	87.5	0.01	NP
Arsenic (mg/L)	MW-9	0.0025	4	21	No	8	0	0.01	NP
Benzene (ug/L)	MW-9	0.3071	14	21	No	8	50	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-3 (bg)	0.454	8	21	No	8	62.5	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-4 (bg)	2.103	17	21	No	8	37.5	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-5 (bg)	1.918	18	21	No	8	75	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-7R	-3.717	-10	-21	No	8	0	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-8R	0.7101	2	21	No	8	12.5	0.01	NP
Chemical Oxygen Demand (mg/L)	MW-9	82.24	14	21	No	8	0	0.01	NP
Chemical Oxygen Demand (mg/L)	**MW-23**	**4.689**	**24**	**21**	**Yes**	**8**	**0**	**0.01**	**NP**
Chloride (mg/L)	MW-3 (bg)	-0.582	-11	-21	No	8	0	0.01	NP
Chloride (mg/L)	**MW-4 (bg)**	**-7.295**	**-24**	**-21**	**Yes**	**8**	**0**	**0.01**	**NP**
Chloride (mg/L)	**MW-5 (bg)**	**-15.39**	**-24**	**-21**	**Yes**	**8**	**0**	**0.01**	**NP**
Chloride (mg/L)	MW-7R	-8.073	-18	-21	No	8	0	0.01	NP
Chloride (mg/L)	MW-8R	9.65	16	21	No	8	0	0.01	NP
Chloride (mg/L)	MW-9	22.59	3	21	No	8	0	0.01	NP
Chloride (mg/L)	MW-23	-15.45	-12	-21	No	8	0	0.01	NP
Iron (mg/L)	MW-3 (bg)	0.08331	8	21	No	8	0	0.01	NP
Iron (mg/L)	MW-4 (bg)	0.2695	2	21	No	8	0	0.01	NP
Iron (mg/L)	MW-5 (bg)	-0.2721	-18	-21	No	8	12.5	0.01	NP
Iron (mg/L)	MW-7R	0.3128	14	21	No	8	0	0.01	NP
Iron (mg/L)	MW-8R	-0.5841	-20	-21	No	8	0	0.01	NP
Iron (mg/L)	MW-9	1.55	6	21	No	8	0	0.01	NP
Iron (mg/L)	MW-23	0.3353	2	21	No	8	0	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-3 (bg)	0.1113	14	21	No	8	0	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-4 (bg)	0.02272	14	21	No	8	12.5	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-5 (bg)	0	5	21	No	8	87.5	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-7R	0	11	21	No	8	75	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-8R	0	13	21	No	8	75	0.01	NP
Nitrogen, Ammonia (mg/L)	MW-9	0.278	21	21	No	8	0	0.01	NP
Nitrogen, Ammonia (mg/L)	**MW-23**	**0.468**	**26**	**21**	**Yes**	**8**	**0**	**0.01**	**NP**
pH (S.U.)	MW-3 (bg)	-0.1356	-18	-21	No	8	0	0.01	NP
pH (S.U.)	MW-4 (bg)	-0.1185	-16	-21	No	8	0	0.01	NP
pH (S.U.)	MW-5 (bg)	-0.04862	-8	-21	No	8	0	0.01	NP
pH (S.U.)	MW-7R	-0.0632	-13	-21	No	8	0	0.01	NP
pH (S.U.)	MW-8R	-0.05986	-14	-21	No	8	0	0.01	NP
pH (S.U.)	**MW-9**	**-0.08968**	**-22**	**-21**	**Yes**	**8**	**0**	**0.01**	**NP**
pH (S.U.)	MW-23	-0.05594	-14	-21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-3 (bg)	-33.18	-8	-21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-4 (bg)	-26.69	-8	-21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-5 (bg)	-30.32	-17	-21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-7R	-102.8	-12	-21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-8R	24.64	10	21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-9	485.1	14	21	No	8	0	0.01	NP
Specific Conductance (umhos/cm)	MW-23	-19.73	-4	-21	No	8	0	0.01	NP
Total Organic Halogens (mg/L)	MW-3 (bg)	0.00118	6	21	No	8	12.5	0.01	NP
Total Organic Halogens (mg/L)	MW-4 (bg)	0.009215	12	21	No	8	12.5	0.01	NP
Total Organic Halogens (mg/L)	MW-5 (bg)	0.001207	4	21	No	8	0	0.01	NP

Trend Test

ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR Printed 8/22/2024, 12:09 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Alpha	Method
Total Organic Halogens (mg/L)	MW-7R	0.004278	4	21	No	8	0	0.01	NP
Total Organic Halogens (mg/L)	MW-8R	0.009782	8	21	No	8	0	0.01	NP
Total Organic Halogens (mg/L)	MW-9	0.2251	18	21	No	8	0	0.01	NP
Total Organic Halogens (mg/L)	MW-23	-0.01256	-2	-21	No	8	0	0.01	NP

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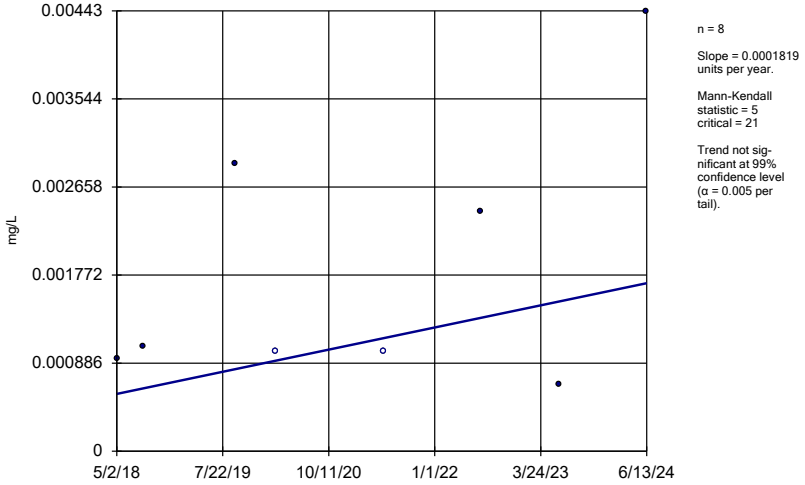
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-3 (bg)



n = 8

Slope = 0.0001819 units per year.

Mann-Kendall statistic = 5
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 8/22/2024 12:06 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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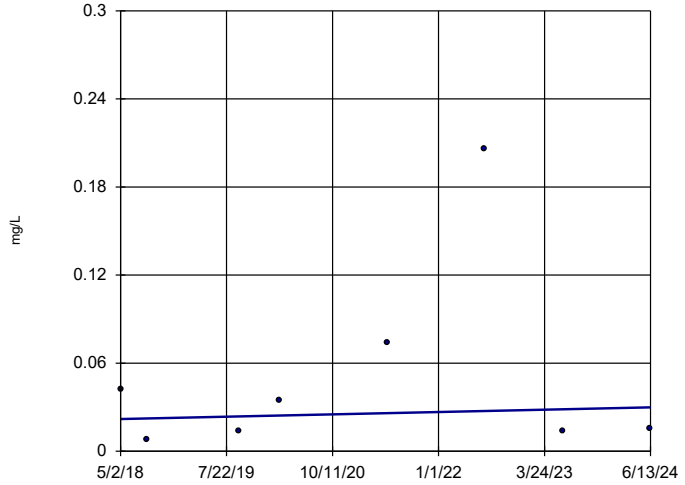
Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = 0.001304 units per year.

Mann-Kendall statistic = 6
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 8/22/2024 12:06 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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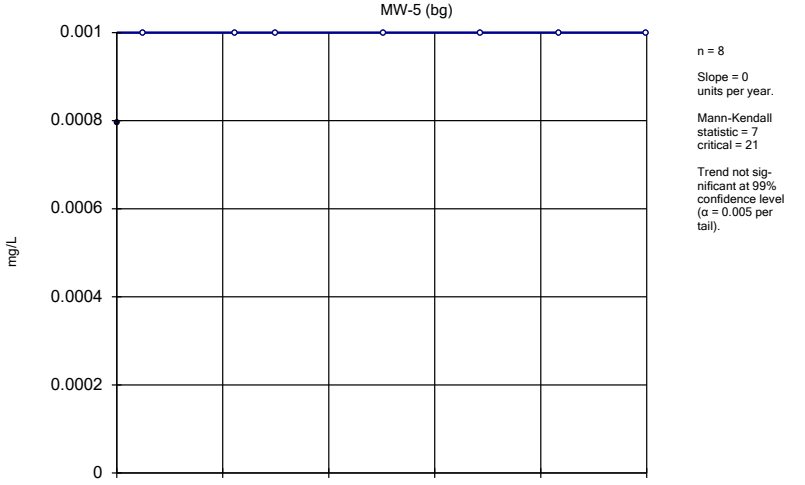
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-5 (bg)



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 7
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 8/22/2024 12:06 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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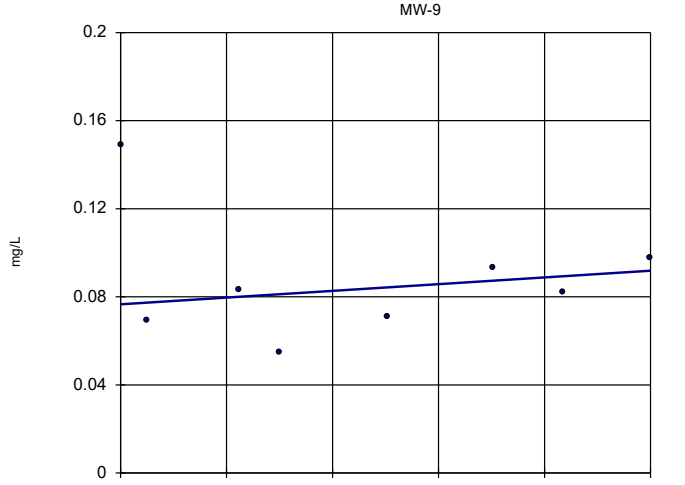
Sen's Slope Estimator

MW-9



n = 8

Slope = 0.0025 units per year.

Mann-Kendall statistic = 4
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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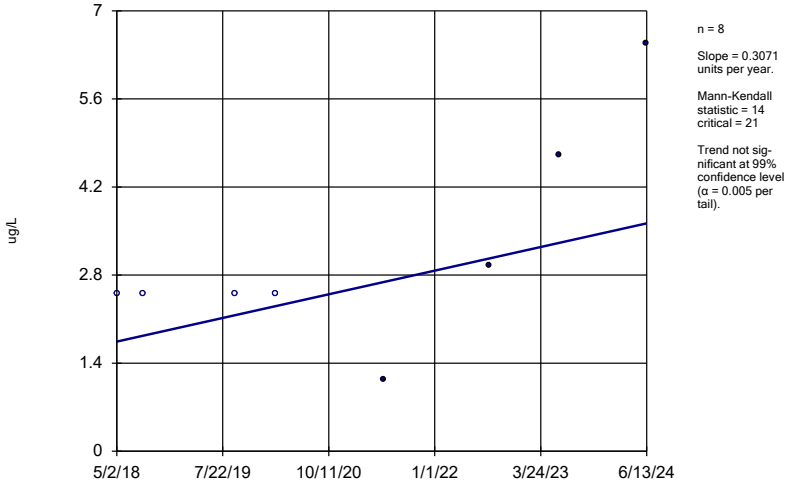
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-9



n = 8

Slope = 0.3071 units per year.

Mann-Kendall statistic = 14 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Benzene Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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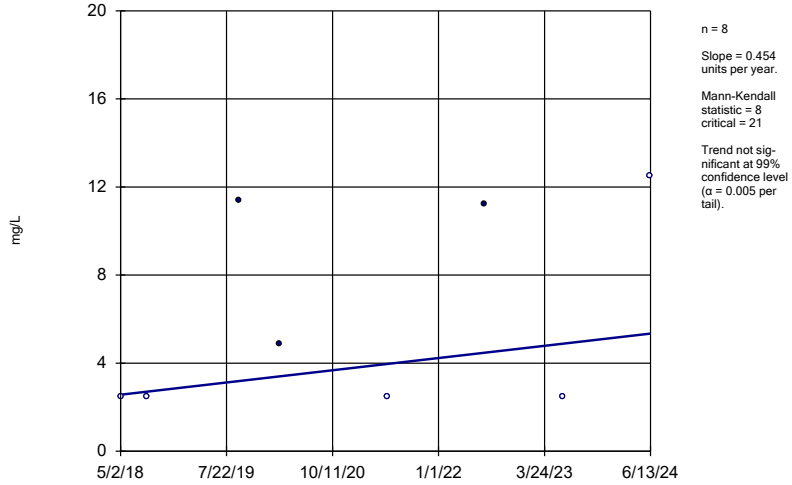
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-3 (bg)



n = 8

Slope = 0.454 units per year.

Mann-Kendall statistic = 8 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chemical Oxygen Demand Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Ken
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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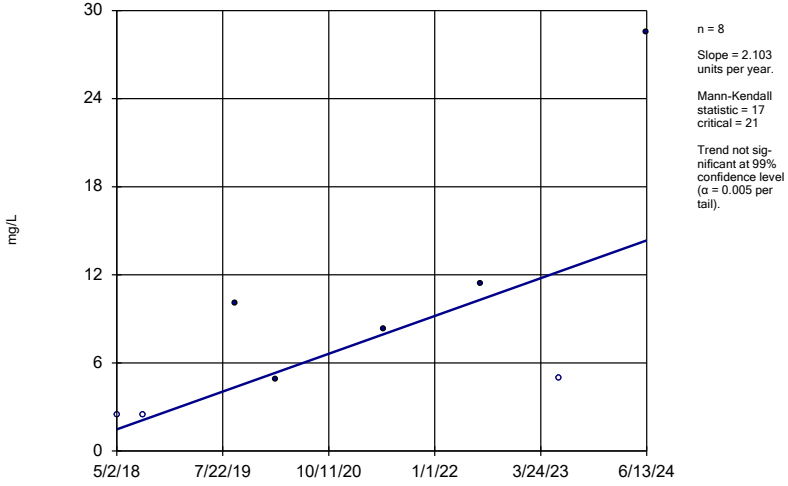
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = 2.103 units per year.

Mann-Kendall statistic = 17 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chemical Oxygen Demand Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Ken
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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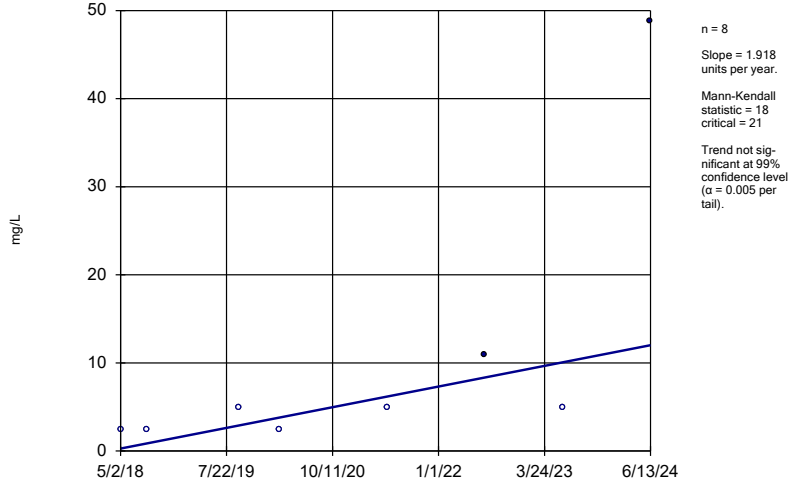
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-5 (bg)



n = 8

Slope = 1.918 units per year.

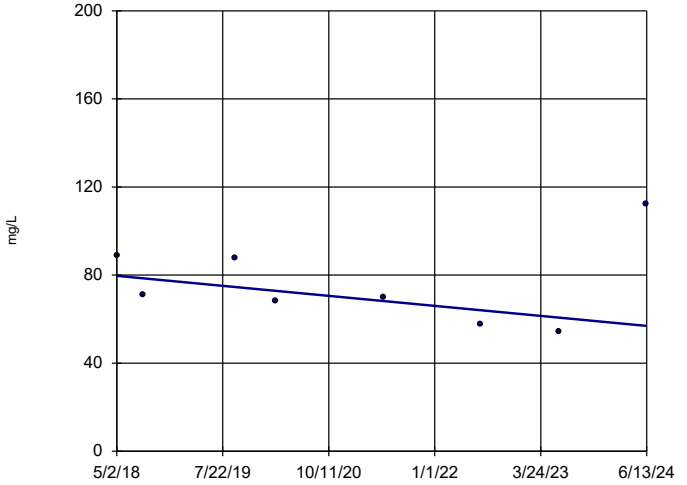
Mann-Kendall statistic = 18 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chemical Oxygen Demand Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Ken
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sen's Slope Estimator

MW-7R



n = 8

Slope = -3.717 units per year.

Mann-Kendall statistic = -10 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

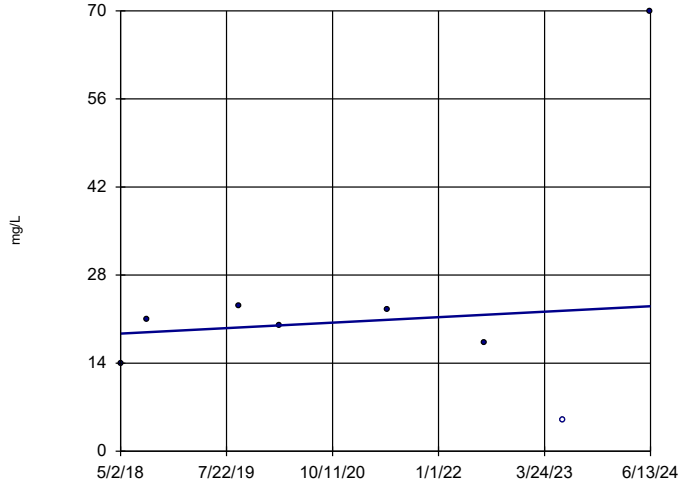
Constituent: Chemical Oxygen Demand Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Ken

ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-8R



n = 8

Slope = 0.7101 units per year.

Mann-Kendall statistic = 2 critical = 21

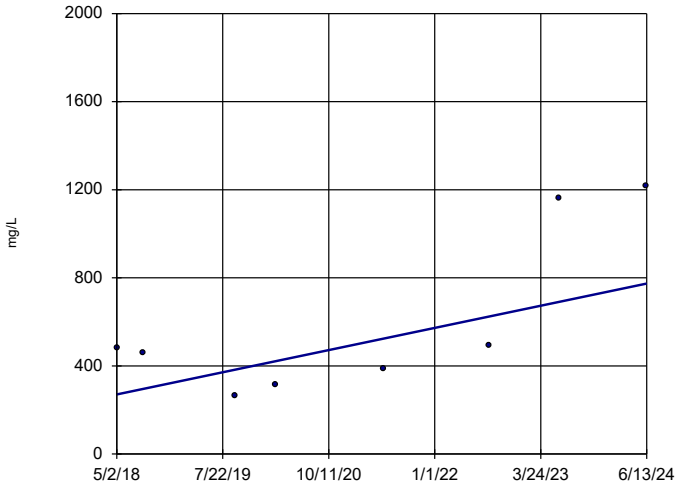
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chemical Oxygen Demand Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Ken

ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sen's Slope Estimator

MW-9



n = 8

Slope = 82.24 units per year.

Mann-Kendall statistic = 14 critical = 21

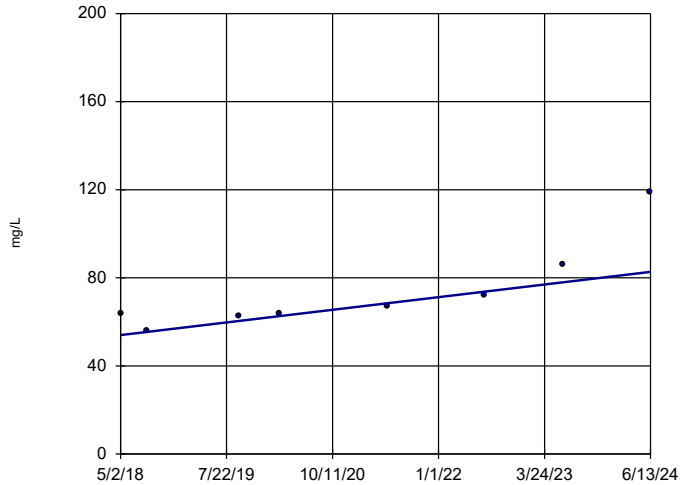
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chemical Oxygen Demand Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Ken

ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sen's Slope Estimator

MW-23



n = 8

Slope = 4.689 units per year.

