Starches Sweeteners and Texturizers North America

November 30th, 2023

Iowa Department of Natural Resources
DNR Field Office 5
Wallace Office Building
502 E 9th Street
Des Moines IA, 50319

RE: Cargill Incorporated – Eddyville, Iowa (Permit #62-SDP-04-89P)
2023 Annual Water Quality Report

Enclosed please find the 2023 Annual Water Quality Report for the Cargill Coal Combustion Residual Landfill in Mahaska County. The report was prepared by HR Green.

If you have any questions or require additional information please feel free to contact with either me or Mr. Steven Phillips at 641-969-3918 or at steven_phillips@cargill.com.

Sincerely,

Jonathan Razink

Facility Manager

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 known violations.

cc: File

CCR LANDFILL

2023 ANNUAL WATER QUALITY REPORT
Permit No. 62-SDP-04-89P

CARGILL
MAHASKA COUNTY, IOWA

November 2023

Prepared by:
HR Green, Inc.
8710 Earhart Lane SW
Cedar Rapids, IA

OWNERSHIP OF DOCUMENT

This document, and the ideas and designs incorporated herein, as an instrument of professional service, is the property of HR Green, Inc. and is not to be used, in whole or in part, for any other project without the written authorization of HR Green, Inc.

2023 ANNUAL WATER QUALITY REPORT

CCR LANDFILL
Permit No. 62-SDP-04-89P

CARGILL, INC.
MAHASKA COUNTY, IOWA

November 2023

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

Date: 11/30/2023

STACY EILEEN WOODSON, P.E.

License No. **17389**

My renewal date is **December 31**, **2024**

Pages or sheets covered by this seal:

Entire Document

Prepared By:

QUALIFIED GROUNDWATER SCIENTIST
Iowa Administrative Code Chapter 113.10(1)d

Name: Rose Amundson, C.G.P.

Signature:

Date: November 30, 2023

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EXECUTIVE SUMMARY

Cargill owns a Coal Combustion Residual (CCR) landfill located within an abandon coal mine in Mahaska County, Iowa. Since the landfill's inception in 1990, it has been operated and maintained in accordance with permits issued by the Iowa Department of Natural Resources (IDNR). Cargill completed closure construction activities in the Fall of 2023 for permanent closure as detailed in the IDNR-approved Closure Plan, dated March 12, 2021, and the Final Closure Report completed in November 2023.

This Annual Water Quality Report (AWQR) is submitted to comply with requirements of Cargill's landfill permit, Iowa Administrative Code 567, Chapter 103.1 (4) e, and IDNR comments received after the 2022 AWQR submittal. The report covers ground water quality monitoring activities that were completed in 2023.

As requested by IDNR in 2023, MW-6 was evaluated as a background well for locations MW-8 and MW-9 and MW-26 was evaluated as a background well for locations MW-10, MW-11, MW-12R, and MW-13R. Additionally, one sample was collected from the leachate system. Samples collected from all sample locations for 567 IAC 103.1(2)"f" parameters and new parameters including: boron, calcium, fluoride, lithium, molybdenum, pH, total suspended solids (TSS), total dissolved solids (TDS).

During this sampling event, beryllium, which had not been detected at a sample location prior to 2023, was detected above the MCL (0.001 mg/l) at MW-26 (0.00174 mg/L). Beryllium was not detected at any other sample location. No other groundwater concentrations were observed above Maximum Contaminant Levels (MCLs)/Action Levels (ALs).

Where a MCL/AL does not exist, concentrations were compared to additional regulatory standards including Secondary Drinking Water Regulations (SDWR), Health Advisory Levels (HAL), and Statewide Standards (SWSs). Impact above non-MCL regulatory standards was observed at this facility, including in the background monitoring wells (MW-6 and MW-26). Water quality results collected from MW-6 include concentrations of iron, manganese (when compared to the SDWR), lithium, sulfate, and TDS above a corresponding regulatory threshold value in 2023 sample results. Water quality results collected from MW-26 include concentrations of cobalt, manganese (when compared to the SDWR), lithium, pH, sulfate, and TDS above a corresponding regulatory threshold value in 2023 sample results. Groundwater samples from Hydrologic Monitoring System Plan (HMSP) monitoring locations reported concentrations of these three compounds above a corresponding regulatory threshold at several locations.

The two well networks – one with a background location of MW-6 and one with a background location of MW-26 – reflect two site conditions, one that is dominated by the site geology and to a minor extent historical mining operations while the other appears to be heavily influenced by historical mining and spoils on the site. This is best observed when reviewing data collected for MW-6 (background completed into native), MW-26 (background completed into spoils), and MW10 through MW-13R (downgradient of MW-26 completed into spoils and located downgradient of the CCR landfill). The leachate sample collected during 2023 does not clearly align with either condition and is unique in being the only location where molybdenum was only detected.

Based on the concentrations observed in 2023, it is recommended during the Spring of 2024 monitoring wells, underdrains, and the mine drain be sampled for the full list of analytes listed in Table 2 with exception of molybdenum, which is recommended to be removed in future sampling event.

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APPENDICES

GLOSSARY OF TERMS

AL – Action Level

AMSL – Above mean sea level

AWQR – Annual Water Quality Report

CCR – Coal Combustion Residual

CL - Control Limit (M+/-2SD)

HAL – Health Advisory Level

HMSP – Hydrologic Monitoring System Plan

HR Green – HR Green, Inc.

IAC – Iowa Administrative Code

IDALS – Iowa Department of Agriculture and Land Stewardship

IDNR – Iowa Department of Natural Resources

IGS – Iowa Geological Survey

LCSPE – Leachate Control System Performance Evaluation

MCL – Maximum Contaminant Level

MW – Monitoring Well

NC – No Change

NPDES – National Pollutant Discharge Elimination System

NPGW – Non-Protected Groundwater

PGW – Protected Groundwater

PL – Prediction Limit

RL – Reporting Limit

SDP – Sanitary Disposal Project

SDWR – Secondary Drinking Water Regulations

SWS – Statewide Standard

TDS – Total Dissolved Solids

TSS- Total Suspended Solids

US EPA – United States Environmental Protection Agency

1. Introduction

1.1 Background

The Cargill CCR landfill site is located approximately 6.5 miles northwest of the City of Eddyville in Mahaska County, Iowa, in the SW¼ NE¼ and NW¼ SE¼, Section 30, Township 74 North, Range 16 West.

The site was originally the location of an open pit coal mine, operated by a previous owner. The east walls of the pit are bedrock, while along the west side mine spoils are deposited. An abandoned underground coal tunnel-mine is also located on the property. For more historical site information, refer to the detailed account presented in the 2009 annual report (HR Green, 2009).

Landfilling of CCR and gypsum was initiated in 1990 at two separate locations on the site; the North Landfill (CCR) and the South Landfill (Gypsum). The landfills are constructed with a groundwater drainage system under a four-foot thick compacted clay liner. A granular leachate collection layer and piping system was installed above the clay liner. The two landfills were initially regulated under separate IDNR permits. Disposal operations in the South Landfill and North Landfill were discontinued in 1991 and 2000, respectively. Soil cover was applied and both landfills were maintained for a number of years under interim status.

In January 2014 IDNR approved a 10-year permit renewal wherein the two formerly separate gypsum and CCR landfills were combined under one permit for the disposal of CCR wastes, see Figure 3 for fill area extents. Following permit renewal, the North Landfill remained under interim status and the South Landfill actively accepted CCR for about three years (January 2014 to January 2017).

The Cargill Eddyville facility no longer generates CCR waste and permanently close the landfill site with construction activities completed Fall 2023. Cargill has begun closure construction activities as detailed in their IDNR approved Closure Plan, dated March 12, 2021 and the Construction Closure Report dated November 2023.

1.2 Hydrogeology and Groundwater Flow Conditions

The groundwater flow directions at the site reflect surface topography. Overall, the shallow groundwater flow system is west-northwest toward the valley of Little Bluff Creek, which is likely unchanged from pre-mining times. Excavation of the strip mine created free drainage of the high wall cuts resulting in a shifting of the shallow groundwater divide beneath the ridge crest toward the east and south, though the shift has been somewhat mitigated by subsequent filling. Sheet No. 1 depicts the 2023 water table and groundwater flow condition and Sheet Nos. 2 and 3 depict the site configuration, leachate collection system, and monitoring points. Figures 2 and 3 have been updated to reflect current site grading at the facility.

Groundwater gradients remain steeper in some areas indicating low permeability materials and potential flow discontinuity along the high wall where native materials have been completely stripped away (see Figure 1). The steepest gradients are observed in the southwest corner of the site near MW-8 and MW-9 west of the South Fill Area where flow paths converge along a natural drainage-way. The gradient is lower through the spoil area in the central part of the site (MW-10, MW-11, and MW-12) because the spoils are composed of crushed shale and silt and are irregularly placed and somewhat more permeable. The flow direction and gradients remain consistent with historical data.

The shallow groundwater is not useable as a water supply aquifer based on historic in-situ permeability (slug) test analyses, where for HMSP-approved monitoring wells, the hydraulic conductivity, K value, is < 0.44 m/day (< 5.0E10-4 cm/sec).

1.3 Hydrologic Monitoring System Plan and Additional Monitoring Locations

Samples and measurements were collected from approved HMSP and additional monitoring locations identified in Table 1 on September 5-6, 2023. Groundwater samples were collected from all HMSP monitoring wells, two underdrain locations, an additional monitoring well, and from the leachate collection

system. The mine drain sample location was not sampled during this fall sampling event due to insufficient flow at the outfall. A pH field reading was measured at all monitoring locations. Samples were contained in laboratory-provided containers and preserved on ice prior to delivery to the analytical laboratory where they were analyzed for the compounds listed in Table 2. Sample analysis was completed by Eurofins TA in Cedar Falls, IA. Additionally, under the Special Provisions X.5.e of the permit, water level elevations were measured in each HMSP-approved point during the sampling event.

The analytical report and field sheets from the September 2022 sample collection are included in Appendix A and B, respectively. Historical data collected since 2016 can be found in Appendix C and this data are compared to geologic impact ranges and values observed in Appendix D. Additional tables have been included to bring this report into agreement with the IDNR-specified template for landfill facilities, discussed further in the relevant sections of this report.

Per IDNR's request, Cargill transitioned in September 2016 to a low flow collection methodology, unfiltered field samples, where possible, and total metals analysis. Permit Amendment #1 granted a variance from continued analysis of dissolved metals. This historic data can be reviewed in the 2015 AWQR and is no longer being updated.

The next groundwater sample collection is scheduled to occur in Spring 2024. A schedule of previous and future sampling through 2024 is included in Table 2.

2. Monitoring Well Maintenance and Performance Summary

Reviews of well performance are conducted to confirm that the HMSP-approved wells continue to function as viable monitoring points. A schedule of these reviews is included in Table 3. A summary of the well information is presented in Table 4. This table includes a record of high and low water level elevation at each monitoring well and reports the change in depth of well from initial installation. Observations during 2023 include a new record high water elevation observed at MW-9 and record low water elevations observed at MW-10, MW-11, and MW-26. Groundwater elevations were observed above the top screen at all locations with the exception of where the new record low elevations were observed which was reported below the top of screen. A change in depth of well could be the result of damage or sedimentation at a monitoring well. During 2022, the measured depth of wells was at or within one foot of the initial well depth at all monitoring locations with the exception of MW-10, MW-11, MW-12R, and MW-13R. During 2023 the well casing was adjusted to allow access with the change in ground surface elevation after closure. As such, these wells will be further investigated during the Spring 2024 sampling event to determine the cause of this discrepancy.

The current review indicates: (1) a steady groundwater flow gradient and pattern persists (Sheet No. 1), and (2) the wells remain viable sampling points as they are physically intact, void of excessive turbidity with stable well depth measurements, and provide the anticipated recharge during sampling. No changes to the hydrologic monitoring system plan are recommended.

3. Annual Monitoring Results

3.1 Comparison to Standards

Due to the change in the monitoring well network with MW-26 (previously sampled for a limited list of compounds) performing as a background well for MW-10, MW-11, MW-12R, and MW-13R and new compounds added to the parameter list, the number of background values that could be evaluated was limited. An updated background statistical report was completed for wells where sufficient data was available resulting in updated intrawell limits for those wells and parameters. Additionally, where intrawell limits were not reported, the mean of the reported concentrations was calculated and then the two standard deviations was added to develop a background limit, see Table 5. When more than one sample had been collected and the results identified no detections at MW-6 or MW-26, the most recent reporting limit was used as the background value.

Additional statistical analysis will be considered to develop background concentrations once a sufficient dataset is available (n=8) as more samples are collected at MW-26 and for new compounds. U.S. EPA Unified Guidance along with IDNR rules and requirements will be considered to select an appropriate data analysis method as additional sample collection is completed.

Additional review was completed to compare groundwater quality results to health-based regulatory standards. Where the parameters have a MCL[1] established by the U.S. EPA, the water quality data are evaluated in relation to the established MCL's, or where an MCL does not exist, the result is compared to the HAL[2] or SDWR[3] (U.S. EPA edition of the Drinking Water Standards and Health Advisories, 2018). Where an MCL, HAL, or SDWR standard does not exist, the result is compared to the Iowa SWS[4] for a protected groundwater source.

The calculated preliminary control limits and applicable standards are listed in Table 5. The full list of intrawell limits can be found in Figure E of Appendix E.

3.2 2023 Water Quality Results

Sampling of the HMSP-approved monitoring points and additional monitoring locations was conducted during the period of September 5-6, 2023. The sample collected during this event at Fly Ash North #002 was collected from the corresponding manhole structures that were installed according the IDNR-approved Closure/Post-Closure Plan for the facility (see Figure 3). A water sample was not collected from Tunnel Mine #004 during this sampling event as there was insufficient flow to collect a sample. Table 6 provides a summary of monitoring points and detected constituents from recent and the 2023 sampling event that did not exceed a control limit. Table 7 is a summary of ongoing or newly identified exceedances of control limits. Both tables 6 and 7 will be limited to compounds that have background concentrations and/or, where applicable, have an upgradient well with a reported background value. Table 8 includes the historical sample results at this facility from 2016-2023. Table 9 summarizes findings from 2016-2023 where exceedances have occurred.

This report found no water quality results reported above a MCL/AL with the exception of beryllium at MW-26. This is the first detection of this compound at the facility within the dataset from 2016-2023.

Two pre-landfill development conditions appear to potentially influence water quality on the site: regional geology and influence associated with historical mining operations. The regional geology is dominated by rock types with geochemically mixed compositions, including shale, siltstone, coal, and limestone of the Pennsylvanian System – all of which contribute to naturally poor water ambient groundwater quality of the region. This ambient condition is useful in comparison to the landfill's background groundwater quality as monitored at MW-6 (upgradient), where the quality appears representative of ambient conditions. Indications of the influence of historical mining operations and mine spoils on the site's groundwater quality can be observed in monitoring wells MW-10 through MW-13R and MW-26 which are all screened in decades-old mine spoils and directly above a low permeability under-clay deposit. Monitoring well MW-26 represents the stand alone influence of the mine spoils on groundwater quality because it is located side-gradient of the landfill (as much as is possible on site). MW-10 through MW-13R represents the influence of both mine spoils and CCR waste because they are located down gradient of the landfill and also influenced by the geochemistry of the mine spoils. Note that iron pyrite (FeS_2) is abundant and visible in this material. Pyrite exposed to the atmosphere during historic mining and excavation reacts with oxygen and water to form sulfate. Thus, the groundwater chemistry monitored by these wells reflects the continued weathering (oxidation) and leaching via precipitation of the pre-landfill deposited mine spoils. Appendix D includes plots over time displaying the results collected from the site and the regional average from this

1 The highest level of contaminant allowed in drinking water. MCLs are enforceable standards.
2 An estimate of acceptable drinking water levels for a chemical substance based on health effect information. This is not a legally enforceable Federal standard, but serves as technical guidance to assist Federal, State, and local officials.
3 Non-enforceable Federal guidelines regarding cosmetic effects (suck as tooth or skin discoloration) or aesthetic effects (suck as taste, odor, or color) of drinking water.
4 Chapter 137 of Iowa DNR voluntary cleanup rules prescribed SWSs for groundwater/ Two classes are distinguished by the hydraulic conductivity (K) of the aquifer and the naturally occurring total dissolved solids (TDS) content. Groundwater in a useable aquifer ($K \geq 0.44$ m/d and TDS < 2,500 mg/L) has a higher level of protection than groundwater that is not likely to be used.

study and ranges for iron, manganese, and sulfate for sample locations MW-6, MW-26, and MW-10 through MW-13R.

- Iron, manganese (when compared to the SDWR), and sulfate exceed their respective regulatory standards in up-gradient well MW-6 and manganese and sulfate exceed their respective regulatory standards in side-gradient well MW-26. The magnitude of these values generally reflects the natural ambient conditions of the native bedrock comprised of siltstone, shale, sandstone, limestone, and coal (USGS, 1983. Hydrology of Area 38, Western Region, Interior Coal Province, Iowa and Missouri, Water Resources Investigations, OFR 82-1014).
- During the period 2016-2023, reported sulfate and iron concentrations at MW-26 and MW-11 through MW-13R, with exception of two samples as shown in Appendix D, were within the range of the regional ambient quality for geologic impact for the Pennsylvanian system. During this same period, manganese concentrations at these locations is reported above the regional ambient quality at MW-26, MW-13R, MW-11, and MW-10 with the highest elevations observed at MW-26. MW-26 is assumed to be dominated by mine spoil impact with minimal to no CCR landfill influence. In Appendix C, the manganese results at all monitoring locations are displayed from 2016-2023 and, but for the exception of one year, reported concentrations above the observed manganese concentrations at MW-26 are those reported at Tunnel Mine #004.

This general understanding of the site is what resulted in changing the groundwater monitoring network so that there are two background monitoring locations and corresponding downgradient monitoring locations as follows:

- Upgradient: MW-6
- Downgradient: MW-8 and MW-9

- Upgradient: MW-26
- Downgradient: MW-10, MW-11, MW-12R, and MW-13R

Additional findings include:

- Background location MW-6 exceeded an applicable regulatory standard for iron, lithium, manganese (SDWR), sulfate, and TDS.
    - Downgradient monitoring location MW-8 exceeded the iron SDWR. Both MW-6 and MW-8 did not exceed preliminary background threshold values.
    - Downgradient monitoring location MW-9 exceeded the manganese HAL and SDWR and sulfate SDWR. Both MW-6 and MW-9 did not exceed preliminary background threshold values.
    - Lithium and TDS are new parameters that were tested in 2023 and concentrations observed at both downgradient locations (MW-8 and MW-9) were observed above the PGW SWS and HAL, respectively. As this has been tested once, no background concentrations exist for these parameters.
    - Additional new parameters that were detected include boron and calcium. Parameters that were new in 2023 that were not detected include fluoride and molybdenum.

- Background location MW-26 exceeded an applicable regulatory standard for beryllium, cobalt, lithium, manganese, pH, sulfate, and TDS.
    - The background location MW-26 was the only location to report a detected concentration. This is the first detection at the facility when the data set is reviewed from 2016-2023. This detection did exceed the MCL for beryllium. There is no background concentration available for this compound.
    - The background location MW-26 was pH value that was reported outside of the SDWR range. The laboratory-reported and field-reported pH values both appear to fall outside of the preliminary background threshold value.
    - Downgradient monitoring locations MW-10, MW-11, MW-12R, MW-13R and both underdrain locations exceeded the PGW SWS for lithium and SDWR for TDS. As these have been tested

once, no background concentrations exist for these parameters.
  - While iron was not observed at MW-26 above the SDWR for iron, all downgradient locations (including both underdrain locations) reported concentrations above the iron SDWR. Reported concentrations did not exceed preliminary background threshold values.
  - Downgradient monitoring locations MW-10, MW-11, MW-12R, MW-13R and both underdrain locations exceeded the SDWR and HAL for manganese and the SDWR for sulfate. The observed concentrations did not exceed preliminary background threshold values.
  - Additional new parameters that were detected include boron and calcium. Parameters that were new in 2023 that were not detected include molybdenum. Fluoride was detected at MW-26 and Gypsum West #005 only.

- The leachate sample was collected and analyzed for the same list of parameters as the other sample locations. This result of this sample appears to display a unique water quality signature that is different than the monitoring well results.
  - Beryllium, fluoride, and lithium were not detected in the collected sample.
  - Cobalt was detected at a concentration below the PGW SWS.
  - Iron was detected at a concentration below the SDWR.
  - Manganese was detected at a concentration above the HAL and SDWR.
  - Molybdenum was detected at a concentration above the HAL.
  - Sulfate and TDS were detected at concentrations above their SDWR values.

Based on test results, it appears the groundwater concentrations in the HMSP wells are, in significant part, the result of the geochemical influences imparted by the native bedrock in the well pairings associated with upgradient location MW-6 and this bedrock contribution and widespread mine spoils that remain on site in the well pairings associated with upgradient location MW-26. While the pre-landfill conditions create naturally poor water quality conditions and can create some difficulty with discerning the differences between these conditions and the potential landfill contribution there do appear to be similarities observed within one well network that is not observed in the other, as noted above.

The data collected from 2016-2023 was evaluated to determine the appropriate analysis for the data under EPA's Unified Guidance. Due to the number of non-detect concentrations, new parameters, and changes in well network to create two upgradient wells, background concentrations were limited. Additionally, once 10 samples are available a power curve will be created to allow for regulatory compliance comparison of the results. Intrawell values for background wells are listed in Table 5 where available and the full list of intrawell prediction limits can be found in Figure E in Appendix E. Additional background exceedances for 2023 are reported in Table 1, Table 7, and Table 9.

A new parameter that was evaluated in 2023 was TSS. TSS has the potential to impact water quality concentrations, specifically for metals, as they can adhere to the surface of soil particles. The strength of the bond to the soil particle varies both on the size of the compound's particle and ion charge (valence charge). A study that was reviewed found that TSS was a good indicator of metals such as iron, lead, and aluminum (i.e. increased TSS would also indicate a higher iron concentration, relatively). This was generally observed when plotting iron vs. TSS

4. Leachate Control System Performance Evaluation (LCSPE)

An engineered leachate collection system is present at the bottom of both the North and South Fill Areas. Leachate is collected above the clay liner, flowing within a granular drainage layer to a piping system where it is directed to an on-site leachate storage lagoon.

Leachate is temporarily stored in the on-site lagoon and managed in accordance with the landfill SDP permit. Leachate management options in 2023 included:

1. Discharge to a publicly owned treatment works
2. Discharge to the Cargill Eddyville Plant treatment plant after a NPDES permit update in August; and,
3. On-site beneficial use for establishment of vegetation.

Cargill previously hauled and disposed of leachate at the City of Ottumwa's Water Pollution Control Facility under a permit they received in December 2020. During this annual reporting period prior to August, leachate was tested, collected, hauled, and disposed of at this facility. Upon receiving a new NDPES permit for the Cargill Eddyville plant, Cargill started hauling the leachate to their facility for disposal. Leachate disposal information is specified in Table 10.

In accordance with Special Provision X.6.d of the SDP landfill permit, leachate head levels and elevations are measured regularly in the system's manholes. These measurements were completed during the annual groundwater monitoring event in September and are included in Table 10. The landfill SDP permit deems that effective leachate control is considered as achieving less than 12-inches of head (on the liner), and maintaining applicable surface water and groundwater quality standards at compliance monitoring points. During 2023, off-cell leachate system pipes were replaced during construction activities. The resulting leachate head readings of the landfill manholes identify acceptable head levels and that the system is performing successfully across the lined area of the landfills.

It is recommended that Cargill continue to document its leachate management, collect leachate head measurements annually, and comply and maintain records for off-site disposal of leachate from this facility.

5. Summary of Recommendations

1. The site is currently inactive (not accepting CCR) and closure construction activities have been completed. As indicated in the landfill SDP permit, Cargill is to permanently close the site in 2023. Cargill has submitted a Closure/Post-Closure Plan and Closure Construction Report.

2. Routine annual monitoring, analysis, and reporting should continue as specified in coal combustion residue landfill regulations 567-IAC 103.1(4)d-e, permit-specific requirements, and as requested by IDNR in 2022, as follows:

- IDNR instructed Cargill to transition to testing for total metals with no field filtering and a low flow sampling methodology. The fall 2016 sampling event was the first event to reflect this transition. Under Permit Amendment #1 Cargill received a variance from the IAC Chapter 103.1(2)f and the Permit Special Provisions X.5.g requirements that the analysis be for dissolved metals with filtering in the field. Future water quality samples will continue to be collected and analyzed as total recoverable metals (no field filtering) via low flow sample collection.

- The approved HMSP sample locations and additional sample locations identified in Table 1 should continue to be sampled on an annual basis for parameters specified in Table 2 with the exception molybdenum which was only detected in the leachate sample and not in any of the drains or monitoring well locations. As such, molybdenum is recommended to be removed from future sample collection. The other parameters added in 2023 were observed at one monitoring location or more and as such will be sampled again in Spring 2024.

  Additional statistical review will be completed as more data is collected to complete the statistical analysis according to EPA Unified Guidance. It is recommended that annual sample collection continue with a Spring 2024 event.

- Annual water level measurements should be collected during the sampling event at all existing monitoring wells, with MW-6, MW-8, MW-9, MW-10, MW-11, MW-12, MW-13, and MW-26 used to construct the annual water table map.

3. Based on review of the well performance indicators, including the annual water level and well depth evaluation, no changes are recommended for the hydrologic monitoring plan, beyond conducting a field review of conditions at MW-10, MW-11, MW-12R, and MW-13R. Wells were adjusted or repaired in 2023 and surveyed however the depth of the wells will need to be confirmed in 2024 and further review will be completed to address the discrepancy observed in Table 4.

4. The annual sampling event was conducted on September 5-6, 2023. The water quality data are evaluated in relation to established MCL; or where an MCL does not exist to the HAL; or where an MCL or HAL does not exist, to the Iowa Statewide Standards for a protected groundwater source. Additional analysis was completed this year to compare results to the preliminary background level.

- The results of this review can be found in Section 3.2 of this report.

5. The LCSPE indicates:

- During this annual reporting period the entire site was in interim closure status. Collected leachate was managed in accordance with Cargill's landfill SDP Permit and other IDNR authorization.

- The leachate collection system is currently effective and achieving less than 12-inches of head on the clay liner.

- In order to maintain the lowest head possible on the landfill liners, the facility should resume a regular maintenance cycle, as needed. It is recommended that jetting occur at least once every three years, as required for other landfill types.

- Leachate levels should be measured annually in the system's manholes.

6. A report summarizing the AWQR and LCSPE should be submitted annually by November 30.

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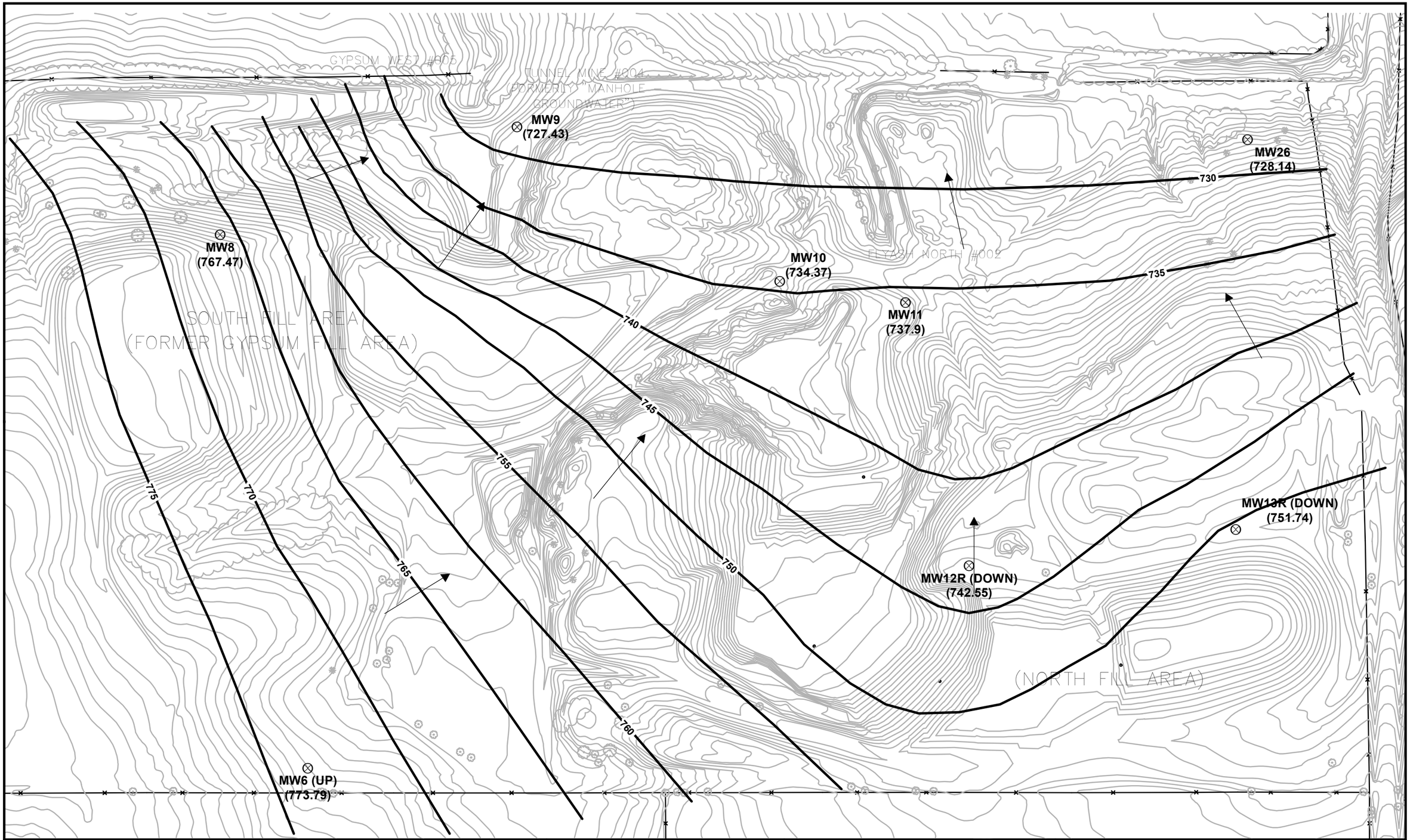
FIGURES

Sheet 1: Monitoring Points and Groundwater Contour Map

Sheet 2: Site Boundaries and Survey

Sheet 3: Existing Site Conditions



Drawn By: RAMUNDS	Job Date: Nov. 2023		
Approved:	Job Number: 2302127		
GIS Date:			
GIS File:			

NO.	DATE	BY	REVISION DESCRIPTION

HRGreen

CARGILL CCR LANDFILL
CARGILL, INC.
EDDYVILLE, IOWA

Monitoring Points and Groundwater Contour Map (9/5-6/2023)

N

SHEET NO.
1

NW CORNER SW 1/4–NE 1/4
SECTION 30–74–16
FOUND 3/4" PIPE BY
PLS 6708 – 12" DEEP

NW CORNER SE 1/4–NE 1/4
SECTION 30–74–16
FOUND 60D NAIL 3" DEEP
ABOVE 3/4" PIPE BY PLS 6708
(BOOK 1 PAGE 205)

NE CORNER SE 1/4–NE 1/4
SECTION 30–74–16
FOUND 1/2" REBAR BY
PLS 6708 3" DEEP

CENTER
SECTION 30–74–16
FOUND 5/8" REBAR BY
PLS 6708 – EXPOSED 2"

SW CORNER SE 1/4–NE 1/4
SECTION 30–74–16
FOUND 3/4" PIPE BY
PLS 6708 AT SURFACE

EAST 1/4 CORNER
SECTION 30–74–16
FOUND 60D NAIL ABOVE
3/4" PIPE BY PLS 6708
(BOOK 2 PAGE 93)

OWNER: CARGILL INCOPORATED

OWNER: CARGILL INCOPORATED

SW 1/4 – NE 1/4 SECTION 30–74–16

SE 1/4 – NE 1/4 SECTION 30–74–16

MONITORING WELL #26
CONC BASE=746.37
TOP PIPE=749.27
TOP LID=749.62

MONITORING WELL #13R
CONC BASE=808.58
TOP PIPE=812.55
TOP LID=812.75

MONITORING WELL #4
CONC BASE=815.77
TOP PIPE=817.67
TOP LID=818.20

MONITORING WELL #1
CONC BASE=816.12
TOP PIPE=817.21
TOP LID=817.94

STRUCTURE 13
TOP=831.38
T/ WATER=755.33

STRUCTURE 12
TOP=833.99
T/ WATER=753.96

STRUCTURE 11
TOP=815.31
T/ WATER=746.45

MONITORING WELL #12R
CONC BASE=804.65
TOP PIPE=808.10
TOP LID=808.42

MONITORING WELL #11
CONC BASE=760.56
TOP PIPE=762.72
TOP LID=763.00

STRUCTURE 14
TOP=761.11
T/ WATER=740.40

STRUCTURE 9
TOP=770.52
T/ WATER=742.66

STRUCTURE 10
TOP=783.49
T/ WATER=743.46

STRUCTURE 1
TOP=759.53
T/ WATER=740.89

STRUCTURE 8
TOP=762.83
T/ WATER=742.00

MONITORING WELL #10
GROUND ELEV=768.42
TOP PIPE=771.57
TOP LID=772.12

MONITORING WELL #5
GROUND ELEV=821.14
TOP PIPE=824.28
TOP LID=824.43

STRUCTURE 2
TOP=764.83
T/ WATER=744.92

STRUCTURE 3
TOP=773.01
T/ WATER=748.29

CONTROL STRUCTURE
TOP=739.17
BOT=729.02
FL 8" OUT=732.61
FL 6" IN=732.57

MH–LF
GRATE=742.62
FL IN=738.00
FL OUT=737.71

MH UD01
GRATE=759.24
T/ WATER=737.74

MH ST–01
RIM=753.83
FL=736.68

MH ST–02
RIM=754.18
FL E=743.34
FL W=736.33

BUILDING

GRAVEL

TREES

GENERAL LEGEND

- ▲ = SECTION CORNER FOUND
- 800 = EXISTING GROUND CONTOUR LINE
- = TREE OR SHRUB
- x = FIELD FENCELINE
- o = CHAIN LINK FENCELINE
- = RIP–RAP
- = BOLLARD
- M = MONITORING WELL
- E = ELECTRIC MANHOLE
- OE = OVERHEAD ELECTRIC LINE
- = UTILITY POLE
- = GUY WIRE
- T/ WATER = TOP OF STANDING WATER IN MH

NORTH

0 100' 200'

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CARGILL, INCORPORATED

REV.	DATE	DESCRIPTION
1	11/16/2023	RECORD DRAWINGS

DESIGN JOB NO. CARGILL | DESIGN NAME JOB NO. ENGINEERING FIRM

CCR LANDFILL CLOSURE

TOPOGRAPHIC SURVEY

DRAWING NUMBER 02–TS–099001

PLANT EDDYVILLE, IA | DEPARTMENT UTILITIES | SCALE: N/A | DATE 04–21–2021 | REV.NO. 1

Xrefs: xgt–1–dh01; xv–Survey_Final

01–03

NAME/DATE LAST EDITED: 11/16/2023 8:58:20 PM

CAD FILE NAME: J:\2015\10150075\CAD\Dwgs\C\02–TS–099001.dwg

CENTER
SECTION 30-74-16
FOUND 5/8" REBAR BY
PLS 6708 - EXPOSED 2"

SW CORNER SE 1/4-NE 1/4
SECTION 30-74-16
FOUND 3/4" PIPE BY
PLS 6708 AT SURFACE

EAST 1/4 CORNER
SECTION 30-74-16
FOUND 60D NAIL ABOVE
3/4" PIPE BY PLS 6708
(BOOK 2 PAGE 93)

STRUCTURE 3
TOP=773.01
T/ WATER=748.29

MONITORING WELL #9
GROUND ELEV=747.76
TOP PIPE=749.28
TOP LID=750.35

6" MINE DRAIN
OUTLETS PIPE
ALIGNMENT ARE UNCERTAIN

STRUCTURE 4
TOP=768.34
T/ WATER=750.29

STRUCTURE 5
TOP=783.07
T/ WATER=751.86

STRUCTURE 15
TOP=797.60
T/ WATER=753.00

STRUCTURE 16
TUNNEL MINE DRAINAGE
TOP=798.01
T/ WATER=742.30

6" MINE DRAIN OUTLET
PIPE ALIGNMENT IS UNCERTAIN

STRUCTURE 6
TOP=811.25
T/ WATER=756.80

MONITORING WELL #2
CONC BASE=793.99
TOP PIPE=796.12
TOP LID=796.36

MONITORING WELL #6
CONC BASE=808.26
TOP PIPE=811.50
TOP LID=811.77

NW 1/4 - SE 1/4
SECTION 30-74-16

NE 1/4 - SE 1/4
SECTION 30-74-16

OWNER: CARGILL INCOPORATED

OWNER: BERNARD JOHN JANSSEN

MONITORING WELL #8
CONC BASE=805.74
TOP PIPE=808.13
TOP LID=808.45

STRUCTURE 7
TOP=827.01
T/ WATER=774.87

SW CORNER NW 1/4-SE 1/4
SECTION 30-74-16
FOUND 3/4" PIPE BY
PLS 6708 - EXPOSED 2"

MONITORING WELL
CONC BASE=818.04
TOP PIPE=820.22
TOP LID=820.70

MONITORING WELL #3
CONC BASE=835.40
TOP LID=837.35
UNABLE TO UNLOCK LID

SW CORNER NE 1/4-SE 1/4
SECTION 30-74-16
FOUND 3/4" PIPE BY
PLS 6708 EXPOSED 4"

SE CORNER NE 1/4-SE 1/4
SECTION 30-74-16
FOUND 5/8" REBAR BY
PLS 6708 5" DEEP
(BOOK 2 PAGE 93)

GENERAL LEGEND

- ▲ = SECTION CORNER FOUND
- 800 = EXISTING GROUND CONTOUR LINE
- = TREE OR SHRUB
- x = FIELD FENCELINE
- o = CHAIN LINK FENCELINE
- = RIP-RAP
- = BOLLARD
- (M) = MONITORING WELL
- (E) = ELECTRIC MANHOLE
- OE = OVERHEAD ELECTRIC LINE
- = UTILITY POLE
- = GUY WIRE
- T/ WATER = TOP OF STANDING WATER IN MH

NORTH

0 100' 200'

Xrefs: xgt-1-dh01; xvt-Survey_Final

01-03

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CARGILL, INCORPORATED

REV.	DATE	DESCRIPTION	DESIGN	JOB NO.	DESIGN	NAME	JOB NO.
			.	.	.	.	
1	11/16/2023	RECORD DRAWINGS	CARGILL		ENGINEERING FIRM		

NAME/DATE LAST EDITED: 11/16/2023 8:58:23 PM

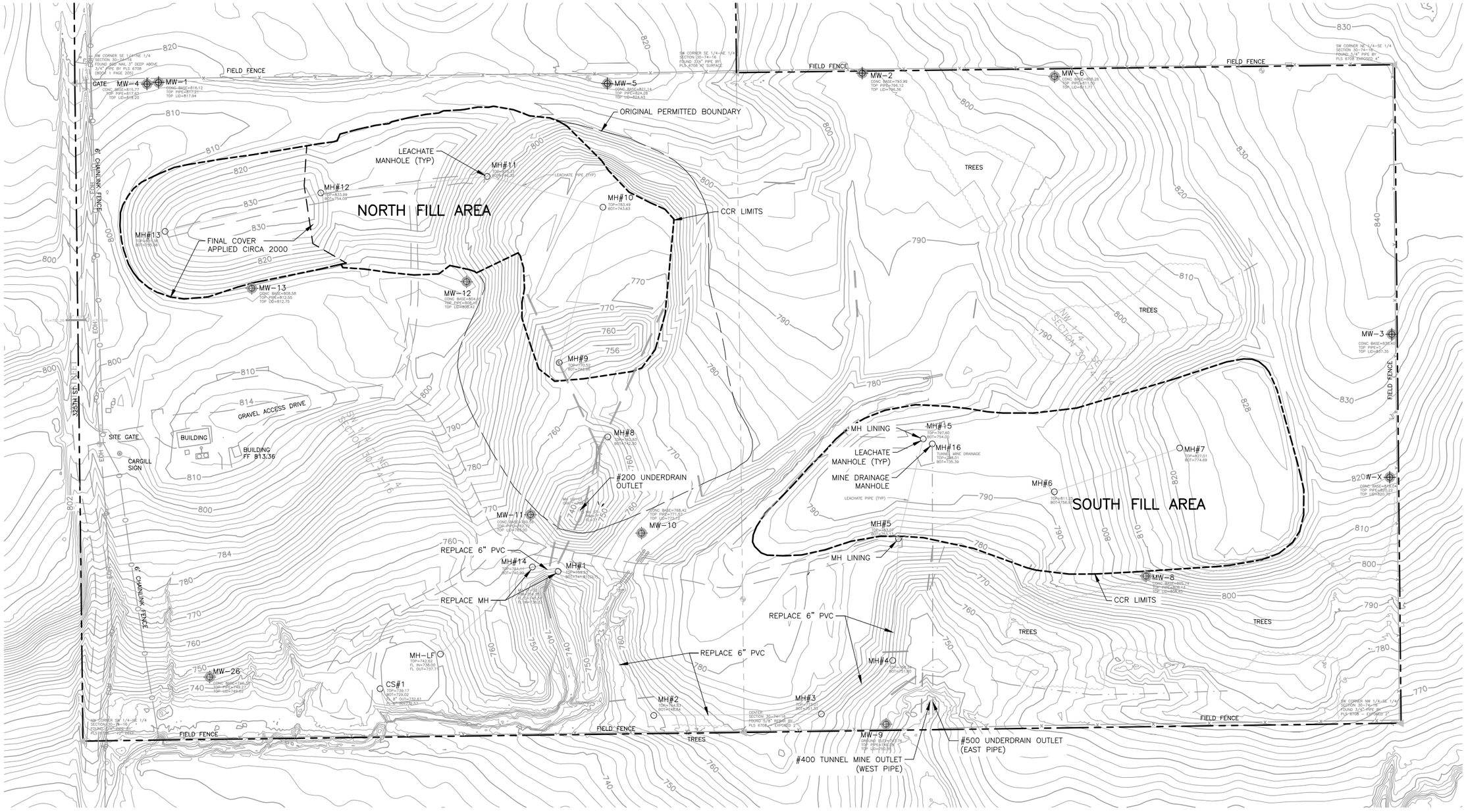
CAD FILE NAME: J:\2015\10150075\CAD\Dwgs\C\02-TS-099002.dwg

CCR LANDFILL CLOSURE

TOPOGRAPHIC SURVEY

DRAWING NUMBER 02-TS-099002

PLANT	DEPARTMENT	SCALE:	DATE	REV.NO.
EDDYVILLE, IA	UTILITIES	N/A	04-21-2021	1



SURVEY NOTES:

1. BASE MAP IS A COMPILATION OF A 2008 LIDAR AERIAL SURVEY AND A GROUND SURVEY BY GARDEN & ASSOC, OSKALOOSA, IA. DATED 2/5/2020. GROUND SURVEY INCLUDED UPDATED TOPOGRAPHY OF PORTIONS OF SITE, MONITORING WELLS, AND STRUCTURES.
2. MAPPING DATUM:
   HORIZONTAL: NAD 83, IOWA STATE PLANE, SOUTH ZONE (1402), US SURVEY FEET
   VERTICAL: NAVD88

NORTH

0 100

1" = 100'

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CARGILL, INCORPORATED

REV.	DATE	DESCRIPTION	DESIGN (CARGILL)	JOB NO. (CARGILL)	DESIGN (ENGINEERING FIRM)	NAME (ENGINEERING FIRM)	JOB NO. (ENGINEERING FIRM)
1	11/16/2023	RECORD DRAWINGS	.	.			
0	4/21/2021	FOR CONSTRUCTION	.	.			