Mann-Kendall statistic = 24 critical = 21

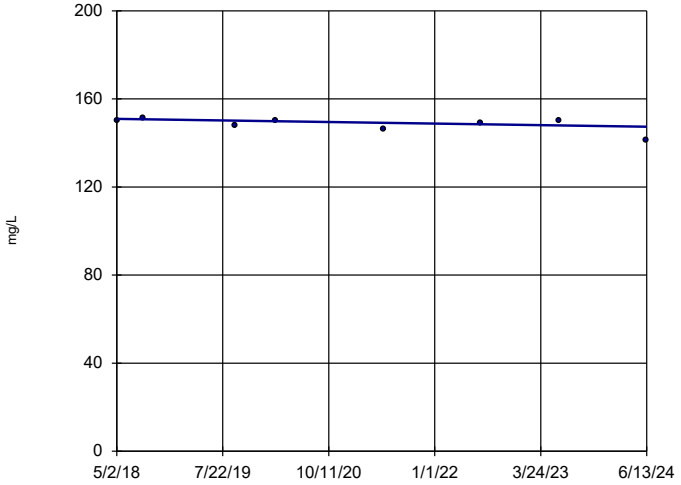
Increasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chemical Oxygen Demand Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Ken

ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sen's Slope Estimator

MW-3 (bg)



n = 8

Slope = -0.582 units per year.

Mann-Kendall statistic = -11
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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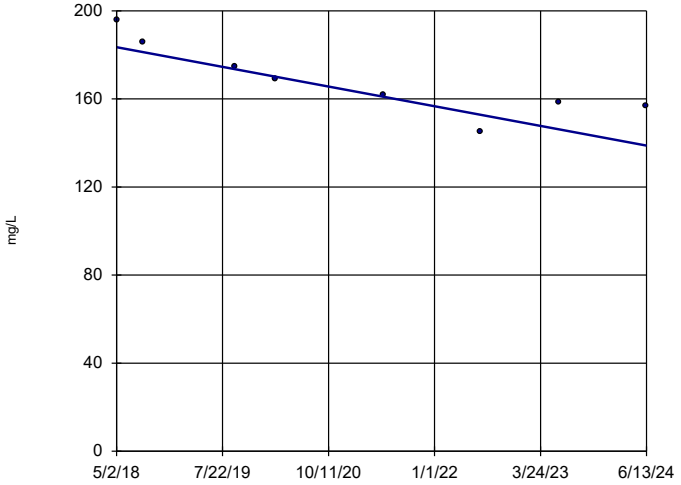
Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = -7.295 units per year.

Mann-Kendall statistic = -24
critical = -21

Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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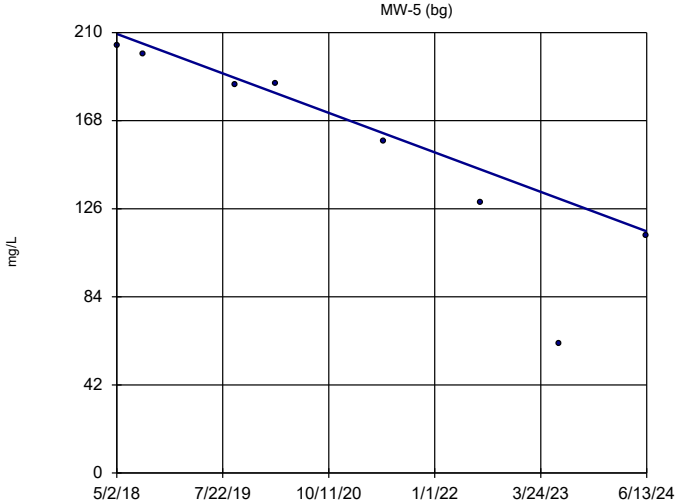
Sen's Slope Estimator

MW-5 (bg)



n = 8

Slope = -15.39 units per year.

Mann-Kendall statistic = -24
critical = -21

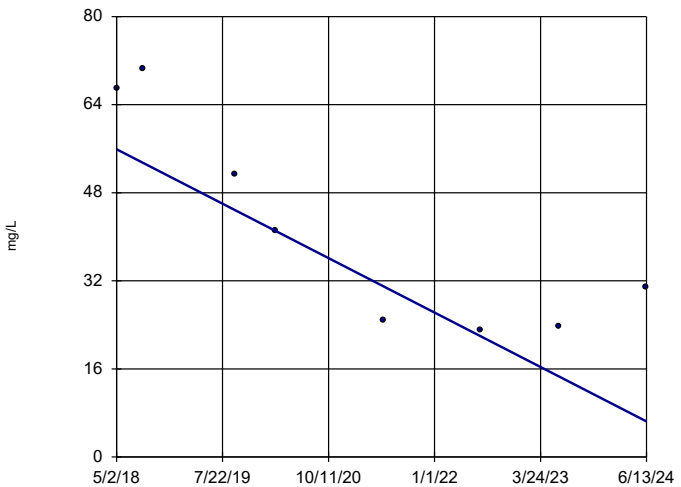
Decreasing trend significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sanitas™ v.10.0.20 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-7R



n = 8

Slope = -8.073 units per year.

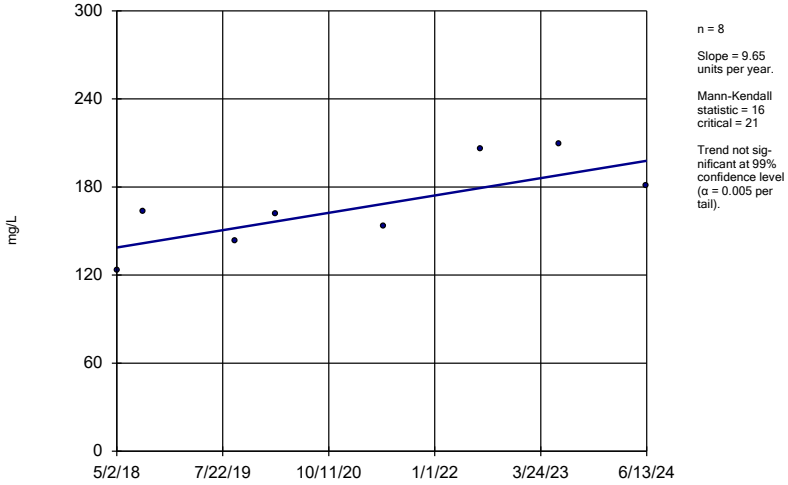
Mann-Kendall statistic = -18
critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sen's Slope Estimator

MW-8R

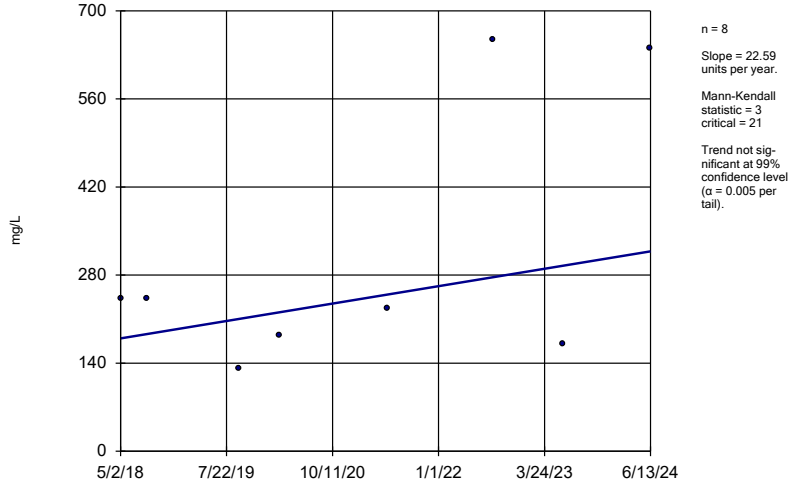


Constituent: Chloride Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sanitas™ v.10.0.20 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-9



Constituent: Chloride Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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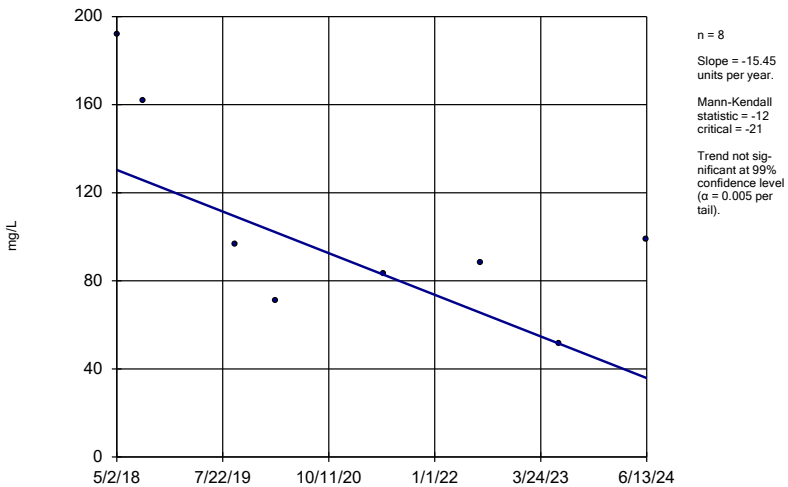
Sen's Slope Estimator

MW-23

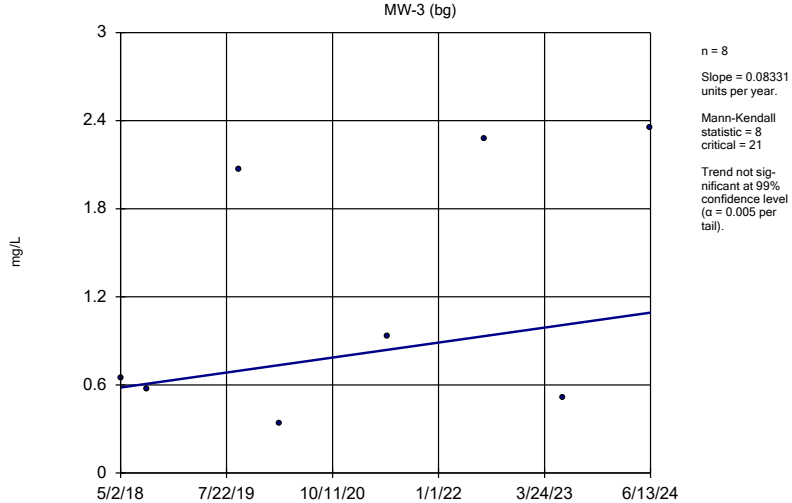


Constituent: Chloride Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sanitas™ v.10.0.20 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

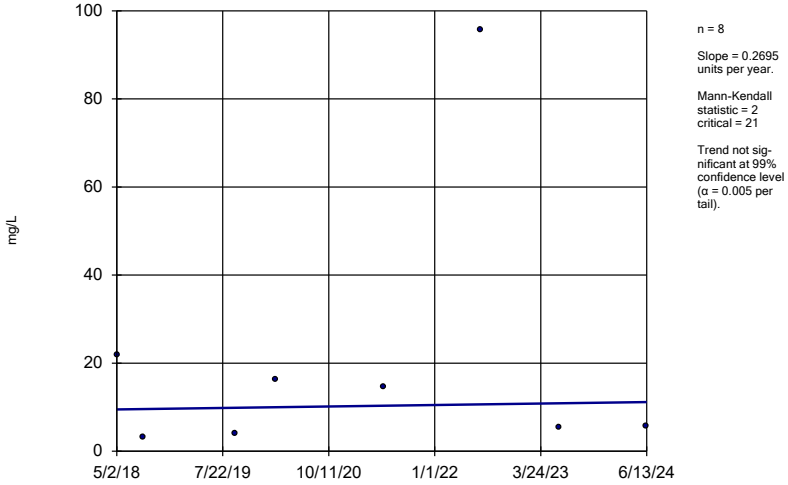
MW-3 (bg)



Constituent: Iron Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = 0.2695 units per year.

Mann-Kendall statistic = 2 critical = 21

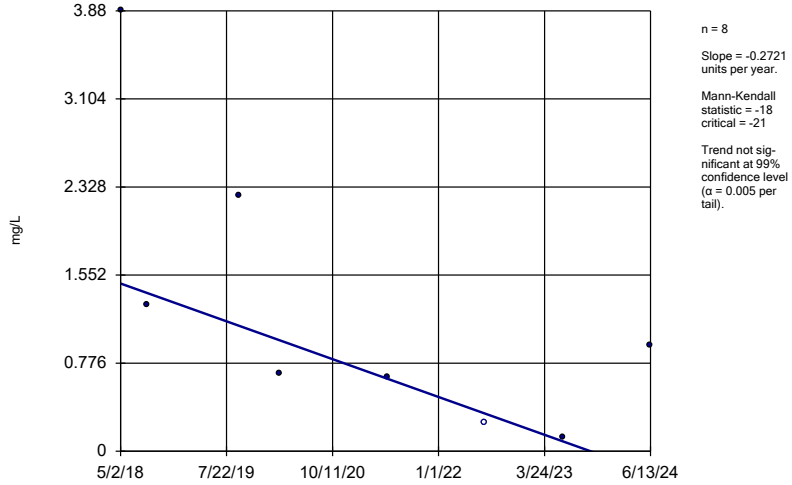
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-5 (bg)



n = 8

Slope = -0.2721 units per year.

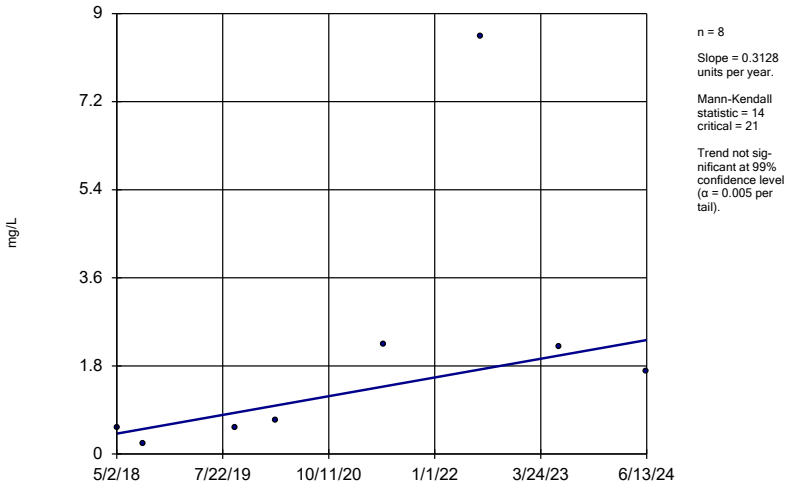
Mann-Kendall statistic = -18 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sen's Slope Estimator

MW-7R



n = 8

Slope = 0.3128 units per year.

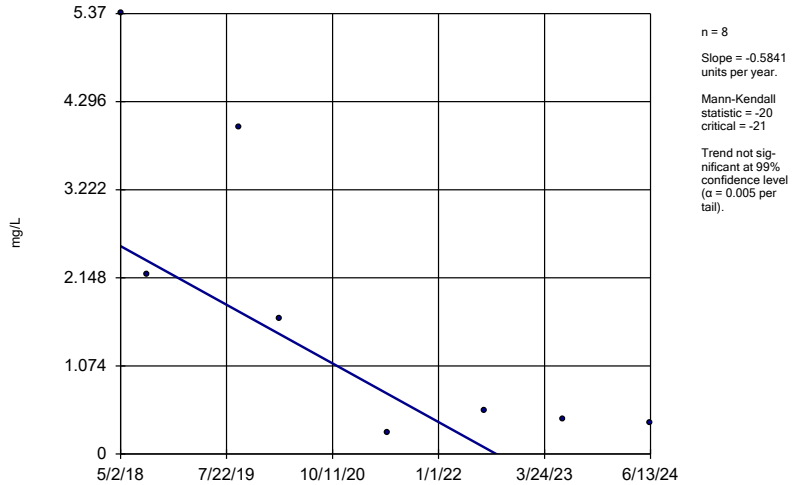
Mann-Kendall statistic = 14 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sen's Slope Estimator

MW-8R



n = 8

Slope = -0.5841 units per year.

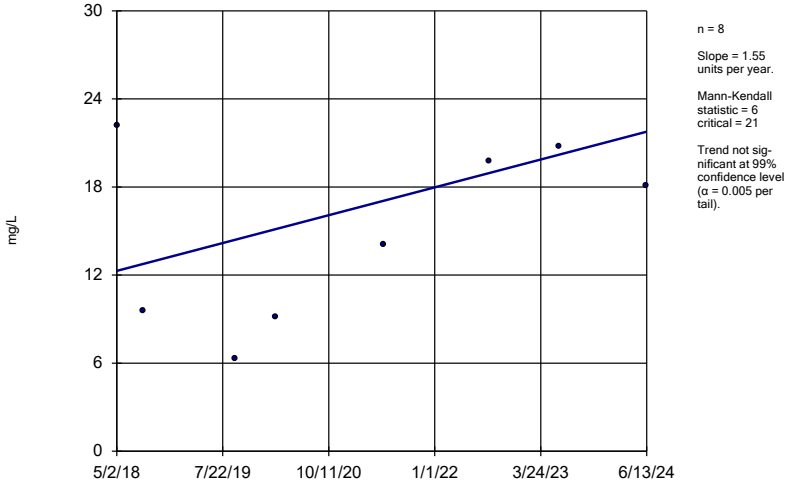
Mann-Kendall statistic = -20 critical = -21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sen's Slope Estimator

MW-9



n = 8

Slope = 1.55 units per year.

Mann-Kendall statistic = 6 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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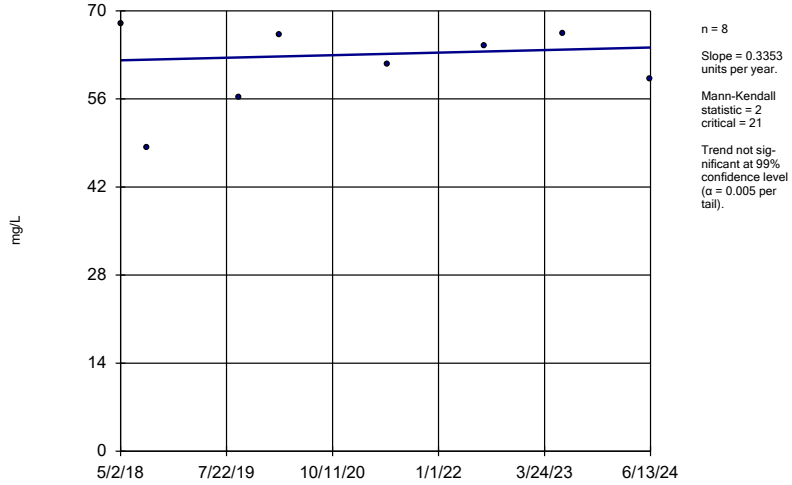
Sen's Slope Estimator

MW-23



n = 8

Slope = 0.3353 units per year.

Mann-Kendall statistic = 2 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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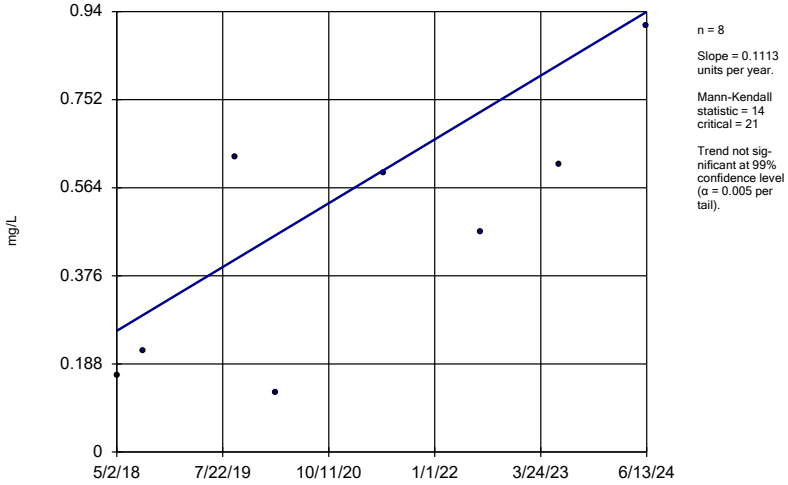
Sen's Slope Estimator

MW-3 (bg)



n = 8

Slope = 0.1113 units per year.

Mann-Kendall statistic = 14 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nitrogen, Ammonia Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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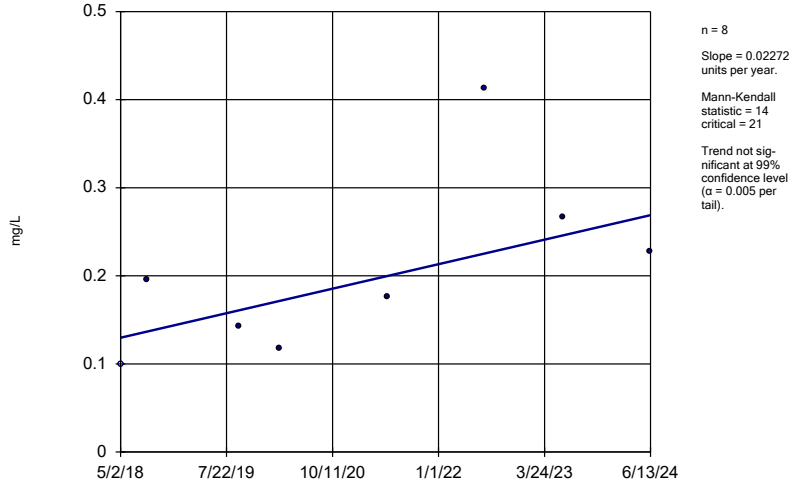
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = 0.02272 units per year.

Mann-Kendall statistic = 14 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nitrogen, Ammonia Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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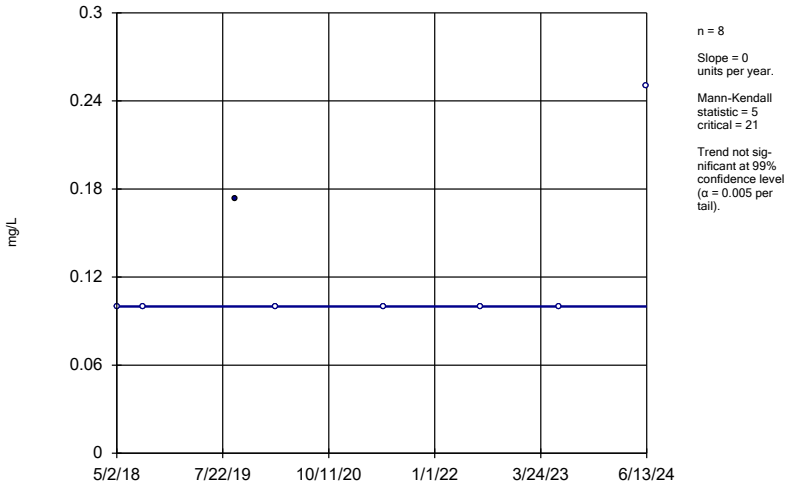
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-5 (bg)



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 5 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nitrogen, Ammonia Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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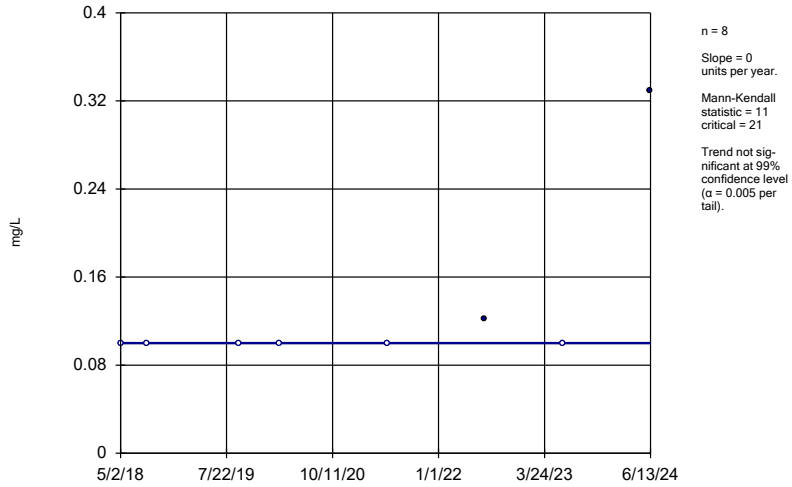
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-7R



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 11 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nitrogen, Ammonia Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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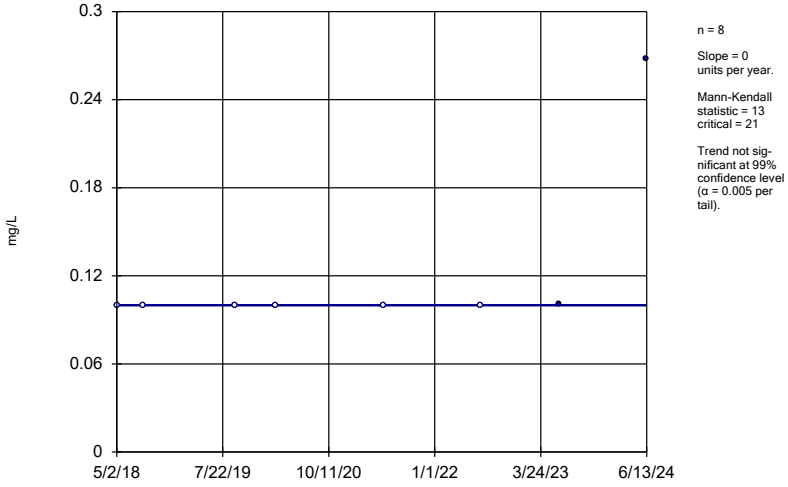
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-8R



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 13 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nitrogen, Ammonia Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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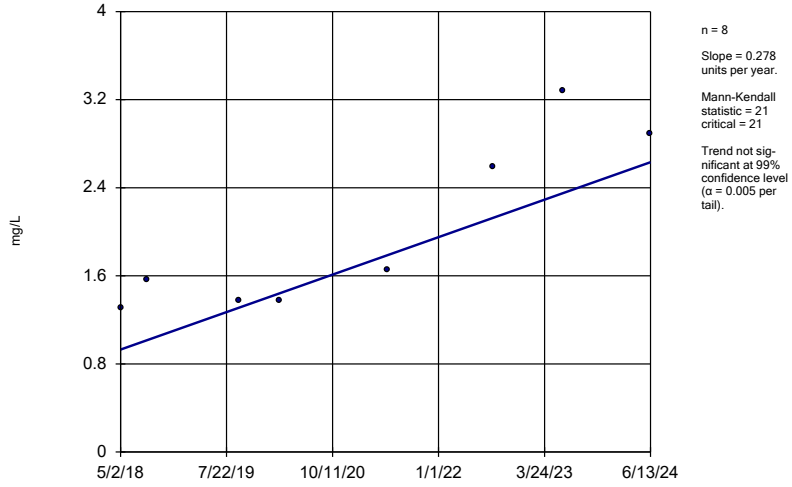
Sen's Slope Estimator

MW-9



n = 8

Slope = 0.278 units per year.

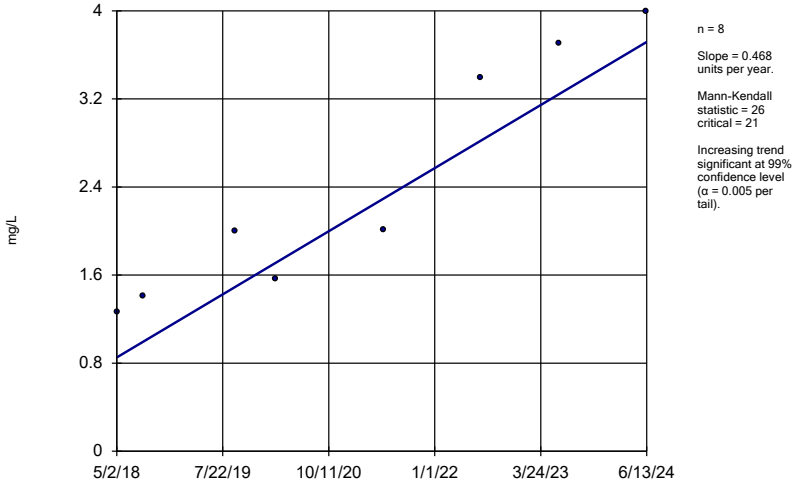
Mann-Kendall statistic = 21 critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nitrogen, Ammonia Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sen's Slope Estimator

MW-23



Constituent: Nitrogen, Ammonia Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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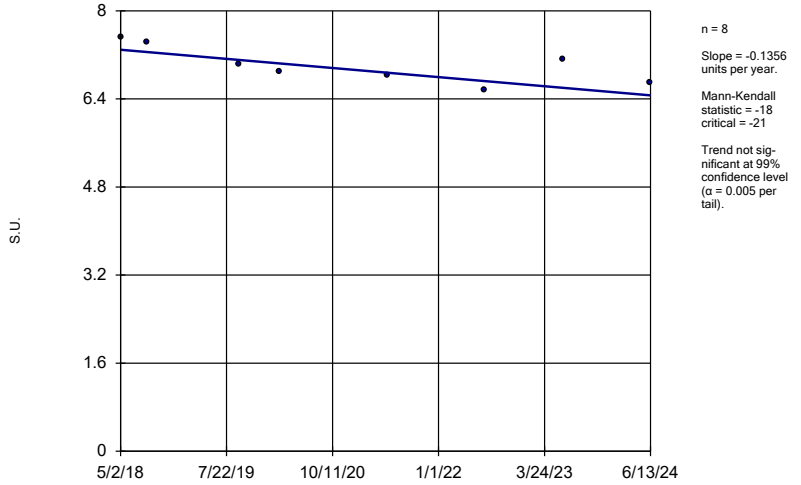
Sen's Slope Estimator

MW-3 (bg)



Constituent: pH Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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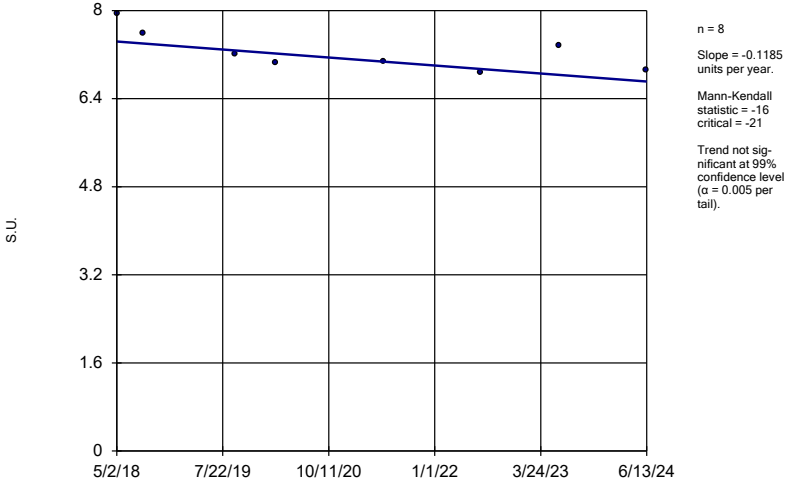
Sen's Slope Estimator

MW-4 (bg)



Constituent: pH Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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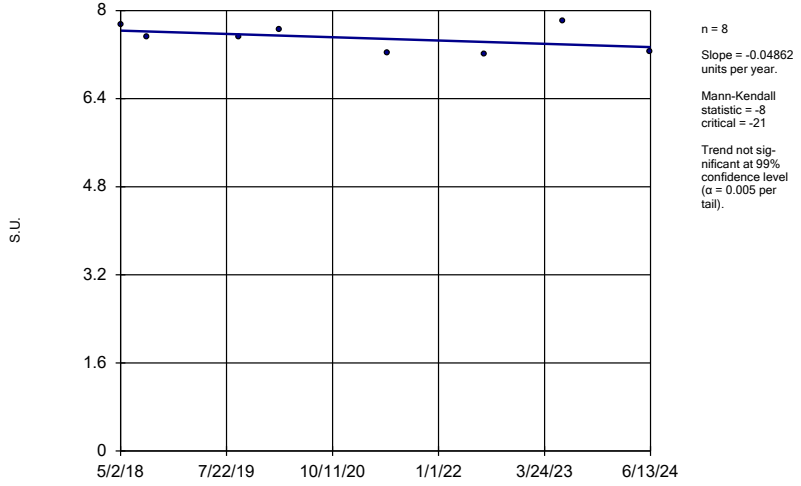
Sen's Slope Estimator

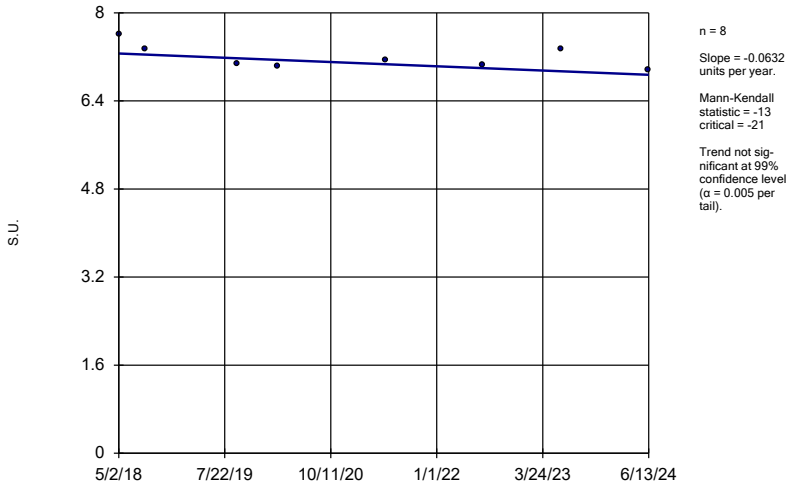
MW-5 (bg)



Constituent: pH Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sen's Slope Estimator

MW-7R



Constituent: pH Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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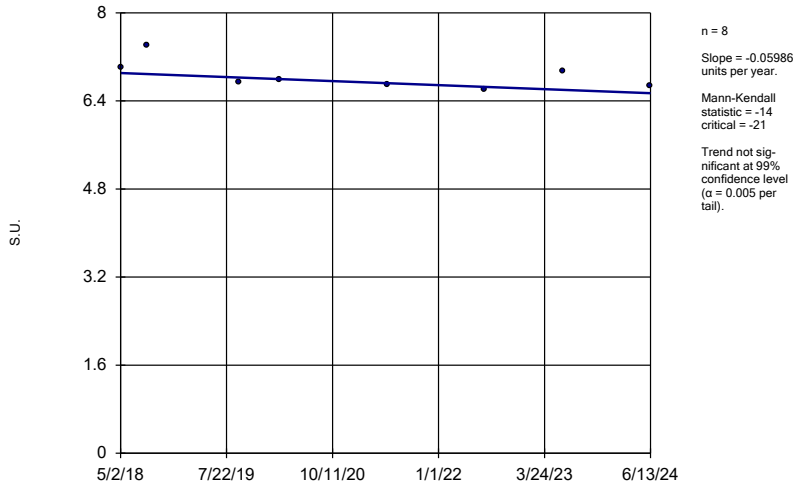
Sen's Slope Estimator

MW-8R



Constituent: pH Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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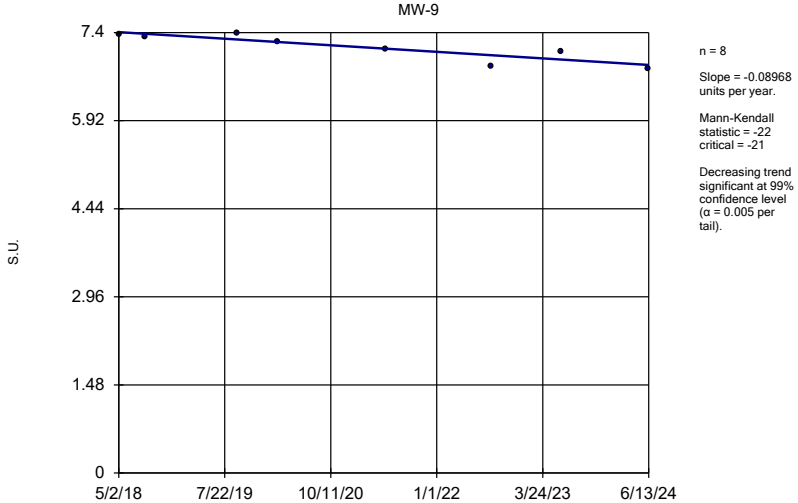
Sen's Slope Estimator

MW-9



Constituent: pH Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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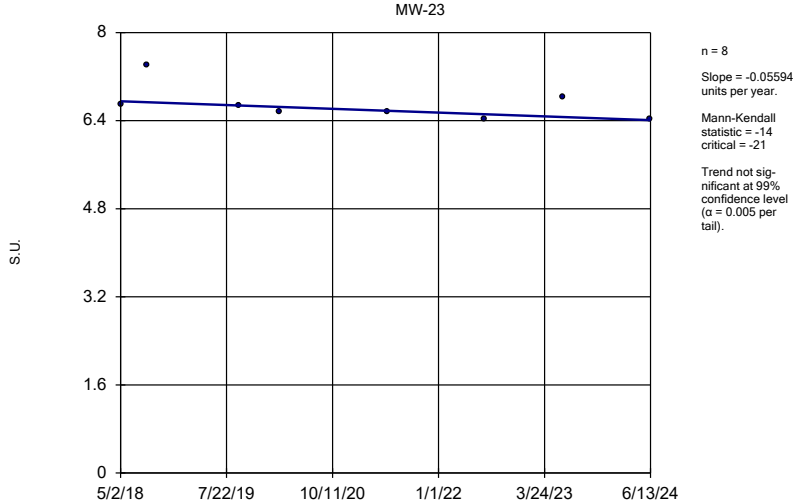
Sen's Slope Estimator

MW-23



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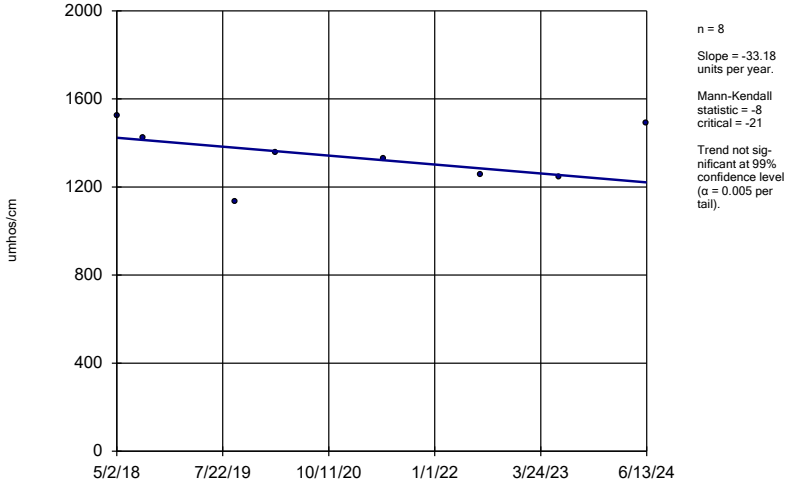
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sen's Slope Estimator

MW-3 (bg)



Constituent: Specific Conductance Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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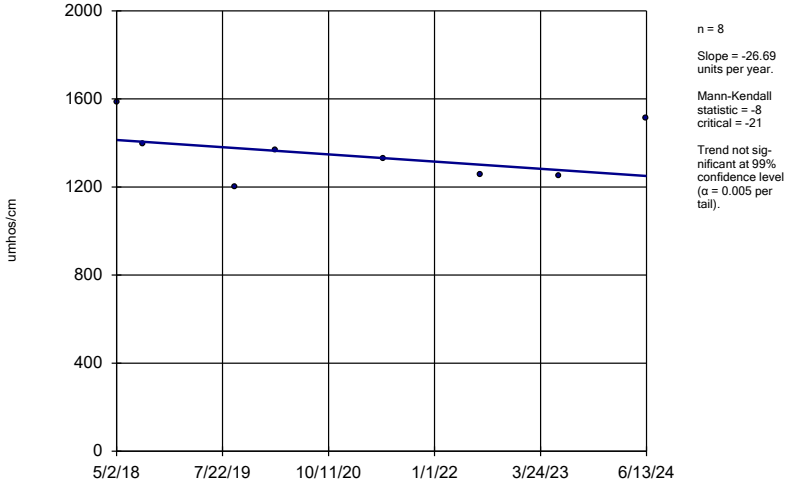
Sen's Slope Estimator

MW-4 (bg)



Constituent: Specific Conductance Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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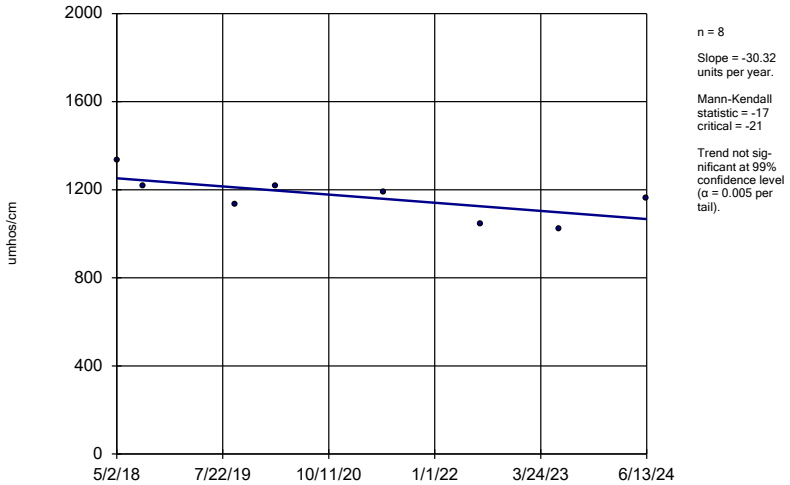
Sen's Slope Estimator