CCR LANDFILL CLOSURE

EXISTING SITE CONDITIONS

Cargill

DRAWING NUMBER 02-PPE-099002

PLANT	DEPARTMENT	SCALE:	DATE	REV.NO.
EDDYVILLE, IA	UTILITIES	N/A	04-21-2021	1

NAME/DATE LAST EDITED: 11/16/2023 8:58:16 PM

CAD FILE NAME: J:\2015\10150075\CAD\Dwgs\C\02-PPE-099002.dwg

Xrefs: xv-Cont; xv-Base; xgt-1-dh01

01-03

TABLES

Table 1
Monitoring Program Summary
2023 Annual Water Quality Report
Cargill CCR Landfill
Permit No. 62-SDP-04-89P

Monitoring Well	Formation	Current Monitoring Program	Change for next sampling event	Background Exceedances	No. of Samples Since January 1, 2016		
					Routine	Supplemental	Remedial Action
MW-6	Weathered Till	Background	NC		8	-	-
MW-8	Weathered Till	Routine	NC	Zinc	8	-	-
MW-9	Weathered Till	Routine	NC		8	-	-
MW-10	Mine Spoil	Routine	NC		8	-	-
MW-11	Mine Spoil	Routine	NC		8	-	-
MW-12/MW-12R	Mine Spoil	Routine	NC		7	-	-
MW-13/MW-13R	Mine Spoil	Routine	NC		8	-	-
Other monitoring points							
Fly Ash North #002*	Groundwater Drain Line	Routine	NC		8	-	-
Gypsum West #005	Groundwater Drain Line	Routine	NC		8	-	-
Tunnel Mine #004**	Tunnel Mine Drainage	Routine	NC		4	-	-
MW-26	Mine Spoil	Background	NC		8		
Leachate	Leachate	Single	Do not sample in 2024		1	-	-

*Per IDNR-approved Closure/Post Closure plans, this drain line now discharge to a manholes and the samples were collected from the end of pipe within the corresponding manholes on the plans. **Insufficient flow prevented sample collection at Tunnel Mine #004.

Table 2
Monitoring Program Implementation Schedule
2023 Annual Water Quality Report
Cargill CCR Landfill
Permit No. 62-SDP-04-89P

Monitoring Well	Recent Sampling Dates and Constituents								PLANNED
	10/4/2016	8/10/2017	9/26/2018	7/8/2019	9/1/2020	5/25/2021	9/8/2022	9/5/2023	April 2024
MW-6	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	567 IAC 103.1(2)"f", New 2023	567 IAC 103.1(2)"f", 2024 Parameters
MW-8	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	567 IAC 103.1(2)"f", New 2023	567 IAC 103.1(2)"f", 2024 Parameters
MW-9	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	567 IAC 103.1(2)"f", New 2023	567 IAC 103.1(2)"f", 2024 Parameters
MW-10	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	567 IAC 103.1(2)"f", New 2023	567 IAC 103.1(2)"f", 2024 Parameters
MW-11	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	567 IAC 103.1(2)"f", New 2023	567 IAC 103.1(2)"f", 2024 Parameters
MW-12/MW-12R	- [1]	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	567 IAC 103.1(2)"f", New 2023	567 IAC 103.1(2)"f", 2024 Parameters
MW-13/MW-13R	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	pH, 567 IAC 103.1(2)"f"	567 IAC 103.1(2)"f", New 2023	567 IAC 103.1(2)"f", 2024 Parameters
MW-26	pH, Fe, Mn, Mg, and SO_4	pH, Fe, Mn, Mg, and SO_4	pH, Fe, Mn, Mg, and SO_4	pH, Fe, Mn, Mg, and SO_4	pH, Fe, Mn, Mg, and SO_4	pH, Fe, Mn, Mg, and SO_4	pH, Fe, Mn, Mg, and SO_4	567 IAC 103.1(2)"f", New 2023	567 IAC 103.1(2)"f", 2024 Parameters
Fly Ash North #002	pH, Fe, Mn, Mg, and SO_4	pH, Fe, Mn, Mg, and SO_4	pH, Fe, Mn, Mg, and SO_4	pH, Fe, Mn, Mg, and SO_4	pH, Fe, Mn, Mg, and SO_4	pH, Fe, Mn, Mg, and SO_4	pH, Fe, Mn, Mg, and SO_4	567 IAC 103.1(2)"f", New 2023	567 IAC 103.1(2)"f", 2024 Parameters
Tunnel Mine #004	pH, Fe, Mn, Mg, and SO4	- [2]	- [2]	pH, Fe, Mn, Mg, and SO4	pH, Fe, Mn, Mg, and SO4	pH, Fe, Mn, Mg, and SO4	- [2]	- [2]	567 IAC 103.1(2)"f", 2024 Parameters
Gypsum West #005	pH, Fe, Mn, Mg, and SO4	pH, Fe, Mn, Mg, and SO4	pH, Fe, Mn, Mg, and SO4	pH, Fe, Mn, Mg, and SO4	pH, Fe, Mn, Mg, and SO4	pH, Fe, Mn, Mg, and SO4	pH, Fe, Mn, Mg, and SO4	567 IAC 103.1(2)"f", New 2023	567 IAC 103.1(2)"f", 2024 Parameters
Leachate	pH, Fe, Mn, Mg, and SO4	pH, Fe, Mn, Mg, and SO4	pH, Fe, Mn, Mg, and SO4	pH, Fe, Mn, Mg, and SO4	pH, Fe, Mn, Mg, and SO4	pH, Fe, Mn, Mg, and SO4	pH, Fe, Mn, Mg, and SO4	567 IAC 103.1(2)"f", New 2023	567 IAC 103.1(2)"f", 2024 Parameters

567 IAC 103.1(2)"f" parameters: arsenic, barium, beryllium, cobalt, copper, iron, lead, magnesium, manganese, selenium, zinc, chloride, and sulfate
New 2023 parameters: boron, calcium, fluoride, lithium, molybdenum, pH, TSS, TDS
1: Monitoring well damaged and could not purge and sample well 2: Insufficient flow to sample
2024 Parameters: boron, calcium, fluoride, lithium, pH, TSS, TDS

Table 3

Monitoring Well Maintenance and Performance Revaluation Schedule

2023 Annual Water Quality Report

Cargill CCR Landfill

Permit No. 62-SDP-04-89P

Compliance with:	Monitoring Calendar Years					
	2018	2019	2020	2021	2022	2023
567 IAC 114.21(2)"a" high and low water levels	Completed		Completed		Completed	
567 IAC 114.21(2)"b" changes in the hydrologic setting and flow paths	Completed		Completed		Completed	
567 IAC 114.21(2)"c" well depths	Completed	Completed	Completed	Completed	Completed	Completed

Table 4
Monitoring Well Maintenance and Performance Summary
2023 Annual Water Quality Report
Cargill CCR Landfill
Permit No. 62-SDP-04-89P

Well	Top of Casing	Top of Screen	Total Depth[1]		Date of Measurement	Water Levels (ft. amsl) [2]		Maximum Depth Discrepancy (ft)
					9/5/2023	Low	High	
MW-6	811.77	743.1	77.4	Groundwater Level (ft)	37.98	759.56	782.61	1
				Groundwater Elevation (Ft MSL)	773.79			
				Measured Well Depth (ft)	78.4			
				Submerged screen	Y			
MW-8	808.47	758.1	60	Groundwater Level (ft)	41	762.55	768.5	0.22
				Groundwater Elevation (Ft MSL)	767.47			
				Measured Well Depth (ft)	60.22			
				Submerged screen	Y			
MW-9	748.75	723.1	35.6	Groundwater Level (ft)	21.32	714.08	727.43	0
				Groundwater Elevation (Ft MSL)	727.43			
				Measured Well Depth (ft)	35.6			
				Submerged screen	Y			
MW-10	768.42	735.2	43.3	Groundwater Level (ft)	34.05	734.37	741.75	3.5
				Groundwater Elevation (Ft MSL)	734.37			
				Measured Well Depth (ft)*	*46.8*			
				Submerged screen	N			
MW-11	762.72	738.43	32.29	Groundwater Level (ft)	24.82	737.9	741.25	1.83
				Groundwater Elevation (Ft MSL)	737.9			
				Measured Well Depth (ft)*	*34.12*			
				Submerged screen	N			
MW-12R	808.1	741.42	76.68	Groundwater Level (ft)	65.55	740.47	752.27	2.02
				Groundwater Elevation (Ft MSL)	742.55			
				Measured Well Depth (ft)*	*78.7*			
				Submerged screen	Y			
MW-13R	811.37	747.34	74.03	Groundwater Level (ft)	59.63	745.44	756.4	3.82
				Groundwater Elevation (Ft MSL)	751.74			
				Measured Well Depth (ft)*	*77.85*			
				Submerged screen	Y			
MW-26	749.2	732.3	26.9	Groundwater Level (ft)	21.06	728.14	733.84	0.1
				Groundwater Elevation (Ft MSL)	728.14			
				Measured Well Depth (ft)	27			
				Submerged screen	N			

1: Original depths as specified in 2012, MW-8 updated based on 2003 repairs and MW-12R & MW-13R per 2017 logs
2: Period of Record: 1995-2023
*Confirm depth and inspect well in Spring 2024 - well casining was adjusted in 2023

Table 5
Preliminary Background Summary - 2016-2023
2023 Annual Water Quality Report
Cargill CCR Landfill
Permit No. 62-SDP-04-89P

Preliminary Background/Control Limit (MW-6)

Constituent	Units	Samples	Detections	Background Level	Statistical Test	Action Level	Source
Arsenic (As)	mg/l	8	0	0.002	Non-Detect	0.01	MCL
Barium (Ba)	mg/l	8	8	0.04644	Intrawell	2	MCL
Beryllium (Be)	mg/l	8	0	0.001	Non-Detect	0.004	MCL
Boron (B)	mg/l	1	1	-	-	6	HAL
Calcium (Ca)	mg/l	1	1	-	-	-	-
Chloride	mg/l	8	0	5	Non-Detect	250	SDWR
Cobalt (Co)	mg/l	8	0	0.0005	Non-Detect	0.01	NPGW SWS
Copper (Cu)	mg/l	8	0	0.005	Non-Detect	1.3	MCL/Action Level
Fluoride (F)	mg/l	1	0	-	-	4	MCL
Iron (Fe)	mg/l	8	7	1.304	Intrawell	0.3	SDWR
Lead (Pb)	mg/l	8	0	0.0005	Non-Detect	0.015	MCL/Action Level
Lithium (Li)	mg/l	1	1	-	-	0.07	NPGW SWS
Magnesium (Mg)	mg/l	8	8	33.12	Intrawell	-	-
Manganese (Mn)	mg/l	8	8	0.21	M+/-2SD	0.3	HAL
Molybdenum (Mo)	mg/l	1	0	-	-	0.04	HAL
pH	s.u.	8	8	5.562-8.887	Intrawell	6.5-8.5	SDWR
Selenium (Se)	mg/l	8	0	0.005	Non-Detect	0.05	MCL
Sulfate	mg/l	8	8	601.1	Intrawell	250	SDWR
Total Suspended Solids (TSS)	mg/l	1	1	-	-	-	-
Total Dissolved Solids (TDS)	mg/l	1	1	-	-	500	SDWR
Zinc (Zn)	mg/l	8	0	0.02	Non-Detect	2	HAL

Preliminary Background/Control Limit (MW-26)

Constituent	Units	Samples	Detections	Background Level	Statistical Test	Action Level	Source
Arsenic (As)	mg/l	1	0	-	-	0.01	MCL
Barium (Ba)	mg/l	1	1	-	-	2	MCL
Beryllium (Be)	mg/l	1	1	-	-	0.004	MCL
Boron (B)	mg/l	1	1	-	-	6	HAL
Calcium (Ca)	mg/l	1	1	-	-	-	-
Chloride	mg/l	1	0	-	-	250	SDWR
Cobalt (Co)	mg/l	1	1	-	-	0.01	NPGW SWS
Copper (Cu)	mg/l	1	0	-	-	1.3	MCL/Action Level
Fluoride (F)	mg/l	1	1	-	-	4	MCL
Iron (Fe)	mg/l	8	6	4.555	Intrawell	0.3	SDWR
Lead (Pb)	mg/l	1	0	-	-	0.015	MCL/Action Level
Lithium (Li)	mg/l	1	1	-	-	0.07	NPGW SWS
Magnesium (Mg)	mg/l	8	8	446.8	Intrawell	-	-
Manganese (Mn)	mg/l	8	8	58.92	M+/-2SD	0.3	HAL
Molybdenum (Mo)	mg/l	1	0	-	-	0.04	HAL
pH	s.u.	8	8	2.959 - 7.101	Intrawell	6.5-8.5	SDWR
Selenium (Se)	mg/l	1	1	-	-	0.05	MCL
Sulfate	mg/l	8	8	3192	Intrawell	250	SDWR
Total Suspended Solids (TSS)	mg/l	1	1	-	-	-	-
Total Dissolved Solids (TDS)	mg/l	1	1	-	-	500	SDWR
Zinc (Zn)	mg/l	1	1	-	-	2	HAL

Additional intrawell background values can be found in Appendix E (Figure E)

Table 6

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

2023 Annual Water Quality Report

Cargill CCR Landfill

Permit No. 62-SDP-04-89P

Well	Constituent	Units	Most recent result	Background Level*, **
MW-8	Arsenic	mg/l	<0.002	0.002 (ND)
	Barium	mg/l	0.0281	0.06098
	Manganese	mg/l	<0.01	0.21
	pH	SU	7.16	6.097-8.096
	Sulfate	mg/l	216	367.5
MW-9	Barium	mg/l	0.0313	0.0313
	pH	SU	7.11	5.944-7.983
MW-10	Barium	mg/l	0.015	0.01783
	pH	mg/l	6.62	5.498-7.435
MW-12R	Barium	mg/l	0.0144	0.0313
MW-13R	Barium	mg/l	0.0188	0.08641
MW-26	Iron	mg/l	0.216	4.555
#002	pH	S.U.	6.9	6.339-8.175
#005	pH	S.U.	6.8	6.339-8.175

*Background for the period of 2016-2023 / **Background limits are not available for new analytes (boron, calcium, cobalt, fluoride, lithium, molybdenum, TSS, and TDS for all locations / Backgrounds not available for MW-26 and dowgradient wells for arsenic, barium, beryllium, chloride, copper, lead, selenium, and zinc.

Table 7
Summary of Ongoing and Newly Identified Control Limit Exceedances
2023 Annual Water Quality Report
Cargill CCR Landfill
Permit No. 62-SDP-04-89P

Well	Constituent	Units	Most recent result	Control Limit (Background)	Action Level/ Statewide Standard
MW-12R	Zinc	mg/l	0.0214	0.02 (ND)	2

Statistics for 2023 were updated and there were no background exceedance observed with these new values. Additionally, there are several

Bold is MCL or AL / ***Backgroun**d** limits are not available for new analytes (boron, calcium, cobalt, fluoride, lithium, molybdenum, TSS, and TDS for all locations / Backgrounds not available for MW-26 and dowgradient wells for arsenic, barium, beryllium, chloride,

Table 8
Analytical Data Summary
2023 Annual Water Quality Report
Cargill CCR Landfill
Permit No. 62-SDP-04-89P

Constituent (CAS #)	Sample Date	Units	MW-6 Bkgrnd	MW-8 DwnGrad	MW-9 DwnGrad	MW-10 DwnGrad	MW-11 DwnGrad	MW-12R DwnGrad	MW-13R DwnGrad	MW-26 Bkgrnd	#002 U-Drain	#004 Mine Drain	#005 U-Drain	Leachate -
Arsenic (Total) (7440-38-2)	10/4-5/2016	mg/l	<0.002	<0.002	<0.002	**0.0034**	<0.002		<0.002					
MCL = 0.01	8/10-11/2017	mg/l	<0.002	<0.002	<0.002	**0.00253**	<0.002	<0.002	**0.00246**					
	9/26-27/2018	mg/l	<0.002	<0.002	<0.002	**0.00301**	<0.002	<0.002	**0.00422**					
	7/8-9/2019	mg/l	<0.002	<0.002	<0.002	<0.008	<0.008	<0.008	<0.008					
	9/1-2/2020	mg/l	<0.002	<0.002	<0.002	**0.0031**	<0.008	<0.008	<0.008					
	5/25-26/2021	mg/l	<0.002	<0.002	<0.002	**0.00279**	**0.00284**	<0.002	**0.00268**					
	9/8-9/2022	mg/l	<0.002	<0.002	<0.002	**0.00323**	**0.00350**	<0.002	**0.00825**					
	9/5-6/2023	mg/l	<0.002	<0.002	<0.002	**0.00306**	**0.00267**	<0.002	<0.002	<0.002	<0.002		**0.00434**	**0.0068**
Barium (Total) (7440-39-3)	10/4-5/2016	mg/l	**0.0317**	**0.0458**	**0.0237**	**0.0137**	**0.0325**		**0.00446**					
MCL = 2.0	8/10-11/2017	mg/l	**0.0334**	**0.0425**	**0.0224**	**0.0148**	**0.0299**	**0.0313**	**0.0665**					
	9/26-27/2018	mg/l	**0.024**	**0.0438**	**0.0217**	**0.0158**	**0.0311**	**0.016**	**0.0322**					
	7/8-9/2019	mg/l	**0.0261**	**0.0438**	**0.0236**	**0.0160**	**0.0489**	**0.0182**	**0.0338**					
	9/1-2/2020	mg/l	**0.0201**	**0.0323**	**0.2020**	**0.0146**	**0.0315**	**0.0169**	**0.0255**					
	5/25-26/2021	mg/l	**0.0210**	**0.0358**	**0.0211**	**0.0141**	**0.0314**	**0.0157**	**0.0265**					
	9/8-9/2022	mg/l	**0.0213**	**0.0291**	**0.0213**	**0.016**	**0.0388**	**0.0144**	**0.0217**					
	9/5-6/2023	mg/l	**0.0207**	**0.0281**	**0.0313**	**0.0150**	**0.0329**	**0.0144**	**0.0188**	**0.00972**	**0.015**		**0.00896**	**0.0308**
Beryllium (Total) (7440-41-7)	10/4-5/2016	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001		<0.001					
MCL = 0.001	8/10-11/2017	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001					
	9/26-27/2018	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001					
	7/8-9/2019	mg/l	<0.001	<0.001	<0.001	<0.004	<0.004	<0.004	<0.004					
	9/1-2/2020	mg/l	<0.001	<0.001	<0.001	<0.004	<0.004	<0.004	<0.004					
	5/25-26/2021	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001					
	9/8-9/2022	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001					
	9/5-6/2023	mg/l	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001	**0.00174**	<0.001		<0.001	<0.001
Boron (7440-42-8)	10/4-5/2016	mg/l												
HAL = 6	8/10-11/2017	mg/l												
	9/26-27/2018	mg/l												
	7/8-9/2019	mg/l												
	9/1-2/2020	mg/l												
	5/25-26/2021	mg/l												
	9/8-9/2022	mg/l												
	9/5-6/2023	mg/l	**0.364**	**0.356**	**0.992**	**0.634**	**0.407**	**1.42**	**0.56**	**0.154**	**0.894**		**0.785**	**5.06**
Calcium (7440-70-2)	10/4-5/2016	mg/l												
	8/10-11/2017	mg/l												
	9/26-27/2018	mg/l												
	7/8-9/2019	mg/l												
	9/1-2/2020	mg/l												
	5/25-26/2021	mg/l												
	9/8-9/2022	mg/l												
	9/5-6/2023	mg/l	**112**	**137**	**348**	**651**	**395**	**602**	**505**	**417**	**491**		**518**	**391**
Chloride (16887-00-6)	10/4-5/2016	mg/l	<5	<5	<5	<5	**8.08**		<5					
SDWR = 250	8/10-11/2017	mg/l	<5	<5	<5	<5	**5.26**	**8.06**	**17.5**					
	9/26-27/2018	mg/l	<5	<5	<5	<5	**5.12**	**7**	**8.41**					
	7/8-9/2019	mg/l	<5	<5	<5	<5	**6.03**	**7.64**	**8.75**					
	9/1-2/2020	mg/l	<5	<5	<5	**5.18**	**5.15**	**8.22**	**8.33**					
	5/25-26/2021	mg/l	<5	<5	<5	<5	<5	**7.01**	**10.5**					
	9/8-9/2022	mg/l	<5	<5	<5	<5	**10.8**	**6.33**	**11.3**					
	9/5-6/2023	mg/l	<5	<5	<5	<5	**6.47**	**6.72**	**14.3**	<5	**7.42**		<5	**59.7**

Constituent (CAS #)	Sample Date	Units	MW-6 Bkgrnd	MW-8 DwnGrad	MW-9 DwnGrad	MW-10 DwnGrad	MW-11 DwnGrad	MW-12R DwnGrad	MW-13R DwnGrad	MW-26 DwnGrad	#002 U-Drain	#004 Mine Drain	#005 U-Drain	Leachate -
Cobalt (Total) (7440-48-4)	10/4-5/2016	mg/l	<0.0005	<0.0005	<0.0005	**0.0188**	**0.0277**		<0.0005					
SS = 0.0021	8/10-11/2017	mg/l	<0.0005	<0.0005	<0.0005	**0.0181**	**0.0343**	**0.00528**	**0.044**					
	9/26-27/2018	mg/l	<0.0005	<0.0005	<0.0005	**0.0185**	**0.0324**	**0.0043**	**0.0571**					
	7/8-9/2019	mg/l	<0.0005	**0.00189**	<0.0005	**0.0187**	**0.0478**	**0.00544**	**0.0703**					
	9/1-2/2020	mg/l	<0.0005	<0.0005	<0.0005	**0.0181**	**0.0354**	**0.00696**	**0.0597**					
	5/25-26/2021	mg/l	<0.0005	<0.0005	<0.0005	**0.0192**	**0.0351**	**0.00790**	**0.0514**					
	9/8-9/2022	mg/l	<0.0005	<0.0005	<0.0005	**0.0176**	**0.0409**	**0.0042**	**0.0528**					
	9/5-6/2023	mg/l	<0.0005	<0.0005	**0.00138**	**0.0188**	**0.0471**	**0.00416**	**0.0579**	**0.082**	**0.0122**		**0.0608**	**0.00143**
Copper (Total) (7440-50-8)	10/4-5/2016	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005					
MCL AL = 1.3	8/10-11/2017	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005					
	9/26-27/2018	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0194**					
	7/8-9/2019	mg/l	<0.005	<0.005	<0.005	<0.02	<0.02	<0.02	<0.02					
	9/1-2/2020	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005					
	5/25-26/2021	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005					
	9/8-9/2022	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005					
	9/5-6/2023	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005		<0.005	<0.005
Fluoride (16984-48-8)	10/4-5/2016	mg/l												
MCL = 4	8/10-11/2017	mg/l												
	9/26-27/2018	mg/l												
	7/8-9/2019	mg/l												
	9/1-2/2020	mg/l												
	5/25-26/2021	mg/l												
	9/8-9/2022	mg/l												
	9/5-6/2023	mg/l	<1	<1	<1	<1	<1	<1	<1	**1.1**	<1		**1.3**	<1
Iron (Total) (7439-89-6)	10/4-5/2016	mg/l	<0.1	**0.137**	<0.1	**4.39**	**4.33**		**0.569**	**0.685**	**4.76**	<0.1	**4.17**	
SDWR = 0.3	8/10-11/2017	mg/l	**0.148**	**0.238**	**0.107**	**4.35**	**9.25**	**3.12**	**6.85**	<0.1	**71.7**		**4.95**	
	9/26-27/2018	mg/l	**0.909**	**0.308**	<0.1	**4.7**	**10.7**	**3.76**	**12**	**1.2**	**7.12**		**65.3**	
	7/8-9/2019	mg/l	**0.951**	<0.1	<0.1	**4.59**	**35.9**	**4.68**	**10.4**	**2.88**	**11.1**	**286**	**61.5**	
	9/1-2/2020	mg/l	**0.706**	<0.1	<0.1	**4.65**	**14.3**	**4.88**	**9.25**	<1.00	**15.3**	**262**	**45.6**	
	5/25-26/2021	mg/l	**0.877**	<0.100	<0.100	**4.65**	**17**	**4.48**	**7.34**	**0.123**	**5.44**	**313**	**43.1**	
	9/8-9/2022	mg/l	**0.847**	<0.100	<0.100	**6.02**	**36.7**	**3.79**	**8.8**	**0.38**	**16.3**		**52.4**	
	9/5-6/2023	mg/l	**0.403**	**1.27**	**0.175**	**5.97**	**22**	**3.73**	**7.06**	**0.216**	**5.58**		**70.3**	**0.146**
Lead (Total) (7439-92-1)	10/4-5/2016	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005					
MCL AL = 0.015	8/10-11/2017	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.000591**	**0.00395**					
	9/26-27/2018	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.00989**					
	7/8-9/2019	mg/l	<0.0005	<0.0005	<0.0005	<0.002	<0.002	<0.002	**0.00241**					
	9/1-2/2020	mg/l	<0.0005	**0.00111**	<0.0005	<0.0005	<0.0005	**0.000708**	**0.0028**					
	5/25-26/2021	mg/l	<0.0005	**<0.0005**	<0.0005	<0.0005	<0.0005	**<0.0005**	**<0.0005**					
	9/8-9/2022	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	**0.0096**					
	9/5-6/2023	mg/l	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005		<0.0005	<0.0005
Lithium (7439-93-2)	10/4-5/2016	mg/l												
PGW SWS = 0.014	8/10-11/2017	mg/l												
	9/26-27/2018	mg/l												
	7/8-9/2019	mg/l												
	9/1-2/2020	mg/l												
	5/25-26/2021	mg/l												
	9/8-9/2022	mg/l												
	9/5-6/2023	mg/l	**0.0577**	**0.0954**	**0.12**	**0.15**	**0.0518**	**0.322**	**0.175**	**0.0363**	**0.234**		**0.186**	<0.1

Constituent (CAS #)	Sample Date	Units	MW-6 Bkgrnd	MW-8 DwnGrad	MW-9 DwnGrad	MW-10 DwnGrad	MW-11 DwnGrad	MW-12R DwnGrad	MW-13R DwnGrad	MW-26 DwnGrad	#002 U-Drain	#004 Mine Drain	#005 U-Drain	Leachate -
Magnesium (Total) (7439-95-4)	10/4-5/2016	mg/l	**13.5**	**37.3**	**70.6**	**199**	**124**		**142**	**214**	**265**	**424**	**194**	
	8/10-11/2017	mg/l	**14.8**	**44**	**69.5**	**191**	**107**	**196**	**231**	**235**	**190**		**282**	
	9/26-27/2018	mg/l	**26.2**	**40.4**	**71.5**	**206**	**109**	**196**	**168**	**251**	**313**		**195**	
	7/8-9/2019	mg/l	**28.7**	**38.5**	**75.6**	**184**	**127**	**208**	**218**	**333**	**340**	**434**	**208**	
	9/1-2/2020	mg/l	**27**	**39**	**65**	**193**	**116**	**258**	**196**	**280**	**328**	**412**	**221**	
	5/25-26/2021	mg/l	**28.5**	**46.7**	**70.9**	**179**	**107**	**293**	**228**	**318**	**329**	**359**	**182**	
	9/8-9/2022	mg/l	**25.3**	**41.5**	**72.5**	**205**	**158**	**214**	**243**	**360**	**396**		**238**	
	9/5-6/2023	mg/l	**25**	**41**	**65**	**195**	**112**	**205**	**232**	**270**	**288**		**212**	**207**
Manganese (Total) (7439-96-5)	10/4-5/2016	mg/l	**0.0474**	**0.014**	<0.01	**7.12**	**5.87**		**1.74**	**9.2**	**2.55**	**0.135**	**0.411**	
HAL = 0.3	8/10-11/2017	mg/l	**0.035**	**0.033**	<0.01	**6.01**	**5.12**	**0.923**	**13.9**	**20.2**	**13.1**		**2.47**	
	9/26-27/2018	mg/l	**0.157**	**0.062**	<0.01	**7.07**	**5.83**	**0.84**	**17.9**	**45.2**	**2.62**		**11.5**	
	7/8-9/2019	mg/l	**0.162**	**0.751**	<0.01	**7.03**	**7.98**	**0.987**	**19.9**	**30.5**	**5.58**	**74.6**	**10.9**	
	9/1-2/2020	mg/l	**0.139**	**0.106**	<0.01	**6.89**	**6.14**	**1.32**	**17.3**	**35.4**	**7.38**	**53.2**	**14.3**	
	5/25-26/2021	mg/l	**0.129**	**0.028**	<0.0100	**7.26**	**5.64**	**1.55**	**19**	**6.32**	**6.32**	**54.5**	**8.78**	
	9/8-9/2022	mg/l	**0.14**	**0.011**	<0.0100	**7.85**	**7.37**	**0.808**	**17.9**	**43.5**	**4.14**		**9.42**	
	9/5-6/2023	mg/l	**0.0924**	<0.01	**0.341**	**8.07**	**8.01**	**0.85**	**16.8**	**39.1**	**3.15**		**12.5**	**1.13**
Molybdenum (7439-98-7)	10/4-5/2016	mg/l												
HAL = 0.04	8/10-11/2017	mg/l												
	9/26-27/2018	mg/l												
	7/8-9/2019	mg/l												
	9/1-2/2020	mg/l												
	5/25-26/2021	mg/l												
	9/8-9/2022	mg/l												
	9/5-6/2023	mg/l	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002		<0.002	**0.81**
pH	10/4-5/2016	SU	**7.71**	**6.86**	**7.1**	**6.45**	**6.14**		**6.89**	**5.91**	**6.68**	**6.4**	**6.4**	
SDWR =6.5-8.5	8/10-11/2017	SU	**7.32**	**6.83**	**6.73**	**6.55**	**6.2**	**6.41**	**6.42**	**5.06**	**6.44**		**6.5**	
	9/26-27/2018	SU	**6.39**	**6.94**	**6.54**	**6.18**	**5.99**	**6.12**	**6.52**	**5.54**	**6.59**		**6.20**	
	7/8-9/2019	SU	**7.12**	**7.22**	**7.08**	**6.49**	**6.1**	**6.38**	**6.26**	**4.54**	**6.84**	**6.26**	**6.39**	
	9/1-2/2020	SU	**7.11**	**7.01**	**6.91**	**6.35**	**6.09**	**6.21**	**6.15**	**4.41**	**7.15**	**6.44**	**6.56**	
	5/25-26/2021	SU	**7.4**	**7.7**	**7.21**	**6.46**	**6.13**	**6.31**	**6.25**	**5.7**	**6.8**	**6.6**	6.8	
	9/8-9/2022	SU	**7.75**	**7.61**	**7.41**	**6.99**	**6.41**	**6.83**	**6.74**	**4.5**	**6.9**		**7.0**	
	9/5-6/2023	SU	**7.58**	**7.16**	**7.11**	**6.62**	**6.58**	**6.54**	**6.54**	**5.28**	**6.9**		**6.8**	**7.75**
Selenium (Total) (7782-49-2)	10/4-5/2016	mg/l	<0.005	<0.005	**0.00721**	<0.005	<0.005		<0.005					
MCL = 0.05	8/10-11/2017	mg/l	<0.005	<0.005	**0.00651**	<0.005	<0.005	<0.005	<0.005					
	9/26-27/2018	mg/l	<0.005	<0.005	**0.0054**	<0.005	<0.005	<0.005	<0.005					
	7/8-9/2019	mg/l	<0.005	<0.005	<0.005	<0.02	<0.02	<0.02	<0.02					
	9/1-2/2020	mg/l	<0.005	<0.005	<0.005	<0.02	<0.02	<0.02	<0.02					
	5/25-26/2021	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005					
	9/8-9/2022	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005					
	9/5-6/2023	mg/l	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	**0.0054**	<0.005		<0.005	**0.00812**
Sulfate (14808-79-8)	10/4-5/2016	mg/l	**295**	**175**	**1030**	**1740**	**802**		**1340**	**1750**	**2140**	**3500**	**1740**	
SDWR = 250	8/10-11/2017	mg/l	**304**	**243**	**1100**	**3600**	**681**	**2240**	**2260**	**2010**	**2310**		**1920**	
	9/26-27/2018	mg/l	**403**	**227**	**1210**	**1890**	**743**	**2220**	**1720**	**2050**	**2500**		**2000**	
	7/8-9/2019	mg/l	**467**	**265**	**1220**	**1910**	**733**	**2290**	**1870**	**2400**	**2680**	**3130**	**1890**	
	9/1-2/2020	mg/l	**464**	**262**	**1130**	**1830**	**680**	**2510**	**1760**	**2410**	**2730**	**3150**	**2110**	
	5/25-26/2021	mg/l	**429**	**307**	**1140**	**1770**	**744**	**2740**	**2030**	**2450**	**2470**	**3140**	**1850**	
	9/8-9/2022	mg/l	**373**	**236**	**1170**	**1760**	**1300**	**2220**	**2000**	**948**	**2590**		**2000**	
	9/5-6/2023	mg/l	**373**	**216**	**1290**	**1800**	**762**	**2230**	**2160**	**2370**	**2410**		**2200**	**3620**

Constituent (CAS #)	Sample Date	Units	MW-6 Bkgrnd	MW-8 DwnGrad	MW-9 DwnGrad	MW-10 DwnGrad	MW-11 DwnGrad	MW-12R DwnGrad	MW-13R DwnGrad	MW-26 DwnGrad	#002 U-Drain	#004 Mine Drain	#005 U-Drain	Leachate -
TDS (STL00242)	10/4-5/2016	mg/l												
SDWR = 500	8/10-11/2017	mg/l												
	9/26-27/2018	mg/l												
	7/8-9/2019	mg/l												
	9/1-2/2020	mg/l												
	5/25-26/2021	mg/l												
	9/8-9/2022	mg/l												
	9/5-6/2023	mg/l	**778**	**632**	**1890**	**2440**	**1560**	**3750**	**3370**	**3280**	**3700**		**3240**	**5820**
Zinc (Total) (7440-66-6)	10/4-5/2016	mg/l	<0.01	<0.01	<0.01	<0.01	**0.0556**		**0.0111**					
HAL = 2.0	8/10-11/2017	mg/l	<0.02	<0.02	<0.02	<0.02	**0.0554**	<0.02	**0.0413**					
	9/26-27/2018	mg/l	<0.02	<0.02	<0.02	<0.02	**0.0521**	<0.02	**0.0911**					
	7/8-9/2019	mg/l	<0.02	<0.02	<0.02	<0.08	<0.08	<0.08	<0.08					
	9/1-2/2020	mg/l	<0.02	<0.02	<0.02	<0.02	**0.0392**	<0.02	**0.0316**					
	5/25-26/2021	mg/l	<0.02	<0.02	<0.02	<0.02	**0.0550**	<0.02	**<0.02**					
	9/8-9/2022	mg/l	<0.02	<0.02	<0.02	<0.02	**0.82**	<0.02	**0.029**					
	9/5-6/2023	mg/l	<0.02	**0.0214**	<0.02	<0.02	**0.438**	<0.02	<0.02	**0.32**	<0.02		**0.131**	<0.2

Key:

MCL = USEPA Maximum Contaminant Level
HAL = Health Advisory Level
SS = Iowa Statewide Standards
SDWR = Secondary Drinking Water Regulations

Table 9
Historic Control Limit & Action Level Exceedances
2023 Annual Water Quality Report
Cargill CCR Landfill
Permit No. 62-SDP-04-89P

Well	Constituent	Oct 2016	Aug 2017	Sept 2018	Jul 2019	Sept 2020	May 2021	Sept 2022	Sept 2023
MW-6	Iron [1]			X	X	X	X	X	X
	Lithium	-	-	-	-	-	-	-	X
	pH			X					
	TDS	-	-	-	-	-	-	-	X
	Sulfate	X	X	X	X	X	X	X	X
MW-8	Iron [1]			X					X
	Lithium	-	-	-	-	-	-	-	X
	Lead								
	Magnesium								
	Manganese				X				
	TDS	-	-	-	-	-	-	-	X
	Sulfate				X	X	X		
MW-9	Barium								
	Cobalt								X
	Magnesium								
	Manganese								X
	Lithium	-	-	-	-	-	-	-	X
	TDS	-	-	-	-	-	-	-	X
	Sulfate	X	X	X	X	X	X	X	X
MW-10	Arsenic								
	Chloride								
	Cobalt	X	X	X	X	X	X	X	X
	Iron [1]	X	X	X	X	X	X	X	X
	Lithium	-	-	-	-	-	-	-	X
	Magnesium								
	Manganese	X	X	X	X	X	X	X	X
	pH	X		X	X	X	X		X
	TDS	-	-	-	-	-	-	-	X
	Sulfate	X	X	X	X	X	X	X	X
MW-11	Arsenic								
	Barium								
	Chloride								
	Cobalt	X	X	X	X	X	X	X	X
	Iron [1]	X	X	X	X	X	X	X	X
	Lithium	-	-	-	-	-	-	-	X
	Magnesium								
	Manganese	X	X	X	X	X	X	X	X
	pH	X	X	X	X	X	X	X	
	Sulfate	X	X	X	X	X	X	X	X
	TDS	-	-	-	-	-	-	-	X
	Zinc								
MW-12R	Chloride	-							
	Cobalt	-							X
	Iron [1]	-	X	X	X	X	X	X	X
	Lead	-	X						
	Lithium	-	-	-	-	-	-	-	X
	Magnesium	-							
	Manganese	-	X	X	X	X	X	X	X
	pH	-	X	X	X	X	X		
	TDS	-	-	-	-	-	-	-	X
	Sulfate	-	X	X	X	X	X	X	X

MW-13R	Arsenic								
	Chloride								
	Cobalt		X	X	X	X	X	X	X
	Iron [1]	X	X	X	X	X	X	X	X
	Lead								
	Lithium	-	-	-	-	-	-	-	X
	Magnesium								
	Manganese	X	X	X	X	X	X	X	X
	pH		X		X	X	X		
	Sulfate	X	X	X	X	X	X	X	X
	TDS	-	-	-	-	-	-	-	X
	Zinc								
MW-26	Beryllium	-	-	-	-	-	-	-	
	Cobalt	-	-	-	-	-	-	-	X
	Iron [1]	X		X	X			X	
	Lithium	-	-	-	-	-	-	-	X
	Magnesium								
	Manganese	X	X	X	X	X	X	X	X
	pH	X	X	X	X	X	X	X	
	TDS	-	-	-	-	-	-	-	X
	Sulfate	X	X	X	X	X	X	X	X
#002 - Fly Ash North	Iron [1]	X	X	X	X	X	X	X	X
	Cobalt	-	-	-	-	-	-	-	X
	Lithium	-	-	-	-	-	-	-	X
	Magnesium								
	Manganese					X	X	X	X
	pH		X						
	TDS	-	-	-	-	-	-	-	X
	Sulfate	X	X	X	X	X	X	X	X
#004 - Tunnel Mine	Iron [1]		-	-	X	X	X	-	-
	Magnesium		-	-				-	-
	Manganese		-	-	X	X	X	-	-
	pH	X	-	-	X	X		-	-
	Sulfate	X	-	-	X	X	X	-	-
#005 - Gypsum West	Iron [1]	X	X	X	X	X	X	X	X
	Cobalt	-	-	-	-	-	-	-	X
	Lithium	-	-	-	-	-	-	-	X
	Magnesium								
	Manganese	X	X	X	X	X	X	X	X
	pH	X	X	X	X				
	TDS	-	-	-	-	-	-	-	X
	Sulfate	X	X	X	X	X	X	X	X
Leachate	Manganese	-	-	-	-	-	-	-	X
	Molybdenum	-	-	-	-	-	-	-	X
	Sulfate	-	-	-	-	-	-	-	X
	TDS	-	-	-	-	-	-	-	X

Exceeds MCL

Exceeds Background - Starting in 2020

X Exceeds a SDWR, HAL, or PGW SWS when no MCL

- : Sample not collected due to insufficient flow or damage to well

[1] Iron SDWR (0.3 mg/L) is less than than the Preliminary Background Concentrations

Table 10
2023 Leachate Management Summary
Cargill CCR Landfill
Permit No. 62-SDP-04-89P

Month	Manhole Leachate Head (feet)																			Leachate Collected (gal)	Volume Utilized for Dust Control (gal)	Discharge to Ottumwa POTW (gal)	Discharge to Cargill Eddyville Treatment Plant (gal)
	MH 1	MH 2	MH 3	MH 4	MH 5	MH 6	MH 7	MH 8	MH 9	MH 10	MH 11	MH 12	MH 13	MH LF	MH 14	MH 15	MH 16*	CS 1*	SW MH	Site wide total			
November (2022)																				0	0	0	0
December (2022)																				16,200	0	16,200	0
January																				0	0	0	0
February																				0	0	0	0
March																				58,300	0	58,300	0
April																				42,400	0	42,400	0
May																				121,900	0	121,900	0
June																				0	0	0	0
July																				0	0	0	0
August																				0	0	0	0
September	0.67	0.23	0.55	0.5	DRY	DRY	DRY	DRY	DRY	0.38	DRY	DRY	DRY	DRY	0.54	0.42	6.85	1.21	1.24	0	0	0	0
October																				0	0	0	0
November																				132,000	0	0	132,000
2023 Annual Total																				370,800	0	238,800	132,000

*MH 16 is the mine manhole that extends beneath the liner. CS 1 is the outfall MH of the lagoon. Both are not applicable to head levels on the liner.