MW-5 (bg)

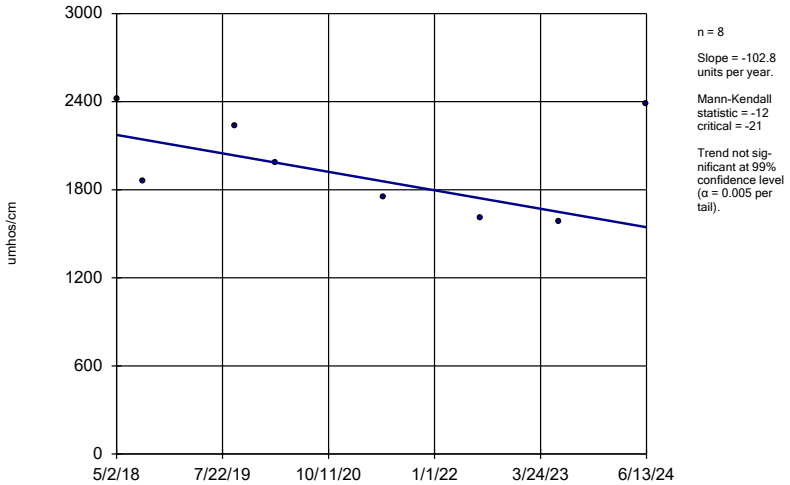


Constituent: Specific Conductance Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sanitas™ v.10.0.20 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

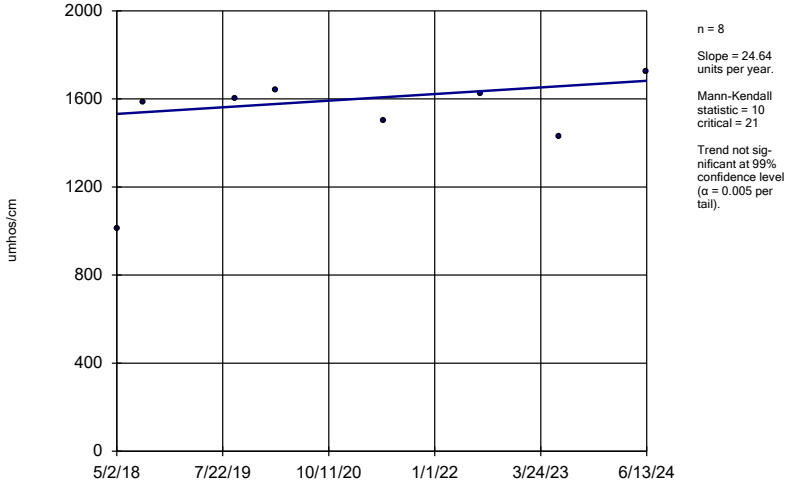
MW-7R



Constituent: Specific Conductance Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sen's Slope Estimator

MW-8R



Constituent: Specific Conductance Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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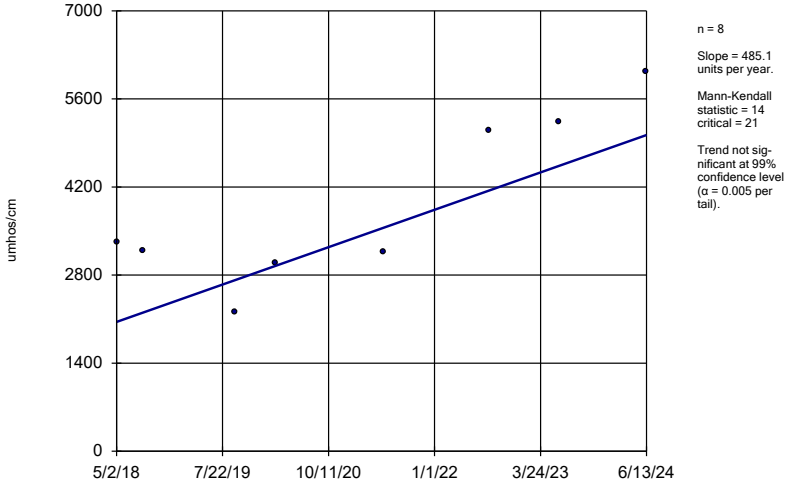
Sen's Slope Estimator

MW-9



Constituent: Specific Conductance Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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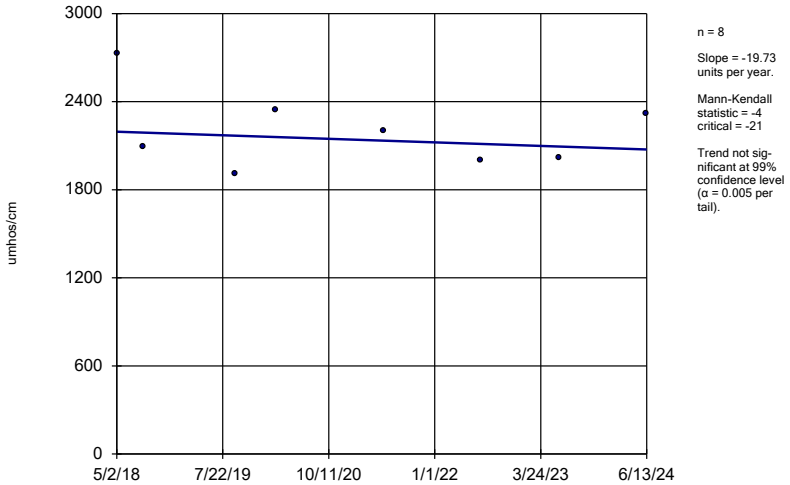
Sen's Slope Estimator

MW-23



Constituent: Specific Conductance Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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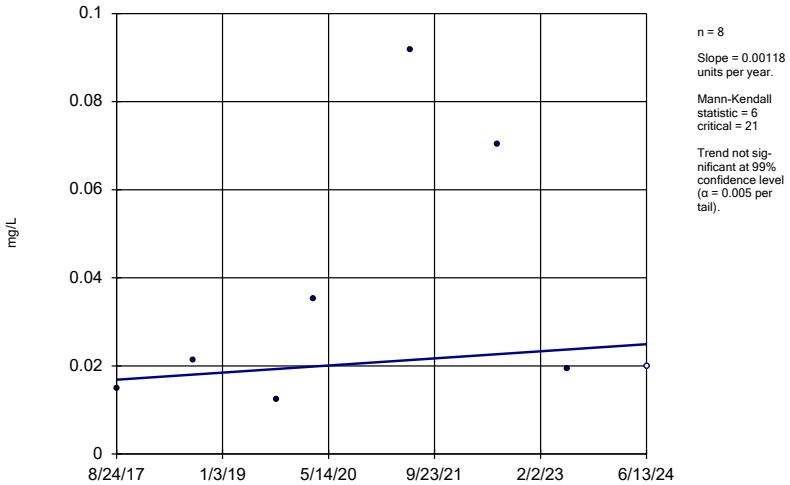
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-3 (bg)

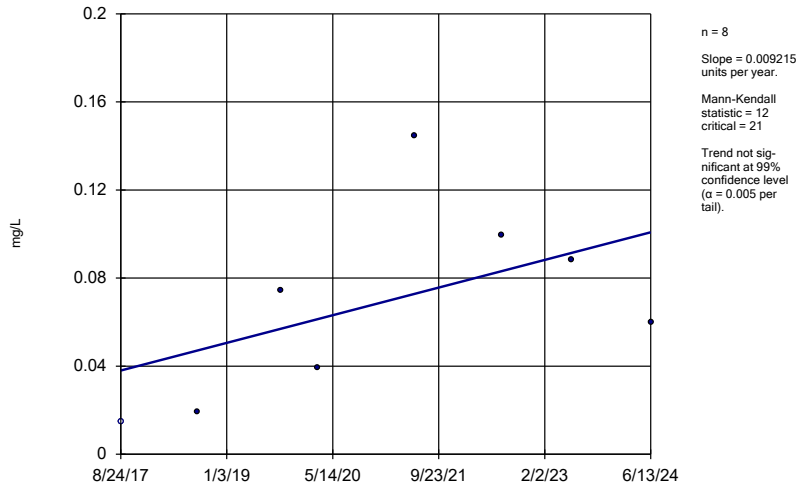


Constituent: Total Organic Halogens Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-4 (bg)



n = 8

Slope = 0.009215 units per year.

Mann-Kendall statistic = 12
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Organic Halogens Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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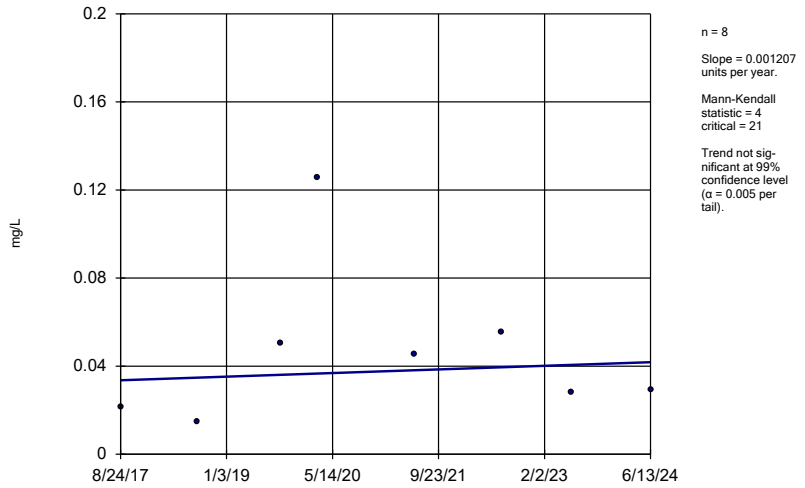
Sen's Slope Estimator

MW-5 (bg)



n = 8

Slope = 0.001207 units per year.

Mann-Kendall statistic = 4
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Organic Halogens Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

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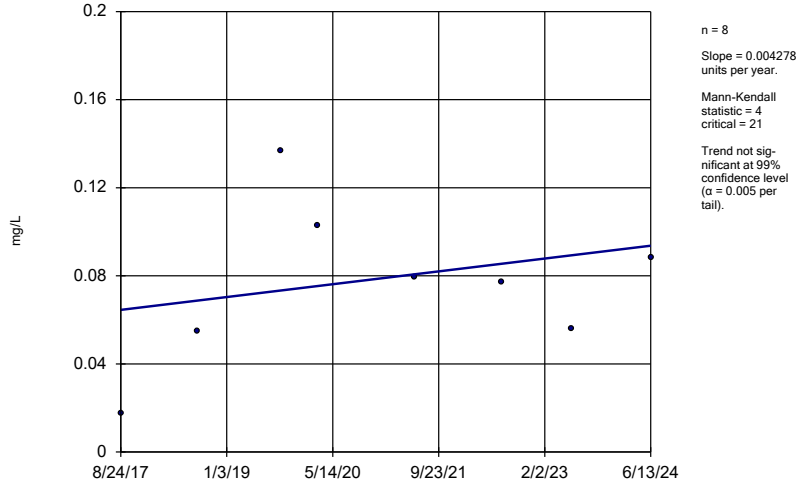
Sen's Slope Estimator

MW-7R



n = 8

Slope = 0.004278 units per year.

Mann-Kendall statistic = 4
critical = 21

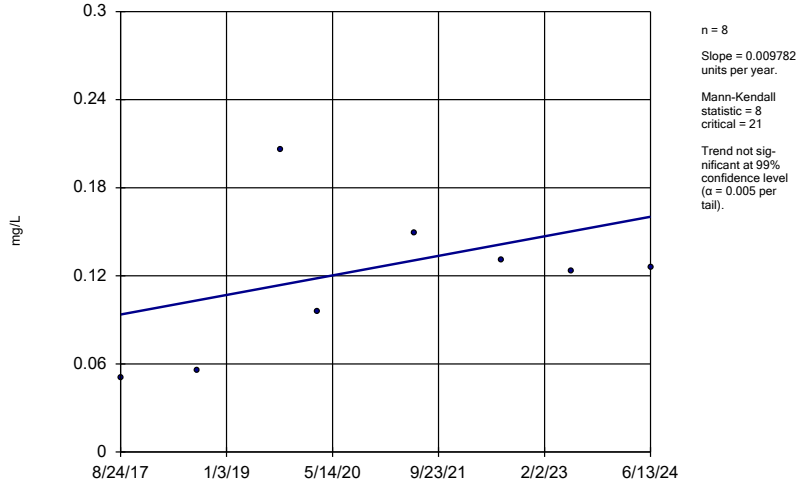
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Organic Halogens Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sanitas™ v.10.0.20 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-8R



n = 8

Slope = 0.009782 units per year.

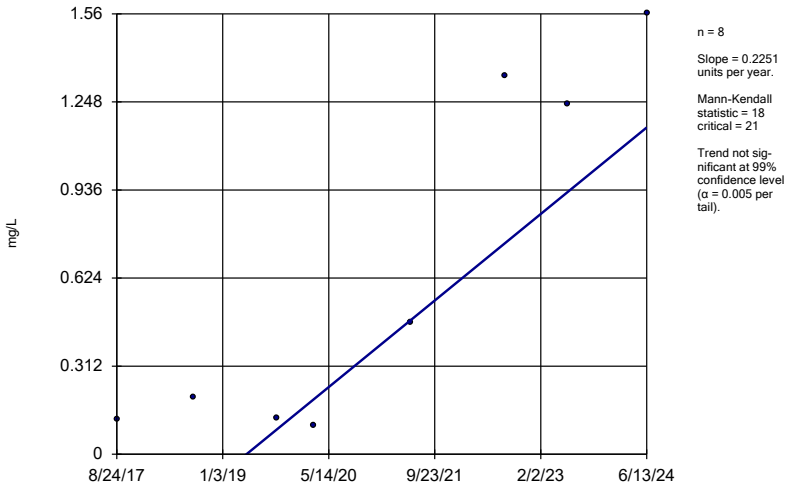
Mann-Kendall statistic = 8
critical = 21

Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Total Organic Halogens Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sen's Slope Estimator

MW-9

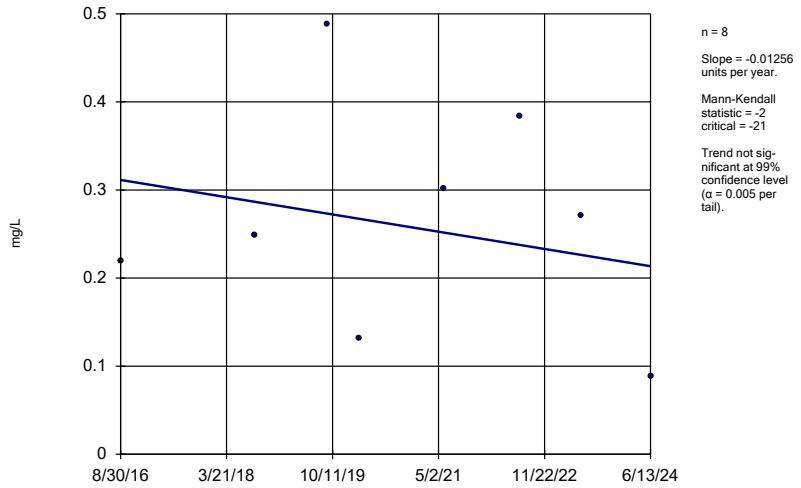


Constituent: Total Organic Halogens Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Sanitas™ v.10.0.20 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

MW-23



Constituent: Total Organic Halogens Analysis Run 8/22/2024 12:07 PM View: 2024AWQR - Mann Kendall
ALTER Hwy 22 Monofill Client: SCS Engineers Data: ALTER-AM 2024AWQR

Appendix E

Mann-Kendall Trend Table

Monitoring Well	Constituent Name	Calculated Statistic		
		Decreasing Trend	Stable Trend	Increasing Trend
MW-3	Arsenic		5	
	Chemical Oxygen Demand		8	
	Chloride		-11	
	Iron		8	
	Nitrogen, Ammonia			14
	pH	-18		
	Specific Conductance		-8	
	Total Organic Halogens		6	
MW-4	Arsenic		6	
	Chemical Oxygen Demand			17
	Chloride	-24		
	Iron		2	
	Nitrogen, Ammonia			14
	pH	-16		
	Specific Conductance		-8	
	Total Organic Halogens		12	
MW-5	Arsenic		7	
	Chemical Oxygen Demand			18
	Chloride	-24		
	Iron	-18		
	Nitrogen, Ammonia		5	
	pH		-8	
	Specific Conductance	-17		
	Total Organic Halogens		4	
MW-7R	Chemical Oxygen Demand		-10	
	Chloride	-18		
	Iron			14
	Nitrogen, Ammonia		11	
	pH	-13		
	Specific Conductance		-12	
	Total Organic Halogens		4	
MW-8R	Chemical Oxygen Demand		2	
	Chloride			16
	Iron	-20		
	Nitrogen, Ammonia			13
	pH	-14		
	Specific Conductance		10	
	Total Organic Halogens		8	
MW-9	Arsenic		4	
	Benzene			14
	Chemical Oxygen Demand			14
	Chloride		3	
	Iron		6	
	Nitrogen, Ammonia			21
	pH	-22		
	Specific Conductance			14
	Total Organic Halogens			18
MW-23	Chemical Oxygen Demand			24
	Chloride		-12	
	Iron		2	
	Nitrogen, Ammonia			26
	pH	-14		
	Specific Conductance		-4	
	Total Organic Halogens		-2	

Appendix F

Leachate Control System Performance Evaluation Report

Table F1
Leachate Management Summary
2024 Leachate Control System Performance Evaluation Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Date of Measurement	Column in Piezometer (ft)							Month of Measurement	Discharge to POTW (gal)	Precipitation (in)
	EW-2	EW-3	EW-4	EW-5	EW-6	EW-7	EW-8			
9/1/2023	3.25	3.81	3.04	3.05	1.74	2.57	2.60	Aug. 2023	19,540	2.74
10/2/2023	3.29	3.81	3.11	3.10	1.77	2.43	2.56	Sept. 2023	14,317	3.20
11/1/2023	3.24	3.87	3.04	3.25	1.81	2.52	2.55	Oct. 2023	13,925	4.05
12/1/2023	3.25	3.82	3.08	3.13	1.93	2.34	2.55	Nov. 2023	14,297	0.78
1/2/2024	3.93	3.79	3.13	2.94	1.87	2.53	2.56	Dec. 2023	19,873	2.67
1/30/2024	4.43	3.77	3.09	3.28	1.94	2.38	2.43	Jan. 2024	29,807	2.55
2/29/2024	3.24	3.82	3.03	3.23	1.82	2.43	2.47	Feb. 2024	62,720	0.18
4/1/2024	3.23	3.84	2.94	3.13	1.77	2.37	2.49	Mar. 2024	63,255	3.01
5/2/2024	2.04	3.87	3.10	3.28	1.88	2.48	2.61	Apr. 2024	134,790	7.44
5/31/2024	3.19	3.82	3.09	3.06	1.96	2.37	2.35	May 2024	87,612	3.02
7/2/2024	3.22	3.83	3.16	3.15	1.85	2.50	2.40	Jun. 2024	56,420	2.83
7/31/2024	3.20	3.86	3.13	3.17	1.97	2.40	2.47	Jul. 2024	40,067	7.25
8/30/2024	3.23	3.83	3.02	3.26	1.73	2.27	2.52	Aug. 2024	39,559	5.13
Reporting Period Total									596,182	44.85

Notes:

1) Leachate column thicknesses for the reporting period generally remained consistent with historical measurements.
2) Historical leachate levels and graphs are provided in Attachment A.
3) Precipitation data for August 2023 - August 2024 obtained from ncdc.noaa.gov.
4) NA - Not Available

Comments:

Reporting Period: August 2023 - August 2024.
Approved Changes to Leachate Collection System: None.
Proposed Changes to Leachate Collection System: None.
Maintenance Performed on Leachate Collection System: None.
Last Date of Cleaning and Inspection: None
Date of Next Cleaning and Inspection: None.
Volume of Leachate Recirculated: Not Applicable.
Volume of Leachate Treated Off-Site: 596,182 gallons were pumped to the City of Davenport during the reporting period.
Leachate Quality Testing Results: Leachate quality testing results for the reporting period are provided in Attachment B.

Leachate Control System

Legend

- Approximate Monitoring Well Location
- Approximate Leachate Monitoring Location
- Leachate Extraction Well
- Leachate Pipe
- Approximate Waste Boundary
- Approximate Waste Excavation Boundary
- Approximate Property Boundary

Alter Trading Corporation
Davenport, Iowa
Project No: 27224254.00
Drawing Date:
November 2024

Figure 1

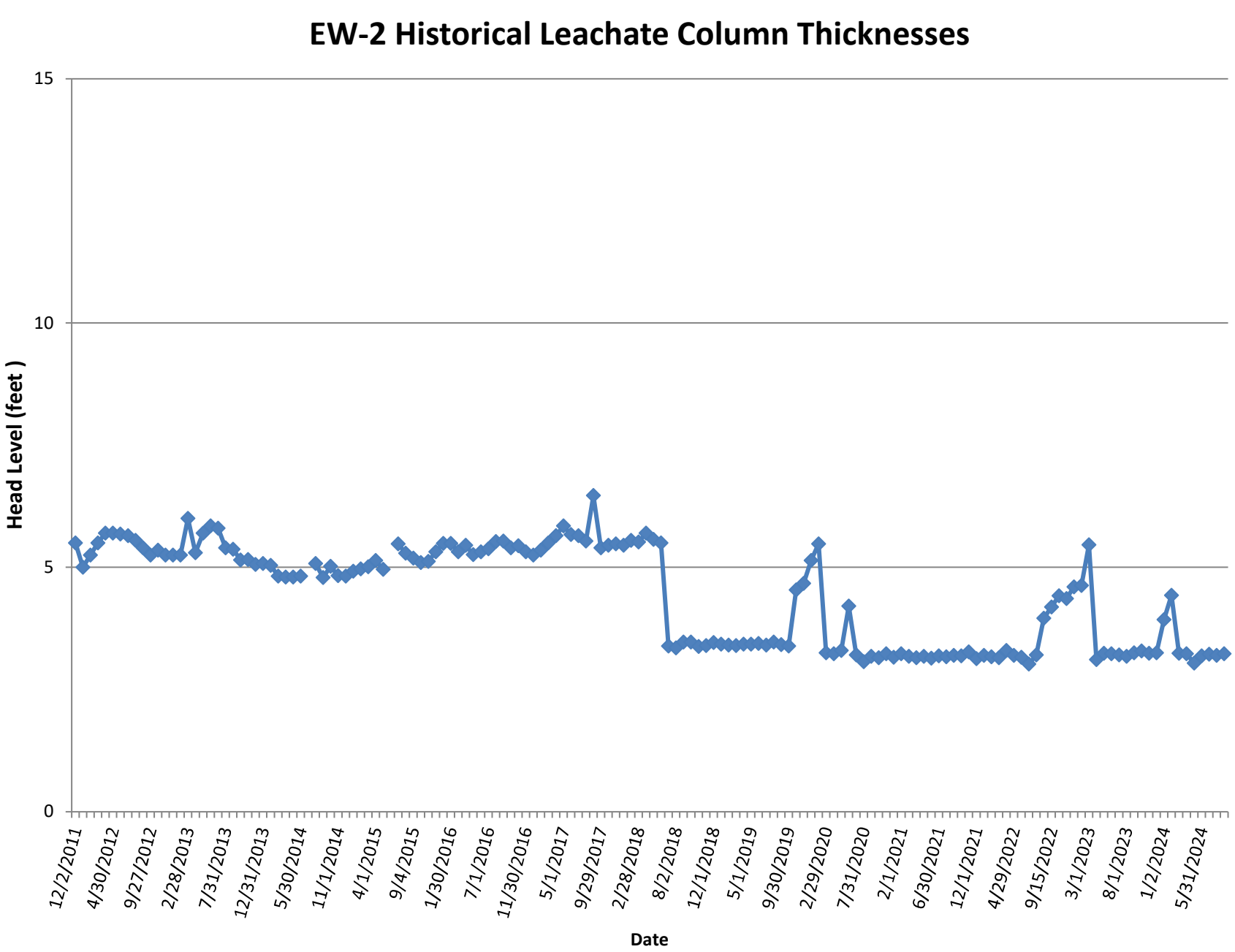
N
W E
S

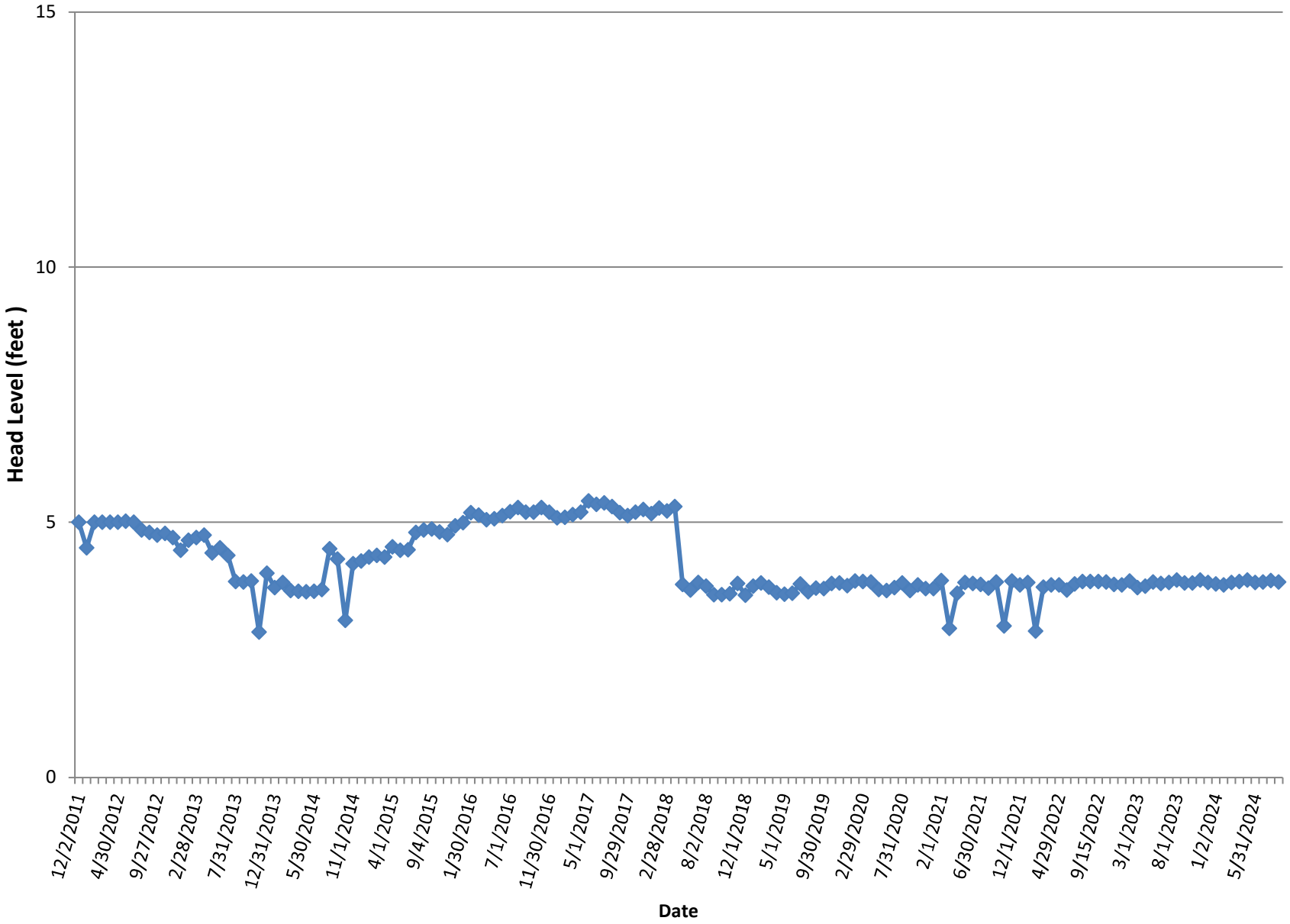
0 155 310 620
Feet

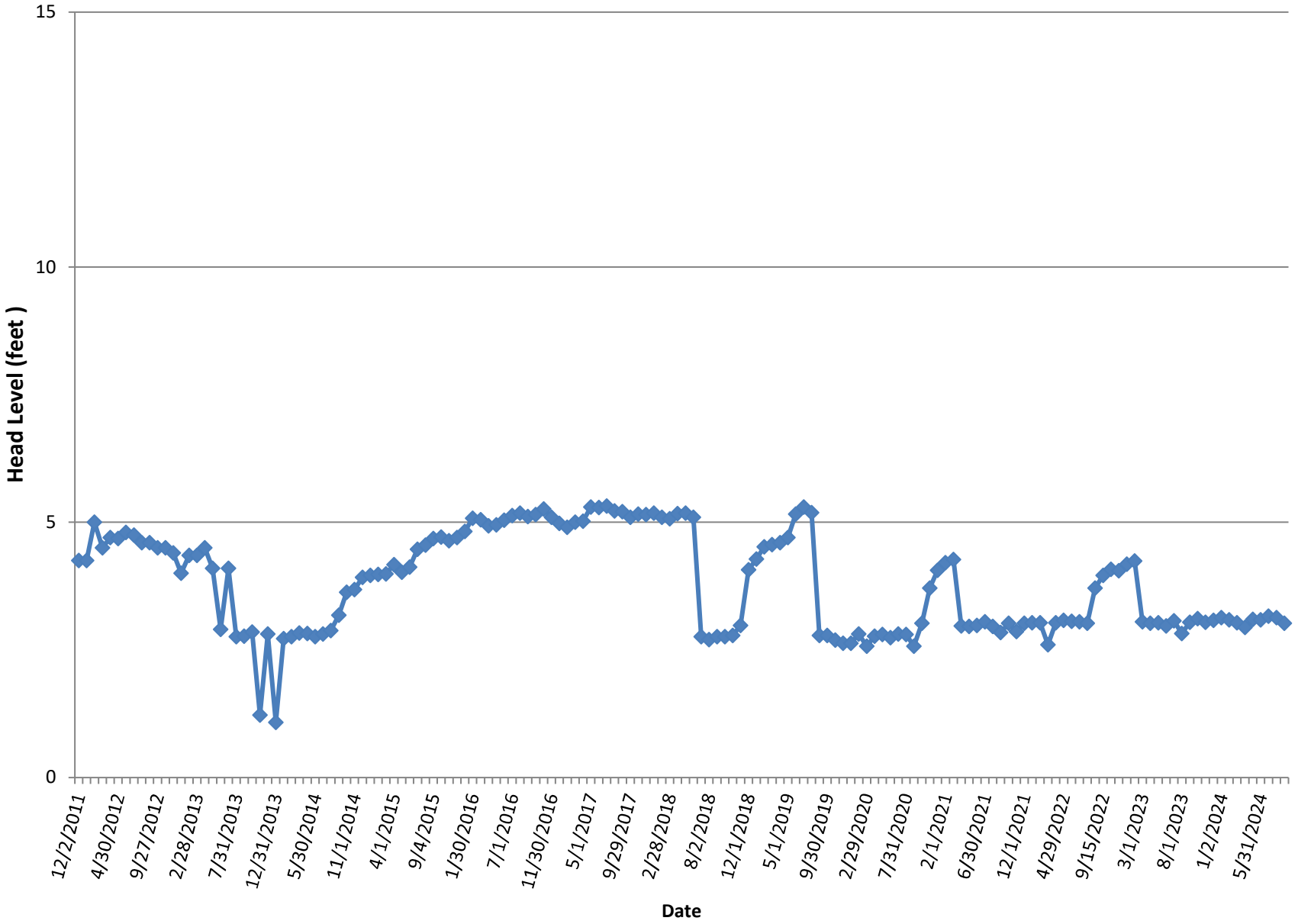
SCS ENGINEERS
environmental consultants and contractors

Attachment A

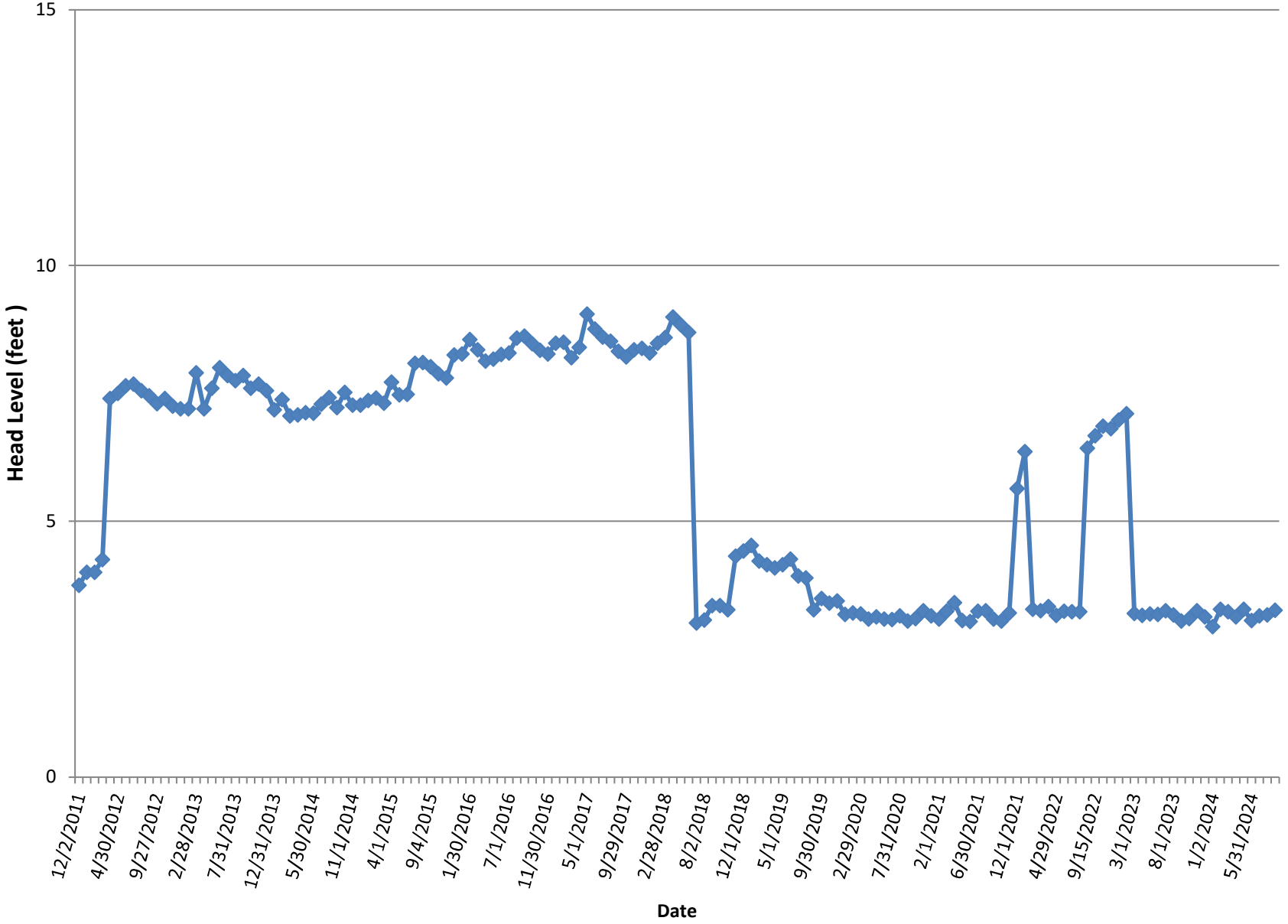
Historical Leachate Level Graphs

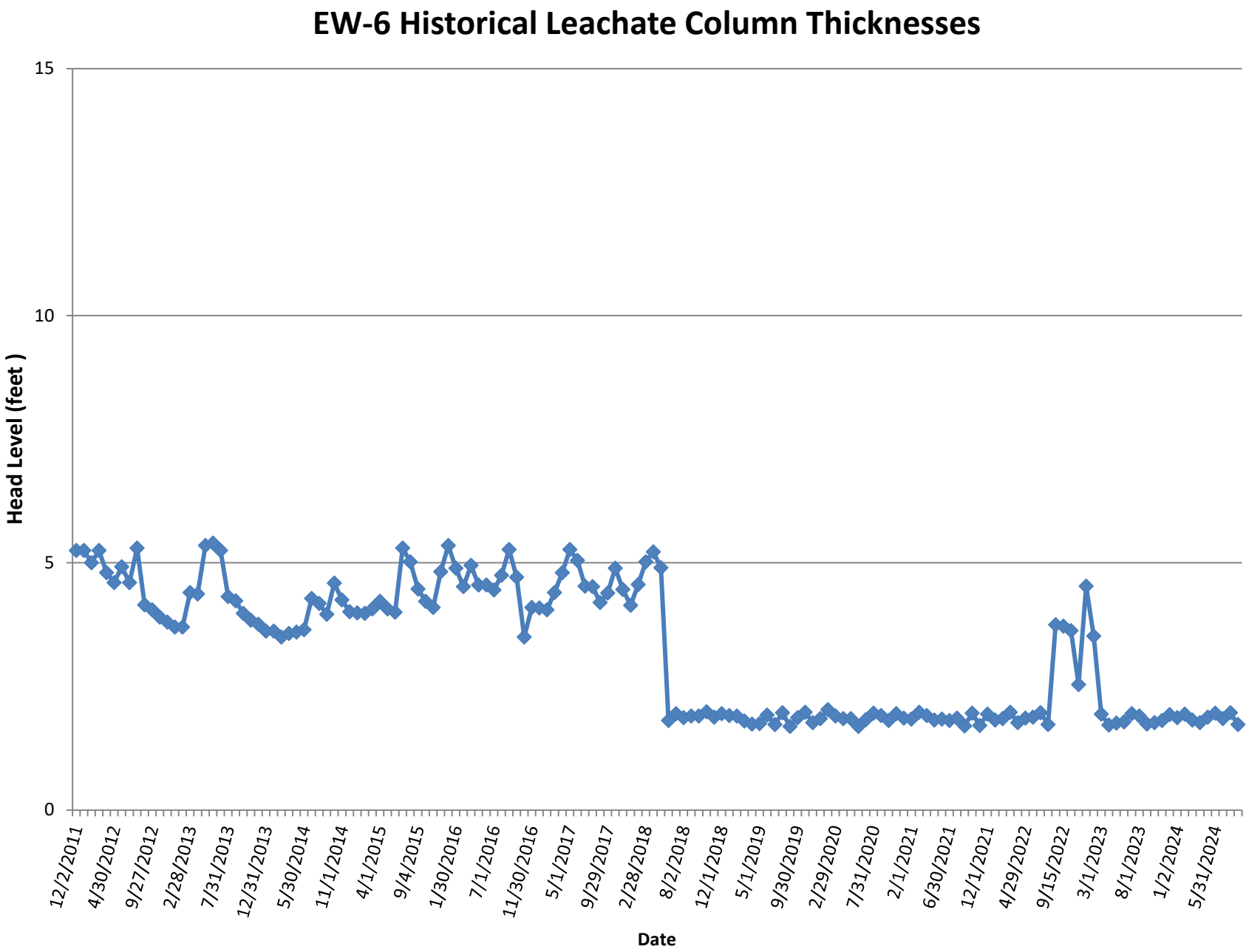

EW-2 Historical Leachate Column Thicknesses
Head Level (feet)
15
10
5
0
12/2/2011
4/30/2012
9/27/2012
2/28/2013
7/31/2013
12/31/2013
5/30/2014
11/1/2014
4/1/2015
9/4/2015
1/30/2016
7/1/2016
11/30/2016
5/1/2017
9/29/2017
2/28/2018
8/2/2018
12/1/2018
5/1/2019
9/30/2019
2/29/2020
7/31/2020
2/1/2021
6/30/2021
12/1/2021
4/29/2022
9/15/2022
3/1/2023
8/1/2023
1/2/2024
5/31/2024
Date


EW-3 Historical Leachate Column Thicknesses
Head Level (feet)
15
10
5
0
12/2/2011
4/30/2012
9/27/2012
2/28/2013
7/31/2013
12/31/2013
5/30/2014
11/1/2014
4/1/2015
9/4/2015
1/30/2016
7/1/2016
11/30/2016
5/1/2017
9/29/2017
2/28/2018
8/2/2018
12/1/2018
5/1/2019
9/30/2019
2/29/2020
7/31/2020
2/1/2021
6/30/2021
12/1/2021
4/29/2022
9/15/2022
3/1/2023
8/1/2023
1/2/2024
5/31/2024
Date