APPENDIX A

LABORATORY ANALYTICAL REPORTS

Laboratory Analytical Report 2023

eurofins | Environment Testing

ANALYTICAL REPORT

PREPARED FOR

Attn: Rose Amundson
HR Green, Inc
PO BOX 9009
Cedar Rapids, Iowa 52409

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JOB DESCRIPTION

Landfill 718160J09-0685

JOB NUMBER

310-264246-1

Eurofins Cedar Falls
3019 Venture Way
Cedar Falls IA 50613

See page two for job notes and contact information.

my EOL

Job Notes

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

Authorization

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Authorized for release by
Zach Bindert, Client Service Manager
Zach.Bindert@et.eurofinsus.com
(319)277-2401

Table of Contents

Job ID: 310-264246-1

Laboratory: Eurofins Cedar Falls

Narrative

Job Narrative
310-264246-1

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

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

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

Receipt
The samples were received on 9/7/2023 1:00 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 0.6°C and 1.8°C

HPLC/IC
Method 9056A_ORGFM_28D: The following samples were diluted due to the nature of the sample matrix: MW-06 (310-264246-1), MW-08 (310-264246-2), MW-09 (310-264246-3), MW-10 (310-264246-4), MW-11 (310-264246-5), MW-12R (310-264246-6), MW-13R (310-264246-7), MW-26 (310-264246-8), Fly Ash North 002 (310-264246-9), Gypsum West 005 (310-264246-10) and MH-LF (Leachate) (310-264246-11). Elevated reporting limits (RLs) are provided.

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

Metals
Method 6020B: The following sample was diluted due to the nature of the sample matrix: MH-LF (Leachate) (310-264246-11). 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.

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

Sample Summary

Client: HR Green, Inc
Job ID: 310-264246-1
Project/Site: Landfill 718160J09-0685

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
310-264246-1	MW-06	Water	09/06/23 10:35	09/07/23 13:00
310-264246-2	MW-08	Water	09/06/23 10:55	09/07/23 13:00
310-264246-3	MW-09	Water	09/06/23 11:30	09/07/23 13:00
310-264246-4	MW-10	Water	09/06/23 08:35	09/07/23 13:00
310-264246-5	MW-11	Water	09/05/23 16:40	09/07/23 13:00
310-264246-6	MW-12R	Water	09/06/23 09:30	09/07/23 13:00
310-264246-7	MW-13R	Water	09/06/23 10:00	09/07/23 13:00
310-264246-8	MW-26	Water	09/05/23 15:20	09/07/23 13:00
310-264246-9	Fly Ash North 002	Water	09/05/23 17:15	09/07/23 13:00
310-264246-10	Gypsum West 005	Water	09/06/23 11:10	09/07/23 13:00
310-264246-11	MH-LF (Leachate)	Water	09/06/23 11:45	09/07/23 13:00

Detection Summary

Client: HR Green, Inc
Project/Site: Landfill 718160J09-0685

Job ID: 310-264246-1

Client Sample ID: MW-06 — Lab Sample ID: 310-264246-1

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	373		5.00		mg/L	5		9056A	Total/NA
Barium	0.0207		0.00200		mg/L	1		6020B	Total/NA
Iron	0.403		0.100		mg/L	1		6020B	Total/NA
Magnesium	25.0		0.500		mg/L	1		6020B	Total/NA
Manganese	0.0924		0.0100		mg/L	1		6020B	Total/NA
Boron	0.364		0.100		mg/L	1		6020B	Total/NA
Calcium	112		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0577		0.0100		mg/L	1		6020B	Total/NA
pH	7.58	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	6.63		1.88		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	778		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-08 — Lab Sample ID: 310-264246-2

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	216		5.00		mg/L	5		9056A	Total/NA
Barium	0.0281		0.00200		mg/L	1		6020B	Total/NA
Iron	1.27		0.100		mg/L	1		6020B	Total/NA
Magnesium	41.0		0.500		mg/L	1		6020B	Total/NA
Boron	0.356		0.100		mg/L	1		6020B	Total/NA
Zinc	0.0214		0.0200		mg/L	1		6020B	Total/NA
Calcium	137		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0954		0.0100		mg/L	1		6020B	Total/NA
pH	7.16	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	13.3		1.88		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	632		50.0		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-09 — Lab Sample ID: 310-264246-3

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1290		50.0		mg/L	50		9056A	Total/NA
Barium	0.0313		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.00138		0.000500		mg/L	1		6020B	Total/NA
Iron	0.175		0.100		mg/L	1		6020B	Total/NA
Magnesium	65.0		0.500		mg/L	1		6020B	Total/NA
Manganese	0.341		0.0100		mg/L	1		6020B	Total/NA
Boron	0.992		0.100		mg/L	1		6020B	Total/NA
Calcium	348		0.500		mg/L	1		6020B	Total/NA
Lithium	0.120		0.0100		mg/L	1		6020B	Total/NA
pH	7.11	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	14.0		2.50		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	1890		250		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-10 — Lab Sample ID: 310-264246-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Sulfate	1800		50.0		mg/L	50		9056A	Total/NA
Arsenic	0.00306		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0150		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.0188		0.000500		mg/L	1		6020B	Total/NA
Iron	5.97		0.100		mg/L	1		6020B	Total/NA
Magnesium	195		5.00		mg/L	10		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-10 (Continued) — Lab Sample ID: 310-264246-4

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Manganese	8.07		0.100		mg/L	10		6020B	Total/NA
Boron	0.634		0.100		mg/L	1		6020B	Total/NA
Calcium	651		5.00		mg/L	10		6020B	Total/NA
Lithium	0.150		0.0100		mg/L	1		6020B	Total/NA
pH	6.62	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	17.8		3.75		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	2440		250		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-11 — Lab Sample ID: 310-264246-5

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.47		5.00		mg/L	5		9056A	Total/NA
Sulfate	762		50.0		mg/L	50		9056A	Total/NA
Arsenic	0.00267		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0329		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.0471		0.000500		mg/L	1		6020B	Total/NA
Iron	22.0		0.100		mg/L	1		6020B	Total/NA
Magnesium	112		5.00		mg/L	10		6020B	Total/NA
Manganese	8.01		0.100		mg/L	10		6020B	Total/NA
Boron	0.407		0.100		mg/L	1		6020B	Total/NA
Zinc	0.438		0.0200		mg/L	1		6020B	Total/NA
Calcium	395		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0518		0.0100		mg/L	1		6020B	Total/NA
pH	6.58	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	110		15.0		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	1560		250		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-12R — Lab Sample ID: 310-264246-6

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	6.72		5.00		mg/L	5		9056A	Total/NA
Sulfate	2230		50.0		mg/L	50		9056A	Total/NA
Barium	0.0144		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.00416		0.000500		mg/L	1		6020B	Total/NA
Iron	3.73		0.100		mg/L	1		6020B	Total/NA
Magnesium	205		5.00		mg/L	10		6020B	Total/NA
Manganese	0.850		0.0100		mg/L	1		6020B	Total/NA
Boron	1.42		0.100		mg/L	1		6020B	Total/NA
Calcium	602		5.00		mg/L	10		6020B	Total/NA
Lithium	0.322		0.0100		mg/L	1		6020B	Total/NA
pH	6.54	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	9.00		1.88		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	3750		250		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-13R — Lab Sample ID: 310-264246-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	14.3		5.00		mg/L	5		9056A	Total/NA
Sulfate	2160		50.0		mg/L	50		9056A	Total/NA
Barium	0.0188		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.0579		0.000500		mg/L	1		6020B	Total/NA
Iron	7.06		0.100		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: MW-13R (Continued)
Lab Sample ID: 310-264246-7

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Magnesium	232		5.00		mg/L	10		6020B	Total/NA
Manganese	16.8		0.100		mg/L	10		6020B	Total/NA
Boron	0.560		0.100		mg/L	1		6020B	Total/NA
Calcium	505		5.00		mg/L	10		6020B	Total/NA
Lithium	0.175		0.0100		mg/L	1		6020B	Total/NA
pH	6.54	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	103		15.0		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	3370		250		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MW-26
Lab Sample ID: 310-264246-8

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.12		1.00		mg/L	5		9056A	Total/NA
Sulfate	2370		50.0		mg/L	50		9056A	Total/NA
Barium	0.00972		0.00200		mg/L	1		6020B	Total/NA
Beryllium	0.00174		0.00100		mg/L	1		6020B	Total/NA
Cobalt	0.0820		0.000500		mg/L	1		6020B	Total/NA
Iron	0.216		0.100		mg/L	1		6020B	Total/NA
Magnesium	270		5.00		mg/L	10		6020B	Total/NA
Manganese	39.1		0.100		mg/L	10		6020B	Total/NA
Selenium	0.00540		0.00500		mg/L	1		6020B	Total/NA
Boron	0.154		0.100		mg/L	1		6020B	Total/NA
Zinc	0.320		0.0200		mg/L	1		6020B	Total/NA
Calcium	417		0.500		mg/L	1		6020B	Total/NA
Lithium	0.0363		0.0100		mg/L	1		6020B	Total/NA
pH	5.28	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	1.88		1.88		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	3280		250		mg/L	1		SM 2540C	Total/NA

Client Sample ID: Fly Ash North 002
Lab Sample ID: 310-264246-9

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	7.42		5.00		mg/L	5		9056A	Total/NA
Sulfate	2410		50.0		mg/L	50		9056A	Total/NA
Barium	0.0150		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.0122		0.000500		mg/L	1		6020B	Total/NA
Iron	5.58		0.100		mg/L	1		6020B	Total/NA
Magnesium	288		5.00		mg/L	10		6020B	Total/NA
Manganese	3.15		0.0100		mg/L	1		6020B	Total/NA
Boron	0.894		0.100		mg/L	1		6020B	Total/NA
Calcium	491		5.00		mg/L	10		6020B	Total/NA
Lithium	0.234		0.0100		mg/L	1		6020B	Total/NA
pH	6.85	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	6.67		5.00		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	3700		250		mg/L	1		SM 2540C	Total/NA

Client Sample ID: Gypsum West 005
Lab Sample ID: 310-264246-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Fluoride	1.33		1.00		mg/L	5		9056A	Total/NA
Sulfate	2200		50.0		mg/L	50		9056A	Total/NA
Arsenic	0.00434		0.00200		mg/L	1		6020B	Total/NA

This Detection Summary does not include radiochemical test results.

Client Sample ID: Gypsum West 005 (Continued) — Lab Sample ID: 310-264246-10

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Barium	0.00896		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.0608		0.000500		mg/L	1		6020B	Total/NA
Iron	70.3		0.100		mg/L	1		6020B	Total/NA
Magnesium	212		5.00		mg/L	10		6020B	Total/NA
Manganese	12.5		0.100		mg/L	10		6020B	Total/NA
Boron	0.785		0.100		mg/L	1		6020B	Total/NA
Zinc	0.131		0.0200		mg/L	1		6020B	Total/NA
Calcium	518		5.00		mg/L	10		6020B	Total/NA
Lithium	0.186		0.0100		mg/L	1		6020B	Total/NA
pH	6.79	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	83.0		15.0		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	3240		250		mg/L	1		SM 2540C	Total/NA

Client Sample ID: MH-LF (Leachate) — Lab Sample ID: 310-264246-11

Analyte	Result	Qualifier	RL	MDL	Unit	Dil Fac	D	Method	Prep Type
Chloride	59.7		5.00		mg/L	5		9056A	Total/NA
Sulfate	3620		50.0		mg/L	50		9056A	Total/NA
Arsenic	0.00680		0.00200		mg/L	1		6020B	Total/NA
Barium	0.0308		0.00200		mg/L	1		6020B	Total/NA
Cobalt	0.00143		0.000500		mg/L	1		6020B	Total/NA
Iron	0.146		0.100		mg/L	1		6020B	Total/NA
Magnesium	207		5.00		mg/L	10		6020B	Total/NA
Manganese	1.13		0.100		mg/L	10		6020B	Total/NA
Selenium	0.00812		0.00500		mg/L	1		6020B	Total/NA
Boron	5.06		1.00		mg/L	10		6020B	Total/NA
Calcium	391		5.00		mg/L	10		6020B	Total/NA
Molybdenum	0.810		0.0200		mg/L	10		6020B	Total/NA
pH	7.75	HF	1.00		SU	1		9040C	Total/NA
Total Suspended Solids	2.75		1.88		mg/L	1		I-3765-85	Total/NA
Total Dissolved Solids	5820		250		mg/L	1		SM 2540C	Total/NA

This Detection Summary does not include radiochemical test results.

Client: HR Green, Inc
Project/Site: Landfill 718160J09-0685

Job ID: 310-264246-1

Client Sample ID: MW-06

Date Collected: 09/06/23 10:35
Date Received: 09/07/23 13:00

Lab Sample ID: 310-264246-1

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			09/13/23 22:54	5
Fluoride	<1.00		1.00		mg/L			09/13/23 22:54	5
Sulfate	**373**		5.00		mg/L			09/13/23 22:54	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:19	1
Barium	**0.0207**		0.00200		mg/L		09/08/23 09:40	09/11/23 20:19	1
Beryllium	<0.00100		0.00100		mg/L		09/08/23 09:40	09/11/23 20:19	1
Cobalt	<0.000500		0.000500		mg/L		09/08/23 09:40	09/11/23 20:19	1
Copper	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:19	1
Iron	**0.403**		0.100		mg/L		09/08/23 09:40	09/11/23 20:19	1
Lead	<0.000500		0.000500		mg/L		09/08/23 09:40	09/11/23 20:19	1
Magnesium	**25.0**		0.500		mg/L		09/08/23 09:40	09/11/23 20:19	1
Manganese	**0.0924**		0.0100		mg/L		09/08/23 09:40	09/11/23 20:19	1
Selenium	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:19	1
Boron	**0.364**		0.100		mg/L		09/08/23 09:40	09/11/23 20:19	1
Zinc	<0.0200		0.0200		mg/L		09/08/23 09:40	09/11/23 20:19	1
Calcium	**112**		0.500		mg/L		09/08/23 09:40	09/11/23 20:19	1
Lithium	**0.0577**		0.0100		mg/L		09/08/23 09:40	09/11/23 20:19	1
Molybdenum	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:19	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**6.63**		1.88		mg/L			09/11/23 08:25	1
Total Dissolved Solids (SM 2540C)	**778**		50.0		mg/L			09/07/23 17:34	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**7.58**	**HF**	1.00		SU			09/07/23 15:14	1

Client: HR Green, Inc
Job ID: 310-264246-1
Project/Site: Landfill 718160J09-0685

Client Sample ID: MW-08
Lab Sample ID: 310-264246-2

Date Collected: 09/06/23 10:55
Matrix: Water

Date Received: 09/07/23 13:00

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			09/13/23 23:55	5
Fluoride	<1.00		1.00		mg/L			09/13/23 23:55	5
Sulfate	**216**		5.00		mg/L			09/13/23 23:55	5

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:22	1
Barium	**0.0281**		0.00200		mg/L		09/08/23 09:40	09/11/23 20:22	1
Beryllium	<0.00100		0.00100		mg/L		09/08/23 09:40	09/11/23 20:22	1
Cobalt	<0.000500		0.000500		mg/L		09/08/23 09:40	09/11/23 20:22	1
Copper	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:22	1
Iron	**1.27**		0.100		mg/L		09/08/23 09:40	09/11/23 20:22	1
Lead	<0.000500		0.000500		mg/L		09/08/23 09:40	09/11/23 20:22	1
Magnesium	**41.0**		0.500		mg/L		09/08/23 09:40	09/11/23 20:22	1
Manganese	<0.0100		0.0100		mg/L		09/08/23 09:40	09/11/23 20:22	1
Selenium	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:22	1
Boron	**0.356**		0.100		mg/L		09/08/23 09:40	09/11/23 20:22	1
Zinc	**0.0214**		0.0200		mg/L		09/08/23 09:40	09/11/23 20:22	1
Calcium	**137**		0.500		mg/L		09/08/23 09:40	09/11/23 20:22	1
Lithium	**0.0954**		0.0100		mg/L		09/08/23 09:40	09/11/23 20:22	1
Molybdenum	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:22	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**13.3**		1.88		mg/L			09/11/23 08:25	1
Total Dissolved Solids (SM 2540C)	**632**		50.0		mg/L			09/07/23 17:34	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**7.16**	**HF**	1.00		SU			09/07/23 15:16	1

Client: HR Green, Inc
Job ID: 310-264246-1
Project/Site: Landfill 718160J09-0685

Client Sample ID: MW-09
Lab Sample ID: 310-264246-3

Date Collected: 09/06/23 11:30
Matrix: Water

Date Received: 09/07/23 13:00

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			09/14/23 00:07	5
Fluoride	<1.00		1.00		mg/L			09/14/23 00:07	5
Sulfate	**1290**		50.0		mg/L			09/14/23 13:41	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:24	1
Barium	**0.0313**		0.00200		mg/L		09/08/23 09:40	09/11/23 20:24	1
Beryllium	<0.00100		0.00100		mg/L		09/08/23 09:40	09/11/23 20:24	1
Cobalt	**0.00138**		0.000500		mg/L		09/08/23 09:40	09/11/23 20:24	1
Copper	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:24	1
Iron	**0.175**		0.100		mg/L		09/08/23 09:40	09/11/23 20:24	1
Lead	<0.000500		0.000500		mg/L		09/08/23 09:40	09/11/23 20:24	1
Magnesium	**65.0**		0.500		mg/L		09/08/23 09:40	09/11/23 20:24	1
Manganese	**0.341**		0.0100		mg/L		09/08/23 09:40	09/11/23 20:24	1
Selenium	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:24	1
Boron	**0.992**		0.100		mg/L		09/08/23 09:40	09/11/23 20:24	1
Zinc	<0.0200		0.0200		mg/L		09/08/23 09:40	09/11/23 20:24	1
Calcium	**348**		0.500		mg/L		09/08/23 09:40	09/11/23 20:24	1
Lithium	**0.120**		0.0100		mg/L		09/08/23 09:40	09/11/23 20:24	1
Molybdenum	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:24	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**14.0**		2.50		mg/L			09/11/23 08:25	1
Total Dissolved Solids (SM 2540C)	**1890**		250		mg/L			09/07/23 17:34	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**7.11**	**HF**	1.00		SU			09/07/23 15:17	1

Client: HR Green, Inc
Project/Site: Landfill 718160J09-0685

Job ID: 310-264246-1

Client Sample ID: MW-10

Date Collected: 09/06/23 08:35
Date Received: 09/07/23 13:00

Lab Sample ID: 310-264246-4

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			09/14/23 00:19	5
Fluoride	<1.00		1.00		mg/L			09/14/23 00:19	5
Sulfate	**1800**		50.0		mg/L			09/14/23 13:53	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00306**		0.00200		mg/L		09/08/23 09:40	09/11/23 20:26	1
Barium	**0.0150**		0.00200		mg/L		09/08/23 09:40	09/11/23 20:26	1
Beryllium	<0.00100		0.00100		mg/L		09/08/23 09:40	09/11/23 20:26	1
Cobalt	**0.0188**		0.000500		mg/L		09/08/23 09:40	09/11/23 20:26	1
Copper	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:26	1
Iron	**5.97**		0.100		mg/L		09/08/23 09:40	09/11/23 20:26	1
Lead	<0.000500		0.000500		mg/L		09/08/23 09:40	09/11/23 20:26	1
Magnesium	**195**		5.00		mg/L		09/08/23 09:40	09/19/23 22:48	10
Manganese	**8.07**		0.100		mg/L		09/08/23 09:40	09/19/23 22:48	10
Selenium	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:26	1
Boron	**0.634**		0.100		mg/L		09/08/23 09:40	09/11/23 20:26	1
Zinc	<0.0200		0.0200		mg/L		09/08/23 09:40	09/11/23 20:26	1
Calcium	**651**		5.00		mg/L		09/08/23 09:40	09/19/23 22:48	10
Lithium	**0.150**		0.0100		mg/L		09/08/23 09:40	09/11/23 20:26	1
Molybdenum	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**17.8**		3.75		mg/L			09/11/23 08:25	1
Total Dissolved Solids (SM 2540C)	**2440**		250		mg/L			09/07/23 17:34	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**6.62**	**HF**	1.00		SU			09/07/23 15:18	1

Client: HR Green, Inc
Job ID: 310-264246-1
Project/Site: Landfill 718160J09-0685

Client Sample ID: MW-11
Lab Sample ID: 310-264246-5

Date Collected: 09/05/23 16:40
Matrix: Water

Date Received: 09/07/23 13:00

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.47**		5.00		mg/L			09/14/23 00:31	5
Fluoride	<1.00		1.00		mg/L			09/14/23 00:31	5
Sulfate	**762**		50.0		mg/L			09/14/23 14:05	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00267**		0.00200		mg/L		09/08/23 09:40	09/11/23 20:28	1
Barium	**0.0329**		0.00200		mg/L		09/08/23 09:40	09/11/23 20:28	1
Beryllium	<0.00100		0.00100		mg/L		09/08/23 09:40	09/11/23 20:28	1
Cobalt	**0.0471**		0.000500		mg/L		09/08/23 09:40	09/11/23 20:28	1
Copper	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:28	1
Iron	**22.0**		0.100		mg/L		09/08/23 09:40	09/11/23 20:28	1
Lead	<0.000500		0.000500		mg/L		09/08/23 09:40	09/11/23 20:28	1
Magnesium	**112**		5.00		mg/L		09/08/23 09:40	09/19/23 22:50	10
Manganese	**8.01**		0.100		mg/L		09/08/23 09:40	09/19/23 22:50	10
Selenium	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:28	1
Boron	**0.407**		0.100		mg/L		09/08/23 09:40	09/11/23 20:28	1
Zinc	**0.438**		0.0200		mg/L		09/08/23 09:40	09/11/23 20:28	1
Calcium	**395**		0.500		mg/L		09/08/23 09:40	09/11/23 20:28	1
Lithium	**0.0518**		0.0100		mg/L		09/08/23 09:40	09/11/23 20:28	1
Molybdenum	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:28	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**110**		15.0		mg/L			09/08/23 09:50	1
Total Dissolved Solids (SM 2540C)	**1560**		250		mg/L			09/07/23 17:34	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**6.58**	**HF**	1.00		SU			09/07/23 15:19	1

Client: HR Green, Inc
Project/Site: Landfill 718160J09-0685

Job ID: 310-264246-1

Client Sample ID: MW-12R

Date Collected: 09/06/23 09:30
Date Received: 09/07/23 13:00

Lab Sample ID: 310-264246-6

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**6.72**		5.00		mg/L			09/14/23 00:43	5
Fluoride	<1.00		1.00		mg/L			09/14/23 00:43	5
Sulfate	**2230**		50.0		mg/L			09/14/23 14:17	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:39	1
Barium	**0.0144**		0.00200		mg/L		09/08/23 09:40	09/11/23 20:39	1
Beryllium	<0.00100		0.00100		mg/L		09/08/23 09:40	09/11/23 20:39	1
Cobalt	**0.00416**		0.000500		mg/L		09/08/23 09:40	09/11/23 20:39	1
Copper	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:39	1
Iron	**3.73**		0.100		mg/L		09/08/23 09:40	09/11/23 20:39	1
Lead	<0.000500		0.000500		mg/L		09/08/23 09:40	09/11/23 20:39	1
Magnesium	**205**		5.00		mg/L		09/08/23 09:40	09/19/23 22:52	10
Manganese	**0.850**		0.0100		mg/L		09/08/23 09:40	09/11/23 20:39	1
Selenium	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:39	1
Boron	**1.42**		0.100		mg/L		09/08/23 09:40	09/11/23 20:39	1
Zinc	<0.0200		0.0200		mg/L		09/08/23 09:40	09/11/23 20:39	1
Calcium	**602**		5.00		mg/L		09/08/23 09:40	09/19/23 22:52	10
Lithium	**0.322**		0.0100		mg/L		09/08/23 09:40	09/11/23 20:39	1
Molybdenum	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:39	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**9.00**		1.88		mg/L			09/11/23 08:25	1
Total Dissolved Solids (SM 2540C)	**3750**		250		mg/L			09/08/23 15:27	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**6.54**	**HF**	1.00		SU			09/07/23 15:20	1

Client: HR Green, Inc
Job ID: 310-264246-1
Project/Site: Landfill 718160J09-0685

Client Sample ID: MW-13R
Lab Sample ID: 310-264246-7
Date Collected: 09/06/23 10:00
Matrix: Water
Date Received: 09/07/23 13:00

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**14.3**		5.00		mg/L			09/14/23 00:55	5
Fluoride	<1.00		1.00		mg/L			09/14/23 00:55	5
Sulfate	**2160**		50.0		mg/L			09/14/23 14:29	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:41	1
Barium	**0.0188**		0.00200		mg/L		09/08/23 09:40	09/11/23 20:41	1
Beryllium	<0.00100		0.00100		mg/L		09/08/23 09:40	09/11/23 20:41	1
Cobalt	**0.0579**		0.000500		mg/L		09/08/23 09:40	09/11/23 20:41	1
Copper	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:41	1
Iron	**7.06**		0.100		mg/L		09/08/23 09:40	09/11/23 20:41	1
Lead	<0.000500		0.000500		mg/L		09/08/23 09:40	09/11/23 20:41	1
Magnesium	**232**		5.00		mg/L		09/08/23 09:40	09/19/23 23:08	10
Manganese	**16.8**		0.100		mg/L		09/08/23 09:40	09/19/23 23:08	10
Selenium	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:41	1
Boron	**0.560**		0.100		mg/L		09/08/23 09:40	09/11/23 20:41	1
Zinc	<0.0200		0.0200		mg/L		09/08/23 09:40	09/11/23 20:41	1
Calcium	**505**		5.00		mg/L		09/08/23 09:40	09/19/23 23:08	10
Lithium	**0.175**		0.0100		mg/L		09/08/23 09:40	09/11/23 20:41	1
Molybdenum	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:41	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**103**		15.0		mg/L			09/11/23 08:25	1
Total Dissolved Solids (SM 2540C)	**3370**		250		mg/L			09/08/23 15:27	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**6.54**	**HF**	1.00		SU			09/07/23 15:21	1

Client: HR Green, Inc
Job ID: 310-264246-1
Project/Site: Landfill 718160J09-0685

Client Sample ID: MW-26
Lab Sample ID: 310-264246-8

Date Collected: 09/05/23 15:20
Matrix: Water
Date Received: 09/07/23 13:00

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			09/14/23 01:07	5
Fluoride	**1.12**		1.00		mg/L			09/14/23 01:07	5
Sulfate	**2370**		50.0		mg/L			09/14/23 14:41	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:44	1
Barium	**0.00972**		0.00200		mg/L		09/08/23 09:40	09/11/23 20:44	1
Beryllium	**0.00174**		0.00100		mg/L		09/08/23 09:40	09/11/23 20:44	1
Cobalt	**0.0820**		0.000500		mg/L		09/08/23 09:40	09/11/23 20:44	1
Copper	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:44	1
Iron	**0.216**		0.100		mg/L		09/08/23 09:40	09/11/23 20:44	1
Lead	<0.000500		0.000500		mg/L		09/08/23 09:40	09/11/23 20:44	1
Magnesium	**270**		5.00		mg/L		09/08/23 09:40	09/19/23 23:10	10
Manganese	**39.1**		0.100		mg/L		09/08/23 09:40	09/19/23 23:10	10
Selenium	**0.00540**		0.00500		mg/L		09/08/23 09:40	09/11/23 20:44	1
Boron	**0.154**		0.100		mg/L		09/08/23 09:40	09/11/23 20:44	1
Zinc	**0.320**		0.0200		mg/L		09/08/23 09:40	09/11/23 20:44	1
Calcium	**417**		0.500		mg/L		09/08/23 09:40	09/11/23 20:44	1
Lithium	**0.0363**		0.0100		mg/L		09/08/23 09:40	09/11/23 20:44	1
Molybdenum	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:44	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**1.88**		1.88		mg/L			09/08/23 09:50	1
Total Dissolved Solids (SM 2540C)	**3280**		250		mg/L			09/07/23 17:34	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**5.28**	**HF**	1.00		SU			09/07/23 15:22	1

Client: HR Green, Inc
Project/Site: Landfill 718160J09-0685

Job ID: 310-264246-1

Client Sample ID: Fly Ash North 002

Date Collected: 09/05/23 17:15
Date Received: 09/07/23 13:00

Lab Sample ID: 310-264246-9

Matrix: Water

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**7.42**		5.00		mg/L			09/14/23 01:19	5
Fluoride	<1.00		1.00		mg/L			09/14/23 01:19	5
Sulfate	**2410**		50.0		mg/L			09/14/23 14:54	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:48	1
Barium	**0.0150**		0.00200		mg/L		09/08/23 09:40	09/11/23 20:48	1
Beryllium	<0.00100		0.00100		mg/L		09/08/23 09:40	09/11/23 20:48	1
Cobalt	**0.0122**		0.000500		mg/L		09/08/23 09:40	09/11/23 20:48	1
Copper	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:48	1
Iron	**5.58**		0.100		mg/L		09/08/23 09:40	09/11/23 20:48	1
Lead	<0.000500		0.000500		mg/L		09/08/23 09:40	09/11/23 20:48	1
Magnesium	**288**		5.00		mg/L		09/08/23 09:40	09/19/23 23:14	10
Manganese	**3.15**		0.0100		mg/L		09/08/23 09:40	09/11/23 20:48	1
Selenium	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:48	1
Boron	**0.894**		0.100		mg/L		09/08/23 09:40	09/11/23 20:48	1
Zinc	<0.0200		0.0200		mg/L		09/08/23 09:40	09/11/23 20:48	1
Calcium	**491**		5.00		mg/L		09/08/23 09:40	09/19/23 23:14	10
Lithium	**0.234**		0.0100		mg/L		09/08/23 09:40	09/11/23 20:48	1
Molybdenum	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:48	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**6.67**		5.00		mg/L			09/08/23 09:50	1
Total Dissolved Solids (SM 2540C)	**3700**		250		mg/L			09/07/23 17:34	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**6.85**	**HF**	1.00		SU			09/07/23 15:23	1

Client: HR Green, Inc
Job ID: 310-264246-1
Project/Site: Landfill 718160J09-0685

Client Sample ID: Gypsum West 005
Lab Sample ID: 310-264246-10

Date Collected: 09/06/23 11:10
Matrix: Water
Date Received: 09/07/23 13:00

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<5.00		5.00		mg/L			09/14/23 01:55	5
Fluoride	**1.33**		1.00		mg/L			09/14/23 01:55	5
Sulfate	**2200**		50.0		mg/L			09/14/23 15:06	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00434**		0.00200		mg/L		09/08/23 09:40	09/11/23 20:50	1
Barium	**0.00896**		0.00200		mg/L		09/08/23 09:40	09/11/23 20:50	1
Beryllium	<0.00100		0.00100		mg/L		09/08/23 09:40	09/11/23 20:50	1
Cobalt	**0.0608**		0.000500		mg/L		09/08/23 09:40	09/11/23 20:50	1
Copper	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:50	1
Iron	**70.3**		0.100		mg/L		09/08/23 09:40	09/11/23 20:50	1
Lead	<0.000500		0.000500		mg/L		09/08/23 09:40	09/11/23 20:50	1
Magnesium	**212**		5.00		mg/L		09/08/23 09:40	09/19/23 23:17	10
Manganese	**12.5**		0.100		mg/L		09/08/23 09:40	09/19/23 23:17	10
Selenium	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:50	1
Boron	**0.785**		0.100		mg/L		09/08/23 09:40	09/11/23 20:50	1
Zinc	**0.131**		0.0200		mg/L		09/08/23 09:40	09/11/23 20:50	1
Calcium	**518**		5.00		mg/L		09/08/23 09:40	09/19/23 23:17	10
Lithium	**0.186**		0.0100		mg/L		09/08/23 09:40	09/11/23 20:50	1
Molybdenum	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 20:50	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**83.0**		15.0		mg/L			09/11/23 08:25	1
Total Dissolved Solids (SM 2540C)	**3240**		250		mg/L			09/11/23 20:17	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**6.79**	**HF**	1.00		SU			09/07/23 15:28	1

Client: HR Green, Inc
Project/Site: Landfill 718160J09-0685

Job ID: 310-264246-1

Client Sample ID: MH-LF (Leachate)

Lab Sample ID: 310-264246-11

Date Collected: 09/06/23 11:45

Matrix: Water

Date Received: 09/07/23 13:00

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**59.7**		5.00		mg/L			09/14/23 02:07	5
Fluoride	<1.00		1.00		mg/L			09/14/23 02:07	5
Sulfate	**3620**		50.0		mg/L			09/14/23 15:42	50

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**0.00680**		0.00200		mg/L		09/08/23 09:40	09/11/23 20:53	1
Barium	**0.0308**		0.00200		mg/L		09/08/23 09:40	09/11/23 20:53	1
Beryllium	<0.00100		0.00100		mg/L		09/08/23 09:40	09/11/23 20:53	1
Cobalt	**0.00143**		0.000500		mg/L		09/08/23 09:40	09/11/23 20:53	1
Copper	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 20:53	1
Iron	**0.146**		0.100		mg/L		09/08/23 09:40	09/11/23 20:53	1
Lead	<0.000500		0.000500		mg/L		09/08/23 09:40	09/11/23 20:53	1
Magnesium	**207**		5.00		mg/L		09/08/23 09:40	09/19/23 23:19	10
Manganese	**1.13**		0.100		mg/L		09/08/23 09:40	09/19/23 23:19	10
Selenium	**0.00812**		0.00500		mg/L		09/08/23 09:40	09/11/23 20:53	1
Boron	**5.06**		1.00		mg/L		09/08/23 09:40	09/19/23 23:19	10
Zinc	<0.200		0.200		mg/L		09/08/23 09:40	09/19/23 23:19	10
Calcium	**391**		5.00		mg/L		09/08/23 09:40	09/19/23 23:19	10
Lithium	<0.100		0.100		mg/L		09/08/23 09:40	09/19/23 23:19	10
Molybdenum	**0.810**		0.0200		mg/L		09/08/23 09:40	09/19/23 23:19	10

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids (USGS I-3765-85)	**2.75**		1.88		mg/L			09/11/23 08:25	1
Total Dissolved Solids (SM 2540C)	**5820**		250		mg/L			09/11/23 20:17	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
pH (SW846 9040C)	**7.75**	**HF**	1.00		SU			09/07/23 15:26	1

Definitions/Glossary

Client: HR Green, Inc
Job ID: 310-264246-1
Project/Site: Landfill 718160J09-0685

Qualifiers

HPLC/IC

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.