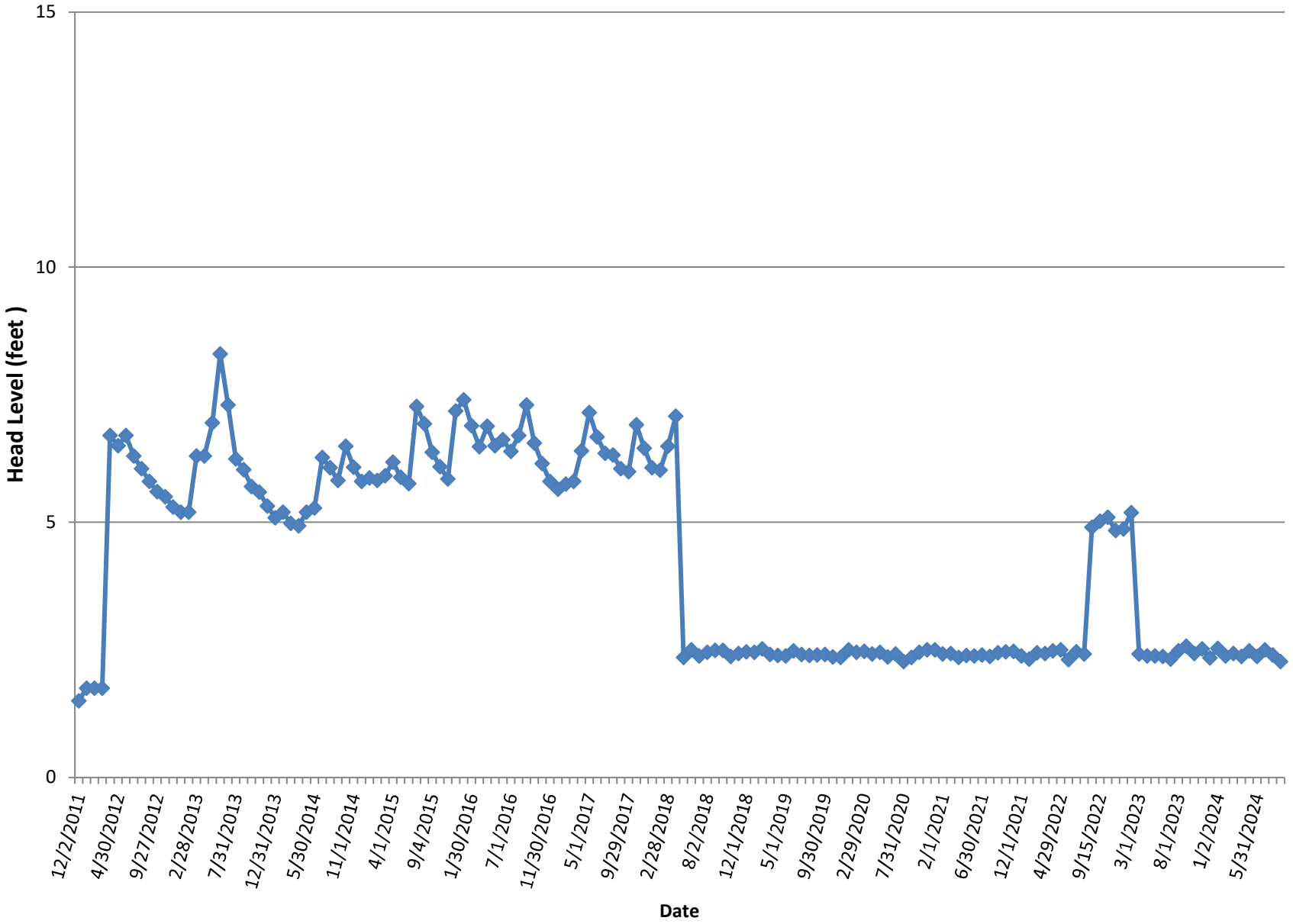

EW-4 Historical Leachate Column Thicknesses
Head Level (feet)
15
10
5
0
12/2/2011
4/30/2012
9/27/2012
2/28/2013
7/31/2013
12/31/2013
5/30/2014
11/1/2014
4/1/2015
9/4/2015
1/30/2016
7/1/2016
11/30/2016
5/1/2017
9/29/2017
2/28/2018
8/2/2018
12/1/2018
5/1/2019
9/30/2019
2/29/2020
7/31/2020
2/1/2021
6/30/2021
12/1/2021
4/29/2022
9/15/2022
3/1/2023
8/1/2023
1/2/2024
5/31/2024
Date

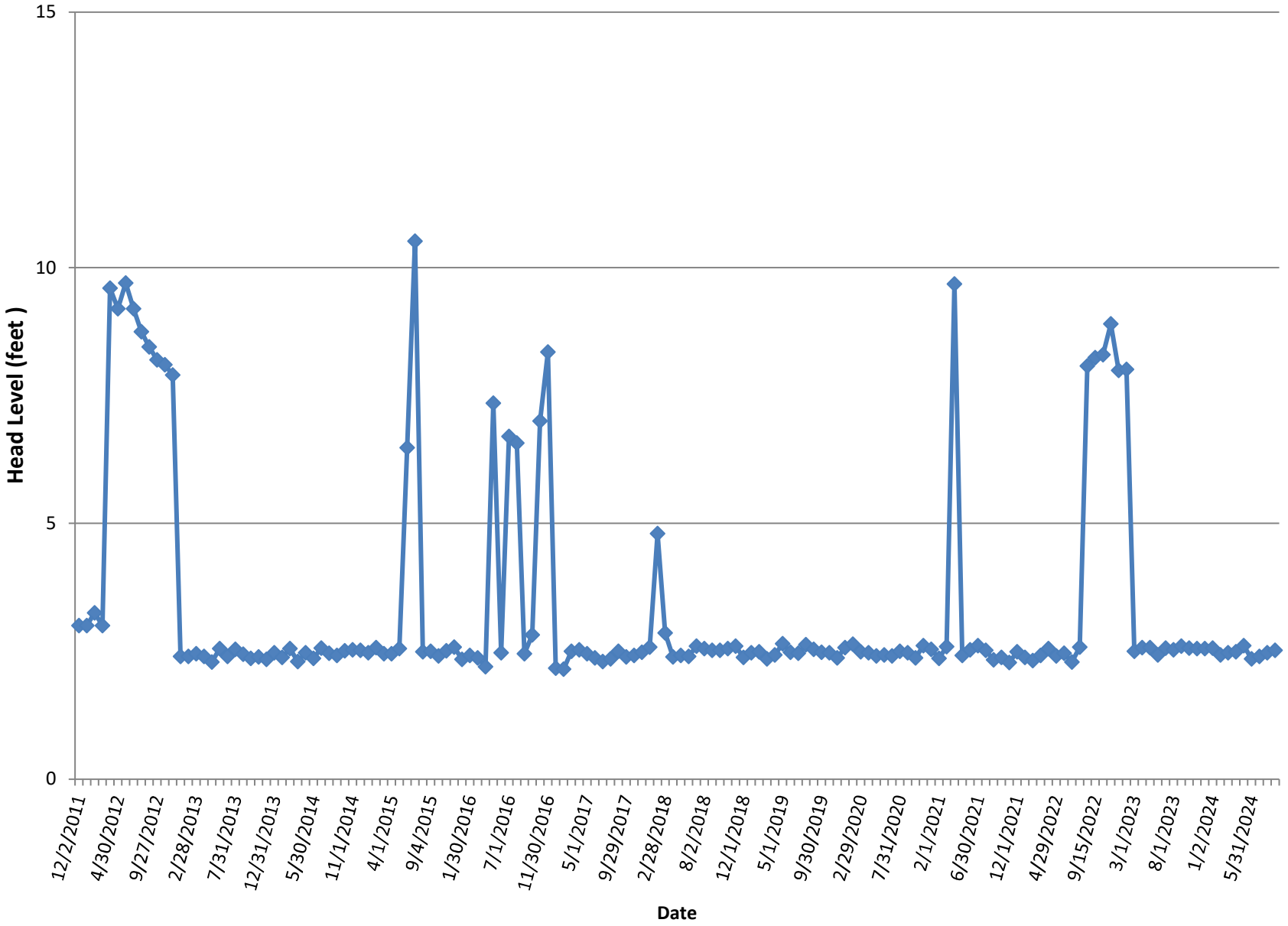
EW-5 Historical Leachate Column Thicknesses




EW-6 Historical Leachate Column Thicknesses
Head Level (feet)
15
10
5
0
12/2/2011
4/30/2012
9/27/2012
2/28/2013
7/31/2013
12/31/2013
5/30/2014
11/1/2014
4/1/2015
9/4/2015
1/30/2016
7/1/2016
11/30/2016
5/1/2017
9/29/2017
2/28/2018
8/2/2018
12/1/2018
5/1/2019
9/30/2019
2/29/2020
7/31/2020
2/1/2021
6/30/2021
12/1/2021
4/29/2022
9/15/2022
3/1/2023
8/1/2023
1/2/2024
5/31/2024
Date

EW-7 Historical Leachate Column Thicknesses




EW-8 Historical Leachate Column Thicknesses
Head Level (feet)
15
10
5
0
12/2/2011
4/30/2012
9/27/2012
2/28/2013
7/31/2013
12/31/2013
5/30/2014
11/1/2014
4/1/2015
9/4/2015
1/30/2016
7/1/2016
11/30/2016
5/1/2017
9/29/2017
2/28/2018
8/2/2018
12/1/2018
5/1/2019
9/30/2019
2/29/2020
7/31/2020
2/1/2021
6/30/2021
12/1/2021
4/29/2022
9/15/2022
3/1/2023
8/1/2023
1/2/2024
5/31/2024
Date

Attachment B

Leachate Quality Testing Results

700 Office Parkway
St. Louis, MO 63141-7124
(314) 872-2400 Voice
(314) 787-3918 Fax

ISO 9001 AND 14001 CERTIFIED

August 17th, 2023

Water Pollution Control Pretreatment Office
Attn: Pretreatment Coordinator
2606 South Concord St
Davenport, Iowa 52802

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

By:

Patrick Kohlmeier

Title: Regional Environmental Manager

Attachments:

1) Industrial Daily Report Form
2) Industrial Monthly Report Form
3) Industrial Monthly Summary Reporting Form
4) Davenport WPC Laboratory Analytical Report, Sample ID **AB03564 (7/10/2023)**

Industrial Daily Reporting Form

Industry: Alter Trading (Monofill)

Reporting Month: July
Reporting Year: 2023
Report Prepared By: Patrick Kohlmeier

Out Fall Number: 1
Sample Collection Date: 10-Jul-23
Date Sample Represents: July 1 - September 30, 2023
Sample Collected By: DAV. WPC Lab
Laboratory: DAV. WPC Lab
Laboratory Address Davenport, IA
Laboratory Phone: (563) 326-7965
Laboratory Fax: (563) 326-7858

Key
NA : Not Applicable
TBR : To Be Reported Later
R : Listed As Reserved Or TBDL On Permit
NS : No Sample Obtained for Required Analyses
LS : Lost Sample or Analyses Due To Lab error

Note: For all violations:
1 = violation, 0 = No violation

** Daily flow based on 31 Days (Meter Read 6/30/2023 and 7/31/2023)

Analyte	< or >	Reported Concentration	Daily Concentration Permit Limits	Units	Violation of Permit	TRC Violation of Permit	Daily Pounds	Daily Permit Pounds Limits	Units	Violation of Permit	TRC Violation of Permit
Daily Flow**		873	30,000	Gallons	0						
pH		7.50	5.5-10 S.U.	S.U.	0						
BOD		81	N/A	mg/l	0	0	0.590063924	N/A	pounds	0	0
TSS		20	N/A	mg/l	0	0	0.145694796	N/A	pounds	0	0
Oil and Grease		10	N/A	mg/l	0	0	0.072847398	N/A	pounds	0	0
Aluminum	<	0.02	N/A	mg/l	0	0	0.000145695	N/A	pounds	0	0
Arsenic	<	0.02	N/A	mg/l	0	0	0.000145695	N/A	pounds	0	0
Barium			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cadmium	<	0.005	N/A	mg/l	0	0	3.64237E-05	N/A	pounds	0	0
Chromium		0.0158	N/A	mg/l	0	0	0.000115099	N/A	pounds	0	0
Copper	<	0.01	N/A	mg/l	0	0	7.28474E-05	N/A	pounds	0	0
Iron			N/A	mg/l	0	0	0	N/A	pounds	0	0
Lead		0.024	N/A	mg/l	0	0	0.000174834	N/A	pounds	0	0
Mercury			N/A	mg/l	0	0	0	N/A	pounds	0	0
Molybdenum		0.3784	N/A	mg/l	0	0	0.002756546	N/A	pounds	0	0
Nickel		0.0659	N/A	mg/l	0	0	0.000480064	N/A	pounds	0	0
Selenium	<	0.02	N/A	mg/l	0	0	0.000145695	N/A	pounds	0	0
Silver	<	0.005	N/A	mg/l	0	0	3.64237E-05	N/A	pounds	0	0
Zinc	<	0.002	N/A	mg/l	0	0	1.45695E-05	N/A	pounds	0	0
Total Metals			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cyanide	<	0.01	N/A	mg/l	0	0	7.28474E-05	N/A	pounds	0	0
Phenols			N/A	mg/l	0	0	0	N/A	pounds	0	0
COD			N/A	mg/l	0	0	0	N/A	pounds	0	0
TTO			N/A	mg/l	0	0		N/A	pounds	0	0

Due 15 Working Days After The End Of The Reporting Month

Industrial Monthly Reporting Form

Industry: Alter Trading (Monofill)

Reporting Month: July
Reporting Year: 2023
Report Prepared By: Patrick Kohlmeier

Out Fall Number: 1
Sample Collection Date: 45117
Date Sample Represents: July 1 - September 30, 2023
Sample Collected By: DAV WPC Lab
Laboratory: DAV WPC Lab
Laboratory Address PO Box 3606 Davenport, IA 52808
Laboratory Phone: (563) 326-7965
Laboratory Fax: (563) 326-7858

Key
NA : Not Applicable
TBR : To Be Reported Later
R : Listed As Reserved Or TBDL On Permit
NS : No Sample Obtained for Required Analyses
LS : Lost Sample or Analyses Due To Lab error

Note: For all violations:
1 = violation, 0 = No violation

Analyte	< or >	Monthly Average Concentration	Monthly Concentration Permit Limits	Units	Violation of Permit	TRC Violation of Permit	Monthly Average lbs/day	Monthly Permit Pounds Limits	Units	Violation of Permit	TRC Violation of Permit
Daily Flow		873.47	5,000	Gallons	0						
pH		7.50	5.5-10 S.U.	S.U.	0						
BOD		81	N/A	mg/l	0	0	0.590063924	N/A	pounds	0	0
TSS		20	N/A	mg/l	0	0	0.145694796	N/A	pounds	0	0
Oil and Grease		10	N/A	mg/l	0	0	0.072847398	N/A	pounds	0	0
Aluminum	<	0.02	N/A	mg/l	0	0	0.000145695	N/A	pounds	0	0
Arsenic	<	0.02	0.581	mg/l	0	0	0.000145695	N/A	pounds	0	0
Barium			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cadmium	<	0.005	0.098	mg/l	0	0	3.64237E-05	N/A	pounds	0	0
Chromium		0.0158	0.199	mg/l	0	0	0.000115099	N/A	pounds	0	0
Copper	<	0.01	1.475	mg/l	0	0	7.28474E-05	N/A	pounds	0	0
Iron			N/A	mg/l	0	0	0	N/A	pounds	0	0
Lead		0.024	1.18	mg/l	0	0	0.000174834	N/A	pounds	0	0
Mercury			N/A	mg/l	0	0	0	N/A	pounds	0	0
Molybdenum		0.3784	N/A	mg/l	0	0	0.002756546	N/A	pounds	0	0
Nickel		0.0659	6.937	mg/l	0	0	0.000480064	N/A	pounds	0	0
Selenium	<	0.02	0.127	mg/l	0	0	0.000145695	N/A	pounds	0	0
Silver	<	0.005	0.074	mg/l	0	0	3.64237E-05	N/A	pounds	0	0
Zinc	<	0.002	4.801	mg/l	0	0	1.45695E-05	N/A	pounds	0	0
Total Metals			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cyanide	<	0.01	0.621	mg/l	0	0	7.28474E-05	N/A	pounds	0	0
Phenols			115.833	mg/l	0	0	0	N/A	pounds	0	0
COD			N/A	mg/l	0	0	0	N/A	pounds	0	0
TTO			N/A	mg/l	0	0	0		pounds	0	0

Due 15 Working Days After The End Of The Reporting Month

Industrial Monthly Summary Reporting Form

Industry: Alter Trading (Monofill)

Out Fall Number 1
Reporting Month: July
Reporting Year: 2023
Report Prepared By: Patrick Kohlmeier

Analyte	Daily Violations	Daily TRC Violations	Monthly Violations	Monthly TRC Violations	Total
Flow	0	0	0	0	0
pH	0	0	0	0	0
BOD	0	0	0	0	0
TSS	0	0	0	0	0
Oil and Grease	0	0	0	0	0
Aluminum	0	0	0	0	0
Arsenic	0	0	0	0	0
Barium	0	0	0	0	0
Cadmium	0	0	0	0	0
Chromium	0	0	0	0	0
Copper	0	0	0	0	0
Iron	0	0	0	0	0
Lead	0	0	0	0	0
Mercury	0	0	0	0	0
Molybdenum	0	0	0	0	0
Nickel	0	0	0	0	0
Selenium	0	0	0	0	0
Silver	0	0	0	0	0
Zinc	0	0	0	0	0
Total Metals	0	0	0	0	0
Cyanide	0	0	0	0	0
Phenols	0	0	0	0	0
COD	0	0	0	0	0
TTO	0	0	0	0	0
Total	0	0	0	0	0

Due 15 Working Days After The End Of The Reporting Month

DAVENPORT
PUBLIC WORKS

Analytical Report

Davenport Water Pollution Control Laboratory
PO Box 3606
Davenport, Iowa 52808
Phone (563) 326-7965
Fax (563) 326-7858

REPORT TO
Alter Trading Corporation **5200 Wisconsin Avenue** **Davenport, IA 52802** **Patrick.Kohlmeier@altertrading.com**

Sample ID **AB03564**
Outfall # **1**
Sample Report Date : July 10, 2023
Sample Collector : NF
Sample Type : Grab

		Analyte Name	Result	Units	Analysis Method	Analyst
		TSS	20	mg/L	SM 2540D	JV
		Grab pH	7.5	S.U.	SM 4500H+ B	NF
		Oil and Grease	10	mg/L	EPA 1664B	JV
		Total Cyanide	<0.01	mg/l	SM 4500-CN C,E	JKA
		BOD	81	mg/L	SM 5210B	JKA
		Aluminum	<0.02	mg/l	SM 3120 B	JDC
		Arsenic	<0.02	mg/l	SM 3120 B	JDC
		Cadmium	<0.005	mg/l	SM 3120 B	JDC
		Chromium	0.0158	mg/l	SM 3120 B	JDC
		Copper	<0.01	mg/l	SM 3120 B	JDC
		Lead	0.0240	mg/l	SM 3120 B	JDC
		Molybdenum	0.3784	mg/l	SM 3120 B	JDC
		Nickel	0.0659	mg/l	SM 3120 B	JDC
		Selenium	<0.02	mg/l	SM 3120 B	JDC
		Silver	<0.005	mg/l	SM 3120 B	JDC
		Zinc	<0.02	mg/l	SM 3120 B	JDC

Reviewed and Approved By: Victoria Gleason

IA DNR Lab #: 221

700 Office Parkway
St. Louis, MO 63141-7124
(314) 872-2400 Voice
(314) 787-3918 Fax

ISO 9001 AND 14001 CERTIFIED

November 10th, 2023

Water Pollution Control Pretreatment Office
Attn: Pretreatment Coordinator
2606 South Concord St
Davenport, Iowa 52802

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

By:

Patrick Kohlmeier

Title: Regional Environmental Manager

Attachments:

1) Industrial Daily Report Form
2) Industrial Monthly Report Form
3) Industrial Monthly Summary Reporting Form
4) Davenport WPC Laboratory Analytical Report, Sample ID **AB05273 (10/16/2023)**

Industrial Daily Reporting Form

Industry: Alter Trading (Monofill)

Reporting Month: October
Reporting Year: 2023
Report Prepared By: Patrick Kohlmeier

Out Fall Number: 1
Sample Collection Date: 16-Oct-23
Date Sample Represents: October 1 - December 31, 2023
Sample Collected By: DAV. WPC Lab
Laboratory: DAV. WPC Lab
Laboratory Address Davenport, IA
Laboratory Phone: (563) 326-7965
Laboratory Fax: (563) 326-7858

Key
NA : Not Applicable
TBR : To Be Reported Later
R : Listed As Reserved Or TBDL On Permit
NS : No Sample Obtained for Required Analyses
LS : Lost Sample or Analyses Due To Lab error