General Chemistry

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

Glossary

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

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 310-399730/3
Matrix: Water
Analysis Batch: 399730

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	<1.00		1.00		mg/L			09/13/23 22:30	1
Fluoride	<0.200		0.200		mg/L			09/13/23 22:30	1
Sulfate	<1.00		1.00		mg/L			09/13/23 22:30	1

Lab Sample ID: LCS 310-399730/4
Matrix: Water
Analysis Batch: 399730

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	9.813		mg/L		98	90 - 110		
Fluoride			2.00	1.980		mg/L		99	90 - 110		
Sulfate			10.0	9.959		mg/L		100	90 - 110		

Lab Sample ID: 310-264246-1 MS
Matrix: Water
Analysis Batch: 399730

Client Sample ID: MW-06
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits		
Chloride	<5.00		25.0	24.50		mg/L		98	80 - 120		
Fluoride	<1.00		5.00	4.965		mg/L		99	80 - 120		
Sulfate	373		25.0	391.1	4	mg/L		72	80 - 120		

Lab Sample ID: 310-264246-1 MSD
Matrix: Water
Analysis Batch: 399730

Client Sample ID: MW-06
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Chloride	<5.00		25.0	24.58		mg/L		98	80 - 120	0	15
Fluoride	<1.00		5.00	4.972		mg/L		99	80 - 120	0	15
Sulfate	373		25.0	390.8	4	mg/L		71	80 - 120	0	15

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 310-398927/1-A
Matrix: Water
Analysis Batch: 399267

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 398927

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 19:49	1
Barium	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 19:49	1
Beryllium	<0.00100		0.00100		mg/L		09/08/23 09:40	09/11/23 19:49	1
Cobalt	<0.000500		0.000500		mg/L		09/08/23 09:40	09/11/23 19:49	1
Copper	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 19:49	1
Iron	<0.100		0.100		mg/L		09/08/23 09:40	09/11/23 19:49	1
Lead	<0.000500		0.000500		mg/L		09/08/23 09:40	09/11/23 19:49	1
Magnesium	<0.500		0.500		mg/L		09/08/23 09:40	09/11/23 19:49	1
Manganese	<0.0100		0.0100		mg/L		09/08/23 09:40	09/11/23 19:49	1
Selenium	<0.00500		0.00500		mg/L		09/08/23 09:40	09/11/23 19:49	1
Boron	<0.100		0.100		mg/L		09/08/23 09:40	09/11/23 19:49	1
Zinc	<0.0200		0.0200		mg/L		09/08/23 09:40	09/11/23 19:49	1

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

Lab Sample ID: MB 310-398927/1-A
Matrix: Water
Analysis Batch: 399267

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 398927

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Calcium	<0.500		0.500		mg/L		09/08/23 09:40	09/11/23 19:49	1
Lithium	<0.0100		0.0100		mg/L		09/08/23 09:40	09/11/23 19:49	1
Molybdenum	<0.00200		0.00200		mg/L		09/08/23 09:40	09/11/23 19:49	1

Lab Sample ID: LCS 310-398927/2-A
Matrix: Water
Analysis Batch: 399267

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 398927

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.200	0.1925		mg/L		96	80 - 120
Barium	0.100	0.09895		mg/L		99	80 - 120
Beryllium	0.100	0.09934		mg/L		99	80 - 120
Cobalt	0.100	0.1059		mg/L		106	80 - 120
Copper	0.200	0.2103		mg/L		105	80 - 120
Iron	0.200	0.2244		mg/L		112	80 - 120
Lead	0.200	0.1982		mg/L		99	80 - 120
Magnesium	2.00	2.059		mg/L		103	80 - 120
Manganese	0.100	0.09389		mg/L		94	80 - 120
Selenium	0.400	0.3832		mg/L		96	80 - 120
Boron	0.200	0.1917		mg/L		96	80 - 120
Zinc	0.200	0.1908		mg/L		95	80 - 120
Calcium	2.00	1.920		mg/L		96	80 - 120
Lithium	0.200	0.1991		mg/L		100	80 - 120
Molybdenum	0.200	0.1913		mg/L		96	80 - 120

Lab Sample ID: 310-264246-8 DU
Matrix: Water
Analysis Batch: 399267

Client Sample ID: MW-26
Prep Type: Total/NA
Prep Batch: 398927

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	<0.00200		<0.00200		mg/L		NC	20
Barium	0.00972		0.009756		mg/L		0.4	20
Beryllium	0.00174		0.001531		mg/L		13	20
Cobalt	0.0820		0.08414		mg/L		3	20
Copper	<0.00500		<0.00500		mg/L		NC	20
Iron	0.216		0.2089		mg/L		4	20
Lead	<0.000500		<0.000500		mg/L		NC	20
Selenium	0.00540		0.005749		mg/L		6	20
Boron	0.154		0.1529		mg/L		0.9	20
Zinc	0.320		0.3304		mg/L		3	20
Calcium	417		426.9		mg/L		2	20
Lithium	0.0363		0.03719		mg/L		2	20
Molybdenum	<0.00200		<0.00200		mg/L		NC	20

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

Lab Sample ID: 310-264246-8 DU
Matrix: Water
Analysis Batch: 400043

Client Sample ID: MW-26
Prep Type: Total/NA
Prep Batch: 398927

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Magnesium	270		286.2		mg/L		6	20
Manganese	39.1		42.18		mg/L		8	20

Method: 9040C - pH

Lab Sample ID: 310-264246-1 DU
Matrix: Water
Analysis Batch: 398912

Client Sample ID: MW-06
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.58	HF	7.500		SU		1	20

Lab Sample ID: 310-264246-11 DU
Matrix: Water
Analysis Batch: 398912

Client Sample ID: MH-LF (Leachate)
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
pH	7.75	HF	7.740		SU		0.1	20

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

Lab Sample ID: MB 310-398993/1
Matrix: Water
Analysis Batch: 398993

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00		mg/L			09/08/23 09:50	1

Lab Sample ID: LCS 310-398993/2
Matrix: Water
Analysis Batch: 398993

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Suspended Solids	100	95.00		mg/L		95	75 - 116

Lab Sample ID: MB 310-399109/1
Matrix: Water
Analysis Batch: 399109

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	<5.00		5.00		mg/L			09/11/23 08:25	1

Lab Sample ID: LCS 310-399109/2
Matrix: Water
Analysis Batch: 399109

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	97.00		mg/L		97	75 - 116

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

Lab Sample ID: MB 310-398923/1
Matrix: Water
Analysis Batch: 398923

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			09/07/23 17:34	1

Lab Sample ID: LCS 310-398923/2
Matrix: Water
Analysis Batch: 398923

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	932.0		mg/L		93	90 - 110

Lab Sample ID: MB 310-399050/1
Matrix: Water
Analysis Batch: 399050

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			09/08/23 15:27	1

Lab Sample ID: LCS 310-399050/2
Matrix: Water
Analysis Batch: 399050

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	976.0		mg/L		98	90 - 110

Lab Sample ID: MB 310-399207/1
Matrix: Water
Analysis Batch: 399207

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	<50.0		50.0		mg/L			09/11/23 20:17	1

Lab Sample ID: LCS 310-399207/2
Matrix: Water
Analysis Batch: 399207

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Total Dissolved Solids	1000	968.0		mg/L		97	90 - 110

Lab Sample ID: 310-264246-10 DU
Matrix: Water
Analysis Batch: 399207

Client Sample ID: Gypsum West 005
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Total Dissolved Solids	3240		2990		mg/L		8	20

HPLC/IC

Analysis Batch: 399730

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-264246-1	MW-06	Total/NA	Water	9056A	
310-264246-2	MW-08	Total/NA	Water	9056A	
310-264246-3	MW-09	Total/NA	Water	9056A	
310-264246-3	MW-09	Total/NA	Water	9056A	
310-264246-4	MW-10	Total/NA	Water	9056A	
310-264246-4	MW-10	Total/NA	Water	9056A	
310-264246-5	MW-11	Total/NA	Water	9056A	
310-264246-5	MW-11	Total/NA	Water	9056A	
310-264246-6	MW-12R	Total/NA	Water	9056A	
310-264246-6	MW-12R	Total/NA	Water	9056A	
310-264246-7	MW-13R	Total/NA	Water	9056A	
310-264246-7	MW-13R	Total/NA	Water	9056A	
310-264246-8	MW-26	Total/NA	Water	9056A	
310-264246-8	MW-26	Total/NA	Water	9056A	
310-264246-9	Fly Ash North 002	Total/NA	Water	9056A	
310-264246-9	Fly Ash North 002	Total/NA	Water	9056A	
310-264246-10	Gypsum West 005	Total/NA	Water	9056A	
310-264246-10	Gypsum West 005	Total/NA	Water	9056A	
310-264246-11	MH-LF (Leachate)	Total/NA	Water	9056A	
310-264246-11	MH-LF (Leachate)	Total/NA	Water	9056A	
MB 310-399730/3	Method Blank	Total/NA	Water	9056A	
LCS 310-399730/4	Lab Control Sample	Total/NA	Water	9056A	
310-264246-1 MS	MW-06	Total/NA	Water	9056A	
310-264246-1 MSD	MW-06	Total/NA	Water	9056A	

Metals

Prep Batch: 398927

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-264246-1	MW-06	Total/NA	Water	3005A	
310-264246-2	MW-08	Total/NA	Water	3005A	
310-264246-3	MW-09	Total/NA	Water	3005A	
310-264246-4	MW-10	Total/NA	Water	3005A	
310-264246-5	MW-11	Total/NA	Water	3005A	
310-264246-6	MW-12R	Total/NA	Water	3005A	
310-264246-7	MW-13R	Total/NA	Water	3005A	
310-264246-8	MW-26	Total/NA	Water	3005A	
310-264246-9	Fly Ash North 002	Total/NA	Water	3005A	
310-264246-10	Gypsum West 005	Total/NA	Water	3005A	
310-264246-11	MH-LF (Leachate)	Total/NA	Water	3005A	
MB 310-398927/1-A	Method Blank	Total/NA	Water	3005A	
LCS 310-398927/2-A	Lab Control Sample	Total/NA	Water	3005A	
310-264246-8 DU	MW-26	Total/NA	Water	3005A	

Analysis Batch: 399267

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-264246-1	MW-06	Total/NA	Water	6020B	398927
310-264246-2	MW-08	Total/NA	Water	6020B	398927
310-264246-3	MW-09	Total/NA	Water	6020B	398927
310-264246-4	MW-10	Total/NA	Water	6020B	398927
310-264246-5	MW-11	Total/NA	Water	6020B	398927

Metals (Continued)

Analysis Batch: 399267 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-264246-6	MW-12R	Total/NA	Water	6020B	398927
310-264246-7	MW-13R	Total/NA	Water	6020B	398927
310-264246-8	MW-26	Total/NA	Water	6020B	398927
310-264246-9	Fly Ash North 002	Total/NA	Water	6020B	398927
310-264246-10	Gypsum West 005	Total/NA	Water	6020B	398927
310-264246-11	MH-LF (Leachate)	Total/NA	Water	6020B	398927
MB 310-398927/1-A	Method Blank	Total/NA	Water	6020B	398927
LCS 310-398927/2-A	Lab Control Sample	Total/NA	Water	6020B	398927
310-264246-8 DU	MW-26	Total/NA	Water	6020B	398927

Analysis Batch: 400043

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-264246-4	MW-10	Total/NA	Water	6020B	398927
310-264246-5	MW-11	Total/NA	Water	6020B	398927
310-264246-6	MW-12R	Total/NA	Water	6020B	398927
310-264246-7	MW-13R	Total/NA	Water	6020B	398927
310-264246-8	MW-26	Total/NA	Water	6020B	398927
310-264246-9	Fly Ash North 002	Total/NA	Water	6020B	398927
310-264246-10	Gypsum West 005	Total/NA	Water	6020B	398927
310-264246-11	MH-LF (Leachate)	Total/NA	Water	6020B	398927
310-264246-8 DU	MW-26	Total/NA	Water	6020B	398927

General Chemistry

Analysis Batch: 398912

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-264246-1	MW-06	Total/NA	Water	9040C	
310-264246-2	MW-08	Total/NA	Water	9040C	
310-264246-3	MW-09	Total/NA	Water	9040C	
310-264246-4	MW-10	Total/NA	Water	9040C	
310-264246-5	MW-11	Total/NA	Water	9040C	
310-264246-6	MW-12R	Total/NA	Water	9040C	
310-264246-7	MW-13R	Total/NA	Water	9040C	
310-264246-8	MW-26	Total/NA	Water	9040C	
310-264246-9	Fly Ash North 002	Total/NA	Water	9040C	
310-264246-10	Gypsum West 005	Total/NA	Water	9040C	
310-264246-11	MH-LF (Leachate)	Total/NA	Water	9040C	
LCS 310-398912/1	Lab Control Sample	Total/NA	Water	9040C	
310-264246-1 DU	MW-06	Total/NA	Water	9040C	
310-264246-11 DU	MH-LF (Leachate)	Total/NA	Water	9040C	

Analysis Batch: 398923

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-264246-1	MW-06	Total/NA	Water	SM 2540C	
310-264246-2	MW-08	Total/NA	Water	SM 2540C	
310-264246-3	MW-09	Total/NA	Water	SM 2540C	
310-264246-4	MW-10	Total/NA	Water	SM 2540C	
310-264246-5	MW-11	Total/NA	Water	SM 2540C	
310-264246-8	MW-26	Total/NA	Water	SM 2540C	
310-264246-9	Fly Ash North 002	Total/NA	Water	SM 2540C	
MB 310-398923/1	Method Blank	Total/NA	Water	SM 2540C	

General Chemistry (Continued)

Analysis Batch: 398923 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 310-398923/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 398993

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-264246-5	MW-11	Total/NA	Water	I-3765-85	
310-264246-8	MW-26	Total/NA	Water	I-3765-85	
310-264246-9	Fly Ash North 002	Total/NA	Water	I-3765-85	
MB 310-398993/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-398993/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 399050

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-264246-6	MW-12R	Total/NA	Water	SM 2540C	
310-264246-7	MW-13R	Total/NA	Water	SM 2540C	
MB 310-399050/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-399050/2	Lab Control Sample	Total/NA	Water	SM 2540C	

Analysis Batch: 399109

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-264246-1	MW-06	Total/NA	Water	I-3765-85	
310-264246-2	MW-08	Total/NA	Water	I-3765-85	
310-264246-3	MW-09	Total/NA	Water	I-3765-85	
310-264246-4	MW-10	Total/NA	Water	I-3765-85	
310-264246-6	MW-12R	Total/NA	Water	I-3765-85	
310-264246-7	MW-13R	Total/NA	Water	I-3765-85	
310-264246-10	Gypsum West 005	Total/NA	Water	I-3765-85	
310-264246-11	MH-LF (Leachate)	Total/NA	Water	I-3765-85	
MB 310-399109/1	Method Blank	Total/NA	Water	I-3765-85	
LCS 310-399109/2	Lab Control Sample	Total/NA	Water	I-3765-85	

Analysis Batch: 399207

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
310-264246-10	Gypsum West 005	Total/NA	Water	SM 2540C	
310-264246-11	MH-LF (Leachate)	Total/NA	Water	SM 2540C	
MB 310-399207/1	Method Blank	Total/NA	Water	SM 2540C	
LCS 310-399207/2	Lab Control Sample	Total/NA	Water	SM 2540C	
310-264246-10 DU	Gypsum West 005	Total/NA	Water	SM 2540C	

Lab Chronicle

Client: HR Green, Inc
Project/Site: Landfill 718160J09-0685

Job ID: 310-264246-1

Client Sample ID: MW-06

Lab Sample ID: 310-264246-1

Date Collected: 09/06/23 10:35

Matrix: Water

Date Received: 09/07/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	399730	QTZ5	EET CF	09/13/23 22:54
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		1	399267	DHM5	EET CF	09/11/23 20:19
Total/NA	Analysis	9040C		1	398912	A3GU	EET CF	09/07/23 15:14
Total/NA	Analysis	I-3765-85		1	399109	DGU1	EET CF	09/11/23 08:25
Total/NA	Analysis	SM 2540C		1	398923	D7CP	EET CF	09/07/23 17:34

Client Sample ID: MW-08

Lab Sample ID: 310-264246-2

Date Collected: 09/06/23 10:55

Matrix: Water

Date Received: 09/07/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	399730	QTZ5	EET CF	09/13/23 23:55
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		1	399267	DHM5	EET CF	09/11/23 20:22
Total/NA	Analysis	9040C		1	398912	A3GU	EET CF	09/07/23 15:16
Total/NA	Analysis	I-3765-85		1	399109	DGU1	EET CF	09/11/23 08:25
Total/NA	Analysis	SM 2540C		1	398923	D7CP	EET CF	09/07/23 17:34

Client Sample ID: MW-09

Lab Sample ID: 310-264246-3

Date Collected: 09/06/23 11:30

Matrix: Water

Date Received: 09/07/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	399730	QTZ5	EET CF	09/14/23 00:07
Total/NA	Analysis	9056A		50	399730	QTZ5	EET CF	09/14/23 13:41
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		1	399267	DHM5	EET CF	09/11/23 20:24
Total/NA	Analysis	9040C		1	398912	A3GU	EET CF	09/07/23 15:17
Total/NA	Analysis	I-3765-85		1	399109	DGU1	EET CF	09/11/23 08:25
Total/NA	Analysis	SM 2540C		1	398923	D7CP	EET CF	09/07/23 17:34

Client Sample ID: MW-10

Lab Sample ID: 310-264246-4

Date Collected: 09/06/23 08:35

Matrix: Water

Date Received: 09/07/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	399730	QTZ5	EET CF	09/14/23 00:19
Total/NA	Analysis	9056A		50	399730	QTZ5	EET CF	09/14/23 13:53
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		1	399267	DHM5	EET CF	09/11/23 20:26
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		10	400043	A6US	EET CF	09/19/23 22:48
Total/NA	Analysis	9040C		1	398912	A3GU	EET CF	09/07/23 15:18

Client Sample ID: MW-10
Lab Sample ID: 310-264246-4

Date Collected: 09/06/23 08:35
Matrix: Water
Date Received: 09/07/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	I-3765-85		1	399109	DGU1	EET CF	09/11/23 08:25
Total/NA	Analysis	SM 2540C		1	398923	D7CP	EET CF	09/07/23 17:34

Client Sample ID: MW-11
Lab Sample ID: 310-264246-5

Date Collected: 09/05/23 16:40
Matrix: Water
Date Received: 09/07/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	399730	QTZ5	EET CF	09/14/23 00:31
Total/NA	Analysis	9056A		50	399730	QTZ5	EET CF	09/14/23 14:05
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		1	399267	DHM5	EET CF	09/11/23 20:28
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		10	400043	A6US	EET CF	09/19/23 22:50
Total/NA	Analysis	9040C		1	398912	A3GU	EET CF	09/07/23 15:19
Total/NA	Analysis	I-3765-85		1	398993	DGU1	EET CF	09/08/23 09:50
Total/NA	Analysis	SM 2540C		1	398923	D7CP	EET CF	09/07/23 17:34

Client Sample ID: MW-12R
Lab Sample ID: 310-264246-6

Date Collected: 09/06/23 09:30
Matrix: Water
Date Received: 09/07/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	399730	QTZ5	EET CF	09/14/23 00:43
Total/NA	Analysis	9056A		50	399730	QTZ5	EET CF	09/14/23 14:17
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		1	399267	DHM5	EET CF	09/11/23 20:39
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		10	400043	A6US	EET CF	09/19/23 22:52
Total/NA	Analysis	9040C		1	398912	A3GU	EET CF	09/07/23 15:20
Total/NA	Analysis	I-3765-85		1	399109	DGU1	EET CF	09/11/23 08:25
Total/NA	Analysis	SM 2540C		1	399050	ENB7	EET CF	09/08/23 15:27

Client Sample ID: MW-13R
Lab Sample ID: 310-264246-7

Date Collected: 09/06/23 10:00
Matrix: Water
Date Received: 09/07/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	399730	QTZ5	EET CF	09/14/23 00:55
Total/NA	Analysis	9056A		50	399730	QTZ5	EET CF	09/14/23 14:29
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		1	399267	DHM5	EET CF	09/11/23 20:41
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		10	400043	A6US	EET CF	09/19/23 23:08

Lab Chronicle

Client: HR Green, Inc
Job ID: 310-264246-1
Project/Site: Landfill 718160J09-0685

Client Sample ID: MW-13R
Lab Sample ID: 310-264246-7
Date Collected: 09/06/23 10:00
Matrix: Water
Date Received: 09/07/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9040C		1	398912	A3GU	EET CF	09/07/23 15:21
Total/NA	Analysis	I-3765-85		1	399109	DGU1	EET CF	09/11/23 08:25
Total/NA	Analysis	SM 2540C		1	399050	ENB7	EET CF	09/08/23 15:27

Client Sample ID: MW-26
Lab Sample ID: 310-264246-8
Date Collected: 09/05/23 15:20
Matrix: Water
Date Received: 09/07/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	399730	QTZ5	EET CF	09/14/23 01:07
Total/NA	Analysis	9056A		50	399730	QTZ5	EET CF	09/14/23 14:41
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		1	399267	DHM5	EET CF	09/11/23 20:44
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		10	400043	A6US	EET CF	09/19/23 23:10
Total/NA	Analysis	9040C		1	398912	A3GU	EET CF	09/07/23 15:22
Total/NA	Analysis	I-3765-85		1	398993	DGU1	EET CF	09/08/23 09:50
Total/NA	Analysis	SM 2540C		1	398923	D7CP	EET CF	09/07/23 17:34

Client Sample ID: Fly Ash North 002
Lab Sample ID: 310-264246-9
Date Collected: 09/05/23 17:15
Matrix: Water
Date Received: 09/07/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	399730	QTZ5	EET CF	09/14/23 01:19
Total/NA	Analysis	9056A		50	399730	QTZ5	EET CF	09/14/23 14:54
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		1	399267	DHM5	EET CF	09/11/23 20:48
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		10	400043	A6US	EET CF	09/19/23 23:14
Total/NA	Analysis	9040C		1	398912	A3GU	EET CF	09/07/23 15:23
Total/NA	Analysis	I-3765-85		1	398993	DGU1	EET CF	09/08/23 09:50
Total/NA	Analysis	SM 2540C		1	398923	D7CP	EET CF	09/07/23 17:34

Client Sample ID: Gypsum West 005
Lab Sample ID: 310-264246-10
Date Collected: 09/06/23 11:10
Matrix: Water
Date Received: 09/07/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	399730	QTZ5	EET CF	09/14/23 01:55
Total/NA	Analysis	9056A		50	399730	QTZ5	EET CF	09/14/23 15:06
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		1	399267	DHM5	EET CF	09/11/23 20:50

Lab Chronicle

Client: HR Green, Inc
Job ID: 310-264246-1
Project/Site: Landfill 718160J09-0685

Client Sample ID: Gypsum West 005
Lab Sample ID: 310-264246-10

Date Collected: 09/06/23 11:10
Matrix: Water
Date Received: 09/07/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		10	400043	A6US	EET CF	09/19/23 23:17
Total/NA	Analysis	9040C		1	398912	A3GU	EET CF	09/07/23 15:28
Total/NA	Analysis	I-3765-85		1	399109	DGU1	EET CF	09/11/23 08:25
Total/NA	Analysis	SM 2540C		1	399207	D7CP	EET CF	09/11/23 20:17

Client Sample ID: MH-LF (Leachate)
Lab Sample ID: 310-264246-11

Date Collected: 09/06/23 11:45
Matrix: Water
Date Received: 09/07/23 13:00

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	9056A		5	399730	QTZ5	EET CF	09/14/23 02:07
Total/NA	Analysis	9056A		50	399730	QTZ5	EET CF	09/14/23 15:42
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		1	399267	DHM5	EET CF	09/11/23 20:53
Total/NA	Prep	3005A			398927	KCK5	EET CF	09/08/23 09:40
Total/NA	Analysis	6020B		10	400043	A6US	EET CF	09/19/23 23:19
Total/NA	Analysis	9040C		1	398912	A3GU	EET CF	09/07/23 15:26
Total/NA	Analysis	I-3765-85		1	399109	DGU1	EET CF	09/11/23 08:25
Total/NA	Analysis	SM 2540C		1	399207	D7CP	EET CF	09/11/23 20:17

Laboratory References:

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

Accreditation/Certification Summary

Client: HR Green, Inc
Job ID: 310-264246-1
Project/Site: Landfill 718160J09-0685

Laboratory: Eurofins Cedar Falls

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

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

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte
6020B	3005A	Water	Lithium

Method Summary

Client: HR Green, Inc
Job ID: 310-264246-1
Project/Site: Landfill 718160J09-0685

Method	Method Description	Protocol	Laboratory
9056A	Anions, Ion Chromatography	SW846	EET CF
6020B	Metals (ICP/MS)	SW846	EET CF
9040C	pH	SW846	EET CF
I-3765-85	Residue, Non-filterable (TSS)	USGS	EET CF
SM 2540C	Solids, Total Dissolved (TDS)	SM	EET CF
3005A	Preparation, Total Metals	SW846	EET CF

Protocol References:

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

eurofins | Environment Testing America

310-264246 Chain of Custody

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: HR Green

City/State: CITY | STATE IA | Project:

Receipt Information

Date/Time Received: DATE 9/7/23 | TIME 1300 | Received By: K

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?	☐ 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): +0.0

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

Uncorrected Temp (°C): 1.8 | Corrected Temp (°C): 1.8

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

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

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

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

Additional Comments

eurofins | Environment Testing America

Place COC scanning label here

Cooler/Sample Receipt and Temperature Log Form

Client Information

Client: HRGreen

City/State: CITY | STATE IA | Project:

Receipt Information

Date/Time Received: DATE 9/7/23 | TIME 1300 | Received By: [illegible]

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: 2 | Correction Factor (°C): +0.0

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

Uncorrected Temp (°C): 0.6 | Corrected Temp (°C): 0.6

• **Sample Container Temperature**

	CONTAINER 1	CONTAINER 2
Container(s) used:		
Uncorrected Temp (°C):		
Corrected Temp (°C):		

Exceptions Noted

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

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

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

Additional Comments

Chain of Custody Record

385383

eurofins | Environment Testing TestAmerica

Address _____

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other

TAL-8210

Client Contact	Project Manager: Ross Amundson	Site Contact: Connor Tayler	Date: 9/7/23	COC No: —
Company Name: HR Green Co.	Tel/Email: 319-321-9573	Lab Contact:	Carrier: RTG	1 of 1 COCs
Address: 8710 Earhart Lane SE	Analysis Turnaround Time			Sampler: Tyler Moffitt / Brady Gaul
City/State/Zip: Cedar Rapids, IA 52404	☐ CALENDAR DAYS ☐ WORKING DAYS			For Lab Use Only
Phone: 319-841-4000	TAT if different from Below _____			Walk-in Client:
Fax: 319-841-4012	☐ 2 weeks			Lab Sampling
Project Name: 71860-J	☐ 1 week			
Site: Eddyville, Iowa	☐ 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)														Sample Specific Notes
MW-06	9/6/23	10:35	G	H_2O	3			SEE													
MW-08	9/6	10:55			3			ATTACHED													
MW-09	9/6	11:30			3			PARAMETER													
MW-10	9/6	8:35			3			SHEET													
MW-11	9/5	16:40			3																
MW-12R	9/6	9:30			3																
MW-13R	9/6	10:00			3																
MW-26	9/5	15:20			3																
Fly Ash North 002	9/5	17:15			3																
Gypsum West 005	9/6	11:10			3																
MH-LF (Leachate)	9/6/23	11:45	↓	↓	3																

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: NO SAMPLE SUBMITTED FOR TUNNEL MINE 004

Custody Seals Intact: ☐ Yes ☐ No	Custody Seal No		Cooler Temp (°C) Obs'd _____ Corr'd _____		Therm ID No _____
Relinquished by:	Company: O.A. Tech Svcs	Date/Time: 9/7/23 13:00	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received by:	Company:	Date/Time
Relinquished by:	Company:	Date/Time	Received in Laboratory by	Company:	Date/Time: 9/7/23 1300

Consultant HR Green Company Sampling Date 9/5+6/23/23 Project # 718160J09-0685

Project Manager Rose Amundson Sampled By Tyler Merritt / Randy Gavin

WELL NO	MW- 06	MW-08	MW-09	MW-10	MW-11	MW-12R	MW-13R	MW-26	FlyAsh North #002	Gypsum West #005	Tunnel Mine #004	MH-LF (leachate)
Arsenic, total	X	X	X	X	X	X	X	X	X	X	X	X
barium, total	X	X	X	X	X	X	X	X	X	X	X	X
Beryllium, total	X	X	X	X	X	X	X	X	X	X	X	X
cobalt, total	X	X	X	X	X	X	X	X	X	X	X	X
Copper, total	X	X	X	X	X	X	X	X	X	X	X	X
Iron, total	X	X	X	X	X	X	X	X	X	X	X	X
lead, total	X	X	X	X	X	X	X	X	X	X	X	X
magnesium, total	X	X	X	X	X	X	X	X	X	X	X	X
manganese, total	X	X	X	X	X	X	X	X	X	X	X	X
Selenium, total	X	X	X	X	X	X	X	X	X	X	X	X
zinc, total	X	X	X	X	X	X	X	X	X	X	X	X
sulfate	X	X	X	X	X	X	X	X	X	X	X	X
chloride	X	X	X	X	X	X	X	X	X	X	X	X
boron	X	X	X	X	X	X	X	X	X	X	X	X
calcium	X	X	X	X	X	X	X	X	X	X	X	X
fluoride	X	X	X	X	X	X	X	X	X	X	X	X
lithium	X	X	X	X	X	X	X	X	X	X	X	X
molybedum	X	X	X	X	X	X	X	X	X	X	X	X
TSS	X	X	X	X	X	X	X	X	X	X	X	X
TDS	X	X	X	X	X	X	X	X	X	X	X	X
pH	X	X	X	X	X	X	X	X	X	X	X	X

Sampler: _____ Shipping Date: 9/7/23

Page 1 of 1

Login Sample Receipt Checklist

Client: HR Green, Inc

Job Number: 310-264246-1

Login Number: 264246

List Source: Eurofins Cedar Falls

List Number: 1

Creator: Costello, Mackenzie K

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

APPENDIX B

IDNR SAMPLING FORMS AND FIELD DOCUMENTATION

IDNR Sampling Forms

Low Flow Sampling Forms

SURFACE WATER SAMPLING FORM

Site Name: Cargill Sweeteners - North America CCR Landfill
Permit No.: 62 - SDP - 04 - 89P
Surface Monitoring Point No.: Fly Ash North 002
Date/Time: 9/5/22 17:15
Name of person filling out form: Randy Gavin & Tyler Merritt

A. TYPE OF MONITORING POINT

- ☐ Stream
- ☐ Road Ditch
- ☐ Drainage Ditch
- ☐ Open Tile
- ☐ Tile with Riser
- ☒ Other (describe) Manhole

B. PURPOSE OF MONITORING POINT

- ☐ Upstream
- ☐ Within Landfill
- ☒ Downstream
- ☐ Other (describe)

C. MONITORING POINT CONDITIONS

General description/condition of monitoring point The point is located between monitoring wells MW-10 and MW-11, downstream from the landfill.

Was monitoring point dry? No **Too little water to sample?** No

Was water flowing? ☐ **YES** ☒ **NO**

If yes, estimate quantity _____ **If yes, estimate depth** _____

Was water discolored? ☐ **YES** ☒ **NO**

If yes, describe _____

Does water have odor? ☐ **YES** ☒ **NO**

If yes, describe _____

Was ground discolored? ☐ **YES** ☒ **NO**

If yes, describe _____

Litter present? ☐ **YES** ☒ **NO**

If yes, describe _____

D. FIELD MEASUREMENT

Weather Conditions Clear, 90°F, SSE 15-25 mph, 29.7" Hg

Field Measurements (after stabilization):

Temperature 25.04 **Units** °C

Equipment Used Horiba U-50 Series Multiparameter Water Quality Meter

pH 6.43 **Equipment Used** Horiba U-50 Series Multiparameter Water Quality Meter

Specific Conditions 3333.7 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E. 9th St, Des Moines, IA 50319.
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 06

Upgradient X **Downgradient**

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [ ] **Yes** [X] **No**

If yes, explain

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 810.52 **Ground Elevation** - - - -

Depth of Well 78.40 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/6/2023 10:30	37.98	772.54
***After Purging**	- - - -	- - - -	- - - -
***Before Purging**	9/6/2023 10:30	37.98	772.54

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) - - - -

No. of Well Volumes (based on current water level) - - - -

Was well pumped/bailed dry? No

Equipment used:

Bailer type Discreet Interval Poly Bailer **Dedicated Bailer?** No

Pump type **Dedicated Pump?**

If not dedicated, method of cleaning Disposable

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

***D. FIELD MEASUREMENT**

Weather Conditions Clear, 67°F, W wind @ 15-20 mph, 29.9" Hg

Field Measurements (after stabilization):

Temperature 14.91 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 6.94

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 1,094.3 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

No purge protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 9/18/2023

Telephone 563-852-5105 **Fax** **Email** oatech@netins.net

NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 08

Upgradient **Downgradient** X

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [ ] **Yes** [X] **No**

If yes, explain

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 808.01 **Ground Elevation** - - - -

Depth of Well 60.22 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/6/2023 10:53	41.00	767.01
***After Purging**	- - - -	- - - -	- - - -
***Before Purging**	9/6/2023 10:53	41.00	767.01

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) - - - -

No. of Well Volumes (based on current water level) - - - -

Was well pumped/bailed dry? No

Equipment used:

Bailer type Discreet Interval Poly Bailer **Dedicated Bailer?** No

Pump type **Dedicated Pump?**

If not dedicated, method of cleaning Disposable

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

*D. FIELD MEASUREMENT

Weather Conditions Clear, 67°F, WNW wind @ 15-25 mph, 29.9" Hg

Field Measurements (after stabilization):

Temperature 15.16 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 6.71

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 1,000.1 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

No purge protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 9/18/2023

Telephone 563-852-5105 **Fax** **Email** oatech@netins.net

NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

Please mail completed form to: Iowa Department of Natural Resources, Land Quality Bureau, 502 E 9th St, Des Moines IA 50319
Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 09

Upgradient **Downgradient** X

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [ ] **Yes** [X] **No**

If yes, explain

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 748.75 **Ground Elevation** - - - -

Depth of Well 35.60 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/6/2023 11:28	21.32	727.43
***After Purging**	- - - -	- - - -	- - - -
***Before Purging**	9/6/2023 11:28	21.32	727.43

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) - - - -

No. of Well Volumes (based on current water level) - - - -

Was well pumped/bailed dry? No

Equipment used:

Bailer type Discreet Interval Poly Bailer **Dedicated Bailer?** No

Pump type **Dedicated Pump?**

If not dedicated, method of cleaning Disposable

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*D. FIELD MEASUREMENT

Weather Conditions Clear, 67°F, WNW wind @ 15-25 mph, 29.9" Hg

Field Measurements (after stabilization):

Temperature 15.19 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 6.74

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 1,772.3 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

No purge protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 9/18/2023

Telephone 563-852-5105 **Fax** **Email** oatech@netins.net

NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

*Omit if only measuring groundwater elevations.

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GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 10

Upgradient **Downgradient** X

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [ ] **Yes** [X] **No**

If yes, explain

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 771.49 **Ground Elevation** - - - -

Depth of Well 46.80 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/6/2023 7:34	34.10	737.39
***After Purging**	9/6/2023 8:32	34.26	737.23
***Before Purging**	9/6/2023 8:32	34.26	737.23

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) 1.75

No. of Well Volumes (based on current water level) 0.84

Was well pumped/bailed dry? No

Equipment used:

Bailer type **Dedicated Bailer?**

Pump type QED Sample Pro Bladder Pump **Dedicated Pump?** No

If not dedicated, method of cleaning Liquinox detergent scrub, then a triple deionized water rinse

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*D. FIELD MEASUREMENT

Weather Conditions Overcast, 66°F, W winds @ 10-15 mph, 29.9" Hg

Field Measurements (after stabilization):

Temperature 15.49 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 6.05

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 2,438.1 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

Low flow protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 9/18/2023

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NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

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GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 11

Upgradient **Downgradient** X

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [X] **Yes** [ ] **No**

If yes, explain The well will be extended and regraded for better drainage.

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 755.25 **Ground Elevation** - - - -

Depth of Well 34.12 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/5/2023 15:58:00 PM	24.82	730.43
***After Purging**	9/5/2023 16:30:00 PM	26.46	728.79
***Before Purging**	9/5/2023 16:30:00 PM	26.46	728.79

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) 1.00

No. of Well Volumes (based on current water level) 0.65

Was well pumped/bailed dry? No

Equipment used:

Bailer type **Dedicated Bailer?**

Pump type Geotech Geopump Peristaltic Pump **Dedicated Pump?** No

If not dedicated, method of cleaning Triple deionized water rinse

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Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

*D. FIELD MEASUREMENT

Weather Conditions Partly cloudy, 90°F, S wind @ 15-20 mph, 29.7" Hg

Field Measurements (after stabilization):

Temperature 23.42 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 6.04

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 2,019.4 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

Low flow protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 9/18/2023

Telephone 563-852-5105 **Fax** **Email** oatech@netins.net

NOTE: Attach Laboratory Report and 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

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GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 12R

Upgradient **Downgradient** X

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [ ] **Yes** [X] **No**

If yes, explain

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 811.53 **Ground Elevation** - - - -

Depth of Well 78.70 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/6/2023 9:27	65.55	745.98
***After Purging**	9/6/2023 9:03	65.78	745.75
***Before Purging**	9/6/2023 9:27	65.78	745.75

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) 0.73

No. of Well Volumes (based on current water level) 0.34

Was well pumped/bailed dry? No

Equipment used:

Bailer type **Dedicated Bailer?**

Pump type QED Sample Pro Bladder Pump **Dedicated Pump?** No

If not dedicated, method of cleaning Liquinox detergent scrub, then a triple deionized water rinse

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*D. FIELD MEASUREMENT

Weather Conditions Overcast, 67°F, WNW winds 10-15 mph, 29.9" Hg

Field Measurements (after stabilization):

Temperature 16.64 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 6.09

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 3,508.0 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

Low flow protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 9/18/2023

Telephone 563-852-5105 **Fax** **Email** oatech@netins.net

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GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 13R

Upgradient **Downgradient** X

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [ ] **Yes** [X] **No**

If yes, explain

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 812.54 **Ground Elevation** - - - -

Depth of Well 77.85 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/6/2023 9:58	59.63	752.91
***After Purging**	- - - -	- - - -	- - - -
***Before Purging**	9/6/2023 9:58	59.63	752.91

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) - - - -

No. of Well Volumes (based on current water level) - - - -

Was well pumped/bailed dry? No

Equipment used:

Bailer type Discreet Interval Poly Bailer **Dedicated Bailer?** No

Pump type **Dedicated Pump?**

If not dedicated, method of cleaning Disposable

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*D. FIELD MEASUREMENT

Weather Conditions Clear, 67°F, W winds 15-20 mph, 29.9" Hg

Field Measurements (after stabilization):

Temperature 16.16 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 6.23

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 3,132.9 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

No purge protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 9/18/2023

Telephone 563-852-5105 **Fax** **Email** oatech@netins.net

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GROUNDWATER SAMPLING AND/OR GROUNDWATER ELEVATION MEASUREMENT FORM

Site Name Cargill Sweeteners - North America CCR Landfill **Permit No.** 62 - SDP - 04 - 89P

Monitoring Well/Piezometer No. MW - 26

Upgradient **Downgradient** X

Name of person sampling Randy Gavin and Tyler Merritt

A. MONITORING WELL/PIEZOMETER CONDITIONS

Well/Piezometer Properly Capped? (please check) [X] **Yes** [ ] **No**

If no, explain

Standing Water or Litter? (please check) [ ] **Yes** [X] **No**

If yes, explain

B. GROUNDWATER ELEVATION MEASUREMENT (± 0.01 foot, MSL)

Elevation:

Top of inner well casing 749.20 **Ground Elevation** - - - -

Depth of Well 27.00 **Inside Casing Diameter** (in inches) 2.00

Equipment Used Solinst 101 P7 Water Level Meter

Groundwater Level (± 0.01 foot below top of inner casing, MSL):

	Date/Time	Depth to Groundwater	Groundwater Elevation
Before Purging	9/5/2023 14:58:00 PM	21.06	728.14
***After Purging**	9/5/2023 15:14:00 PM	21.43	727.77
***Before Purging**	9/5/2023 15:14:00 PM	21.43	727.77

*C. WELL PURGING

Quantity of Water Removed from Well (gallons) 0.53

No. of Well Volumes (based on current water level) 0.55

Was well pumped/bailed dry? No

Equipment used:

Bailer type **Dedicated Bailer?**

Pump type Geotech Geopump Peristaltic Pump **Dedicated Pump?** No

If not dedicated, method of cleaning Triple deionized water rinse

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*D. FIELD MEASUREMENT

Weather Conditions Clear, 90°F, SSE wind @ 15-25 mph, 29.7" Hg

Field Measurements (after stabilization):

Temperature 20.75 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 4.68

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conductance 2,942.8 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Comments

Low flow protocol.

Certification

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature Randy Gavin **Date** 9/18/2023

Telephone 563-852-5105 **Fax** **Email** oatech@netins.net

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Comments

Sample obtained through manhole.

CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature _____ **Date** 9/18/23

Telephone 563 852 5105 **Fax** _____ **Email** oatech@netins.net

NOTE: Attach 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

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SURFACE WATER SAMPLING FORM

Site Name: Cargill Sweeteners - North America CCR Landfill
Permit No.: 62 - SDP - 04 - 89P
Surface Monitoring Point No.: Tunnel Mine 004
Date/Time: 9/6/2023 11:00
Name of person filling out form: Randy Gavin & Tyler Merritt

A. TYPE OF MONITORING POINT

- ☐ Stream
- ☐ Road Ditch
- ☐ Drainage Ditch
- ☒ Open Tile
- ☐ Tile with Riser
- ☐ Other (describe)

B. PURPOSE OF MONITORING POINT

- ☐ Upstream
- ☐ Within Landfill
- ☒ Downstream
- ☐ Other (describe)

C. MONITORING POINT CONDITIONS

General description/condition of monitoring point The point is located near the West fence where the natural drainage exits the property, downstream from the landfill.

Was monitoring point dry? No **Too little water to sample?** Yes

Was water flowing? ☒ **YES** ☐ **NO**

If yes, estimate quantity <20 mL/min **If yes, estimate depth**

Was water discolored? ☐ **YES** ☒ **NO**

If yes, describe

Does water have odor? ☐ **YES** ☒ **NO**

If yes, describe

Was ground discolored? ☒ **YES** ☐ **NO**

If yes, describe Red, rust color

Litter present? ☐ **YES** ☒ **NO**

If yes, describe

D. FIELD MEASUREMENT

Weather Conditions Cloudy, 67°F, WNW 15-25 mph, 29.9" Hg

Field Measurements (after stabilization):

Temperature --- **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH --- **Equipment Used** In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conditions --- **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

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Comments

No sample submitted

CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature _____ **Date** 9/18/23

Telephone 563 852 5105 **Fax** _____ **Email** oatech@netins.net

NOTE: Attach 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

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SURFACE WATER SAMPLING FORM

Site Name: Cargill Sweeteners - North America CCR Landfill | Permit No.: 62 - SDP - 04 - 89P

Surface Monitoring Point No.: Gypsum West 005 | Date/Time: 9/6/22 11:10

Name of person filling out form: Randy Gavin & Tyler Merritt

A. TYPE OF MONITORING POINT

- ☐ Stream
- ☐ Road Ditch
- ☐ Drainage Ditch
- ☒ Open Tile
- ☐ Tile with Riser
- ☐ Other (describe)

B. PURPOSE OF MONITORING POINT

- ☐ Upstream
- ☐ Within Landfill
- ☒ Downstream
- ☐ Other (describe)

C. MONITORING POINT CONDITIONS

General description/condition of monitoring point The point is located near the West fence where the natural drainage exits the property, downstream from the landfill.

Was monitoring point dry? No **Too little water to sample?** No

Was water flowing? ☒ **YES** ☐ **NO**

If yes, estimate quantity 325 mL/min **If yes, estimate depth**

Was water discolored? ☐ **YES** ☒ **NO**

If yes, describe

Does water have odor? ☐ **YES** ☒ **NO**

If yes, describe

Was ground discolored? ☒ **YES** ☐ **NO**

If yes, describe Red, rust color

Litter present? ☐ **YES** ☒ **NO**

If yes, describe

D. FIELD MEASUREMENT

Weather Conditions Cloudy, 67°F, WNW 15-25 mph, 29.9" Hg

Field Measurements (after stabilization):

Temperature 17.04 **Units** °C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

pH 6.29 **Equipment Used** In-Situ AquaTroll 500 Multiparameter Water Quality Meter

Specific Conditions 2620.8 **Units** µmhos/cm @ 25°C

Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

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Comments

CERTIFICATION

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Signature _____ **Date** 9/18/23

Telephone 563 852 5105 **Fax** _____ **Email** oatech@netins.net

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SURFACE WATER SAMPLING FORM

Site Name: Cargill Sweeteners - North America CCR Landfill
Permit No.: 62 - SDP - 04 - 89P
Surface Monitoring Point No.: MH-LF Leachate
Date/Time: 9/6/23 11:45
Name of person filling out form: Randy Gavin & Tyler Merritt

A. TYPE OF MONITORING POINT

- ☐ Stream
- ☐ Road Ditch
- ☐ Drainage Ditch
- ☐ Open Tile
- ☐ Tile with Riser
- ☒ Other (describe): Weir structure

B. PURPOSE OF MONITORING POINT

- ☐ Upstream
- ☐ Within Landfill
- ☒ Downstream
- ☐ Other (describe):

C. MONITORING POINT CONDITIONS

General description/condition of monitoring point: The point is located is upstream of the leachate lagoon.

Was monitoring point dry? No
Too little water to sample? No
Was water flowing? ☒ YES ☐ NO
If yes, estimate quantity 1000 mL/min +/-
If yes, estimate depth
Was water discolored? ☐ YES ☒ NO
If yes, describe
Does water have odor? ☐ YES ☒ NO
If yes, describe
Was ground discolored? ☐ YES ☒ NO
If yes, describe N/A
Litter present? ☐ YES ☒ NO
If yes, describe

D. FIELD MEASUREMENT

Weather Conditions: Cloudy 67°F, WNW 15-25 mph 29.9" Hg

Field Measurements (after stabilization):

Temperature 16.57 **Units** °C
Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter
pH 7.29 **Equipment Used** In-Situ AquaTroll 500 Multiparameter Water Quality Meter
Specific Conditions 4813.5 **Units** µmhos/cm @ 25°C
Equipment Used In-Situ AquaTroll 500 Multiparameter Water Quality Meter

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Questions? Call or Email: Nina Booker Environmental Engineer Sr., 515-725-8309, nina.booker@dnr.iowa.gov

Comments

CERTIFICATION

I certify under penalty of law I believe the information reported above is true, accurate and complete.

Signature _____ **Date** 9/18/23

Telephone 563 852 5105 **Fax** _____ **Email** oatech@netins.net

NOTE: Attach 8 ½" x 11" site plan showing locations of all surface and groundwater monitoring points. One map per sampling round.

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LOW FLOW SAMPLING FORM

DATE	9/6/2023	WELL ID	MW-06	SAMPLE DATE / TIME	9/6/2023 10:35
SITE	Cargill CCR Landfill	DTW	37.98	NOTE	No Purge
PROJECT #	718160J09-0685	WELL DEPTH	78.40		
WEATHER	Cloudy, 67°F, W wind @ 15-25 mph, 29.9" H	PUMP TYPE	Discreet Interval Bailer	DEPTH TO INTAKE	73.4'

TIME	PURGE RATE(r	VOL REMOVED(m	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
10:39			37.98	14.91	6.94	64.8	1094.3	6.31	6.99	
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3	1	
NaOH		
None	2	

LOW FLOW SAMPLING FORM

DATE	9/6/2023	WELL ID	MW-08	SAMPLE DATE / TIME	9/6/2023 10:55
SITE	Cargill CCR Landfill	DTW	41.00 new elevation	NOTE	No Purge
PROJECT #	718160J09-0685	WELL DEPTH	60.22		
WEATHER	Cloudy, 67°F, W wind @ 15-25 mph, 29.9" H	PUMP TYPE	Discreet Interval Bailer	DEPTH TO INTAKE	56'

TIME	PURGE RATE(r	VOL REMOVED(m	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
11:00			41.00	15.16	6.71	77.9	1000.10	55.26	5.89	
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3	1	
NaOH		
None	2	

LOW FLOW SAMPLING FORM

DATE	9/6/2023	WELL ID	MW-09	SAMPLE DATE / TIME	9/3/2023 11:30
SITE	Cargill CCR Landfill	DTW	21.32	NOTE	No Purge
PROJECT #	718160J09-0685	WELL DEPTH	35.60		
WEATHER	Cloudy, 67°F, W wind @ 15-25 mph, 29.9" H	PUMP TYPE	Discreet Interval Bailer	DEPTH TO INTAKE	30'

TIME	PURGE RATE(r	VOL REMOVED(m	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
11:34			21.32	15.19	6.74	7.6	1772.5	15.45	6.42	
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3	1	
NaOH		
None	2	

LOW FLOW SAMPLING FORM

DATE	9/6/2023	WELL ID	MW-10	SAMPLE DATE / TIME	9/6/2023 8:35
SITE	Cargill CCR Landfill	DTW	34.10	NOTE	
PROJECT #	718160J09-0685	WELL DEPTH	46.80		
WEATHER	Overcast, 67°F, W wind @ 10-15 mph, 29.9'	PUMP TYPE	QED Bladder Pump	DEPTH TO INTAKE	42'

TIME	PURGE RATE(r	VOL REMOVED(m	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
7:39										
7:44	125	625	34.24	16.79	6.03	241.7	2686.8	39.83	1.35	
7:48	125	1125	34.24	16.13	6.05	235.4	2571.7	42.81	0.80	
7:52	125	1625	34.27	15.83	6.05	222.5	2538.9	36.66	0.74	
7:56	125	2125	34.26	15.70	6.05	207.1	2510.8	32.00	0.61	
8:00	125	2625	34.28	15.74	6.04	192.0	2491.9	38.72	0.61	
8:04	125	3125	34.28	15.62	6.04	178.5	2481.40	59.8	0.52	
8:08	125	3625	34.26	15.75	6.03	166.0	2470.70	50.3	0.49	
8:12	125	4125	34.26	15.70	6.03	155.6	2462.30	33.2	0.45	
8:16	125	4625	34.26	15.71	6.03	147.0	2453.50	21.0	0.43	
8:20	125	5125	34.27	15.63	6.04	140.1	2450.10	14.3	0.43	
8:24	125	5625	34.28	15.67	6.04	134.2	2448.00	10.9	0.45	
8:28	125	6125	34.28	15.59	6.04	129.5	2441.70	10.2	0.43	
8:32	125	6625	34.26	15.49	6.05	125.6	2438.10	10.5	0.44	
8:50			34.27							After Sampling
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3	1	
NaOH		
None	2	

LOW FLOW SAMPLING FORM

DATE	9/5/2023	WELL ID	MW-11	SAMPLE DATE / TIME	9/5/23 16:40:00 PM
SITE	Cargill CCR Landfill	DTW	24.82	NOTE	
PROJECT #	718160J09-0685	WELL DEPTH	34.12		
WEATHER	Partly cloudy, 90°F, S wind @ 15-20 mph, 2	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	24'

TIME	PURGE RATE(r	VOL REMOVED(m	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
16;00										
16:08	100	800	25.00	25.23	6.12	123.1	2076.7	265.80	0.99	
16:13	100	1300	25.43	24.48	6.08	31.4	2068.7	272.79	0.69	
16:18	100	1800	25.52	23.84	6.07	-7.7	2048.4	331.24	0.54	
16:23	100	2300	25.65	23.44	6.06	-25.1	2030.0	357.22	0.46	
16:28	100	2800	25.93	22.97	6.06	-34.3	2023.3	326.44	0.45	
16:33	100	3300	26.21	23.13	6.05	-39.9	2019.2	333.69	0.44	
16:38	100	3800	26.46	23.42	6.04	-43.8	2019.4	348.71	0.46	
17:03			27.41							After Sampling
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*Limits*
									or +/-0.2 mg	

Preservative	# of Containers	
HCl		
HNO_3	1	
NaOH		
None	2	

LOW FLOW SAMPLING FORM

DATE	9/6/2023	WELL ID	MW-12R	SAMPLE DATE / TIME	9/6/2023 9:30
SITE	Cargill CCR Landfill	DTW	65.55	NOTE	
PROJECT #	718160J09-0685	WELL DEPTH	78.70		
WEATHER	Overcast, 67°F, W wind @ 10-15 mph, 29.9'	PUMP TYPE	QED Bladder Pump	DEPTH TO INTAKE	74'

TIME	PURGE RATE(r	VOL REMOVED(m	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
9:05										
9:11	125	750	65.77	17.66	6.10	141.8	3495.4	19.43	1.25	
9:15	125	1250	65.78	17.03	6.11	136.3	3505.6	26.17	0.83	
9:19	125	1750	65.80	16.81	6.10	132.2	3509.2	6.21	0.51	
9:23	125	2250	65.81	16.71	6.09	129.0	3522.0	5.89	0.44	
9:27	125	2750	65.78	16.64	6.09	126.2	3508.0	6.16	0.40	sand on pump & probe
9:40			65.85							After Sampling
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10%*	*Limits*
									or +/-0.2 mg	

Preservative	# of Containers	
HCl		
HNO_3	1	
NaOH		
None	2	

LOW FLOW SAMPLING FORM

DATE	9/6/2023	WELL ID	MW-13R	SAMPLE DATE / TIME	9/6/2023 10:00
SITE	Cargill CCR Landfill	DTW	59.63	NOTE	No Purge
PROJECT #	718160J09-0685	WELL DEPTH	77.85		
WEATHER	Clear, 67°F, W wind @ 15-20 mph, 29.9" Hg	PUMP TYPE	Discreet Interval Bailer	DEPTH TO INTAKE	74'

TIME	PURGE RATE(r	VOL REMOVED(m	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
10:11			59.63	16.16	6.23	126.3	3132.9	163.25	4.80	
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3	1	
NaOH		
None	2	

LOW FLOW SAMPLING FORM

DATE	9/5/2023	WELL ID	MW-26	SAMPLE DATE / TIME	9/5/2023 15:20:00 PM
SITE	Cargill CCR Landfill	DTW	21.06	NOTE	
PROJECT #	718160J09-0685	WELL DEPTH	27.00		
WEATHER	Clear, 90°F, SSE wind @ 15-25 mph, 29.7" H	PUMP TYPE	GeoTech Peristaltic	DEPTH TO INTAKE	24'

TIME	PURGE RATE(r	VOL REMOVED(m	DTW	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
15:00										
15:04	125	500	21.18	23.14	4.65	257.2	2910.1	3.10	0.84	
15:08	125	1000	21.25	20.29	4.76	253.8	2932.6	1.39	0.66	
15:12	125	1500	21.35	20.65	4.71	258.3	2960.3	3.72	0.62	
15:16	125	2000	21.43	20.75	4.68	260.7	2942.8	2.29	0.59	
15:38			21.79							After Sampling
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

Preservative	# of Containers	
HCl		
HNO_3	1	
NaOH		
None	2	

LOW FLOW SAMPLING FORM

DATE	9/5/23 & 9/6/23	WELL ID	GU underdrains	SAMPLE DATE / TIME	see below
SITE	Cargill CCR Landfill	DTW		NOTE	
PROJECT #	718160J09-0685	WELL DEPTH			
WEATHER	9/5-Partly cloudy, 90°F, S wind @ 15-20 mp	PUMP TYPE	Peristaltic - outlet grab	DEPTH TO INTAKE	N/A
	9/6-Cloudy, 67°F, W wind @ 15-25 mph, 29				

ID		Sample Date	Sample Time	TEMP	Ph	ORP	SpecCond	Turbidity	DO	NOTES
FlyAsh North 002		9/5/2023	17:15	25.04	6.43	-27.8	3333.7	7.59	1.68	Sampled from manhole with peristaltic
Tunnel Mine 004		9/6/2023	11:00							Insufficient flow-no sample
Gypsum West 005		9/6/2023	11:10	17.09	6.29	115.9	2620.8	1.16	7.61	Flow @ 325 mL/min. Sampled directly from tile outlet
MH-LF (leachate)		9/6/2023	11:45	16.57	7.29	-3.4	4813.50	56.69	6.00	Sampled from strructure with peristaltic
0.5-5.0 min	*200-500 ml*	*- - -*	*minimize*	*- - -*	*+/- 0.1*	*+/-10 mV*	*+/- 3%*	*+/- 10%*	*+/- 10% or +/-0.2 mg*	*Limits*

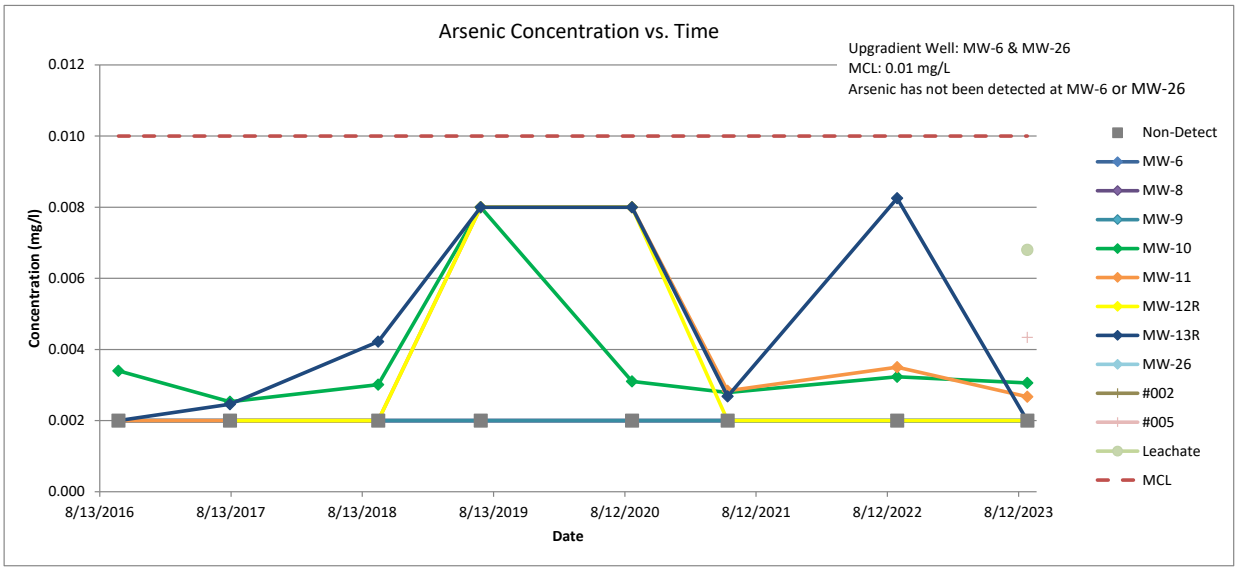
Preservative	# of Containers	
HCl		
HNO_3	1	
NaOH		
None	2	

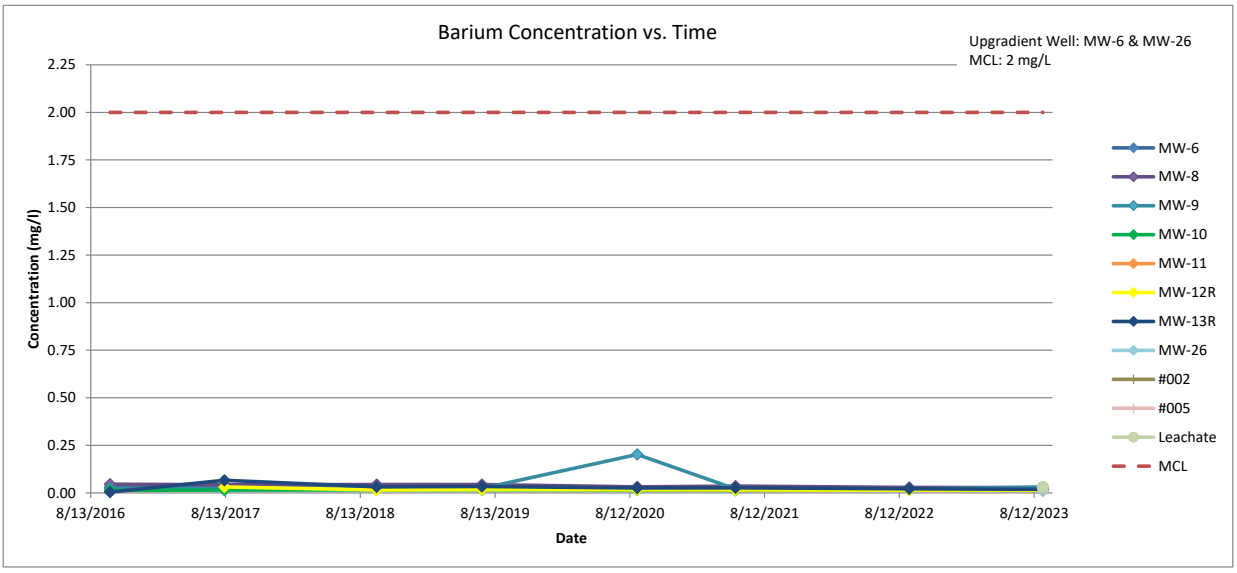
APPENDIX C

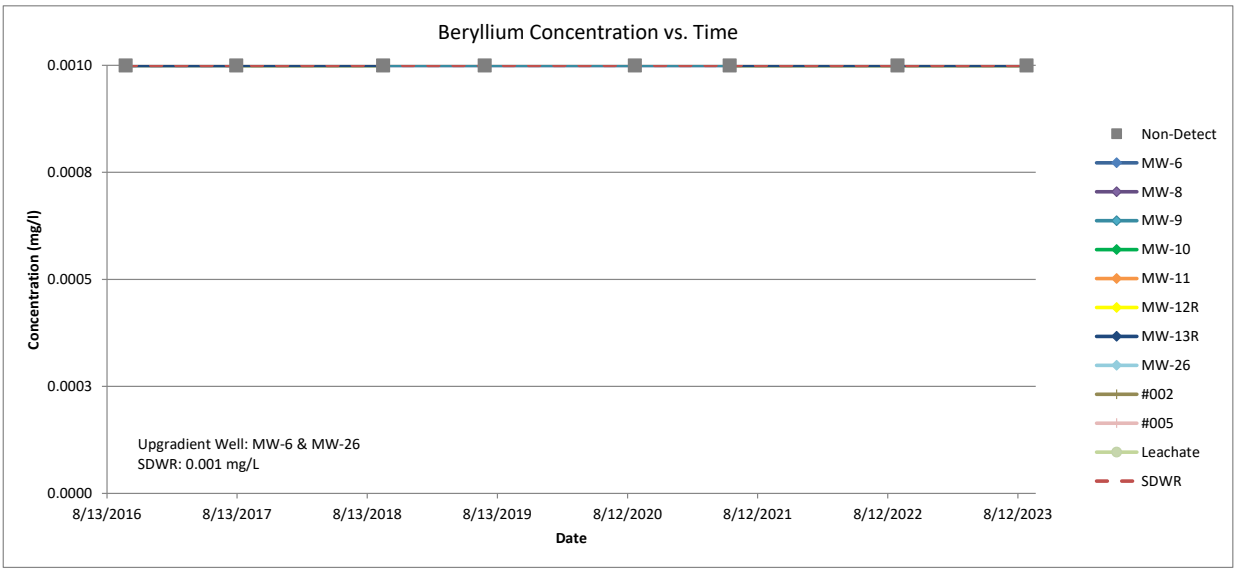
HISTORICAL GROUNDWATER WATER QUALITY FIGURES

Groundwater Results Over Time

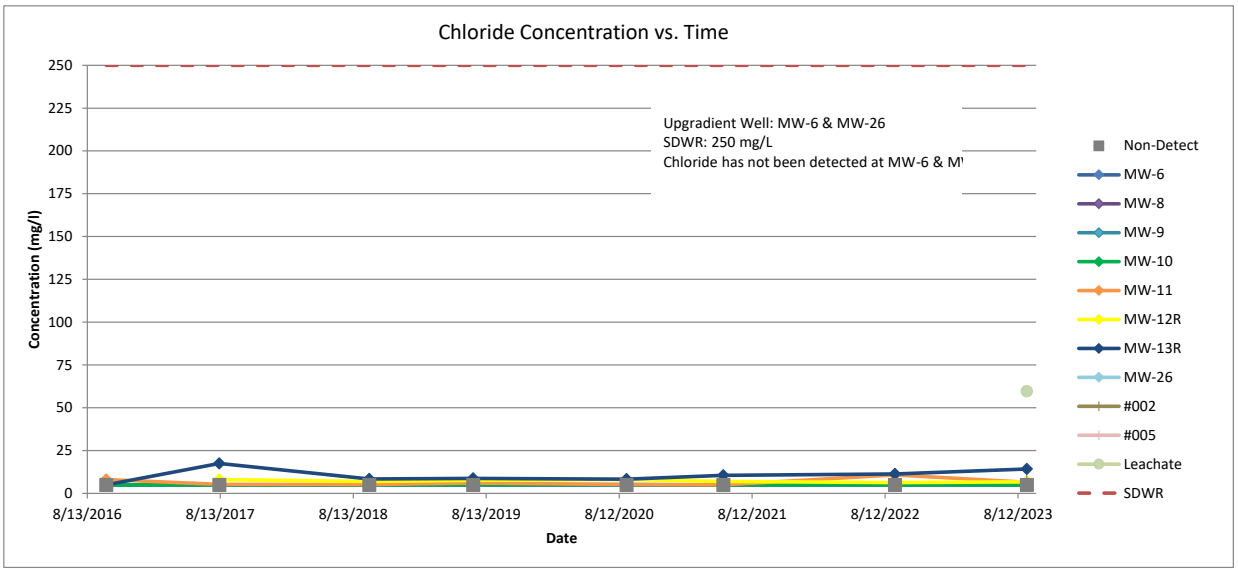
Appendix C
Historical Water Quality Plots

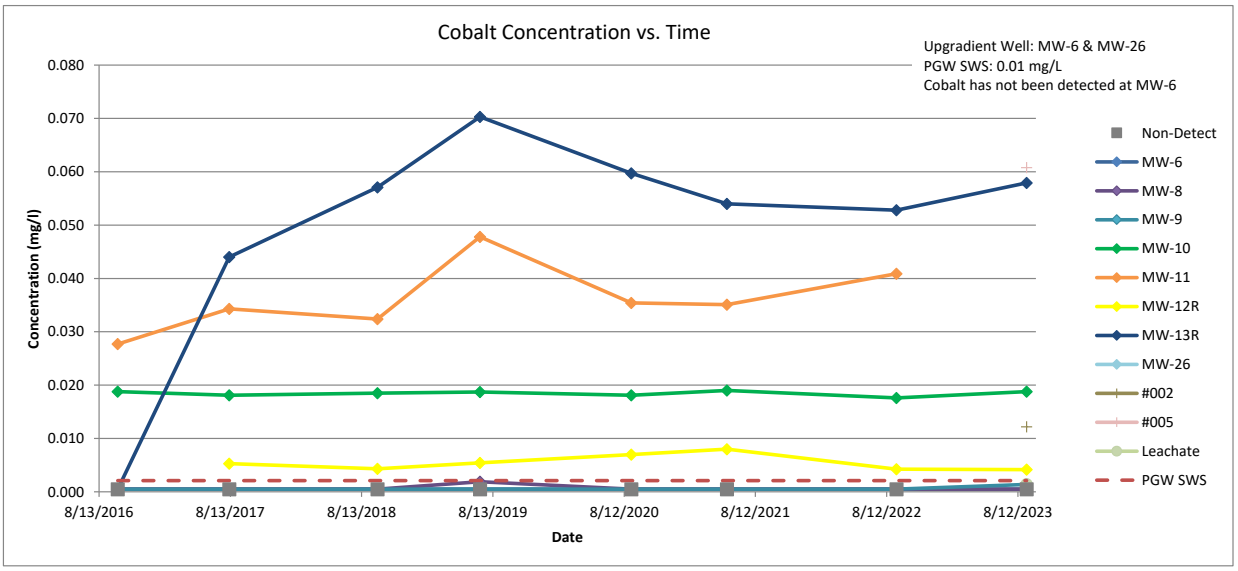


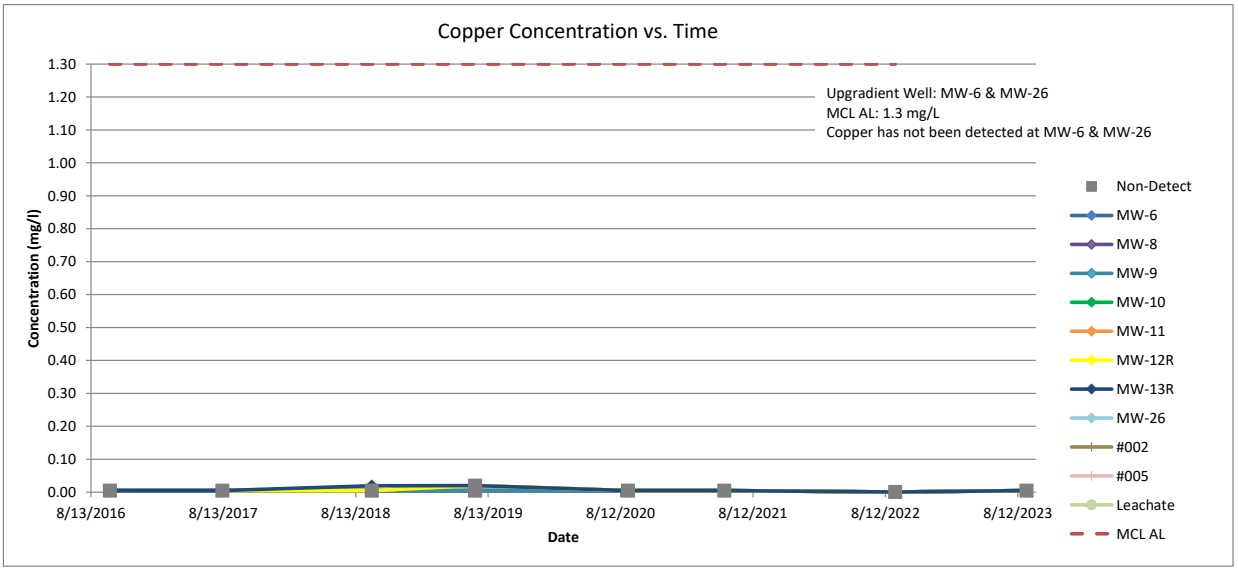




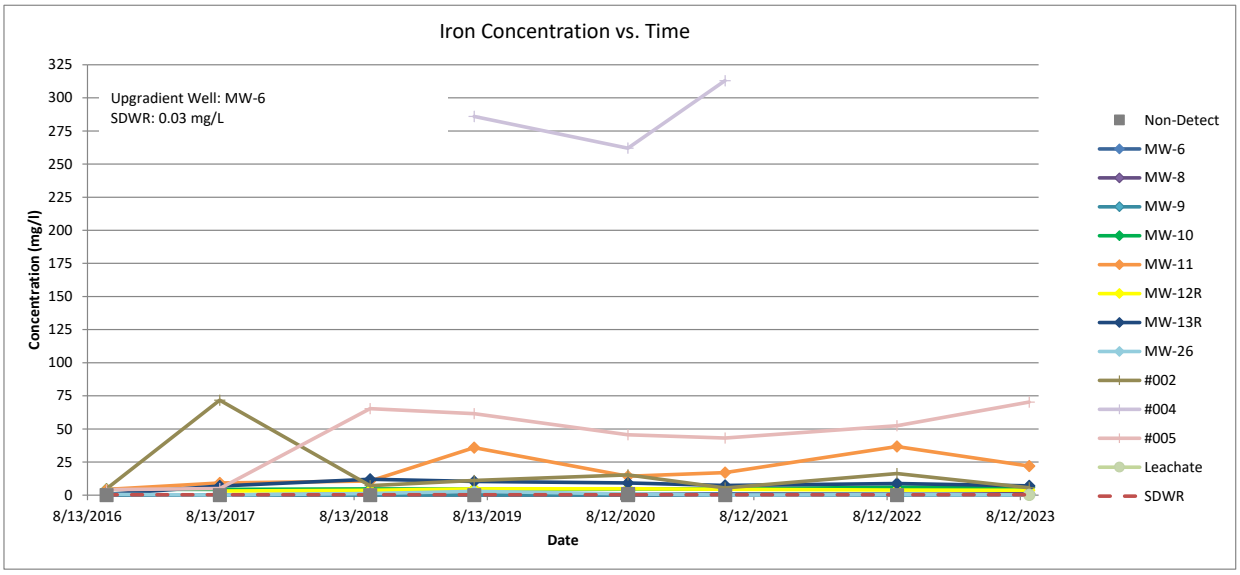
Appendix C
Historical Water Quality Plots

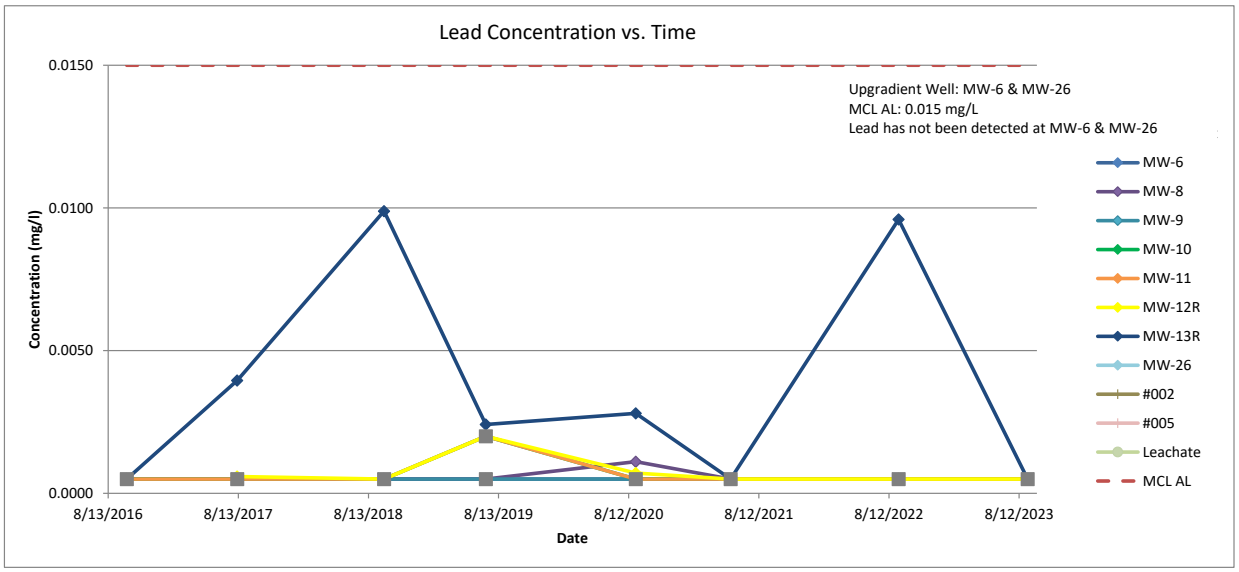


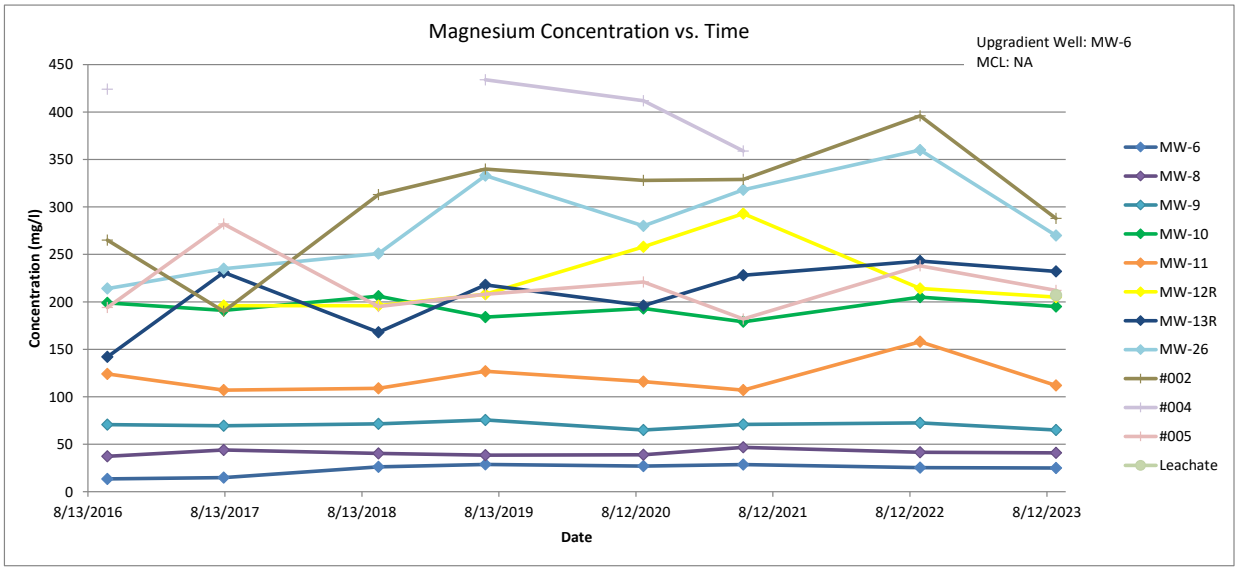




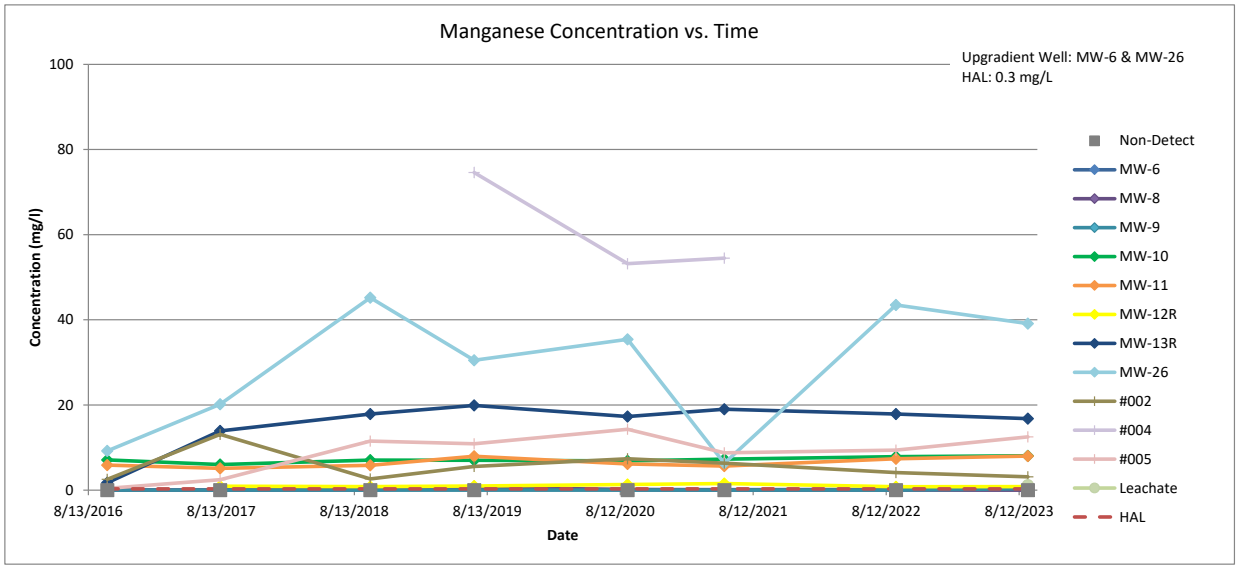
Appendix C
Historical Water Quality Plots

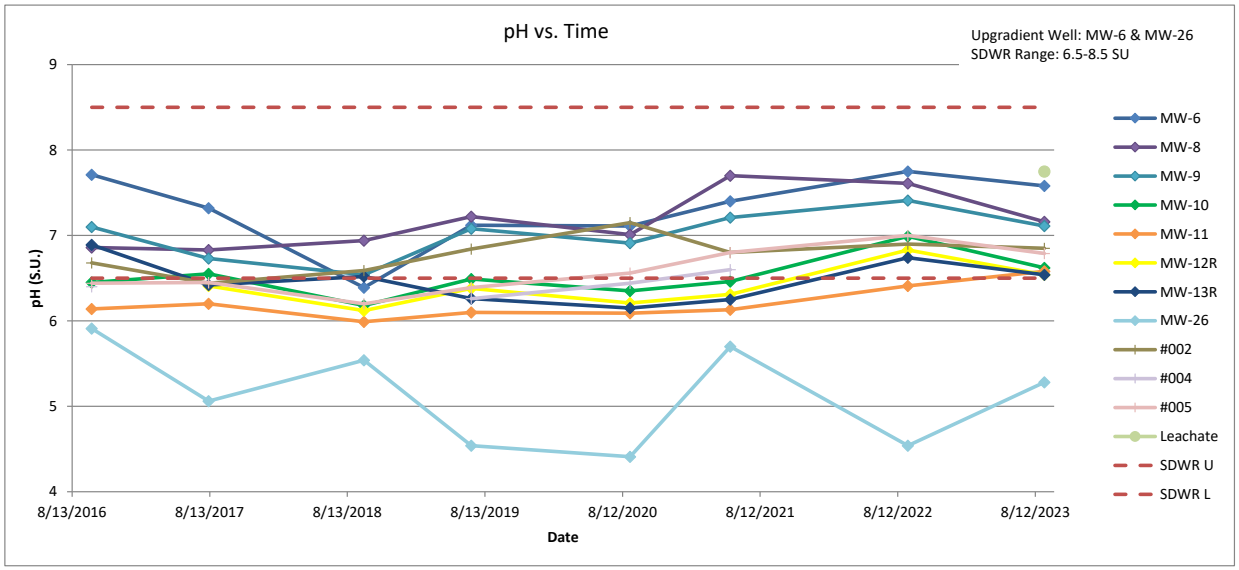


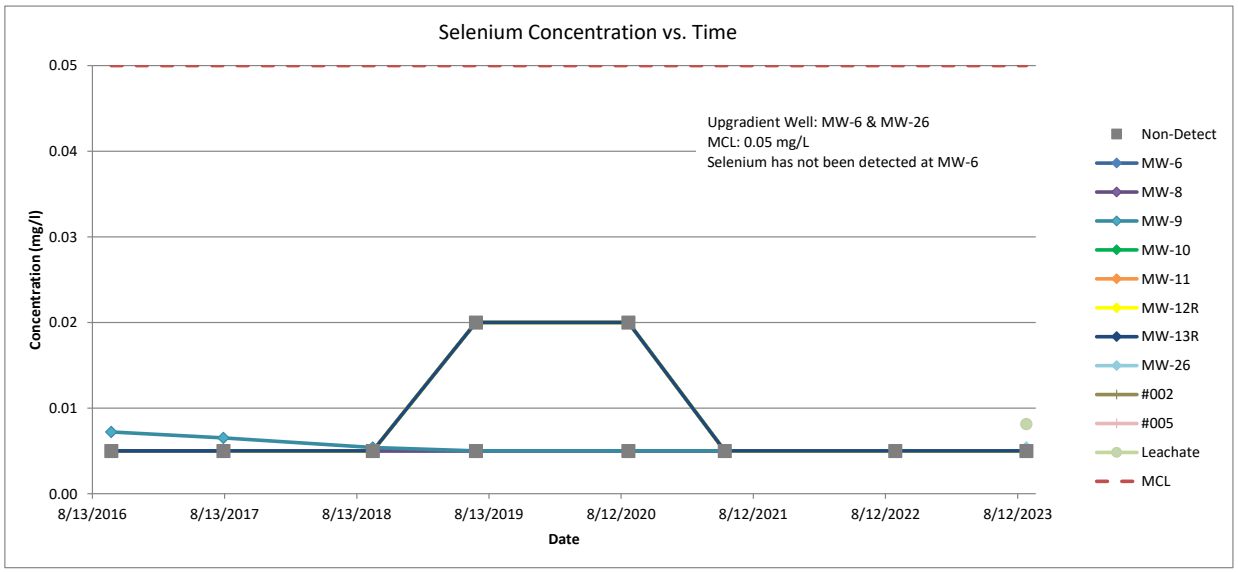




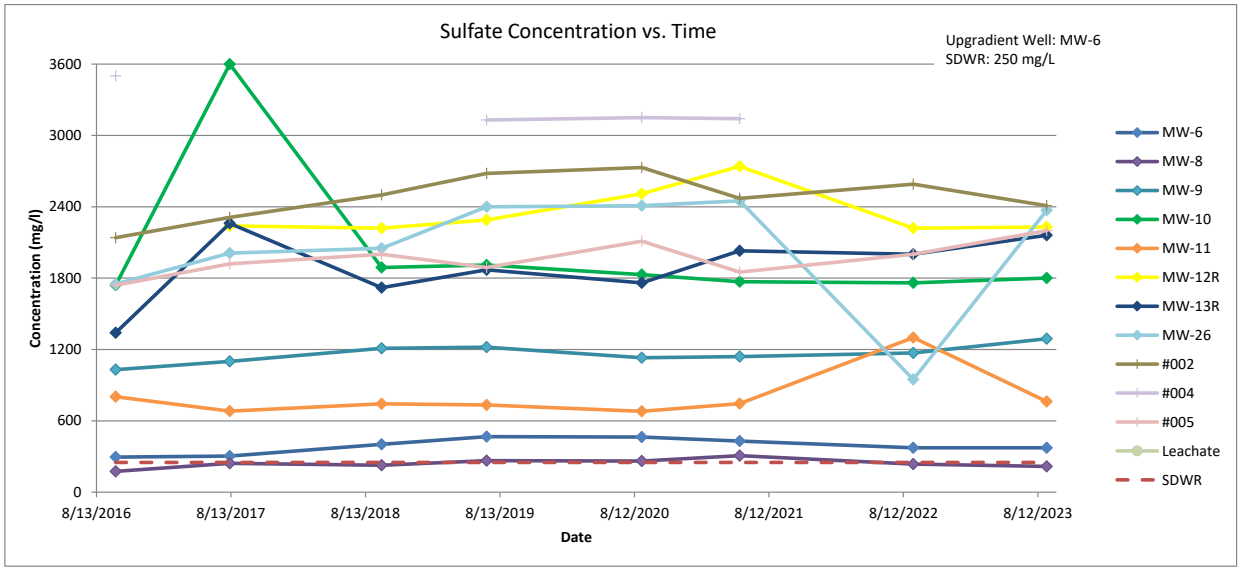
Appendix C
Historical Water Quality Plots