Note: For all violations:
1 = violation, 0 = No violation

** Daily flow based on 30 Days (Meter Read 10/2/2023 and 11/1/2023)

Analyte	< or >	Reported Concentration	Daily Concentration Permit Limits	Units	Violation of Permit	TRC Violation of Permit	Daily Pounds	Daily Permit Pounds Limits	Units	Violation of Permit	TRC Violation of Permit
Daily Flow**		464	30,000	Gallons	0						
pH		7.90	5.5-10 S.U.	S.U.	0						
BOD		45	N/A	mg/l	0	0	0.1741392	N/A	pounds	0	0
TSS		9.5	N/A	mg/l	0	0	0.03676272	N/A	pounds	0	0
Oil and Grease	<	5	N/A	mg/l	0	0	0.0193488	N/A	pounds	0	0
Aluminum	<	0.02	N/A	mg/l	0	0	7.73952E-05	N/A	pounds	0	0
Arsenic	<	0.02	N/A	mg/l	0	0	7.73952E-05	N/A	pounds	0	0
Barium			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cadmium	<	0.005	N/A	mg/l	0	0	1.93488E-05	N/A	pounds	0	0
Chromium		0.0152	N/A	mg/l	0	0	5.88204E-05	N/A	pounds	0	0
Copper		0.0122	N/A	mg/l	0	0	4.72111E-05	N/A	pounds	0	0
Iron			N/A	mg/l	0	0	0	N/A	pounds	0	0
Lead	<	0.01	N/A	mg/l	0	0	3.86976E-05	N/A	pounds	0	0
Mercury			N/A	mg/l	0	0	0	N/A	pounds	0	0
Molybdenum		0.3546	N/A	mg/l	0	0	0.001372217	N/A	pounds	0	0
Nickel		0.0579	N/A	mg/l	0	0	0.000224059	N/A	pounds	0	0
Selenium	<	0.02	N/A	mg/l	0	0	7.73952E-05	N/A	pounds	0	0
Silver	<	0.005	N/A	mg/l	0	0	1.93488E-05	N/A	pounds	0	0
Zinc	<	0.02	N/A	mg/l	0	0	7.73952E-05	N/A	pounds	0	0
Total Metals			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cyanide	<	0.01	N/A	mg/l	0	0	3.86976E-05	N/A	pounds	0	0
Phenols			N/A	mg/l	0	0	0	N/A	pounds	0	0
COD			N/A	mg/l	0	0	0	N/A	pounds	0	0
TTO			N/A	mg/l	0	0		N/A	pounds	0	0

Due 15 Working Days After The End Of The Reporting Month

Industrial Monthly Reporting Form

Industry: Alter Trading (Monofill)

Reporting Month: October
Reporting Year: 2023
Report Prepared By: Patrick Kohlmeier

Out Fall Number: 1
Sample Collection Date: 45215
Date Sample Represents: October 1 - December 31, 2023
Sample Collected By: DAV WPC Lab
Laboratory: DAV WPC Lab
Laboratory Address PO Box 3606 Davenport, IA 52808
Laboratory Phone: (563) 326-7965
Laboratory Fax: (563) 326-7858

Key
NA : Not Applicable
TBR : To Be Reported Later
R : Listed As Reserved Or TBDL On Permit
NS : No Sample Obtained for Required Analyses
LS : Lost Sample or Analyses Due To Lab error

Note: For all violations:
1 = violation, 0 = No violation

Analyte	< or >	Monthly Average Concentration	Monthly Concentration Permit Limits	Units	Violation of Permit	TRC Violation of Permit	Monthly Average lbs/day	Monthly Permit Pounds Limits	Units	Violation of Permit	TRC Violation of Permit
Daily Flow		464	5,000	Gallons	0						
pH		7.90	5.5-10 S.U.	S.U.	0						
BOD		45	N/A	mg/l	0	0	0.1741392	N/A	pounds	0	0
TSS		9.5	N/A	mg/l	0	0	0.03676272	N/A	pounds	0	0
Oil and Grease	<	5	N/A	mg/l	0	0	0.0193488	N/A	pounds	0	0
Aluminum	<	0.02	N/A	mg/l	0	0	7.73952E-05	N/A	pounds	0	0
Arsenic	<	0.02	0.581	mg/l	0	0	7.73952E-05	N/A	pounds	0	0
Barium			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cadmium	<	0.005	0.098	mg/l	0	0	1.93488E-05	N/A	pounds	0	0
Chromium		0.0152	0.199	mg/l	0	0	5.88204E-05	N/A	pounds	0	0
Copper		0.0122	1.475	mg/l	0	0	4.72111E-05	N/A	pounds	0	0
Iron			N/A	mg/l	0	0	0	N/A	pounds	0	0
Lead	<	0.01	1.18	mg/l	0	0	3.86976E-05	N/A	pounds	0	0
Mercury			N/A	mg/l	0	0	0	N/A	pounds	0	0
Molybdenum		0.3546	N/A	mg/l	0	0	0.001372217	N/A	pounds	0	0
Nickel		0.0579	6.937	mg/l	0	0	0.000224059	N/A	pounds	0	0
Selenium	<	0.02	0.127	mg/l	0	0	7.73952E-05	N/A	pounds	0	0
Silver	<	0.005	0.074	mg/l	0	0	1.93488E-05	N/A	pounds	0	0
Zinc	<	0.02	4.801	mg/l	0	0	7.73952E-05	N/A	pounds	0	0
Total Metals			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cyanide	<	0.01	0.621	mg/l	0	0	3.86976E-05	N/A	pounds	0	0
Phenols			115.833	mg/l	0	0	0	N/A	pounds	0	0
COD			N/A	mg/l	0	0	0	N/A	pounds	0	0
TTO			N/A	mg/l	0	0	0		pounds	0	0

Due 15 Working Days After The End Of The Reporting Month

Industrial Monthly Summary Reporting Form

Industry: Alter Trading (Monofill)

Out Fall Number 1
Reporting Month: October
Reporting Year: 2023
Report Prepared By: Patrick Kohlmeier

Analyte	Daily Violations	Daily TRC Violations	Monthly Violations	Monthly TRC Violations	Total
Flow	0	0	0	0	0
pH	0	0	0	0	0
BOD	0	0	0	0	0
TSS	0	0	0	0	0
Oil and Grease	0	0	0	0	0
Aluminum	0	0	0	0	0
Arsenic	0	0	0	0	0
Barium	0	0	0	0	0
Cadmium	0	0	0	0	0
Chromium	0	0	0	0	0
Copper	0	0	0	0	0
Iron	0	0	0	0	0
Lead	0	0	0	0	0
Mercury	0	0	0	0	0
Molybdenum	0	0	0	0	0
Nickel	0	0	0	0	0
Selenium	0	0	0	0	0
Silver	0	0	0	0	0
Zinc	0	0	0	0	0
Total Metals	0	0	0	0	0
Cyanide	0	0	0	0	0
Phenols	0	0	0	0	0
COD	0	0	0	0	0
TTO	0	0	0	0	0
Total	0	0	0	0	0

Due 15 Working Days After The End Of The Reporting Month

DAVENPORT
PUBLIC WORKS

Analytical Report

Davenport Water Pollution Control Laboratory
PO Box 3606
Davenport, Iowa 52808
Phone (563) 326-7965
Fax (563) 326-7858

REPORT TO
Alter Trading Corporation **5200 Wisconsin Avenue** **Davenport, IA 52802** **Patrick.Kohlmeier@altertrading.com**

Sample ID **AB05273**

Outfall # **1**

Sample Report Date : October 16, 2023

Sample Collector : NF

Sample Type : Grab

		Analyte Name	Result	Units	Analysis Method	Analyst
		TSS	9.5	mg/L	SM 2540D	JKA
		Grab pH	7.9	S.U.	SM 4500H+ B	NF
		Oil and Grease	<5	mg/L	EPA 1664B	JV
		Total Cyanide	<0.01	mg/l	SM 4500-CN C,E	JV
		BOD	45	mg/L	SM 5210B	JDC
		Aluminum	<0.02	mg/l	SM 3120 B	JDC
		Arsenic	<0.02	mg/l	SM 3120 B	JDC
		Cadmium	<0.005	mg/l	SM 3120 B	JDC
		Chromium	0.0152	mg/l	SM 3120 B	JDC
		Copper	0.0122	mg/l	SM 3120 B	JDC
		Lead	<0.01	mg/l	SM 3120 B	JDC
		Molybdenum	0.3546	mg/l	SM 3120 B	JDC
		Nickel	0.0579	mg/l	SM 3120 B	JDC
		Selenium	<0.02	mg/l	SM 3120 B	JDC
		Silver	<0.005	mg/l	SM 3120 B	JDC
		Zinc	<0.02	mg/l	SM 3120 B	JDC

Reviewed and Approved By: Victoria Gleason

IA DNR Lab #: 221

700 Office Parkway
St. Louis, MO 63141-7124
(314) 872-2400 Voice
(314) 787-3918 Fax

ISO 9001 AND 14001 CERTIFIED

February 21st, 2024

Water Pollution Control Pretreatment Office
Attn: Pretreatment Coordinator
2606 South Concord St
Davenport, Iowa 52802

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

By:

Patrick Kohlmeier

Title: Regional Environmental Manager

Attachments:

1) Industrial Daily Report Form
2) Industrial Monthly Report Form
3) Industrial Monthly Summary Reporting Form
4) Davenport WPC Laboratory Analytical Report, Sample ID **AB06424 (01/02/2024)**

Industrial Daily Reporting Form

Industry: Alter Trading (Monofill)

Reporting Month: January
Reporting Year: 2024
Report Prepared By: Patrick Kohlmeier

Out Fall Number: 1
Sample Collection Date: 2-Jan-24
Date Sample Represents: January 1 - March 31, 2024
Sample Collected By: DAV. WPC Lab
Laboratory: DAV. WPC Lab
Laboratory Address Davenport, IA
Laboratory Phone: (563) 326-7965
Laboratory Fax: (563) 326-7858

Key
NA : Not Applicable
TBR : To Be Reported Later
R : Listed As Reserved Or TBDL On Permit
NS : No Sample Obtained for Required Analyses
LS : Lost Sample or Analyses Due To Lab error

Note: For all violations:
1 = violation, 0 = No violation

** Daily flow based on 28 Days (Meter Read 1/2/2024 and 1/30/2024)

Analyte	< or >	Reported Concentration	Daily Concentration Permit Limits	Units	Violation of Permit	TRC Violation of Permit	Daily Pounds	Daily Permit Pounds Limits	Units	Violation of Permit	TRC Violation of Permit
Daily Flow**		1065	30,000	Gallons	0						
pH		7.80	5.5-10 S.U.	S.U.	0						
BOD		21	N/A	mg/l	0	0	0.1865241	N/A	pounds	0	0
TSS		2	N/A	mg/l	0	0	0.0177642	N/A	pounds	0	0
Oil and Grease	<	5	N/A	mg/l	0	0	0.0444105	N/A	pounds	0	0
Aluminum	<	0.7922	N/A	mg/l	0	0	0.0070364	N/A	pounds	0	0
Arsenic	<	0.02	N/A	mg/l	0	0	0.000177642	N/A	pounds	0	0
Barium			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cadmium	<	0.01	N/A	mg/l	0	0	0.000088821	N/A	pounds	0	0
Chromium		0.01084	N/A	mg/l	0	0	9.6282E-05	N/A	pounds	0	0
Copper	<	0.01	N/A	mg/l	0	0	0.000088821	N/A	pounds	0	0
Iron			N/A	mg/l	0	0	0	N/A	pounds	0	0
Lead	<	0.01	N/A	mg/l	0	0	0.000088821	N/A	pounds	0	0
Mercury			N/A	mg/l	0	0	0	N/A	pounds	0	0
Molybdenum		0.23904	N/A	mg/l	0	0	0.002123177	N/A	pounds	0	0
Nickel		0.04591	N/A	mg/l	0	0	0.000407777	N/A	pounds	0	0
Selenium	<	0.01	N/A	mg/l	0	0	0.000088821	N/A	pounds	0	0
Silver	<	0.005	N/A	mg/l	0	0	4.44105E-05	N/A	pounds	0	0
Zinc		0.01938	N/A	mg/l	0	0	0.000172135	N/A	pounds	0	0
Total Metals			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cyanide		0.012	N/A	mg/l	0	0	0.000106585	N/A	pounds	0	0
Phenols			N/A	mg/l	0	0	0	N/A	pounds	0	0
COD			N/A	mg/l	0	0	0	N/A	pounds	0	0
TTO			N/A	mg/l	0	0		N/A	pounds	0	0

Due 15 Working Days After The End Of The Reporting Month

Industrial Monthly Reporting Form

Industry: Alter Trading (Monofill)

Reporting Month: January
Reporting Year: 2024
Report Prepared By: Patrick Kohlmeier

Out Fall Number: 1
Sample Collection Date: 45293
Date Sample Represents: January 1 - March 31, 2024
Sample Collected By: DAV WPC Lab
Laboratory: DAV WPC Lab
Laboratory Address PO Box 3606 Davenport, IA 52808
Laboratory Phone: (563) 326-7965
Laboratory Fax: (563) 326-7858

Key
NA : Not Applicable
TBR : To Be Reported Later
R : Listed As Reserved Or TBDL On Permit
NS : No Sample Obtained for Required Analyses
LS : Lost Sample or Analyses Due To Lab error

Note: For all violations:
1 = violation, 0 = No violation

Analyte	< or >	Monthly Average Concentration	Monthly Concentration Permit Limits	Units	Violation of Permit	TRC Violation of Permit	Monthly Average lbs/day	Monthly Permit Pounds Limits	Units	Violation of Permit	TRC Violation of Permit
Daily Flow		1065	5,000	Gallons	0						
pH		7.80	5.5-10 S.U.	S.U.	0						
BOD		21	N/A	mg/l	0	0	0.1865241	N/A	pounds	0	0
TSS		2	N/A	mg/l	0	0	0.0177642	N/A	pounds	0	0
Oil and Grease	<	5	N/A	mg/l	0	0	0.0444105	N/A	pounds	0	0
Aluminum	<	0.7922	N/A	mg/l	0	0	0.0070364	N/A	pounds	0	0
Arsenic	<	0.02	0.581	mg/l	0	0	0.000177642	N/A	pounds	0	0
Barium			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cadmium	<	0.01	0.098	mg/l	0	0	0.000088821	N/A	pounds	0	0
Chromium		0.01084	0.199	mg/l	0	0	9.6282E-05	N/A	pounds	0	0
Copper	<	0.01	1.475	mg/l	0	0	0.000088821	N/A	pounds	0	0
Iron			N/A	mg/l	0	0	0	N/A	pounds	0	0
Lead	<	0.01	1.18	mg/l	0	0	0.000088821	N/A	pounds	0	0
Mercury			N/A	mg/l	0	0	0	N/A	pounds	0	0
Molybdenum		0.23904	N/A	mg/l	0	0	0.002123177	N/A	pounds	0	0
Nickel		0.04591	6.937	mg/l	0	0	0.000407777	N/A	pounds	0	0
Selenium	<	0.01	0.127	mg/l	0	0	0.000088821	N/A	pounds	0	0
Silver	<	0.005	0.074	mg/l	0	0	4.44105E-05	N/A	pounds	0	0
Zinc		0.01938	4.801	mg/l	0	0	0.000172135	N/A	pounds	0	0
Total Metals			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cyanide		0.012	0.621	mg/l	0	0	0.000106585	N/A	pounds	0	0
Phenols			115.833	mg/l	0	0	0	N/A	pounds	0	0
COD			N/A	mg/l	0	0	0	N/A	pounds	0	0
TTO			N/A	mg/l	0	0	0		pounds	0	0

Due 15 Working Days After The End Of The Reporting Month

Industrial Monthly Summary Reporting Form

Industry: Alter Trading (Monofill)

Out Fall Number 1
Reporting Month: January
Reporting Year: 2024
Report Prepared By: Patrick Kohlmeier

Analyte	Daily Violations	Daily TRC Violations	Monthly Violations	Monthly TRC Violations	Total
Flow	0	0	0	0	0
pH	0	0	0	0	0
BOD	0	0	0	0	0
TSS	0	0	0	0	0
Oil and Grease	0	0	0	0	0
Aluminum	0	0	0	0	0
Arsenic	0	0	0	0	0
Barium	0	0	0	0	0
Cadmium	0	0	0	0	0
Chromium	0	0	0	0	0
Copper	0	0	0	0	0
Iron	0	0	0	0	0
Lead	0	0	0	0	0
Mercury	0	0	0	0	0
Molybdenum	0	0	0	0	0
Nickel	0	0	0	0	0
Selenium	0	0	0	0	0
Silver	0	0	0	0	0
Zinc	0	0	0	0	0
Total Metals	0	0	0	0	0
Cyanide	0	0	0	0	0
Phenols	0	0	0	0	0
COD	0	0	0	0	0
TTO	0	0	0	0	0
Total	0	0	0	0	0

Due 15 Working Days After The End Of The Reporting Month

DAVENPORT
PUBLIC WORKS

Analytical Report

Davenport Water Pollution Control Laboratory
PO Box 3606
Davenport, Iowa 52808
Phone (563) 326-7965
Fax (563) 326-7858

REPORT TO
Alter Trading Corporation **5200 Wisconsin Avenue** **Davenport, IA 52802** **Patrick.Kohlmeier@altertrading.com**

Sample ID **AB06424**

Outfall # **1**

Sample Report Date : January 02, 2024

Sample Collector : NF

Sample Type : Grab

		Analyte Name	Result	Units	Analysis Method	Analyst
		TSS	2	mg/L	SM 2540D	JDC
		Grab pH	7.8	S.U.	SM 4500H+ B	NF
		Oil and Grease	<5	mg/L	EPA 1664B	MA
		Total Cyanide	0.012	mg/l	SM 4500-CN C,E	MA
		BOD	21	mg/L	SM 5210B	JDC
		Aluminum	0.7922	mg/l	EPA 200.7	JV
		Arsenic	<0.02	mg/l	EPA 200.7	JV
		Cadmium	<0.01	mg/l	EPA 200.7	JV
		Chromium	0.01084	mg/l	EPA 200.7	JV
		Copper	<0.01	mg/l	EPA 200.7	JV
		Lead	<0.01	mg/l	EPA 200.7	JV
		Molybdenum	0.23904	mg/l	EPA 200.7	JV
		Nickel	0.04591	mg/l	EPA 200.7	JV
		Selenium	<0.01	mg/l	EPA 200.7	JV
		Silver	<0.005	mg/l	EPA 200.7	JV
		Zinc	0.01938	mg/l	EPA 200.7	JV

Reviewed and Approved By: Victoria Gleason

IA DNR Lab #: 221

700 Office Parkway
St. Louis, MO 63141-7124
(314) 872-2400 Voice
(314) 787-3918 Fax

ISO 9001 AND 14001 CERTIFIED

May 23rd, 2024

Water Pollution Control Pretreatment Office
Attn: Pretreatment Coordinator
2606 South Concord St
Davenport, Iowa 52802

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

By:

Patrick Kohlmeier

Title: Regional Environmental Manager

Attachments:

1) Industrial Daily Report Form
2) Industrial Monthly Report Form
3) Industrial Monthly Summary Reporting Form
4) Davenport WPC Laboratory Analytical Report, Sample ID **AB08262 (04/10/2024)**

Industrial Daily Reporting Form

Industry: Alter Trading (Monofill)

Reporting Month: April
Reporting Year: 2024
Report Prepared By: Patrick Kohlmeier

Out Fall Number: 1
Sample Collection Date: 10-Apr-24
Date Sample Represents: April 1st - June 30th, 2024
Sample Collected By: DAV. WPC Lab
Laboratory: DAV. WPC Lab
Laboratory Address Davenport, IA
Laboratory Phone: (563) 326-7965
Laboratory Fax: (563) 326-7858

Key
NA : Not Applicable
TBR : To Be Reported Later
R : Listed As Reserved Or TBDL On Permit
NS : No Sample Obtained for Required Analyses
LS : Lost Sample or Analyses Due To Lab error