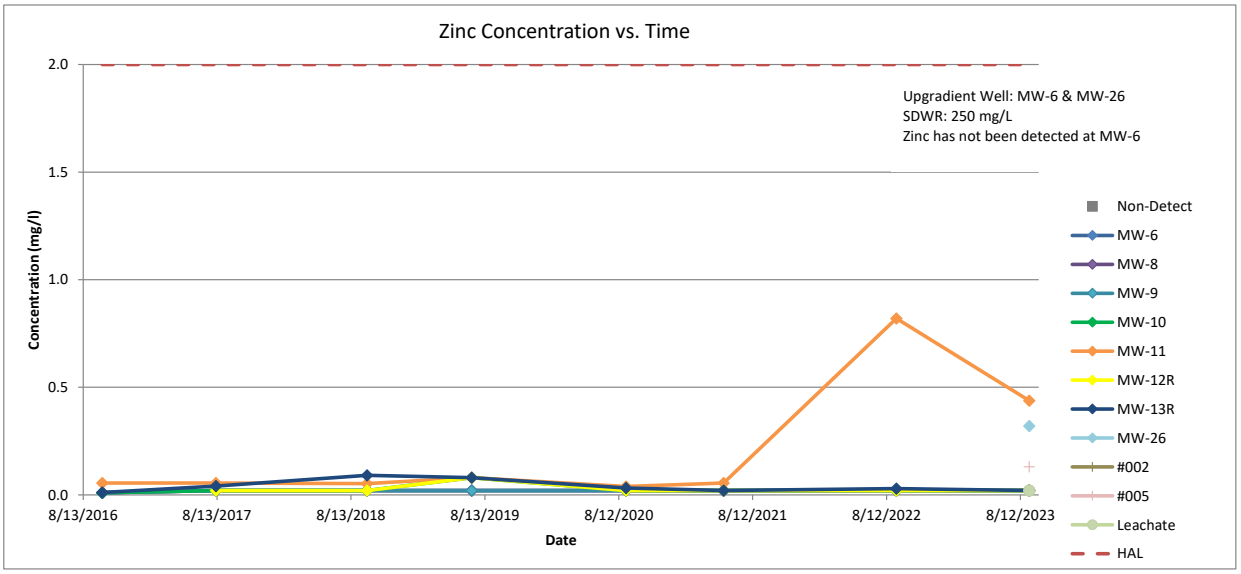






Appendix C
Historical Water Quality Plots

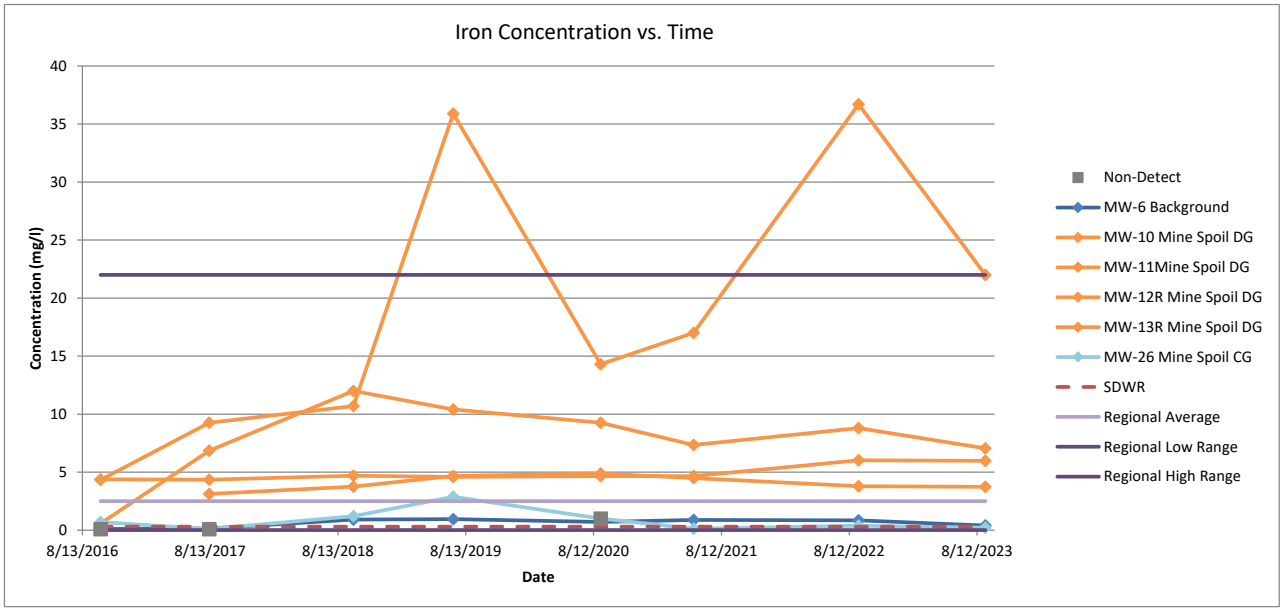


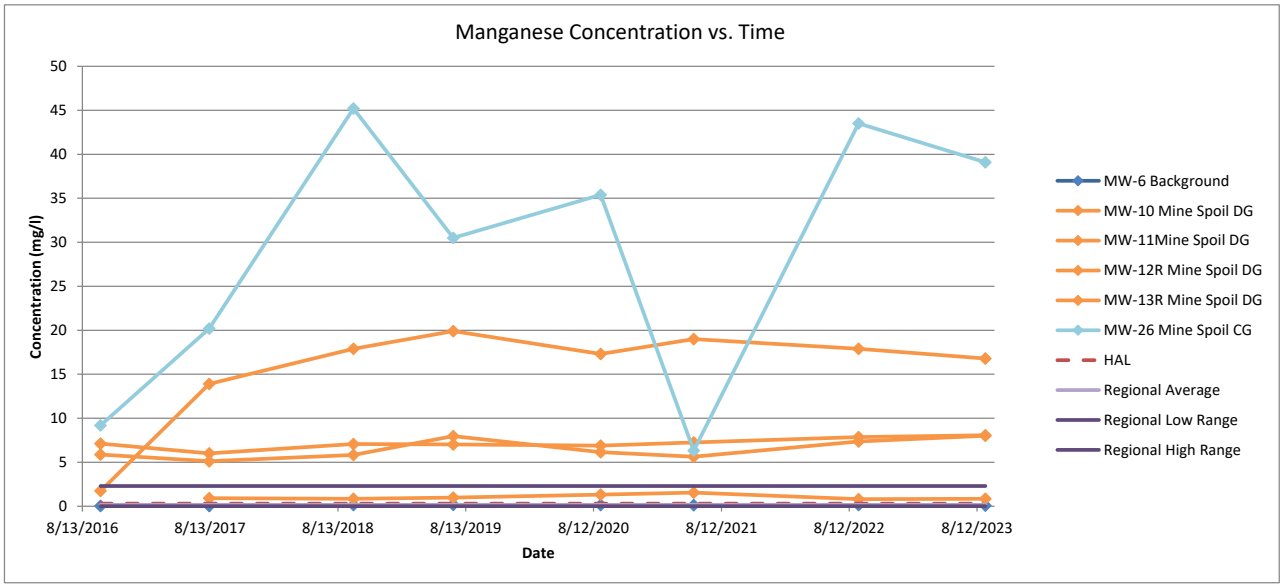


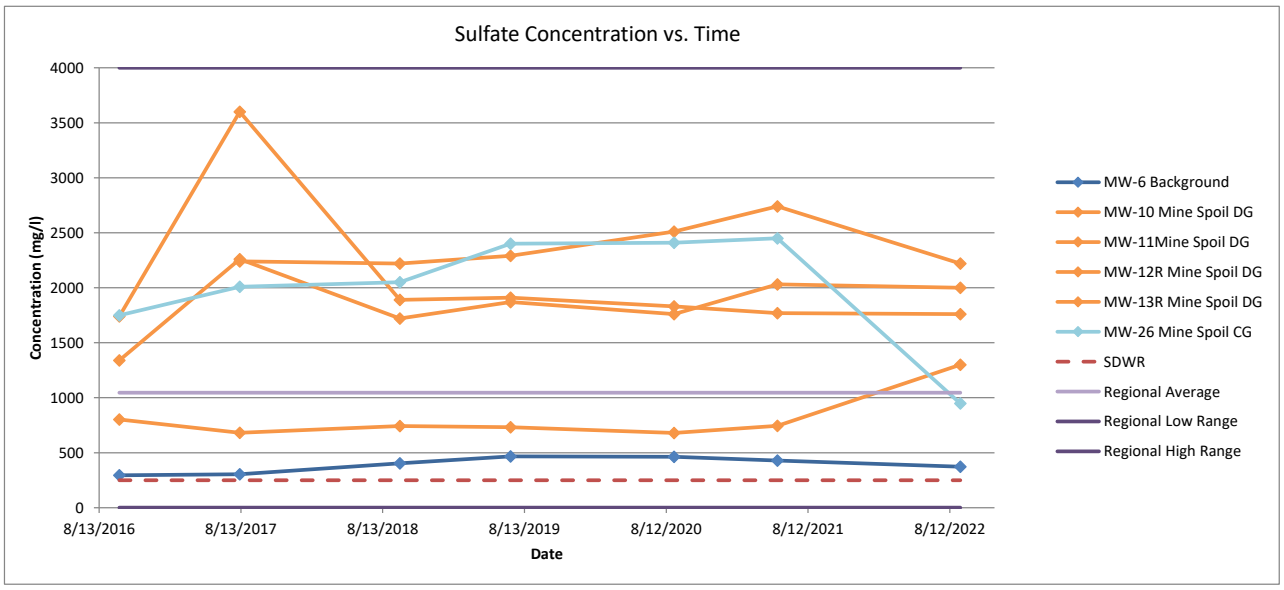
APPENDIX D

HISTORICAL GROUNDWATER WATER QUALITY WITH GEOLOGICAL IMPACT FIGURES

Groundwater Results Related to Geologic Study


Iron Concentration vs. Time
Concentration (mg/l)
Date
8/13/2016
8/13/2017
8/13/2018
8/13/2019
8/12/2020
8/12/2021
8/12/2022
8/12/2023
Non-Detect
MW-6 Background
MW-10 Mine Spoil DG
MW-11Mine Spoil DG
MW-12R Mine Spoil DG
MW-13R Mine Spoil DG
MW-26 Mine Spoil CG
SDWR
Regional Average
Regional Low Range
Regional High Range


Manganese Concentration vs. Time
Concentration (mg/l)
Date
8/13/2016
8/13/2017
8/13/2018
8/13/2019
8/12/2020
8/12/2021
8/12/2022
8/12/2023
MW-6 Background
MW-10 Mine Spoil DG
MW-11Mine Spoil DG
MW-12R Mine Spoil DG
MW-13R Mine Spoil DG
MW-26 Mine Spoil CG
HAL
Regional Average
Regional Low Range
Regional High Range


Sulfate Concentration vs. Time
Concentration (mg/l)
Date
8/13/2016
8/13/2017
8/13/2018
8/13/2019
8/12/2020
8/12/2021
8/12/2022
MW-6 Background
MW-10 Mine Spoil DG
MW-11Mine Spoil DG
MW-12R Mine Spoil DG
MW-13R Mine Spoil DG
MW-26 Mine Spoil CG
SDWR
Regional Average
Regional Low Range
Regional High Range

APPENDIX E

GROUNDWATER QUALITY STATICAL REPORT

GROUNDWATER STATS CONSULTING

November 3, 2023

HR Green, Inc.
Attn: Ms. Rose Amundson
8710 Earhart Ln, SW
Cedar Rapids, Iowa 52404

Re: Cargill CCR Landfill – Data Screening and Statistical Limits

Dear Ms. Amundson,

Groundwater Stats Consulting, formerly the statistical consulting division of Sanitas Technologies, is pleased to provide the background data screening and construction of statistical limits of groundwater data through September 2023 for the Cargill CCR Landfill. The analysis complies with the Iowa Department of Natural Resources Solid Waste Policy and Rules as well as with the USEPA Unified Guidance (2009).

The groundwater monitoring well network, as provided by HR Green, Inc., consists of the following:

Unit 01:
- Upgradient well: MW-6
- Downgradient wells: MW-8 and MW-9

Unit 02:
- Upgradient well: MW-26
- Downgradient wells: MW-10, MW-11, MW-12R, MW-13R, FlyAsh North#002, Tunnell Mine 004, and Gypsum West 005

Sampling began in 2016 for the majority of wells for the original list of constituents which includes: arsenic, barium, beryllium, chloride, cobalt, copper, iron, lead, magnesium, manganese, pH, selenium, sulfate, and zinc. Downgradient well MW-12R was first sampled in 2017 for these constituents. Note that sampling began in 2016 at upgradient well MW-26 and downgradient wells FlyAsh North#002, Tunnell Mine 004, and Gypsum West 005

for a subset of constituents which includes: iron, magnesium, manganese, pH, and sulfate. During this analysis, prediction limits were constructed for these well/constituent pairs.

The following analytes were recently added to groundwater monitoring program: boron, calcium, fluoride, lithium, molybdenum, and total dissolved solids. Sampling began for these constituents at all wells in September 2023 and for all constituents except the subset mentioned earlier (which includes iron, magnesium, manganese, pH, and sulfate) at upgradient well MW-26 and downgradient wells FlyAsh North#002, Tunnell Mine 004, and Gypsum West 005. Data for these well/constituent pairs are plotted on time series graphs. While a minimum of 8 background samples are recommended for construction of statistical limits, background limits will be constructed when at least 4 samples are available to establish a baseline for future compliance comparisons.

Note that when there are no detections present in downgradient wells for a given constituent, statistical analyses are not required. A summary of all well/constituent pairs containing 100% non-detects follows this letter.

Data were sent electronically to Groundwater Stats Consulting, and the statistical analysis was reviewed by Andrew Collins, Project Manager for Groundwater Stats Consulting.

Time series plots for all wells are provided for the purpose of screening data at these wells (Figure A). Additionally, a separate section of box plots is included for all constituents at upgradient and downgradient wells (Figure B). The time series plots are used to initially screen for suspected outliers and trends, while the box plots provide visual representation of variation within individual wells and between all wells. When values have been flagged as outliers, they may be seen in a lighter font and as a disconnected symbol on the graphs.

Due to varying detection limits in background data sets, a substitution of the most recent reporting limit is used for all non-detects. Note that for calculation of intrawell prediction limits, substitution of the most recent reporting limit is performed separately for each well/parameter pair. In some cases, the reporting limit provided by the laboratory contained varying limits for a given parameter; therefore, the substitution may differ from well to well. This generally gives the most conservative limit in each case.

For regulatory comparison of compliance observations against statistical limits, the USEPA Unified Guidance (2009) recommends an annual site-wide false positive rate of 10% (5% for each semi-annual sample event). The EPA also recommends that the selected statistical method provides sufficient power to detect a change at any of the downgradient wells. It is recommended that the selected statistical method provide at least 55% power when compliance observations are 3 standard deviations higher than the background average,

or at least 80% power at 4 standard deviations. Based on the monitoring well network and number of constituents analyzed, a minimum of 10 background samples are required to meet the recommended criteria. Once a minimum of 10 samples are available, a power curve will be provided to demonstrate the statistical method complies with the USEPA Unified Guidance recommendation.

Unit 01:

- Semi-Annual Sampling
- Intrawell Prediction Limits with 1-of-2 resample plan
- # Constituents: 10 (barium, cobalt, iron, lead, magnesium, manganese, pH, selenium, sulfate, and zinc)
- # Downgradient wells: 2

Unit 02:

- Semi-Annual Sampling
- Intrawell Prediction Limits with 1-of-2 resample plan
- # Constituents: 11 (arsenic, barium, chloride, cobalt, iron, lead, magnesium, manganese, pH, sulfate, and zinc)
- # Downgradient wells: 7

The number of constituents listed above is based on well/constituent pairs with detected data and at least 4 samples for construction of intrawell prediction limits. Well/constituent pairs with 100% non-detects or with insufficient samples are not included in the calculation.

Summary of Statistical Methods:

Intrawell prediction limits, combined with a 1-of-2 resample plan are used for Cargill CCR Landfill for all wells and constituents to establish background limits. Parametric prediction limits are utilized when the screened historical data follow a normal or transformed-normal distribution. When data cannot be normalized or the majority of data are non-detects, a nonparametric test is utilized. While the false positive rate associated with the parametric limits is based on an annual 10% (5% per semi-annual event) as recommended by the EPA Unified Guidance (2009), the false positive rate associated with the nonparametric limits is dependent upon the available background sample size, number of future comparisons, and verification resample plan. The distribution of data is tested using the Shapiro-Wilk/Shapiro-Francia test for normality. After testing for normality and performing any adjustments as discussed below (US EPA, 2009), data are analyzed using either parametric or non-parametric prediction limits.

- No statistical analyses are required on wells and analytes containing 100% non-detects (USEPA Unified Guidance, 2009, Chapter 6).
- When data contain <15% non-detects in background, simple substitution of one-half the reporting limit is utilized in the statistical analysis. The reporting limit utilized for non-detects is the practical quantification limit (PQL) as reported by the laboratory.
- When data contain between 15-50% non-detects, the Kaplan-Meier non-detect adjustment is applied to the background data for parametric limits. This technique adjusts the mean and standard deviation of the historical concentrations to account for concentrations below the reporting limit.
- Nonparametric prediction limits are used on data containing greater than 50% non-detects.

Natural systems continuously evolve due to physical changes made to the environment. Examples include capping a landfill, paving areas near a well, or lining a drainage channel to prevent erosion. Periodic updating of background statistical limits is necessary to accommodate these types of changes. In the intrawell case, data for all wells and constituents may be re-evaluated using the Mann-Whitney test to compare the medians of historical data to the medians of more recent compliance data when a minimum of 4 new data points are available to determine whether earlier concentrations are representative of present-day groundwater quality. Alternatively, the Sen's Slope/Mann-Kendall trend test may be used to evaluate each record and determine whether statistically significant increasing or decreasing trends are present when the minimum 4 compliance samples are not yet available. In some cases, the earlier portion of data are deselected prior to construction of limits to provide sensitive limits that will rapidly detect changes in groundwater quality. Even though the data are excluded from the calculation, the values will continue to be reported and shown in tables and graphs.

Background Screening – September 2023

Prior to constructing statistical limits in this analysis, background data were screened as described below for outliers and trending patterns that would lead to artificially elevated statistical limits.

Outlier Analysis

Unit 01

Using the Tukey box plot method, the highest measurement of iron in downgradient well MW-9 was identified as an outlier (Figure C). However, the measurement of 0.175 mg/L

was only slightly higher than the reporting limit of 0.1 mg/L; therefore, it was not flagged in the database.

Although not identified by Tukey's outlier test, the highest measurements of iron in downgradient well MW-8 and manganese in downgradient wells MW-8 and MW-9 were visually identified and flagged as outliers in order to construct conservative (i.e., lower) statistical limits from a regulatory perspective.

Unit 02

Using the Tukey box plot method, the respective highest measurements of sulfate in downgradient wells MW-10 and MW-11 were identified as outliers and flagged in the database (Figure C).

Several other high and low measurements not noted by Tukey's test were identified through visual screening and flagged in the database as outliers. This step reduces the variation within a given record and typically results in statistical limits that are conservative (i.e., lower) and representative of present-day groundwater quality conditions.

Additionally, a previously flagged high measurement for iron in downgradient well MW-11 was unflagged during this analysis as similar concentrations are now present in the record. A summary of all flagged measurements follows this letter (Figure C).

Trend Tests

While trends may be identified by visual inspection, a quantification of the trend and its significance is needed. The Sen's Slope/Mann Kendall trend test was used to evaluate all data at each well to identify statistically significant increasing or decreasing trends at the 99% confidence level (Figure D). In the absence of suspected contamination, significant trending data are typically not included as part of the background data used for construction of prediction limits. This step serves to eliminate the trend and, thus, reduce variation in background. When statistically significant decreasing trends are present, all available data are evaluated to determine whether earlier concentration levels are significantly different than current reported concentrations and will be deselected as necessary. When any records of data are truncated for the reasons above, a summary report will be provided to show the date ranges used in construction of the statistical limits. No statistically significant increasing or decreasing trends were identified for Unit 01 or Unit 02.

Prediction Limits – September 2023

Intrawell prediction limits constructed from carefully screened background data from within each well serve to provide statistical limits that are representative of the background data population, and that will rapidly identify a change in more recent compliance data from within a given well. Compliance samples from the same well are compared to their respective background limits. This statistical method removes the element of variation from across wells and eliminates the chance of mistaking spatial variation for a release from the facility. During this analysis, however, intrawell prediction limits were used to establish background limits for well/constituent pairs and no compliance data were compared to these limits.

Intrawell prediction limits, combined with a 1-of-2 resample plan, were constructed at the Cargill CCR Landfill for all wells and constituents to establish background limits (Figure E). Future samples will be compared against these prediction limits. In the event of an initial exceedance of compliance well data, the 1-of-2 resample plan allows for collection of one additional sample to determine whether the initial exceedance is confirmed. When the resample confirms the initial exceedance, a statistically significant increase (SSI) is identified, and further research would be required to identify the cause of the exceedance (i.e., impact from the site, natural variation, or an off-site source). If a resample falls within the statistical limit, the initial exceedance is considered to be a false positive result; therefore, no further action is necessary. A summary of the statistical limits may be found in the Prediction Limit Summary table following this letter.

Thank you for the opportunity to assist you in the statistical analysis of groundwater quality for the Cargill CCR Landfill. If you have any questions or comments, please feel free to contact us.

For Groundwater Stats Consulting,

Kristina Rayner
Senior Statistician

Andrew T. Collins
Project Manager

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

100% Non-Detects

Analysis Run 10/23/2023 10:06 AM View: 100% ND
Cargill CCR LF Client: HR Green Data: Cargill_Import

Arsenic (mg/L)
MW-12R, MW-26, MW-6, MW-8, MW-9

Beryllium (mg/L)
MW-10, MW-11, MW-12R, MW-13R, MW-6, MW-8, MW-9

Chloride (mg/L)
MW-26, MW-6, MW-8, MW-9

Cobalt (mg/L)
MW-6

Copper (mg/L)
MW-10, MW-11, MW-12R, MW-13R, MW-26, MW-6, MW-8, MW-9

Lead (mg/L)
MW-10, MW-11, MW-26, MW-6, MW-9

Selenium (mg/L)
MW-10, MW-11, MW-12R, MW-13R, MW-6, MW-8

Zinc (mg/L)
MW-10, MW-12R, MW-6, MW-9

Trend Tests - All Results (No Significant)

Cargill CCR LF Client: HR Green Data: Cargill_Import Printed 10/23/2023, 10:12 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Arsenic (mg/L)	MW-10	-0.000001584	0	21	No	8	12.5	n/a	n/a	0.01	NP
Arsenic (mg/L)	MW-11	-0.0008034	-16	-21	No	8	62.5	n/a	n/a	0.01	NP
Arsenic (mg/L)	MW-13R	0	4	21	No	8	50	n/a	n/a	0.01	NP
Barium (mg/L)	MW-10	0.0001095	7	21	No	8	0	n/a	n/a	0.01	NP
Barium (mg/L)	MW-11	0.0003796	8	21	No	8	0	n/a	n/a	0.01	NP
Barium (mg/L)	MW-12R	-0.001127	-16	-18	No	7	0	n/a	n/a	0.01	NP
Barium (mg/L)	MW-13R	-0.002808	-10	-21	No	8	0	n/a	n/a	0.01	NP
Barium (mg/L)	MW-6 (bg)	-0.001671	-16	-21	No	8	0	n/a	n/a	0.01	NP
Barium (mg/L)	MW-8	-0.002726	-21	-21	No	8	0	n/a	n/a	0.01	NP
Barium (mg/L)	MW-9	-0.0001588	-4	-21	No	8	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-10	0	1	21	No	8	87.5	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-11	-0.0102	0	21	No	8	12.5	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-12R	-0.2205	-9	-18	No	7	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-13R	1.059	12	21	No	8	12.5	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-10	0	0	21	No	8	0	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-11	0.002129	16	21	No	8	0	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-12R	-0.00002829	-3	-18	No	7	0	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-13R	0.0001617	1	18	No	7	0	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-8	0	-1	-21	No	8	87.5	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-9	0	7	21	No	8	87.5	n/a	n/a	0.01	NP
Iron (mg/L)	MW-10	0.1412	17	21	No	8	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-11	2.55	20	21	No	8	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-12R	0.007594	1	18	No	7	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-13R	-0.04407	0	21	No	8	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-26 (bg)	-0.1215	-9	-21	No	8	25	n/a	n/a	0.01	NP
Iron (mg/L)	MW-6 (bg)	0.05238	4	21	No	8	12.5	n/a	n/a	0.01	NP
Iron (mg/L)	MW-8	-0.007972	-9	-18	No	7	57.14	n/a	n/a	0.01	NP
Iron (mg/L)	MW-9	0	3	21	No	8	75	n/a	n/a	0.01	NP
Lead (mg/L)	MW-12R	0	-5	-18	No	7	71.43	n/a	n/a	0.01	NP
Lead (mg/L)	MW-13R	-0.0004574	-6	-18	No	7	42.86	n/a	n/a	0.01	NP
Lead (mg/L)	MW-8	0	1	21	No	8	87.5	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-10	-0.4153	-2	-21	No	8	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-11	0.7149	3	21	No	8	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-12R	3.544	8	18	No	7	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-13R	12.44	16	21	No	8	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-26 (bg)	17.79	16	21	No	8	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-6 (bg)	1.596	6	21	No	8	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-8	0.4347	8	21	No	8	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-9	-0.1127	-1	-21	No	8	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-10	0.2114	14	21	No	8	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-11	0.3211	12	21	No	8	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-12R	0.002021	1	18	No	7	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-13R	0.6324	7	21	No	8	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-26 (bg)	4.173	12	21	No	8	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-6 (bg)	0.003449	2	21	No	8	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-8	-0.004468	-8	-21	No	8	12.5	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-9	0	7	21	No	8	87.5	n/a	n/a	0.01	NP
pH (SU)	MW-10	0.0145	1	18	No	7	0	n/a	n/a	0.01	NP
pH (SU)	MW-11	-0.006835	-1	-18	No	7	0	n/a	n/a	0.01	NP
pH (SU)	MW-12R	0.03001	1	14	No	6	0	n/a	n/a	0.01	NP
pH (SU)	MW-13R	-0.08379	-7	-18	No	7	0	n/a	n/a	0.01	NP
pH (SU)	MW-26 (bg)	-0.187	-10	-18	No	7	0	n/a	n/a	0.01	NP
pH (SU)	MW-6 (bg)	0.006744	1	18	No	7	0	n/a	n/a	0.01	NP
pH (SU)	MW-8	0.09951	15	18	No	7	0	n/a	n/a	0.01	NP
pH (SU)	MW-9	0.06461	5	18	No	7	0	n/a	n/a	0.01	NP

Trend Tests - All Results (No Significant)

Cargill CCR LF Client: HR Green Data: Cargill_Import Printed 10/23/2023, 10:12 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Selenium (mg/L)	MW-9	-0.0002276	-18	-21	No	8	62.5	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-10	-9.955	-3	-18	No	7	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-11	0.3751	1	18	No	7	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-12R	2.021	2	18	No	7	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-13R	86.9	12	21	No	8	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-26 (bg)	61.99	10	21	No	8	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-6 (bg)	10.93	5	21	No	8	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-8	6.061	4	21	No	8	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-9	21.53	16	21	No	8	0	n/a	n/a	0.01	NP
Zinc (mg/L)	MW-11	0.004523	2	21	No	8	12.5	n/a	n/a	0.01	NP
Zinc (mg/L)	MW-13R	-0.0006447	-3	-21	No	8	37.5	n/a	n/a	0.01	NP
Zinc (mg/L)	MW-8	0	7	21	No	8	87.5	n/a	n/a	0.01	NP

Intrawell Prediction Limit Summary

Cargill CCR LF Client: HR Green Data: Cargill_Import Printed 10/23/2023, 10:34 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MW-10	0.004557	n/a	n/a	1 future	n/a	8	0.00314	0.0004367	12.5	None	No	0.0006269	Param Intra 1 of 2
Arsenic (mg/L)	MW-11	0.008	n/a	n/a	1 future	n/a	8	n/a	n/a	62.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	MW-13R	0.00825	n/a	n/a	1 future	n/a	8	n/a	n/a	50	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Barium (mg/L)	MW-10	0.01783	n/a	n/a	1 future	n/a	8	0.015	0.0008734	0	None	No	0.0006269	Param Intra 1 of 2
Barium (mg/L)	MW-11	0.0489	n/a	n/a	1 future	n/a	8	n/a	n/a	0	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Barium (mg/L)	MW-12R	0.0313	n/a	n/a	1 future	n/a	7	n/a	n/a	0	n/a	n/a	0.02765	NP Intra (normality) 1 of 2
Barium (mg/L)	MW-13R	0.08641	n/a	n/a	1 future	n/a	8	0.02868	0.0178	0	None	No	0.0006269	Param Intra 1 of 2
Barium (mg/L)	MW-6	0.04644	n/a	n/a	1 future	n/a	8	-3.715	0.1991	0	None	ln(x)	0.0006269	Param Intra 1 of 2
Barium (mg/L)	MW-8	0.06098	n/a	n/a	1 future	n/a	8	0.03765	0.007191	0	None	No	0.0006269	Param Intra 1 of 2
Barium (mg/L)	MW-9	0.0313	n/a	n/a	1 future	n/a	8	n/a	n/a	0	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Chloride (mg/L)	MW-10	5.18	n/a	n/a	1 future	n/a	8	n/a	n/a	87.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Chloride (mg/L)	MW-11	14.09	n/a	n/a	1 future	n/a	8	6.176	2.439	12.5	None	No	0.0006269	Param Intra 1 of 2
Chloride (mg/L)	MW-12R	9.859	n/a	n/a	1 future	n/a	7	7.283	0.7058	0	None	No	0.0006269	Param Intra 1 of 2
Chloride (mg/L)	MW-13R	24.68	n/a	n/a	1 future	n/a	8	10.2	4.464	12.5	None	No	0.0006269	Param Intra 1 of 2
Cobalt (mg/L)	MW-10	0.02014	n/a	n/a	1 future	n/a	8	0.01848	0.000512	0	None	No	0.0006269	Param Intra 1 of 2
Cobalt (mg/L)	MW-11	0.0606	n/a	n/a	1 future	n/a	8	0.03759	0.007093	0	None	No	0.0006269	Param Intra 1 of 2
Cobalt (mg/L)	MW-12R	0.0108	n/a	n/a	1 future	n/a	7	0.005467	0.00146	0	None	No	0.0006269	Param Intra 1 of 2
Cobalt (mg/L)	MW-13R	0.08555	n/a	n/a	1 future	n/a	7	0.05656	0.007944	0	None	No	0.0006269	Param Intra 1 of 2
Cobalt (mg/L)	MW-8	0.00189	n/a	n/a	1 future	n/a	8	n/a	n/a	87.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	MW-9	0.00138	n/a	n/a	1 future	n/a	8	n/a	n/a	87.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Iron (mg/L)	MW-10	6.02	n/a	n/a	1 future	n/a	8	n/a	n/a	0	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Iron (mg/L)	MW-11	57.79	n/a	n/a	1 future	n/a	8	18.77	12.03	0	None	No	0.0006269	Param Intra 1 of 2
Iron (mg/L)	MW-12R	6.366	n/a	n/a	1 future	n/a	7	4.063	0.6309	0	None	No	0.0006269	Param Intra 1 of 2
Iron (mg/L)	MW-13R	18.85	n/a	n/a	1 future	n/a	8	7.784	3.411	0	None	No	0.0006269	Param Intra 1 of 2
Iron (mg/L)	MW-26	4.555	n/a	n/a	1 future	n/a	8	0.7727	0.4197	25	Kaplan-Meier	sqrt(x)	0.0006269	Param Intra 1 of 2
Iron (mg/L)	MW-6	1.304	n/a	n/a	1 future	n/a	8	0.4878	0.3739	12.5	None	x^2	0.0006269	Param Intra 1 of 2
Iron (mg/L)	MW-8	0.308	n/a	n/a	1 future	n/a	7	n/a	n/a	57.14	n/a	n/a	0.02765	NP Intra (NDs) 1 of 2
Iron (mg/L)	MW-9	0.175	n/a	n/a	1 future	n/a	8	n/a	n/a	75	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Lead (mg/L)	MW-12R	0.000708	n/a	n/a	1 future	n/a	7	n/a	n/a	71.43	n/a	n/a	0.02765	NP Intra (NDs) 1 of 2
Lead (mg/L)	MW-13R	0.00906	n/a	n/a	1 future	n/a	7	0.03756	0.01579	42.86	Kaplan-Meier	sqrt(x)	0.0006269	Param Intra 1 of 2
Lead (mg/L)	MW-8	0.00111	n/a	n/a	1 future	n/a	8	n/a	n/a	87.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Magnesium (mg/L)	MW-10	224.7	n/a	n/a	1 future	n/a	8	194	9.457	0	None	No	0.0006269	Param Intra 1 of 2
Magnesium (mg/L)	MW-11	158	n/a	n/a	1 future	n/a	8	n/a	n/a	0	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Magnesium (mg/L)	MW-12R	293	n/a	n/a	1 future	n/a	7	n/a	n/a	0	n/a	n/a	0.02765	NP Intra (normality) 1 of 2
Magnesium (mg/L)	MW-13R	323.1	n/a	n/a	1 future	n/a	8	207.3	35.71	0	None	No	0.0006269	Param Intra 1 of 2
Magnesium (mg/L)	MW-26	446.8	n/a	n/a	1 future	n/a	8	282.6	50.6	0	None	No	0.0006269	Param Intra 1 of 2
Magnesium (mg/L)	MW-6	33.12	n/a	n/a	1 future	n/a	8	402799	246672	0	None	x^4	0.0006269	Param Intra 1 of 2
Magnesium (mg/L)	MW-8	51.01	n/a	n/a	1 future	n/a	8	41.05	3.071	0	None	No	0.0006269	Param Intra 1 of 2
Magnesium (mg/L)	MW-9	81.79	n/a	n/a	1 future	n/a	8	70.08	3.61	0	None	No	0.0006269	Param Intra 1 of 2
pH (SU)	MW-10	7.435	5.498	n/a	1 future	n/a	7	6.466	0.2653	0	None	No	0.0003135	Param Intra 1 of 2
pH (SU)	MW-11	6.63	5.66	n/a	1 future	n/a	7	6.145	0.1329	0	None	No	0.0003135	Param Intra 1 of 2
pH (SU)	MW-12R	7.4	5.317	n/a	1 future	n/a	6	6.358	0.2567	0	None	No	0.0003135	Param Intra 1 of 2
pH (SU)	MW-13R	7.463	5.457	n/a	1 future	n/a	7	6.46	0.2748	0	None	No	0.0003135	Param Intra 1 of 2
pH (SU)	MW-26	7.101	2.959	n/a	1 future	n/a	7	5.03	0.5675	0	None	No	0.0003135	Param Intra 1 of 2
pH (SU)	MW-6	8.887	5.562	n/a	1 future	n/a	7	7.224	0.4554	0	None	No	0.0003135	Param Intra 1 of 2
pH (SU)	MW-8	8.096	6.097	n/a	1 future	n/a	7	7.096	0.2738	0	None	No	0.0003135	Param Intra 1 of 2
pH (SU)	MW-9	7.983	5.944	n/a	1 future	n/a	7	6.964	0.2794	0	None	No	0.0003135	Param Intra 1 of 2
Selenium (mg/L)	MW-9	0.00721	n/a	n/a	1 future	n/a	8	n/a	n/a	62.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Sulfate (mg/L)	MW-10	2053	n/a	n/a	1 future	n/a	7	1814	65.54	0	None	No	0.0006269	Param Intra 1 of 2
Sulfate (mg/L)	MW-11	893.5	n/a	n/a	1 future	n/a	7	735	43.41	0	None	No	0.0006269	Param Intra 1 of 2
Sulfate (mg/L)	MW-12R	2740	n/a	n/a	1 future	n/a	7	n/a	n/a	0	n/a	n/a	0.02765	NP Intra (normality) 1 of 2
Sulfate (mg/L)	MW-13R	2834	n/a	n/a	1 future	n/a	8	1893	290.4	0	None	No	0.0006269	Param Intra 1 of 2
Sulfate (mg/L)	MW-26	3192	n/a	n/a	1 future	n/a	8	4423913	1776559	0	None	x^2	0.0006269	Param Intra 1 of 2
Sulfate (mg/L)	MW-6	601.1	n/a	n/a	1 future	n/a	8	388.5	65.55	0	None	No	0.0006269	Param Intra 1 of 2
Sulfate (mg/L)	MW-8	367.5	n/a	n/a	1 future	n/a	8	241.4	38.87	0	None	No	0.0006269	Param Intra 1 of 2
Sulfate (mg/L)	MW-9	1421	n/a	n/a	1 future	n/a	8	1161	80.08	0	None	No	0.0006269	Param Intra 1 of 2

Intrawell Prediction Limit Summary

Cargill CCR LF Client: HR Green Data: Cargill_Import Printed 10/23/2023, 10:34 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Zinc (mg/L)	MW-11	0.82	n/a	n/a	1 future	n/a	8	n/a	n/a	12.5	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Zinc (mg/L)	MW-13R	0.1383	n/a	n/a	1 future	n/a	8	0.1593	0.06552	37.5	Kaplan-Meier	sqrt(x)	0.0006269	Param Intra 1 of 2
Zinc (mg/L)	MW-8	0.0214	n/a	n/a	1 future	n/a	8	n/a	n/a	87.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2

FIGURE A.

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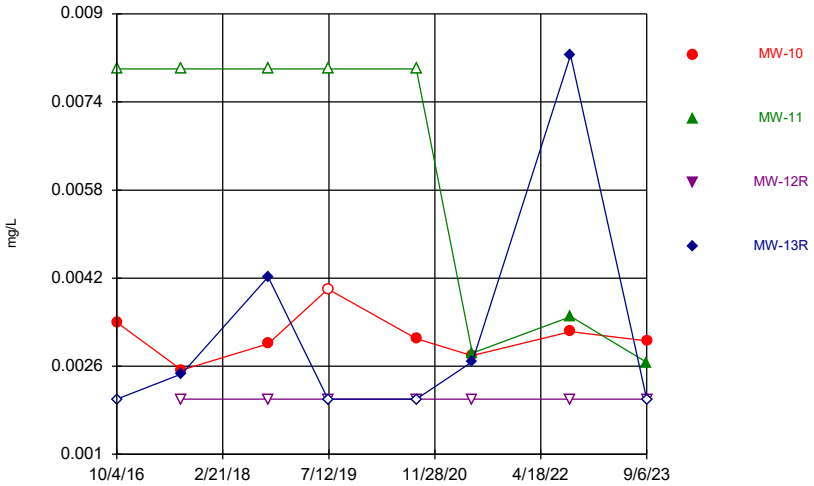
Hollow symbols indicate censored values.

Time Series



Constituent: Arsenic Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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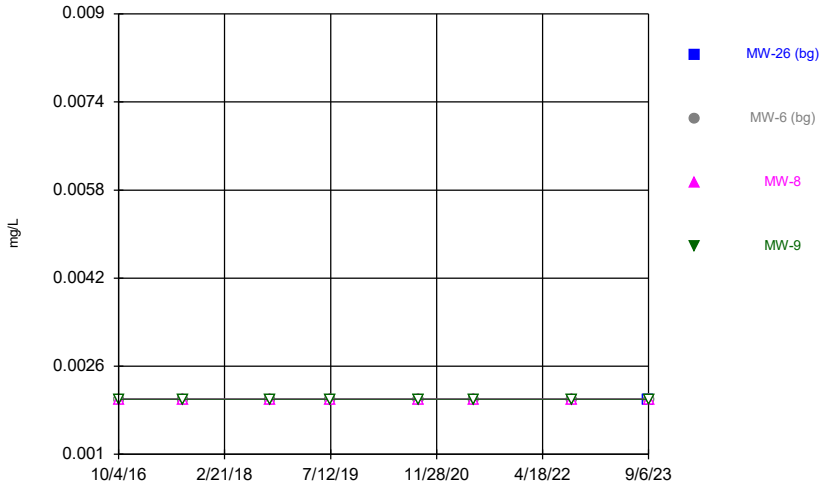
Hollow symbols indicate censored values.

Time Series



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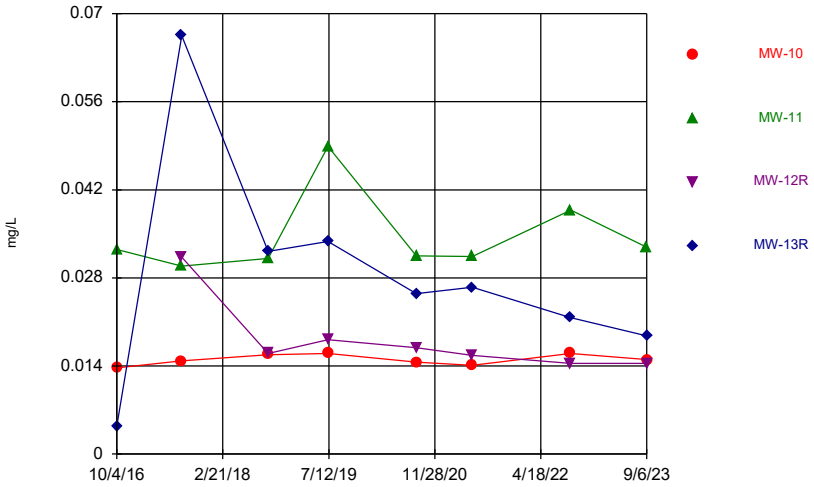
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Time Series



Constituent: Barium Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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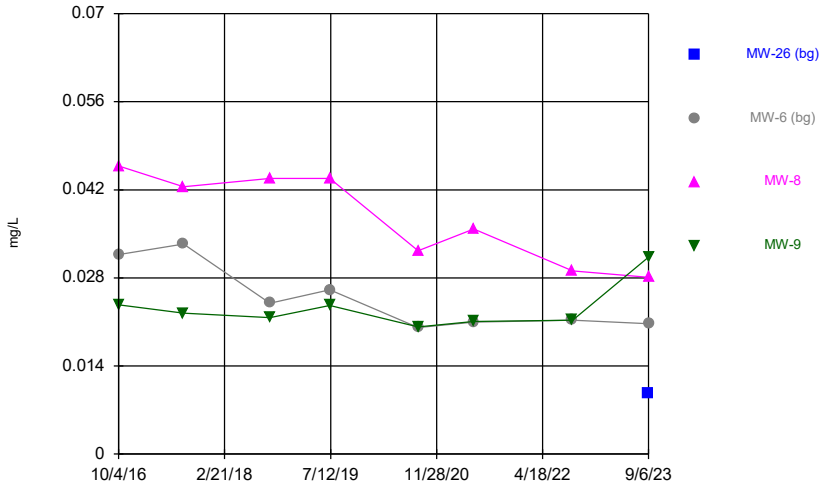
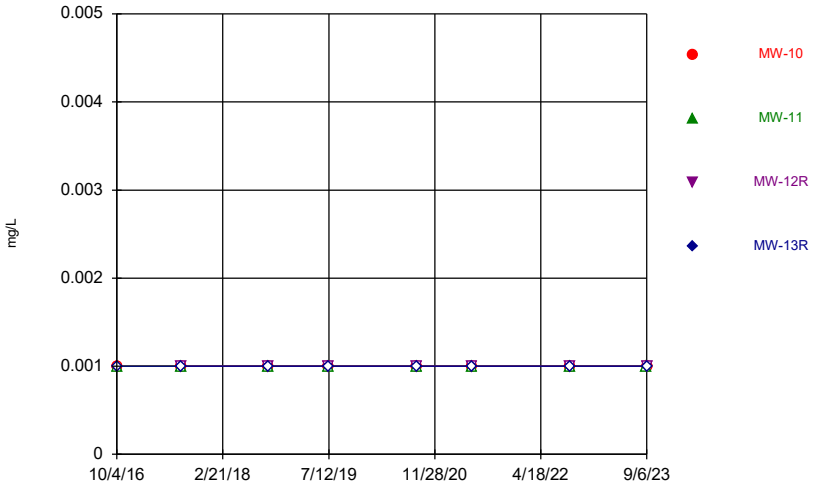
Time Series



Constituent: Barium Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Beryllium Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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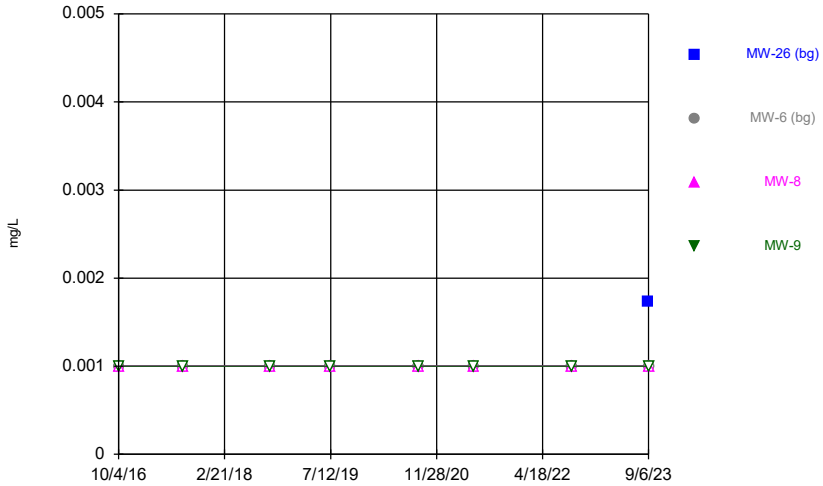
Hollow symbols indicate censored values.

Time Series



Constituent: Beryllium Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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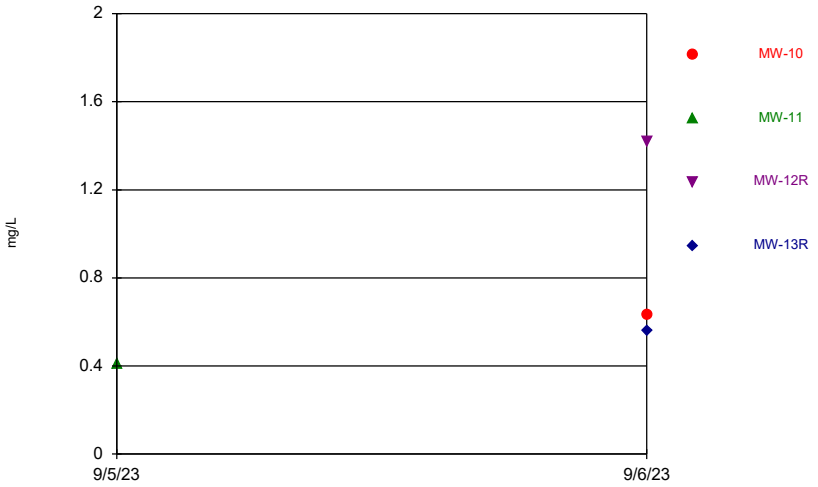
Time Series



Constituent: Boron Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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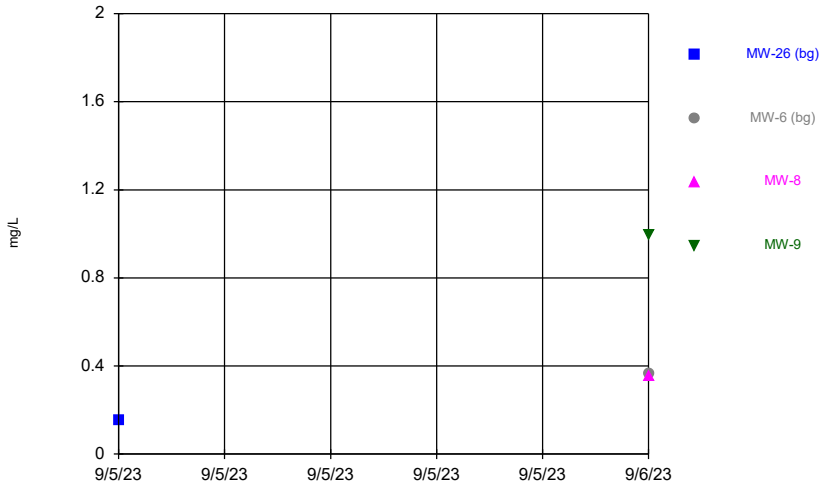
Time Series



Constituent: Boron Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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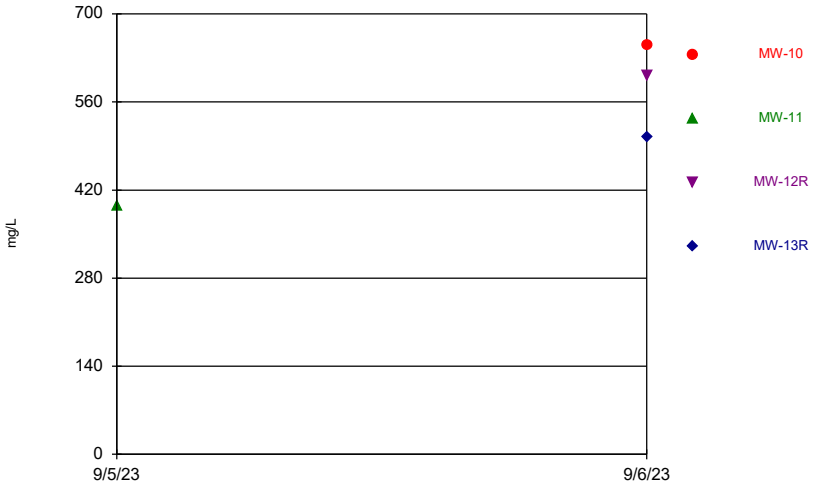
Time Series



Constituent: Calcium Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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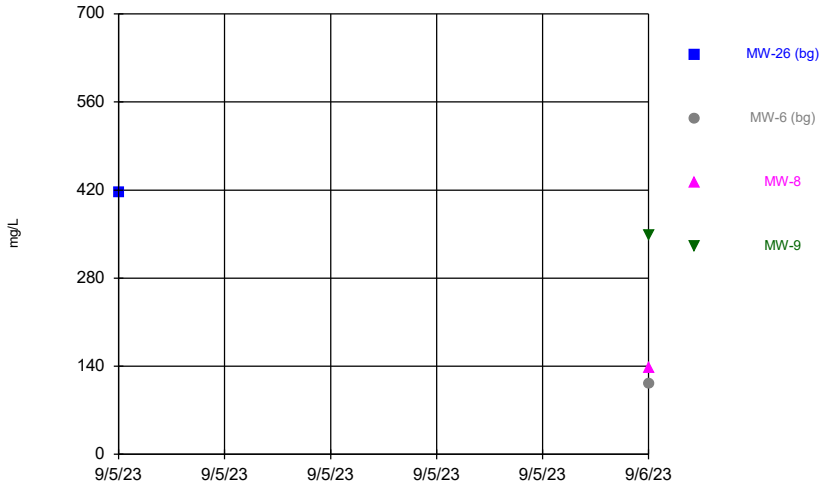
Time Series



Constituent: Calcium Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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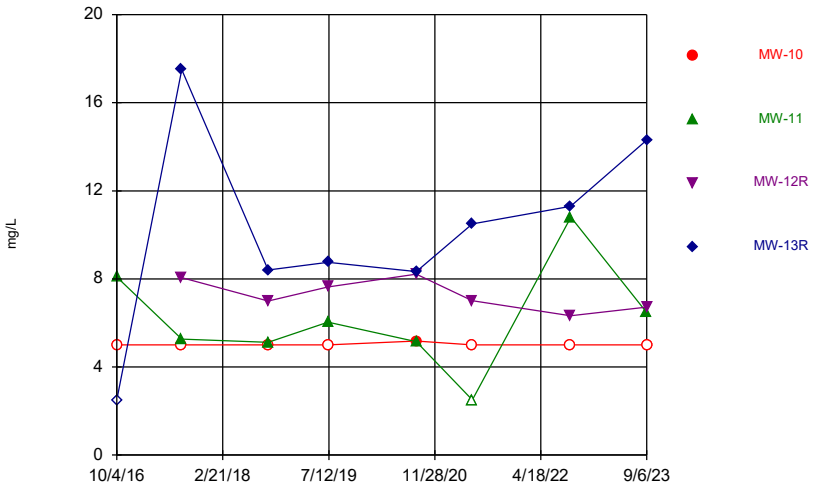
Time Series



Constituent: Chloride Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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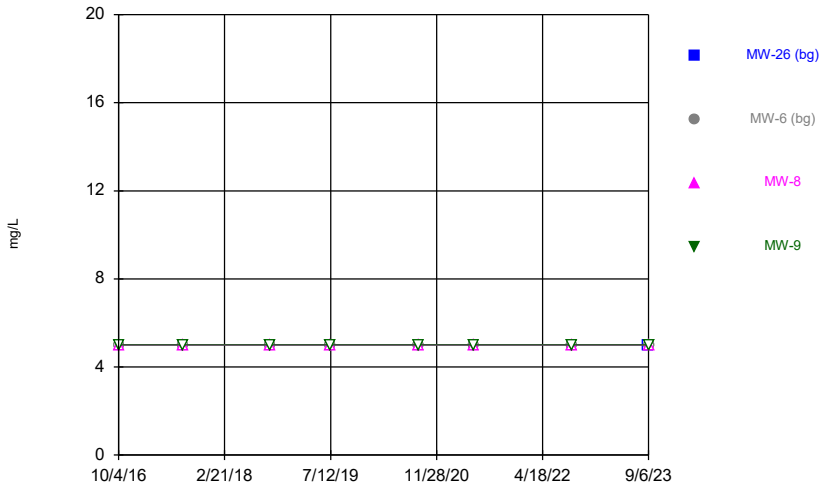
Hollow symbols indicate censored values.

Time Series



Constituent: Chloride Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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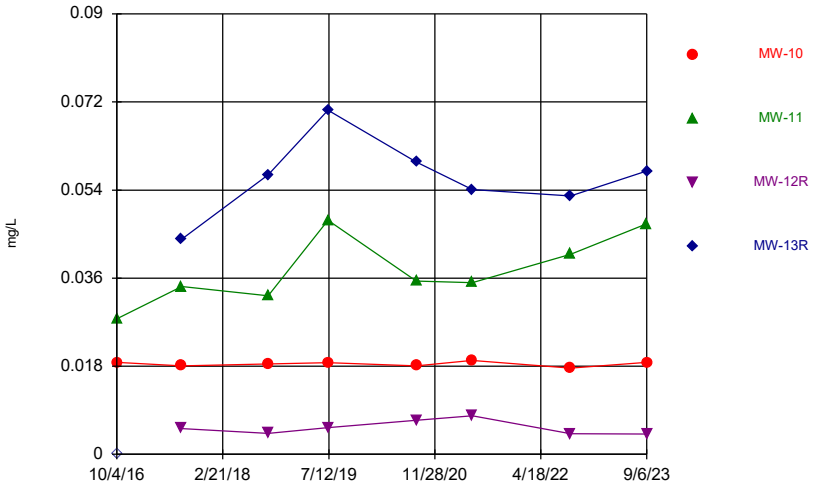
Time Series



Constituent: Cobalt Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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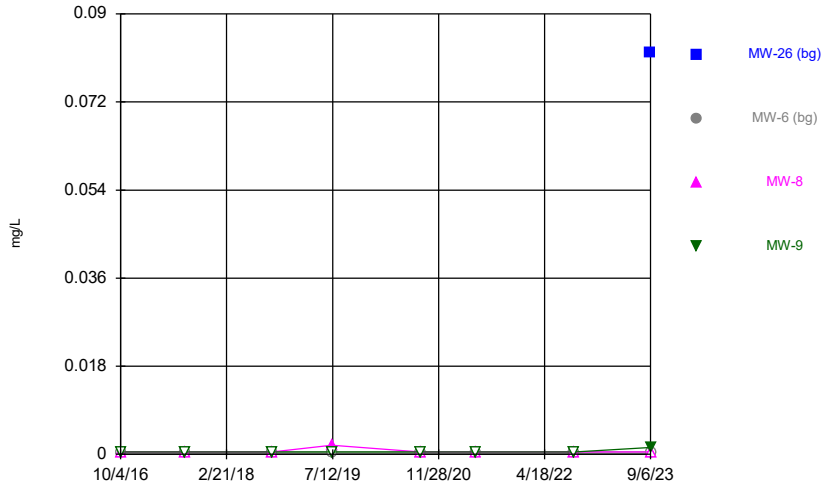
Hollow symbols indicate censored values.

Time Series



Constituent: Cobalt Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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Hollow symbols indicate censored values.

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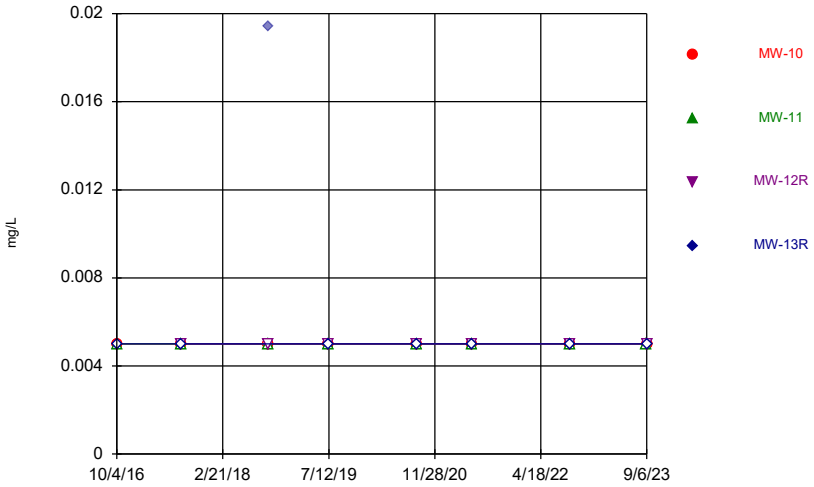

Constituent: Copper Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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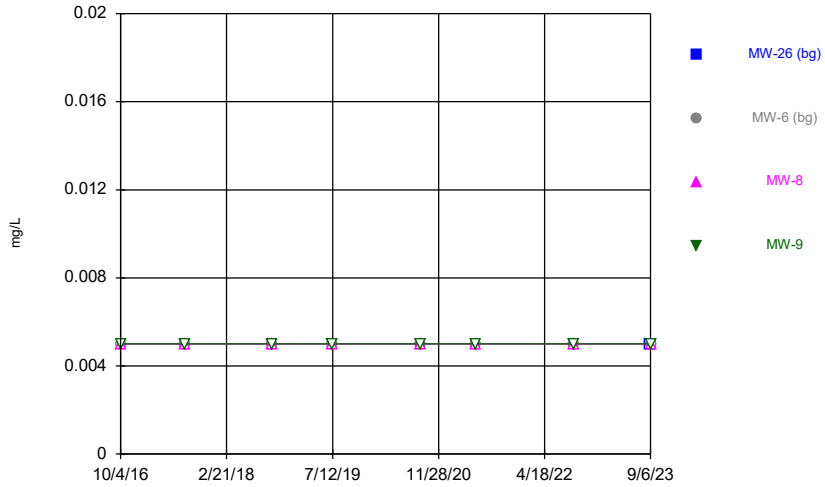
Hollow symbols indicate censored values.

Time Series



Constituent: Copper Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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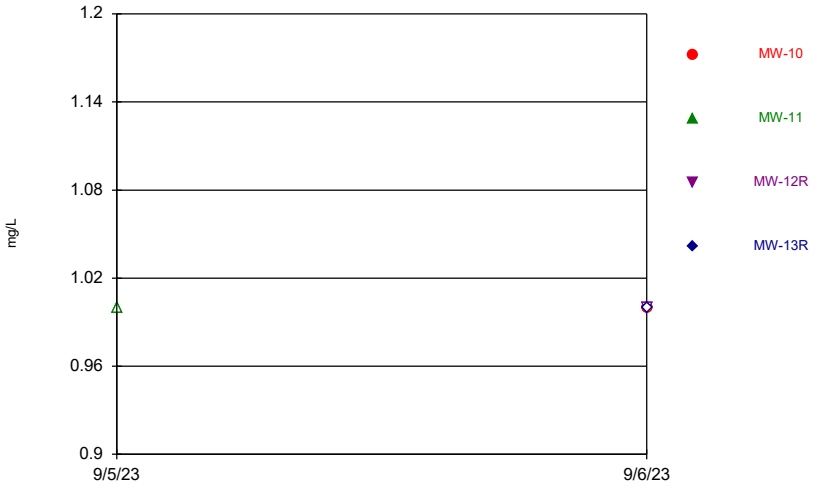
Hollow symbols indicate censored values.

Time Series



Constituent: Fluoride Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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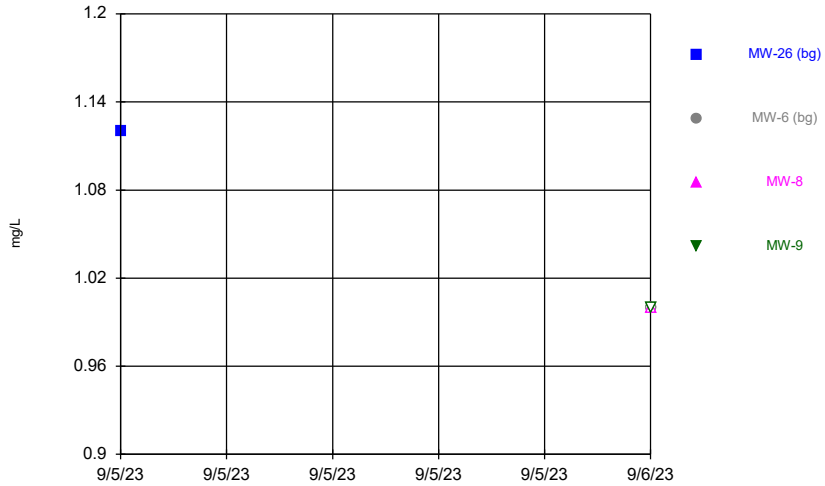
Time Series



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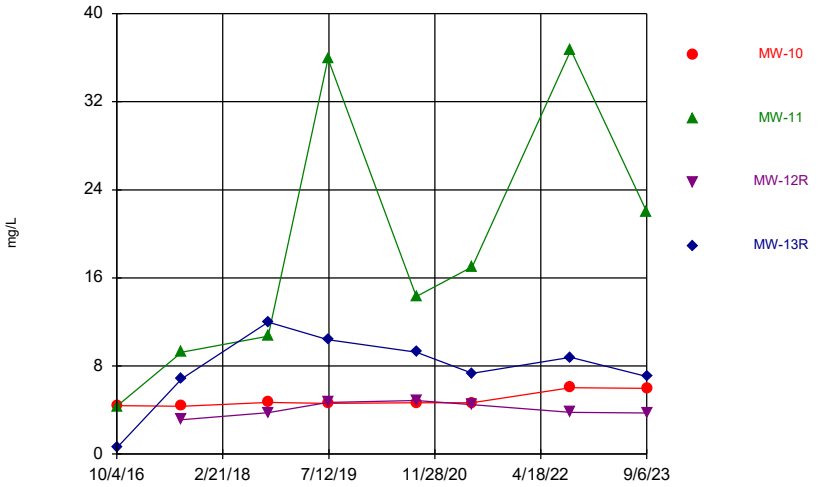
Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Time Series



Constituent: Iron Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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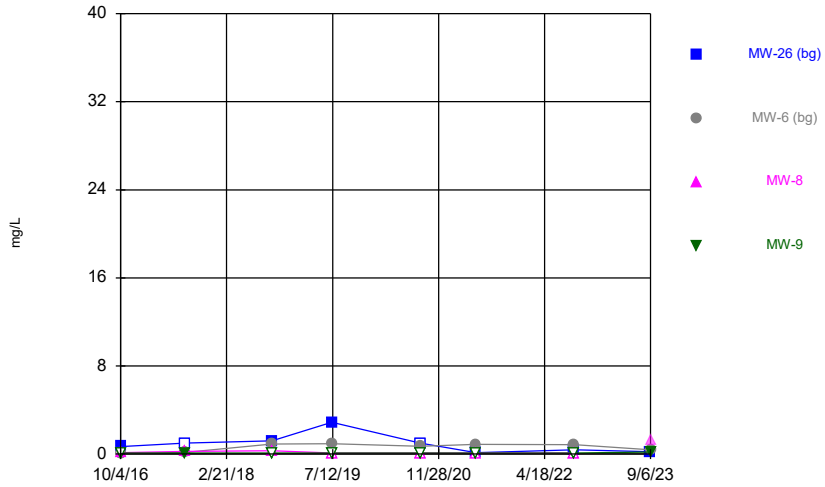
Hollow symbols indicate censored values.

Time Series



Constituent: Iron Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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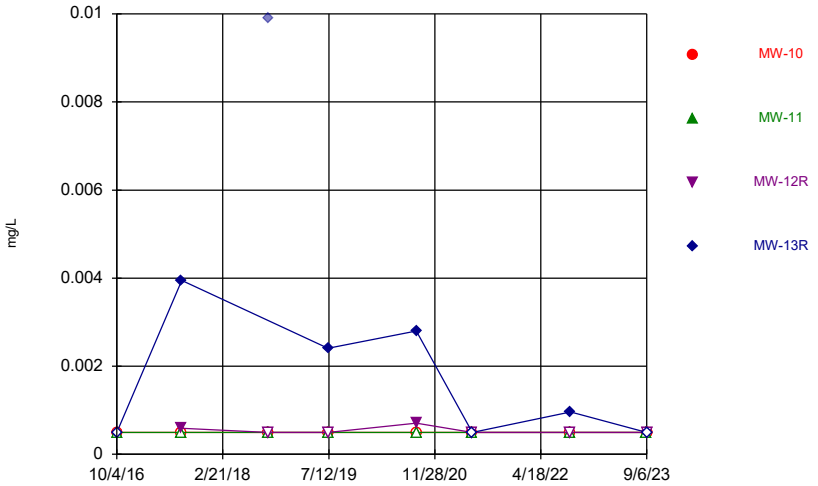
Hollow symbols indicate censored values.

Time Series



Constituent: Lead Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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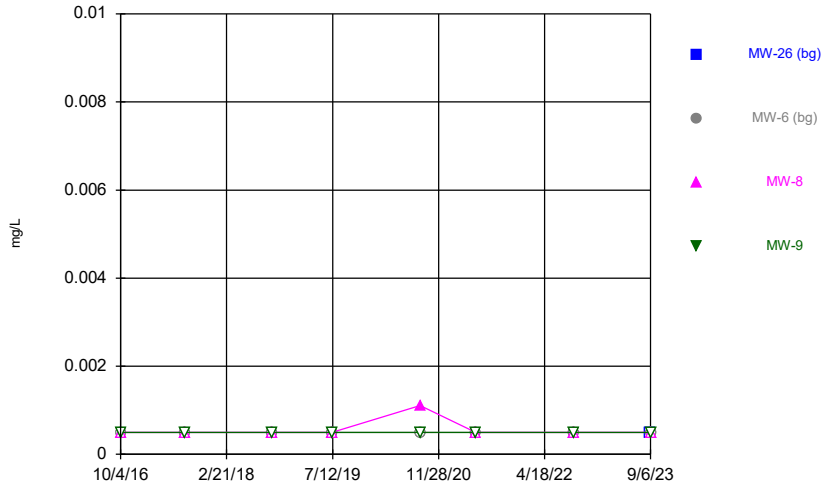
Hollow symbols indicate censored values.

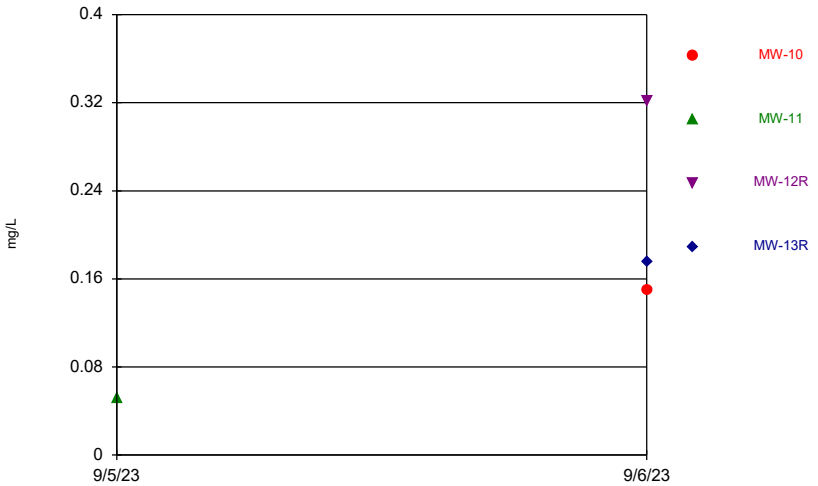
Time Series



Constituent: Lead Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Time Series



Constituent: Lithium Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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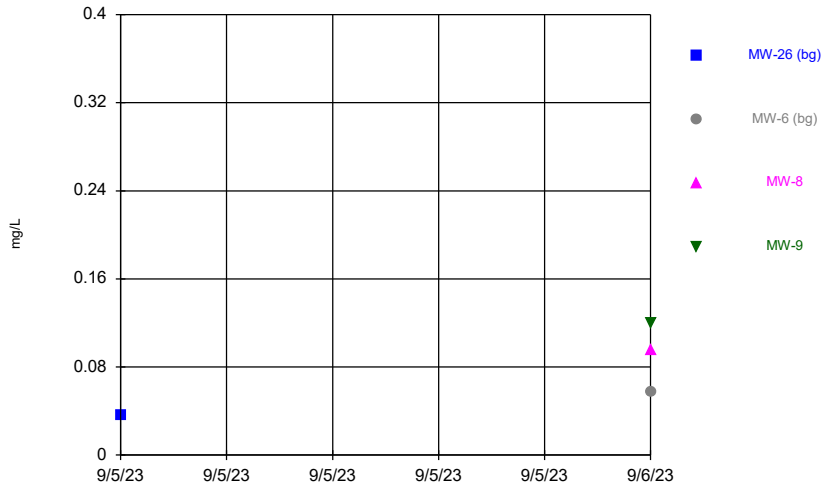
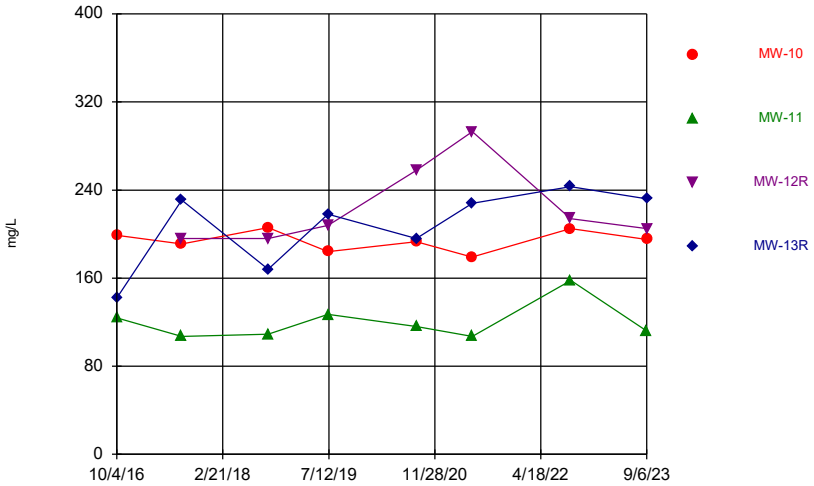
Time Series



Constituent: Lithium Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Time Series



Constituent: Magnesium Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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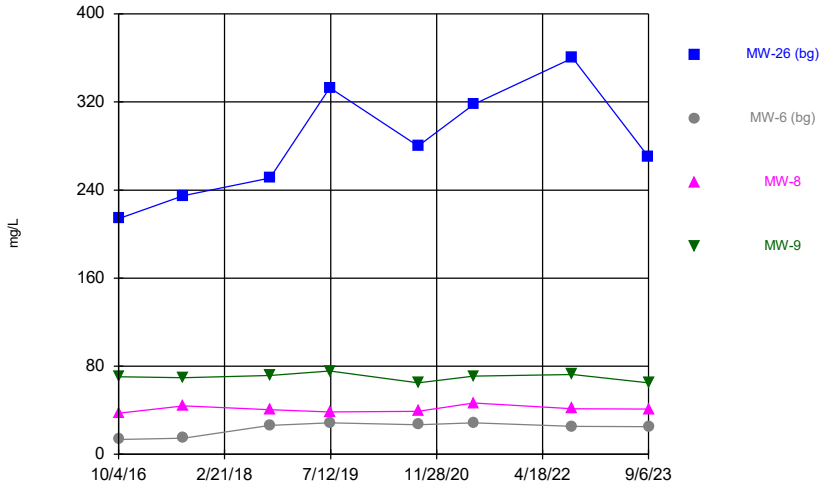
Time Series



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Cargill CCR LF Client: HR Green Data: Cargill_Import

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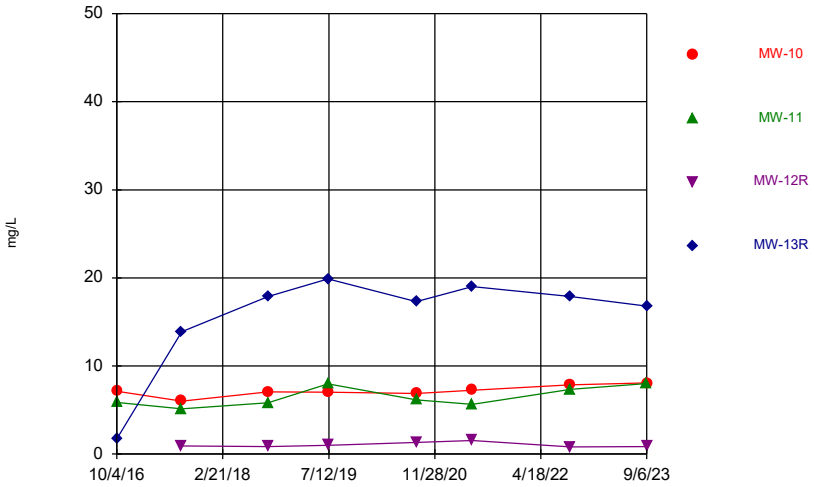
Time Series



Constituent: Manganese Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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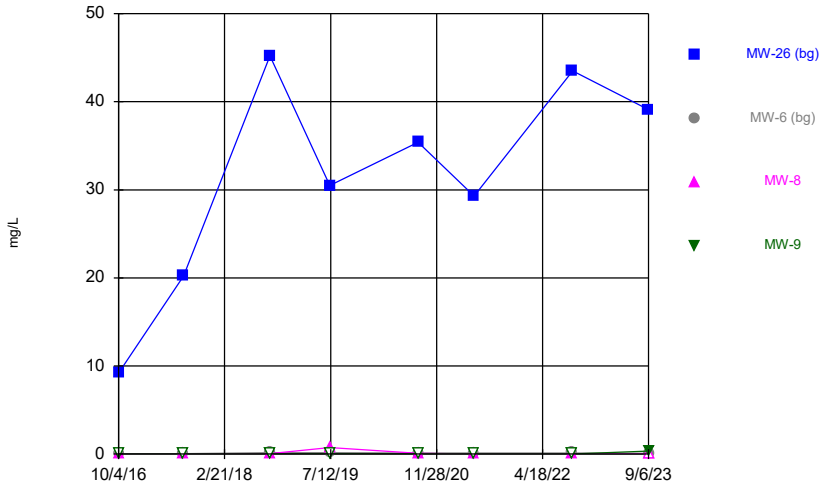
Hollow symbols indicate censored values.

Time Series



Constituent: Manganese Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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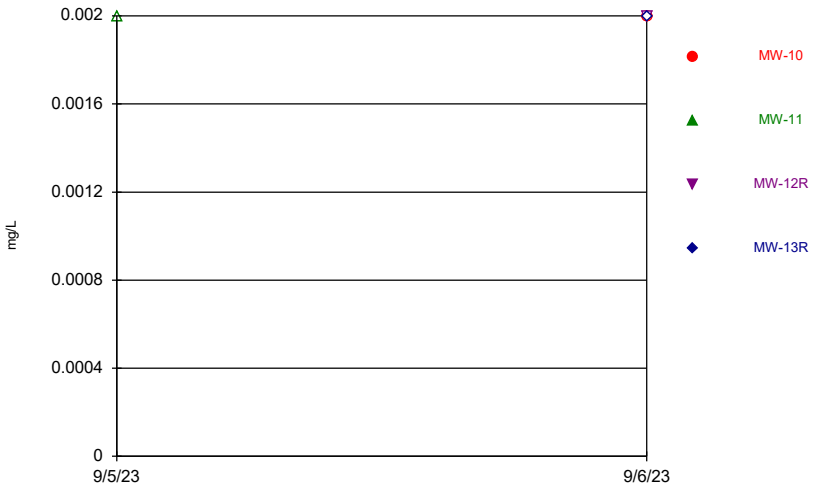
Hollow symbols indicate censored values.

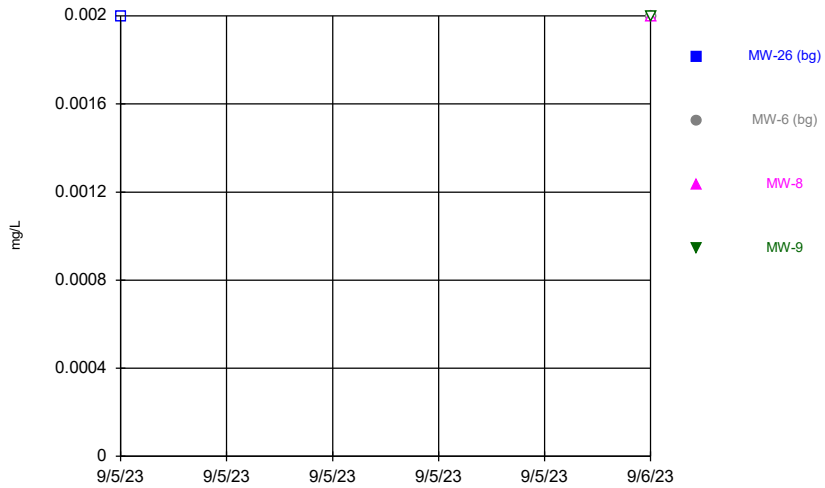
Time Series



Constituent: Molybdenum Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

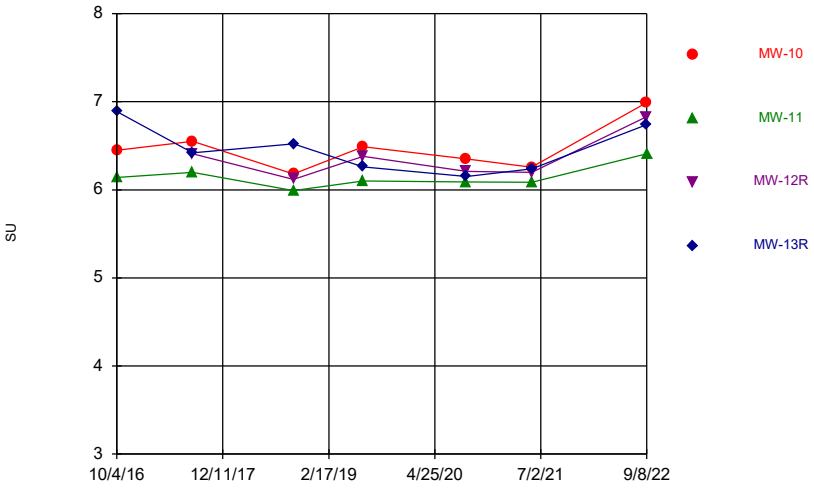
Time Series



Constituent: Molybdenum Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

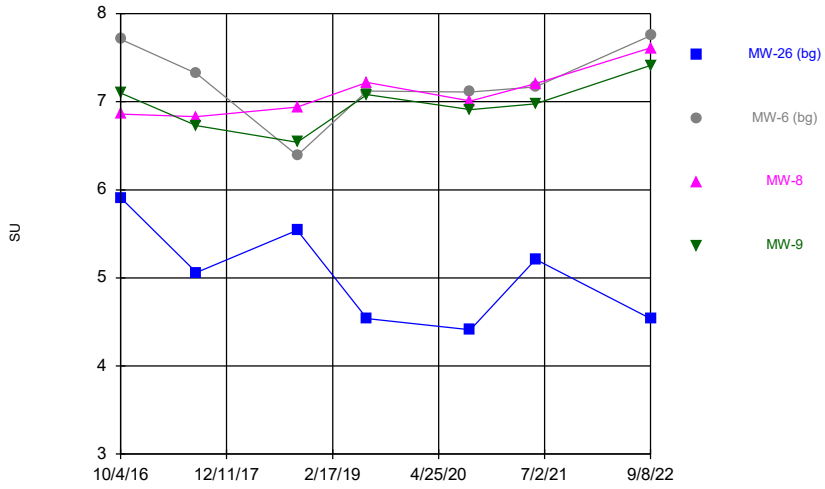
Time Series



Constituent: pH Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

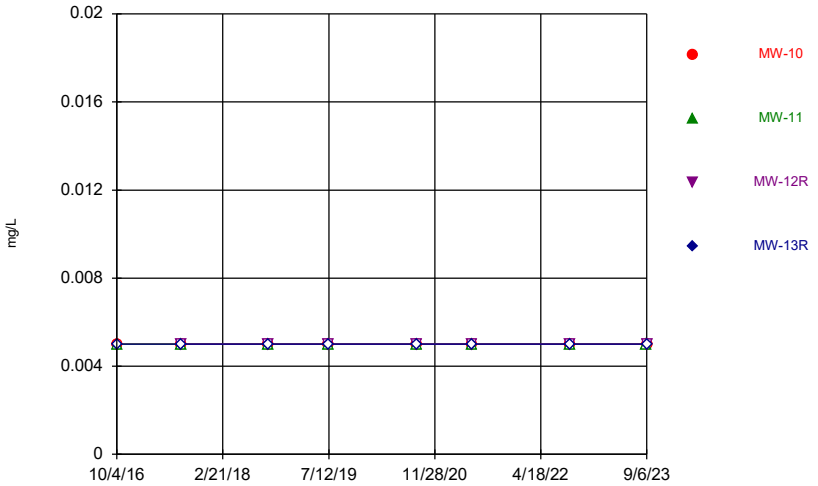
Time Series



Constituent: pH Analysis Run 10/22/2023 10:14 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Selenium Analysis Run 10/22/2023 10:15 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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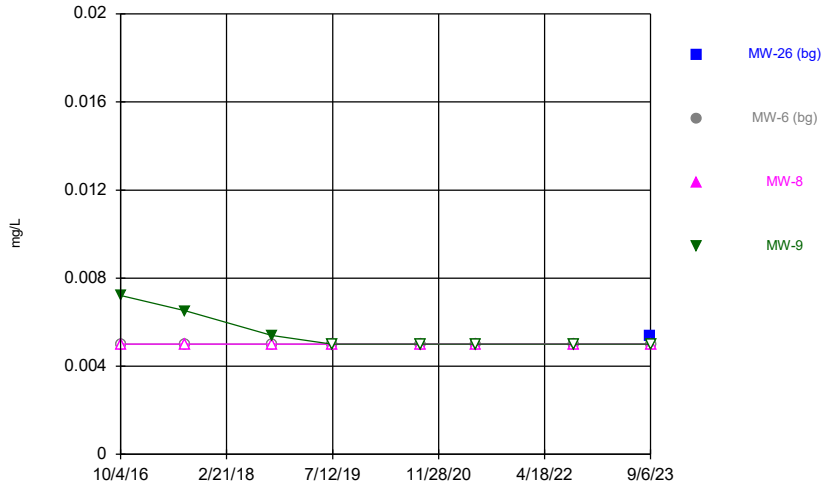
Hollow symbols indicate censored values.