Note: For all violations:
1 = violation, 0 = No violation

** Daily flow based on 31 Days (Meter Read 4/1/2024 and 5/2/2024)

Analyte	< or >	Reported Concentration	Daily Concentration Permit Limits	Units	Violation of Permit	TRC Violation of Permit	Daily Pounds	Daily Permit Pounds Limits	Units	Violation of Permit	TRC Violation of Permit
Daily Flow**		4348	30,000	Gallons	0						
pH		7.50	5.5-10 S.U.	S.U.	0						
BOD		30	N/A	mg/l	0	0	1.087889616	N/A	pounds	0	0
TSS		28	N/A	mg/l	0	0	1.015363642	N/A	pounds	0	0
Oil and Grease	<	5	N/A	mg/l	0	0	0.181314936	N/A	pounds	0	0
Aluminum		0.1462	N/A	mg/l	0	0	0.005301649	N/A	pounds	0	0
Arsenic	<	0.02	N/A	mg/l	0	0	0.00072526	N/A	pounds	0	0
Barium			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cadmium	<	0.01	N/A	mg/l	0	0	0.00036263	N/A	pounds	0	0
Chromium	<	0.01	N/A	mg/l	0	0	0.00036263	N/A	pounds	0	0
Copper		0.0179	N/A	mg/l	0	0	0.000649107	N/A	pounds	0	0
Iron			N/A	mg/l	0	0	0	N/A	pounds	0	0
Lead	<	0.01	N/A	mg/l	0	0	0.00036263	N/A	pounds	0	0
Mercury			N/A	mg/l	0	0	0	N/A	pounds	0	0
Molybdenum	<	0.01	N/A	mg/l	0	0	0.00036263	N/A	pounds	0	0
Nickel	<	0.01	N/A	mg/l	0	0	0.00036263	N/A	pounds	0	0
Selenium	<	0.01	N/A	mg/l	0	0	0.00036263	N/A	pounds	0	0
Silver	<	0.005	N/A	mg/l	0	0	0.000181315	N/A	pounds	0	0
Zinc		0.0226	N/A	mg/l	0	0	0.000819544	N/A	pounds	0	0
Total Metals			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cyanide		0.01	N/A	mg/l	0	0	0.00036263	N/A	pounds	0	0
Phenols			N/A	mg/l	0	0	0	N/A	pounds	0	0
COD			N/A	mg/l	0	0	0	N/A	pounds	0	0
TTO			N/A	mg/l	0	0		N/A	pounds	0	0

Due 15 Working Days After The End Of The Reporting Month

Industrial Monthly Reporting Form

Industry: Alter Trading (Monofill)

Reporting Month: April
Reporting Year: 2024
Report Prepared By: Patrick Kohlmeier

Out Fall Number: 1
Sample Collection Date: 45392
Date Sample Represents: April 1st - June 30th, 2024
Sample Collected By: DAV WPC Lab
Laboratory: DAV WPC Lab
Laboratory Address PO Box 3606 Davenport, IA 52808
Laboratory Phone: (563) 326-7965
Laboratory Fax: (563) 326-7858

Key
NA : Not Applicable
TBR : To Be Reported Later
R : Listed As Reserved Or TBDL On Permit
NS : No Sample Obtained for Required Analyses
LS : Lost Sample or Analyses Due To Lab error

Note: For all violations:
1 = violation, 0 = No violation

Analyte	< or >	Monthly Average Concentration	Monthly Concentration Permit Limits	Units	Violation of Permit	TRC Violation of Permit	Monthly Average lbs/day	Monthly Permit Pounds Limits	Units	Violation of Permit	TRC Violation of Permit
Daily Flow		4348.08	5,000	Gallons	0						
pH		7.50	5.5-10 S.U.	S.U.	0						
BOD		30	N/A	mg/l	0	0	1.087889616	N/A	pounds	0	0
TSS		28	N/A	mg/l	0	0	1.015363642	N/A	pounds	0	0
Oil and Grease	<	5	N/A	mg/l	0	0	0.181314936	N/A	pounds	0	0
Aluminum		0.1462	N/A	mg/l	0	0	0.005301649	N/A	pounds	0	0
Arsenic	<	0.02	0.141	mg/l	0	0	0.00072526	N/A	pounds	0	0
Barium			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cadmium	<	0.01	0.242	mg/l	0	0	0.00036263	N/A	pounds	0	0
Chromium	<	0.01	4.441	mg/l	0	0	0.00036263	N/A	pounds	0	0
Copper		0.0179	2.989	mg/l	0	0	0.000649107	N/A	pounds	0	0
Iron			N/A	mg/l	0	0	0	N/A	pounds	0	0
Lead	<	0.01	0.629	mg/l	0	0	0.00036263	N/A	pounds	0	0
Mercury			N/A	mg/l	0	0	0	N/A	pounds	0	0
Molybdenum	<	0.01	N/A	mg/l	0	0	0.00036263	N/A	pounds	0	0
Nickel	<	0.01	1.77	mg/l	0	0	0.00036263	N/A	pounds	0	0
Selenium	<	0.01	0.121	mg/l	0	0	0.00036263	N/A	pounds	0	0
Silver	<	0.005	0.776	mg/l	0	0	0.000181315	N/A	pounds	0	0
Zinc		0.0226	5.686	mg/l	0	0	0.000819544	N/A	pounds	0	0
Total Metals			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cyanide		0.01	0.448	mg/l	0	0	0.00036263	N/A	pounds	0	0
Phenols			115.828	mg/l	0	0	0	N/A	pounds	0	0
COD			N/A	mg/l	0	0	0	N/A	pounds	0	0
TTO			N/A	mg/l	0	0	0		pounds	0	0

Due 15 Working Days After The End Of The Reporting Month

Industrial Monthly Summary Reporting Form

Industry: Alter Trading (Monofill)

Out Fall Number 1
Reporting Month: April
Reporting Year: 2024
Report Prepared By: Patrick Kohlmeier

Analyte	Daily Violations	Daily TRC Violations	Monthly Violations	Monthly TRC Violations	Total
Flow	0	0	0	0	0
pH	0	0	0	0	0
BOD	0	0	0	0	0
TSS	0	0	0	0	0
Oil and Grease	0	0	0	0	0
Aluminum	0	0	0	0	0
Arsenic	0	0	0	0	0
Barium	0	0	0	0	0
Cadmium	0	0	0	0	0
Chromium	0	0	0	0	0
Copper	0	0	0	0	0
Iron	0	0	0	0	0
Lead	0	0	0	0	0
Mercury	0	0	0	0	0
Molybdenum	0	0	0	0	0
Nickel	0	0	0	0	0
Selenium	0	0	0	0	0
Silver	0	0	0	0	0
Zinc	0	0	0	0	0
Total Metals	0	0	0	0	0
Cyanide	0	0	0	0	0
Phenols	0	0	0	0	0
COD	0	0	0	0	0
TTO	0	0	0	0	0
Total	0	0	0	0	0

Due 15 Working Days After The End Of The Reporting Month

DAVENPORT
PUBLIC WORKS

Analytical Report

Davenport Water Pollution Control Laboratory
PO Box 3606
Davenport, Iowa 52808
Phone (563) 326-7965
Fax (563) 326-7858

REPORT TO

Alter Trading Corporation
5200 Wisconsin Avenue
Davenport, IA 52802
Patrick.Kohlmeier@altertrading.com

Sample ID **AB08262**
Outfall # **1**
Sample Collection Date : 4/10/2024
Sample Collector : NF
Sample Type : Grab
Sample Report Date : 5/10/2024

Analyte Name	Result	Units	Analysis Method	Analyst
TSS	28	mg/L	SM 2540D	MA
Grab pH	7.5	S.U.	SM 4500H+ B	NF
Oil and Grease	<5	mg/L	EPA 1664B	JDC
Total Cyanide	0.01	mg/l	SM 4500-CN C,E	JDC
BOD	30	mg/L	SM 5210B	MA
Aluminum	0.1462	mg/l	EPA 200.7	JM
Arsenic	<0.02	mg/l	EPA 200.7	JM
Cadmium	<0.01	mg/l	EPA 200.7	JM
Chromium	<0.01	mg/l	EPA 200.7	JM
Copper	0.0179	mg/l	EPA 200.7	JM
Lead	<0.01	mg/l	EPA 200.7	JM
Molybdenum	<0.01	mg/l	EPA 200.7	JM

Reviewed and Approved By: Victoria Gleason

IA DNR Lab #: 221

Davenport Water Pollution Control Laboratory
PO Box 3606
Davenport, Iowa 52808
Phone (563) 326-7965
Fax (563) 326-7858

Analytical Report

REPORT TO

Alter Trading Corporation
5200 Wisconsin Avenue
Davenport, IA 52802
Patrick.Kohlmeier@altertrading.com

Sample ID **AB08262**

Outfall # **1**

Sample Collection Date : 4/10/2024

Sample Collector : NF

Sample Type : Grab

Sample Report Date : 5/10/2024

Analyte Name	Result	Units	Analysis Method	Analyst
Nickel	<0.01	mg/l	EPA 200.7	JM
Selenium	<0.01	mg/l	EPA 200.7	JM
Silver	<0.005	mg/l	EPA 200.7	JM
Zinc	0.0226	mg/l	EPA 200.7	JM

Reviewed and Approved By: Victoria Gleason

IA DNR Lab #: 221

700 Office Parkway
St. Louis, MO 63141-7124
(314) 872-2400 Voice
(314) 787-3918 Fax

ISO 9001 AND 14001 CERTIFIED

August 30th, 2024

Water Pollution Control Pretreatment Office
Attn: Pretreatment Coordinator
2606 South Concord St
Davenport, Iowa 52802

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

By:

Patrick Kohlmeier

Title: Regional Environmental Manager

Attachments:

1) Industrial Daily Report Form
2) Industrial Monthly Report Form
3) Industrial Monthly Summary Reporting Form
4) Davenport WPC Laboratory Analytical Report, Sample ID **AB09617 (07/2/2024)**

Industrial Daily Reporting Form

Industry: Alter Trading (Monofill)

Reporting Month: July
Reporting Year: 2024
Report Prepared By: Patrick Kohlmeier

Out Fall Number: 1
Sample Collection Date: 2-Jul-24
Date Sample Represents: July 1st - September 30th, 2024
Sample Collected By: DAV. WPC Lab
Laboratory: DAV. WPC Lab
Laboratory Address Davenport, IA
Laboratory Phone: (563) 326-7965
Laboratory Fax: (563) 326-7858

Key
NA : Not Applicable
TBR : To Be Reported Later
R : Listed As Reserved Or TBDL On Permit
NS : No Sample Obtained for Required Analyses
LS : Lost Sample or Analyses Due To Lab error

Note: For all violations:
1 = violation, 0 = No violation

** Daily flow based on 29 Days (Meter Read 7/2/2024 and 7/31/2024)

Analyte	< or >	Reported Concentration	Daily Concentration Permit Limits	Units	Violation of Permit	TRC Violation of Permit	Daily Pounds	Daily Permit Pounds Limits	Units	Violation of Permit	TRC Violation of Permit
Daily Flow**		1382	30,000	Gallons	0						
pH		7.40	5.5-10 S.U.	S.U.	0						
BOD		59	N/A	mg/l	0	0	0.679835017	N/A	pounds	0	0
TSS		12	N/A	mg/l	0	0	0.138271529	N/A	pounds	0	0
Oil and Grease	<	5	N/A	mg/l	0	0	0.057613137	N/A	pounds	0	0
Aluminum		0.0565	N/A	mg/l	0	0	0.000651028	N/A	pounds	0	0
Arsenic	<	0.02	N/A	mg/l	0	0	0.000230453	N/A	pounds	0	0
Barium			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cadmium	<	0.01	N/A	mg/l	0	0	0.000115226	N/A	pounds	0	0
Chromium	<	0.01	N/A	mg/l	0	0	0.000115226	N/A	pounds	0	0
Copper	<	0.01	N/A	mg/l	0	0	0.000115226	N/A	pounds	0	0
Iron			N/A	mg/l	0	0	0	N/A	pounds	0	0
Lead	<	0.01	N/A	mg/l	0	0	0.000115226	N/A	pounds	0	0
Mercury			N/A	mg/l	0	0	0	N/A	pounds	0	0
Molybdenum		0.2139	N/A	mg/l	0	0	0.00246469	N/A	pounds	0	0
Nickel		0.0447	N/A	mg/l	0	0	0.000515061	N/A	pounds	0	0
Selenium	<	0.01	N/A	mg/l	0	0	0.000115226	N/A	pounds	0	0
Silver	<	0.005	N/A	mg/l	0	0	5.76131E-05	N/A	pounds	0	0
Zinc		0.0153	N/A	mg/l	0	0	0.000176296	N/A	pounds	0	0
Total Metals			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cyanide		0.013	N/A	mg/l	0	0	0.000149794	N/A	pounds	0	0
Phenols			N/A	mg/l	0	0	0	N/A	pounds	0	0
COD			N/A	mg/l	0	0	0	N/A	pounds	0	0
TTO			N/A	mg/l	0	0		N/A	pounds	0	0

Due 15 Working Days After The End Of The Reporting Month

Industrial Monthly Reporting Form

Industry: Alter Trading (Monofill)

Reporting Month: July
Reporting Year: 2024
Report Prepared By: Patrick Kohlmeier

Out Fall Number: 1
Sample Collection Date: 45475
Date Sample Represents: July 1st - September 30th, 2024
Sample Collected By: DAV WPC Lab
Laboratory: DAV WPC Lab
Laboratory Address PO Box 3606 Davenport, IA 52808
Laboratory Phone: (563) 326-7965
Laboratory Fax: (563) 326-7858

Key
NA : Not Applicable
TBR : To Be Reported Later
R : Listed As Reserved Or TBDL On Permit
NS : No Sample Obtained for Required Analyses
LS : Lost Sample or Analyses Due To Lab error

Note: For all violations:
1 = violation, 0 = No violation

Analyte	< or >	Monthly Average Concentration	Monthly Concentration Permit Limits	Units	Violation of Permit	TRC Violation of Permit	Monthly Average lbs/day	Monthly Permit Pounds Limits	Units	Violation of Permit	TRC Violation of Permit
Daily Flow		1381.61	5,000	Gallons	0						
pH		7.40	5.5-10 S.U.	S.U.	0						
BOD		59	N/A	mg/l	0	0	0.679835017	N/A	pounds	0	0
TSS		12	N/A	mg/l	0	0	0.138271529	N/A	pounds	0	0
Oil and Grease	<	5	N/A	mg/l	0	0	0.057613137	N/A	pounds	0	0
Aluminum		0.0565	N/A	mg/l	0	0	0.000651028	N/A	pounds	0	0
Arsenic	<	0.02	0.141	mg/l	0	0	0.000230453	N/A	pounds	0	0
Barium			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cadmium	<	0.01	0.242	mg/l	0	0	0.000115226	N/A	pounds	0	0
Chromium	<	0.01	4.441	mg/l	0	0	0.000115226	N/A	pounds	0	0
Copper	<	0.01	2.989	mg/l	0	0	0.000115226	N/A	pounds	0	0
Iron			N/A	mg/l	0	0	0	N/A	pounds	0	0
Lead	<	0.01	0.629	mg/l	0	0	0.000115226	N/A	pounds	0	0
Mercury			N/A	mg/l	0	0	0	N/A	pounds	0	0
Molybdenum	<	0.2139	N/A	mg/l	0	0	0.00246469	N/A	pounds	0	0
Nickel	<	0.0447	1.77	mg/l	0	0	0.000515061	N/A	pounds	0	0
Selenium	<	0.01	0.121	mg/l	0	0	0.000115226	N/A	pounds	0	0
Silver	<	0.005	0.776	mg/l	0	0	5.76131E-05	N/A	pounds	0	0
Zinc		0.0153	5.686	mg/l	0	0	0.000176296	N/A	pounds	0	0
Total Metals			N/A	mg/l	0	0	0	N/A	pounds	0	0
Cyanide		0.013	0.448	mg/l	0	0	0.000149794	N/A	pounds	0	0
Phenols			115.828	mg/l	0	0	0	N/A	pounds	0	0
COD			N/A	mg/l	0	0	0	N/A	pounds	0	0
TTO			N/A	mg/l	0	0	0		pounds	0	0

Due 15 Working Days After The End Of The Reporting Month

Industrial Monthly Summary Reporting Form

Industry: Alter Trading (Monofill)

Out Fall Number 1
Reporting Month: July
Reporting Year: 2024
Report Prepared By: Patrick Kohlmeier

Analyte	Daily Violations	Daily TRC Violations	Monthly Violations	Monthly TRC Violations	Total
Flow	0	0	0	0	0
pH	0	0	0	0	0
BOD	0	0	0	0	0
TSS	0	0	0	0	0
Oil and Grease	0	0	0	0	0
Aluminum	0	0	0	0	0
Arsenic	0	0	0	0	0
Barium	0	0	0	0	0
Cadmium	0	0	0	0	0
Chromium	0	0	0	0	0
Copper	0	0	0	0	0
Iron	0	0	0	0	0
Lead	0	0	0	0	0
Mercury	0	0	0	0	0
Molybdenum	0	0	0	0	0
Nickel	0	0	0	0	0
Selenium	0	0	0	0	0
Silver	0	0	0	0	0
Zinc	0	0	0	0	0
Total Metals	0	0	0	0	0
Cyanide	0	0	0	0	0
Phenols	0	0	0	0	0
COD	0	0	0	0	0
TTO	0	0	0	0	0
Total	0	0	0	0	0

Due 15 Working Days After The End Of The Reporting Month

Davenport Water Pollution Control Laboratory
PO Box 3606
Davenport, Iowa 52808
Phone (563) 326-7965
Fax (563) 326-7858

Analytical Report

REPORT TO

Alter Trading Corporation
5200 Wisconsin Avenue
Davenport, IA 52802
Patrick.Kohlmeier@altertrading.com

Sample ID **AB09617**

Outfall # **1**

Sample Collection Date 7/2/2024

Sample Collector : NF

Sample Type : Grab

Sample Report Date : 8/7/2024

Analyte Name	Result	Units	Analysis Method	Analyst	Analysis Date	Qualifier
TSS	12	mg/L	SM 2540D	JKA	7/2/24	
Grab pH	7.4	S.U.	SM 4500H+ B	NF	7/2/24	
Oil and Grease	<5	mg/L	EPA 1664B	JV	7/5/24	
Total Cyanide	0.013	mg/l	SM 4500-CN C,E	JV	7/8/24	
BOD	59	mg/L	SM 5210B	JKA	7/3/24	
Aluminum	0.0565	mg/l	EPA 200.7	JDC	7/12/24	
Arsenic	<0.02	mg/l	EPA 200.7	JDC	7/12/24	
Cadmium	<0.01	mg/l	EPA 200.7	JDC	7/12/24	
Chromium	<0.01	mg/l	EPA 200.7	JDC	7/12/24	
Copper	<0.01	mg/l	EPA 200.7	JDC	7/12/24	
Lead	<0.01	mg/l	EPA 200.7	JDC	7/12/24	
Molybdenum	0.2139	mg/l	EPA 200.7	JDC	7/12/24	
Nickel	0.0447	mg/l	EPA 200.7	JDC	7/12/24	
Selenium	<0.01	mg/l	EPA 200.7	JDC	7/12/24	
Silver	<0.005	mg/l	EPA 200.7	JDC	7/12/24	
Zinc	0.0153	mg/l	EPA 200.7	JDC	7/12/24	

Reviewed and Approved By: Victoria Gleason

IA DNR Lab #: 221

Appendix G

Landfill Gas Annual Report

Table G1
Landfill Gas Monitoring Summary
2024 Landfill Gas Monitoring Report
Alter Highway 22 Monofill
Permit No. 82-SDP-04-89C

Monitoring Points			Methane Results (% LEL)	
Name	**Type**	**Description**	**6/13/2024**	**S (Y/N)**
#1	Outdoor	North side of Phase 1	0%	X
#2	Outdoor	Near MW-21	0%	X
#3	Outdoor	Near MW-8	0%	X
#4	Outdoor	South of EW-7	0%	X
#5	Outdoor	South of EW-6	0%	X
#6	Outdoor	Northwest corner of Phase 2	0%	X
#7	Outdoor	South of EW-5	0%	X
#8	Outdoor	Between EW-4 and EW-3	0%	X
#9	Outdoor	South of EW-3	0%	X
#10	Outdoor	Southwest edge of Phase 2	0%	X
#11	Outdoor	South of MW-9	0%	X
#12	Outdoor	Approximately 150 feet south of #13	0%	X
#13	Outdoor	South edge of Phase 2	0%	X
#14	Outdoor	West edge of Phase 2	0%	X

S(Y/N) - Was screen submerged, yes or no.

Methane Monitoring Points	
Monitoring Point	**Location Description**
#1	North side of Phase 1
#2	Near MW-21
#3	Near MW-8
#4	South of EW-7
#5	South of EW-6
#6	Northwest corner of Phase 2
#7	South of EW-5
#8	Between EW-4 and EW-3
#9	South of EW-3
#10	Southwest edge of Phase 2
#11	Between MW-11 and SW-3
#12	Approximately 150 feet south of #13
#13	South edge of Phase 2
#14	West edge of Phase 2

SCS ENGINEERS
environmental consultants and contractors

Methane Monitoring Network

Legend

- Methane Monitoring Point
- Approximate Monitoring Well Location
- Approximate Leachate Monitoring Location
- Approximate Waste Boundary
- Approximate Waste Excavation Boundary
- Approximate Property Boundary

Alter Trading Corporation
Davenport, Iowa
Project No: 27224254.00
Drawing Date:
November 2024

Figure 1

N
W
E
S

0 155 310 620
Feet