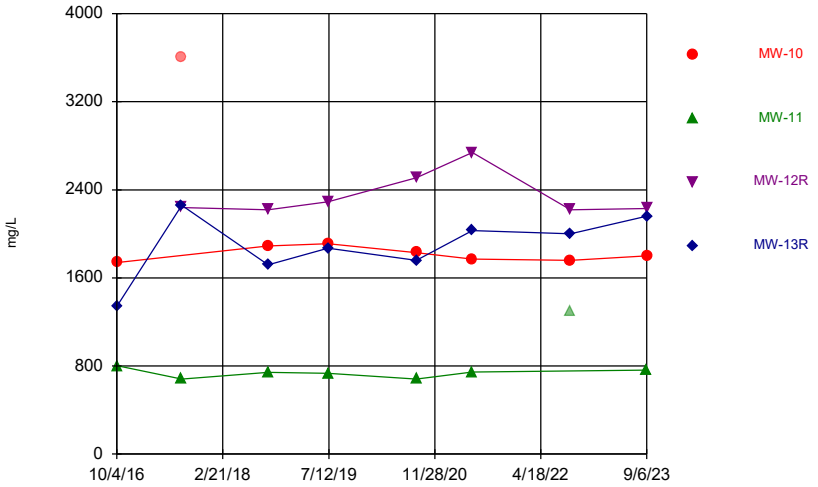
Time Series



Constituent: Selenium Analysis Run 10/22/2023 10:15 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Time Series



Constituent: Sulfate Analysis Run 10/22/2023 10:15 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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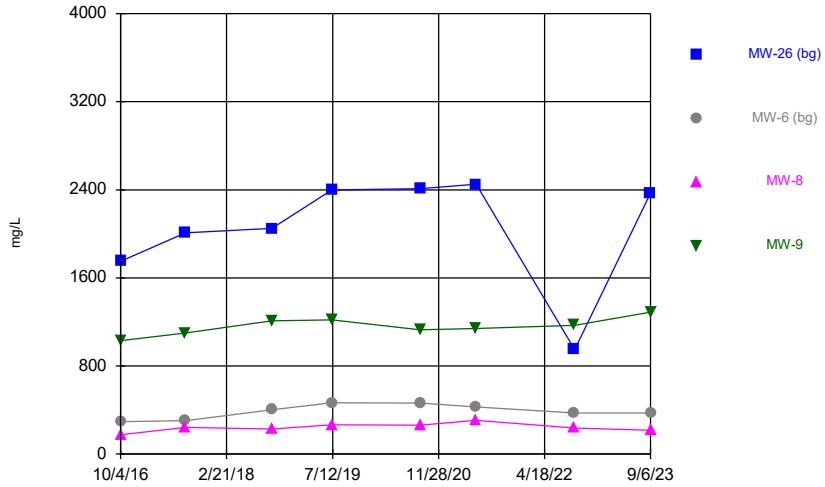
Time Series



Constituent: Sulfate Analysis Run 10/22/2023 10:15 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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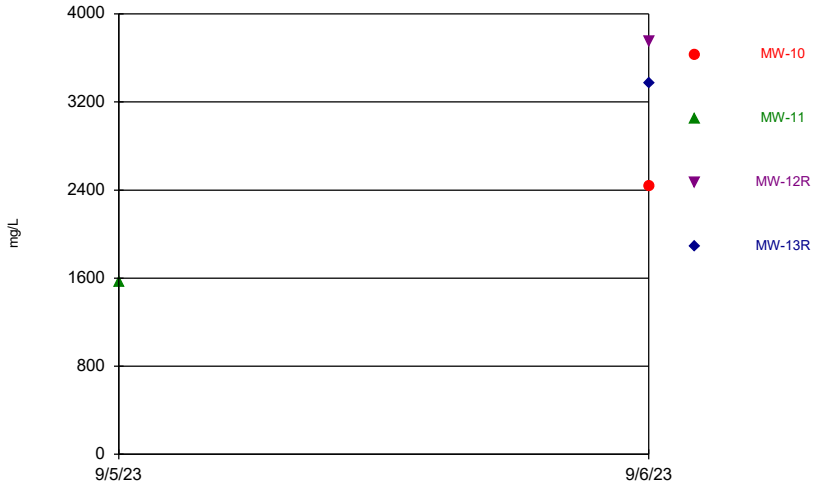
Time Series



Constituent: Total Dissolved Solids Analysis Run 10/22/2023 10:15 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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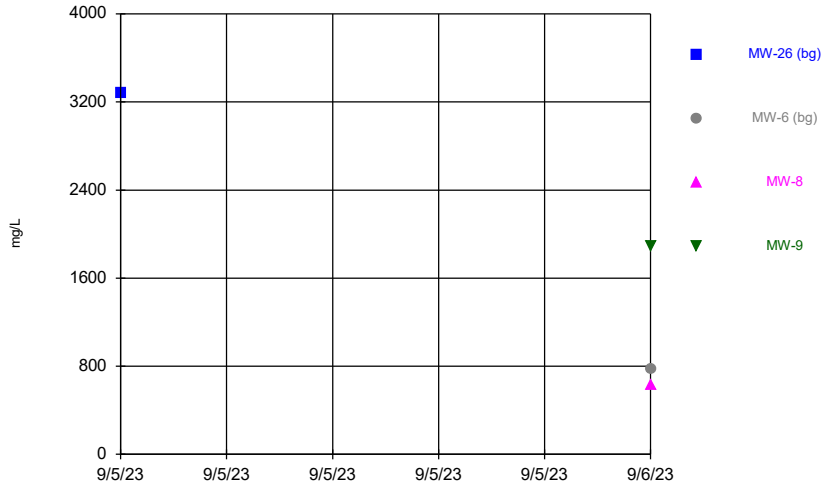
Time Series



Constituent: Total Dissolved Solids Analysis Run 10/22/2023 10:15 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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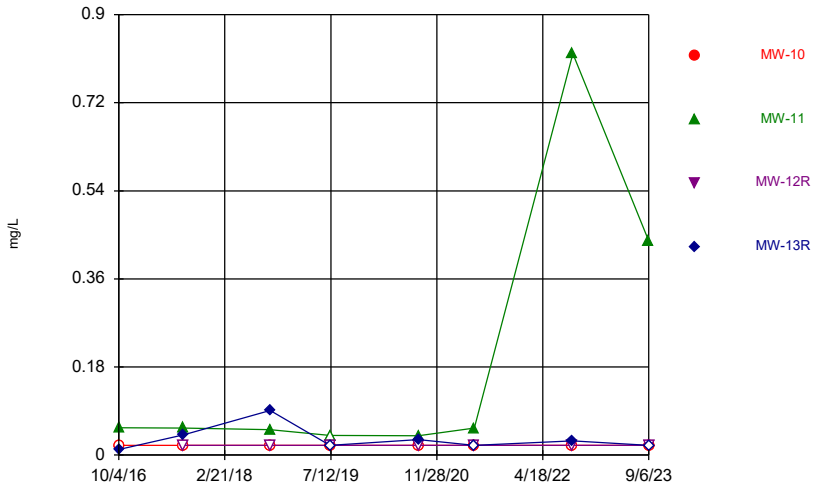
Hollow symbols indicate censored values.

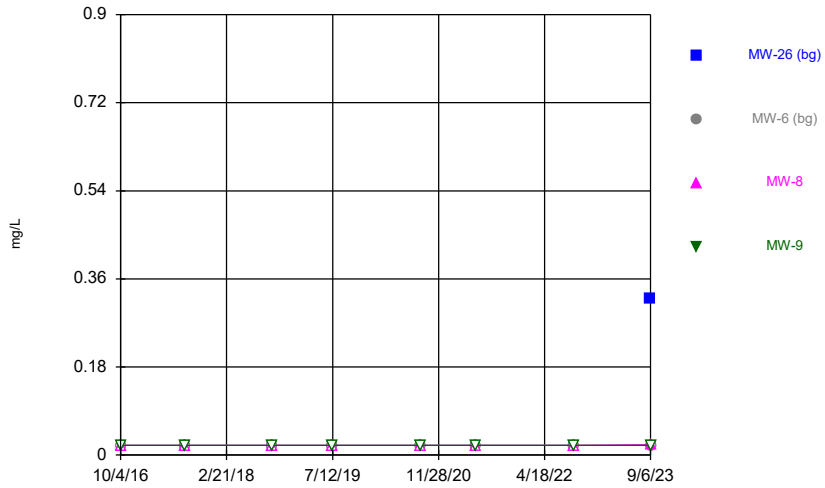
Time Series



Constituent: Zinc Analysis Run 10/22/2023 10:15 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Zinc Analysis Run 10/22/2023 10:15 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

Time Series

Constituent: Arsenic (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
10/4/2016	0.0034	<0.008		<0.002
8/10/2017	0.00253	<0.008	<0.002	0.00246
9/26/2018	0.00301	<0.008	<0.002	0.00422
7/8/2019	<0.008	<0.008	<0.002	<0.002
9/1/2020	0.0031	<0.008	<0.002	<0.002
5/25/2021	0.00279			
5/26/2021		0.00284	<0.002	0.00268
9/7/2022	0.00323		<0.002	0.00825
9/8/2022		0.0035		
9/5/2023		0.00267		
9/6/2023	0.00306		<0.002	<0.002

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Arsenic (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
10/4/2016		<0.002	<0.002	<0.002
8/10/2017		<0.002	<0.002	<0.002
9/26/2018		<0.002	<0.002	<0.002
7/8/2019		<0.002	<0.002	<0.002
9/1/2020		<0.002	<0.002	<0.002
5/25/2021		<0.002	<0.002	<0.002
9/8/2022		<0.002	<0.002	<0.002
9/5/2023	<0.002			
9/6/2023		<0.002	<0.002	<0.002

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Barium (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
10/4/2016	0.0137	0.0325		0.00446
8/10/2017	0.0148	0.0299	0.0313	0.0665
9/26/2018	0.0158	0.0311	0.016	0.0322
7/8/2019	0.016	0.0489	0.0182	0.0338
9/1/2020	0.0146	0.0315	0.0169	0.0255
5/25/2021	0.0141			
5/26/2021		0.0314	0.0157	0.0265
9/7/2022	0.016		0.0144	0.0217
9/8/2022		0.0388		
9/5/2023		0.0329		
9/6/2023	0.015		0.0144	0.0188

Time Series

Constituent: Barium (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
10/4/2016		0.0317	0.0458	0.0237
8/10/2017		0.0334	0.0425	0.0224
9/26/2018		0.024	0.0438	0.0217
7/8/2019		0.0261	0.0438	0.0236
9/1/2020		0.0201	0.0323	0.0202
5/25/2021		0.021	0.0358	0.0211
9/8/2022		0.0213	0.0291	0.0213
9/5/2023	0.00972			
9/6/2023		0.0207	0.0281	0.0313

Time Series

Constituent: Beryllium (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
10/4/2016	<0.001	<0.001		<0.001
8/10/2017	<0.001	<0.001	<0.001	<0.001
9/26/2018	<0.001	<0.001	<0.001	<0.001
7/8/2019	<0.001	<0.001	<0.001	<0.001
9/1/2020	<0.001	<0.001	<0.001	<0.001
5/25/2021	<0.001			
5/26/2021		<0.001	<0.001	<0.001
9/7/2022	<0.001		<0.001	<0.001
9/8/2022		<0.001		
9/5/2023		<0.001		
9/6/2023	<0.001		<0.001	<0.001

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Beryllium (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
10/4/2016		<0.001	<0.001	<0.001
8/10/2017		<0.001	<0.001	<0.001
9/26/2018		<0.001	<0.001	<0.001
7/8/2019		<0.001	<0.001	<0.001
9/1/2020		<0.001	<0.001	<0.001
5/25/2021		<0.001	<0.001	<0.001
9/8/2022		<0.001	<0.001	<0.001
9/5/2023	0.00174			
9/6/2023		<0.001	<0.001	<0.001

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Boron (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
9/5/2023		0.407		
9/6/2023	0.634		1.42	0.56

Time Series

Constituent: Boron (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
9/5/2023	0.154			
9/6/2023		0.364	0.356	0.992

Time Series

Constituent: Calcium (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
9/5/2023		395		
9/6/2023	651		602	505

Time Series

Constituent: Calcium (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
9/5/2023	417			
9/6/2023		112	137	348

Time Series

Constituent: Chloride (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
10/4/2016	<5	8.08		<5
8/10/2017	<5	5.26	8.06	17.5
9/26/2018	<5	5.12	7	8.41
7/8/2019	<5	6.03	7.64	8.75
9/1/2020	5.18	5.15	8.22	8.33
5/25/2021	<5			
5/26/2021		<5	7.01	10.5
9/7/2022	<5		6.33	11.3
9/8/2022		10.8		
9/5/2023		6.47		
9/6/2023	<5		6.72	14.3

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Chloride (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
10/4/2016		<5	<5	<5
8/10/2017		<5	<5	<5
9/26/2018		<5	<5	<5
7/8/2019		<5	<5	<5
9/1/2020		<5	<5	<5
5/25/2021		<5	<5	<5
9/8/2022		<5	<5	<5
9/5/2023	<5			
9/6/2023		<5	<5	<5

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Cobalt (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
10/4/2016	0.0188	0.0277		<0.0005 (o)
8/10/2017	0.0181	0.0343	0.00528	0.044
9/26/2018	0.0185	0.0324	0.0043	0.0571
7/8/2019	0.0187	0.0478	0.00544	0.0703
9/1/2020	0.0181	0.0354	0.00696	0.0597
5/25/2021	0.0192			
5/26/2021		0.0351	0.0079	0.0541
9/7/2022	0.0176		0.00423	0.0528
9/8/2022		0.0409		
9/5/2023		0.0471		
9/6/2023	0.0188		0.00416	0.0579

Time Series

Constituent: Cobalt (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
10/4/2016		<0.0005	<0.0005	<0.0005
8/10/2017		<0.0005	<0.0005	<0.0005
9/26/2018		<0.0005	<0.0005	<0.0005
7/8/2019		<0.0005	0.00189	<0.0005
9/1/2020		<0.0005	<0.0005	<0.0005
5/25/2021		<0.0005	<0.0005	<0.0005
9/8/2022		<0.0005	<0.0005	<0.0005
9/5/2023	0.082			
9/6/2023		<0.0005	<0.0005	0.00138

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Copper (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
10/4/2016	<0.005	<0.005		<0.005
8/10/2017	<0.005	<0.005	<0.005	<0.005
9/26/2018	<0.005	<0.005	<0.005	0.0194 (o)
7/8/2019	<0.005	<0.005	<0.005	<0.005
9/1/2020	<0.005	<0.005	<0.005	<0.005
5/25/2021	<0.005			
5/26/2021		<0.005	<0.005	<0.005
9/7/2022	<0.005		<0.005	<0.005
9/8/2022		<0.005		
9/5/2023		<0.005		
9/6/2023	<0.005		<0.005	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Copper (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
10/4/2016		<0.005	<0.005	<0.005
8/10/2017		<0.005	<0.005	<0.005
9/26/2018		<0.005	<0.005	<0.005
7/8/2019		<0.005	<0.005	<0.005
9/1/2020		<0.005	<0.005	<0.005
5/25/2021		<0.005	<0.005	<0.005
9/8/2022		<0.005	<0.005	<0.005
9/5/2023	<0.005			
9/6/2023		<0.005	<0.005	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Fluoride (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
9/5/2023		<1		
9/6/2023	<1		<1	<1

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Fluoride (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
9/5/2023	1.12			
9/6/2023		<1	<1	<1

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Iron (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
10/4/2016	4.39	4.33		0.569
8/10/2017	4.35	9.25	3.12	6.85
9/26/2018	4.7	10.7	3.76	12
7/8/2019	4.59	35.9	4.68	10.4
9/1/2020	4.65	14.3	4.88	9.25
5/25/2021	4.65			
5/26/2021		17	4.48	7.34
9/7/2022	6.02		3.79	8.8
9/8/2022		36.7		
9/5/2023		22		
9/6/2023	5.97		3.73	7.06

Time Series

Constituent: Iron (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
10/4/2016	0.685	<0.1	0.137	<0.1
8/10/2017	<1	0.148	0.238	0.107
9/26/2018	1.2	0.909	0.308	<0.1
7/8/2019	2.88	0.951	<0.1	<0.1
9/1/2020	<1	0.706	<0.1	<0.1
5/25/2021		0.877	<0.1	<0.1
5/26/2021	0.123			
9/8/2022	0.38	0.847	<0.1	<0.1
9/5/2023	0.216			
9/6/2023		0.403	1.27 (o)	0.175

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Lead (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
10/4/2016	<0.0005	<0.0005		<0.0005
8/10/2017	<0.0005	<0.0005	0.000591	0.00395
9/26/2018	<0.0005	<0.0005	<0.0005	0.00989 (o)
7/8/2019	<0.0005	<0.0005	<0.0005	0.00241
9/1/2020	<0.0005	<0.0005	0.000708	0.0028
5/25/2021	<0.0005			
5/26/2021		<0.0005	<0.0005	<0.0005
9/7/2022	<0.0005		<0.0005	0.00096
9/8/2022		<0.0005		
9/5/2023		<0.0005		
9/6/2023	<0.0005		<0.0005	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Lead (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
10/4/2016		<0.0005	<0.0005	<0.0005
8/10/2017		<0.0005	<0.0005	<0.0005
9/26/2018		<0.0005	<0.0005	<0.0005
7/8/2019		<0.0005	<0.0005	<0.0005
9/1/2020		<0.0005	0.00111	<0.0005
5/25/2021		<0.0005	<0.0005	<0.0005
9/8/2022		<0.0005	<0.0005	<0.0005
9/5/2023	<0.0005			
9/6/2023		<0.0005	<0.0005	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Lithium (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
9/5/2023		0.0518		
9/6/2023	0.15		0.322	0.175

Time Series

Constituent: Lithium (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
9/5/2023	0.0363			
9/6/2023		0.0577	0.0954	0.12

Time Series

Constituent: Magnesium (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
10/4/2016	199	124		142
8/10/2017	191	107	196	231
9/26/2018	206	109	196	168
7/8/2019	184	127	208	218
9/1/2020	193	116	258	196
5/25/2021	179			
5/26/2021		107	293	228
9/7/2022	205		214	243
9/8/2022		158		
9/5/2023		112		
9/6/2023	195		205	232

Time Series

Constituent: Magnesium (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
10/4/2016	214	13.5	37.3	70.6
8/10/2017	235	14.8	44	69.5
9/26/2018	251	26.2	40.4	71.5
7/8/2019	333	28.7	38.5	75.6
9/1/2020	280	27	39	65
5/25/2021		28.5	46.7	70.9
5/26/2021	318			
9/8/2022	360	25.3	41.5	72.5
9/5/2023	270			
9/6/2023		25	41	65

Time Series

Constituent: Manganese (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
10/4/2016	7.12	5.87		1.74
8/10/2017	6.01	5.12	0.923	13.9
9/26/2018	7.07	5.83	0.84	17.9
7/8/2019	7.03	7.98	0.987	19.9
9/1/2020	6.89	6.14	1.32	17.3
5/25/2021	7.26			
5/26/2021		5.64	1.55	19
9/7/2022	7.85		0.808	17.9
9/8/2022		7.37		
9/5/2023		8.01		
9/6/2023	8.07		0.85	16.8

Time Series

Constituent: Manganese (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
10/4/2016	9.2	0.0474	0.014	<0.01
8/10/2017	20.2	0.035	0.033	<0.01
9/26/2018	45.2	0.157	0.062	<0.01
7/8/2019	30.5	0.162	0.751	<0.01
9/1/2020	35.4	0.139	0.106	<0.01
5/25/2021		0.129	0.028	<0.01
5/26/2021	29.3			
9/8/2022	43.5	0.14	0.011	<0.01
9/5/2023	39.1			
9/6/2023		0.0924	<0.01	0.341

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
9/5/2023		<0.002		
9/6/2023	<0.002		<0.002	<0.002

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Molybdenum (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
9/5/2023	<0.002			
9/6/2023		<0.002	<0.002	<0.002

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: pH (SU) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
10/4/2016	6.45	6.14		6.89
8/10/2017	6.55	6.2	6.41	6.42
9/26/2018	6.18	5.99	6.12	6.52
7/8/2019	6.49	6.1	6.38	6.26
9/1/2020	6.35	6.09	6.21	6.15
5/25/2021	6.255 (D)			
5/26/2021		6.085 (D)	6.2 (D)	6.24 (D)
9/7/2022	6.99		6.83	6.74
9/8/2022		6.41		

Time Series

Constituent: pH (SU) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
10/4/2016	5.91	7.71	6.86	7.1
8/10/2017	5.06	7.32	6.83	6.73
9/26/2018	5.54	6.39	6.94	6.54
7/8/2019	4.54	7.12	7.22	7.08
9/1/2020	4.41	7.11	7.01	6.91
5/25/2021		7.17 (D)	7.205 (D)	6.975 (D)
5/26/2021	5.21 (D)			
9/8/2022	4.54	7.75	7.61	7.41

Time Series

Constituent: Selenium (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
10/4/2016	<0.005	<0.005		<0.005
8/10/2017	<0.005	<0.005	<0.005	<0.005
9/26/2018	<0.005	<0.005	<0.005	<0.005
7/8/2019	<0.005	<0.005	<0.005	<0.005
9/1/2020	<0.005	<0.005	<0.005	<0.005
5/25/2021	<0.005			
5/26/2021		<0.005	<0.005	<0.005
9/7/2022	<0.005		<0.005	<0.005
9/8/2022		<0.005		
9/5/2023		<0.005		
9/6/2023	<0.005		<0.005	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Selenium (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
10/4/2016		<0.005	<0.005	0.00721
8/10/2017		<0.005	<0.005	0.00651
9/26/2018		<0.005	<0.005	0.0054
7/8/2019		<0.005	<0.005	<0.005
9/1/2020		<0.005	<0.005	<0.005
5/25/2021		<0.005	<0.005	<0.005
9/8/2022		<0.005	<0.005	<0.005
9/5/2023	0.0054			
9/6/2023		<0.005	<0.005	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Sulfate (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
10/4/2016	1740	802		1340
8/10/2017	3600 (o)	681	2240	2260
9/26/2018	1890	743	2220	1720
7/8/2019	1910	733	2290	1870
9/1/2020	1830	680	2510	1760
5/25/2021	1770			
5/26/2021		744	2740	2030
9/7/2022	1760		2220	2000
9/8/2022		1300 (o)		
9/5/2023		762		
9/6/2023	1800		2230	2160

Time Series

Constituent: Sulfate (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
10/4/2016	1750	295	175	1030
8/10/2017	2010	304	243	1100
9/26/2018	2050	403	227	1210
7/8/2019	2400	467	265	1220
9/1/2020	2410	464	262	1130
5/25/2021		429	307	1140
5/26/2021	2450			
9/8/2022	948	373	236	1170
9/5/2023	2370			
9/6/2023		373	216	1290

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
9/5/2023		1560		
9/6/2023	2440		3750	3370

Time Series

Constituent: Total Dissolved Solids (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
9/5/2023	3280			
9/6/2023		778	632	1890

Time Series

Constituent: Zinc (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10	MW-11	MW-12R	MW-13R
10/4/2016	<0.02	0.0556		0.0111
8/10/2017	<0.02	0.0554	<0.02	0.0413
9/26/2018	<0.02	0.0521	<0.02	0.0911
7/8/2019	<0.02	<0.08	<0.02	<0.02
9/1/2020	<0.02	0.0392	<0.02	0.0316
5/25/2021	<0.02			
5/26/2021		0.055	<0.02	<0.02
9/7/2022	<0.02		<0.02	0.029
9/8/2022		0.82		
9/5/2023		0.438		
9/6/2023	<0.02		<0.02	<0.02

ND substitution: RL or RL/2 if <15% NDs.

Time Series

Constituent: Zinc (mg/L) Analysis Run 10/22/2023 10:16 AM View: Descriptive

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26 (bg)	MW-6 (bg)	MW-8	MW-9
10/4/2016		<0.02	<0.02	<0.02
8/10/2017		<0.02	<0.02	<0.02
9/26/2018		<0.02	<0.02	<0.02
7/8/2019		<0.02	<0.02	<0.02
9/1/2020		<0.02	<0.02	<0.02
5/25/2021		<0.02	<0.02	<0.02
9/8/2022		<0.02	<0.02	<0.02
9/5/2023	0.32			
9/6/2023		<0.02	0.0214	<0.02

ND substitution: RL or RL/2 if <15% NDs.

FIGURE B.

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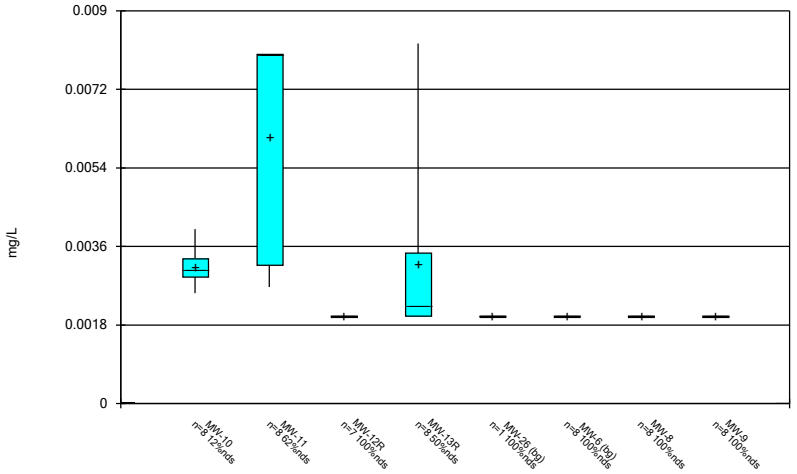
Box & Whiskers Plot



Constituent: Arsenic Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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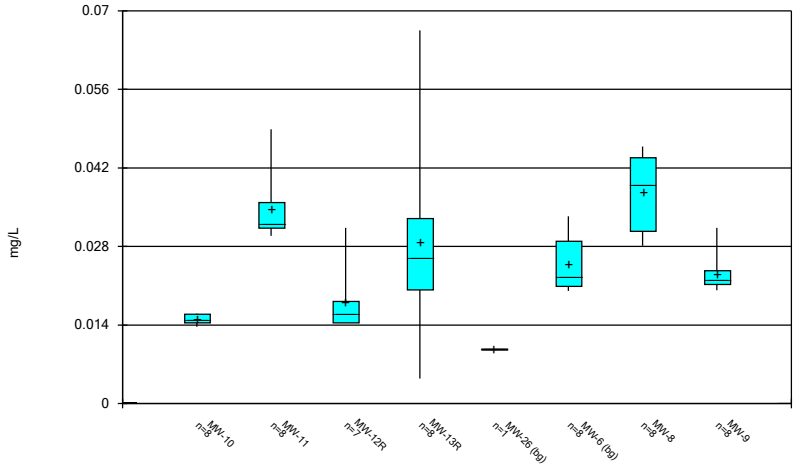
Box & Whiskers Plot



Constituent: Barium Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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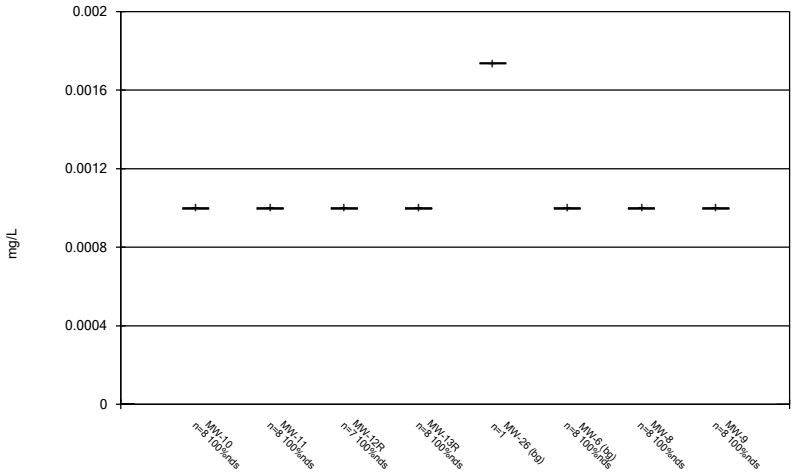
Box & Whiskers Plot



Constituent: Beryllium Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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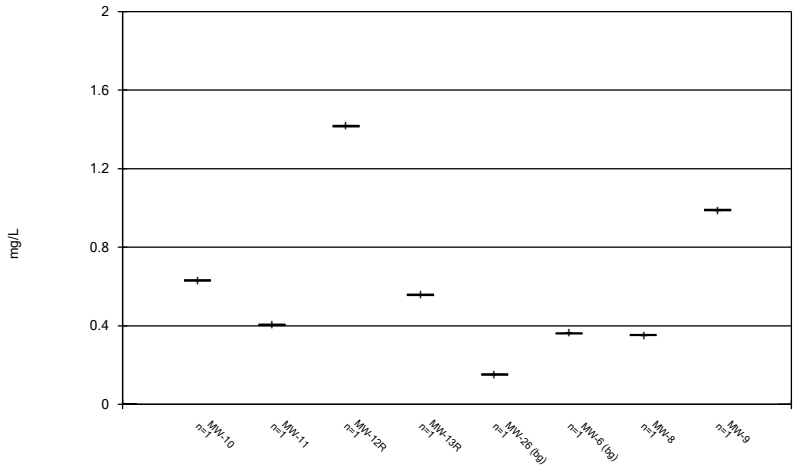
Box & Whiskers Plot



Constituent: Boron Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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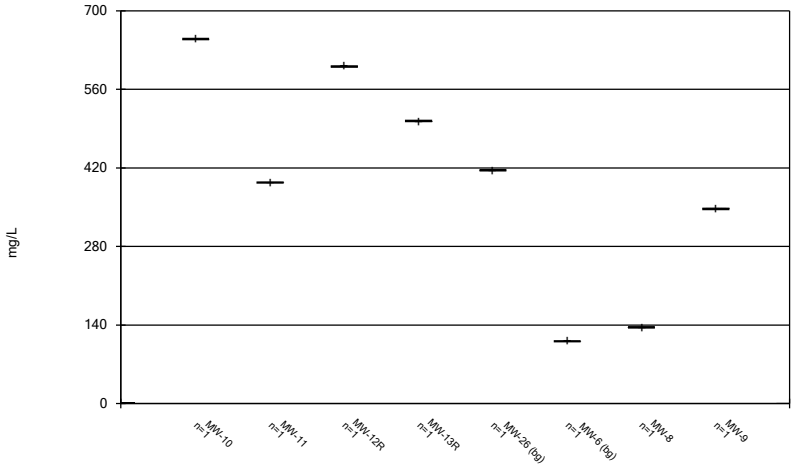
Box & Whiskers Plot



Constituent: Calcium Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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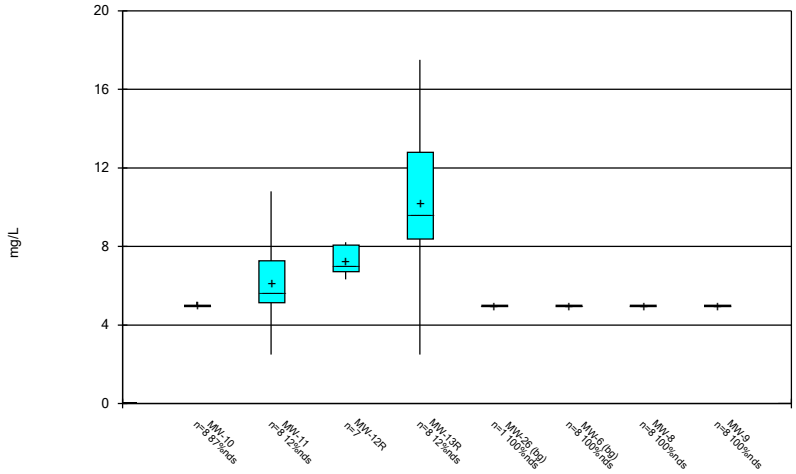
Box & Whiskers Plot



Constituent: Chloride Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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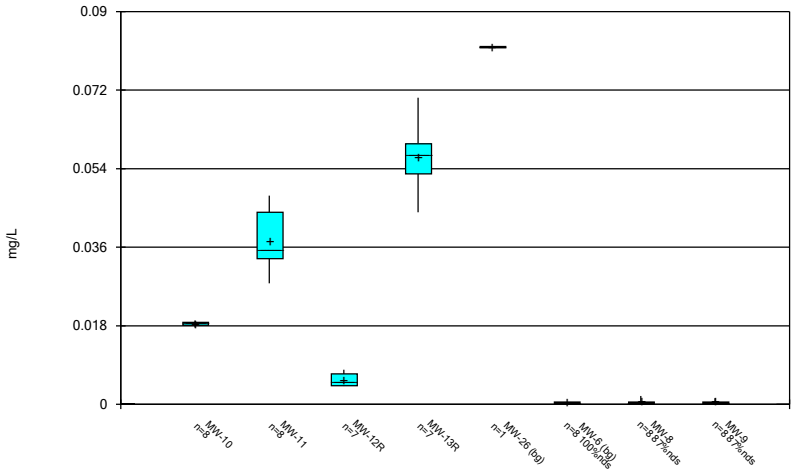
Box & Whiskers Plot



Constituent: Cobalt Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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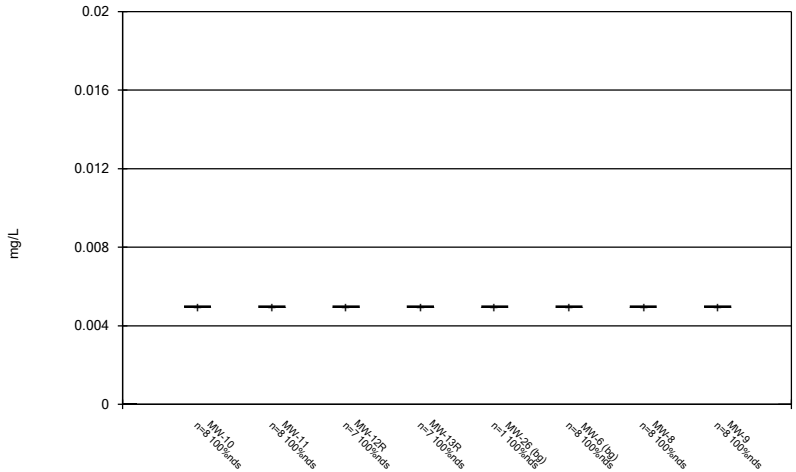
Box & Whiskers Plot



Constituent: Copper Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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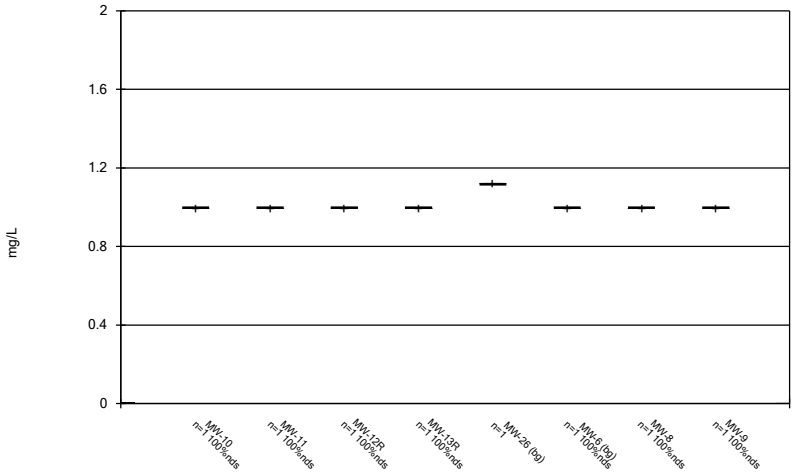
Box & Whiskers Plot



Constituent: Fluoride Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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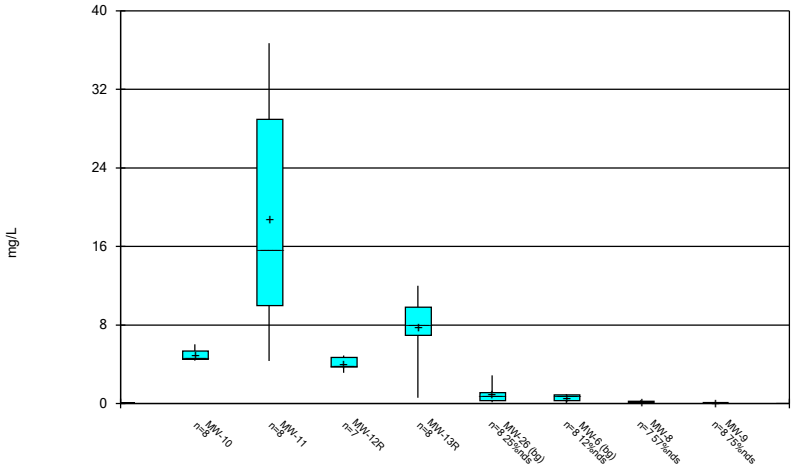
Box & Whiskers Plot



Constituent: Iron Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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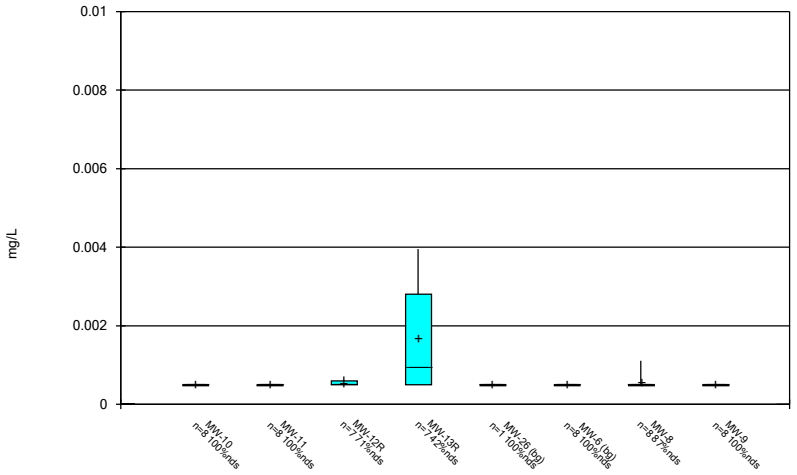
Box & Whiskers Plot



Constituent: Lead Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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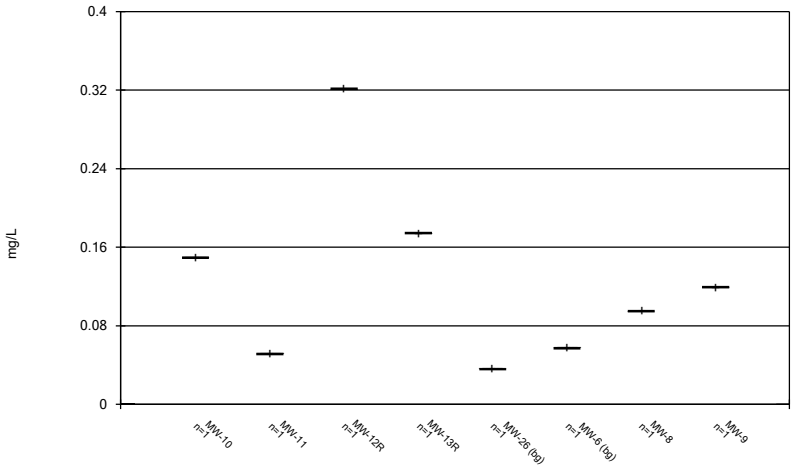
Box & Whiskers Plot



Constituent: Lithium Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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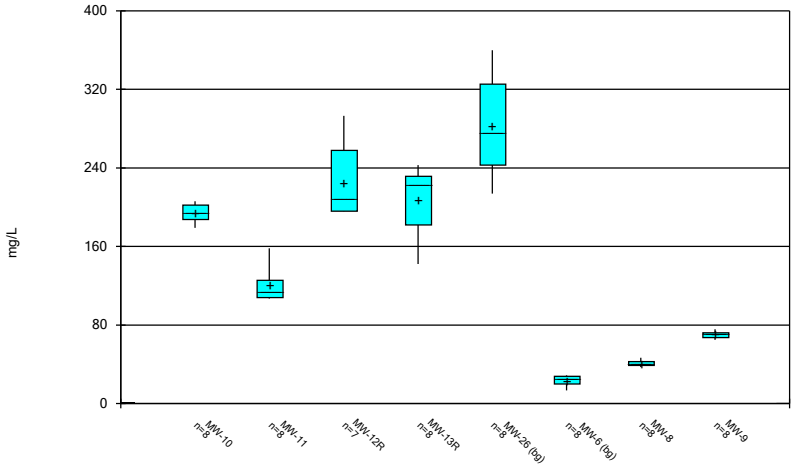
Box & Whiskers Plot



Constituent: Magnesium Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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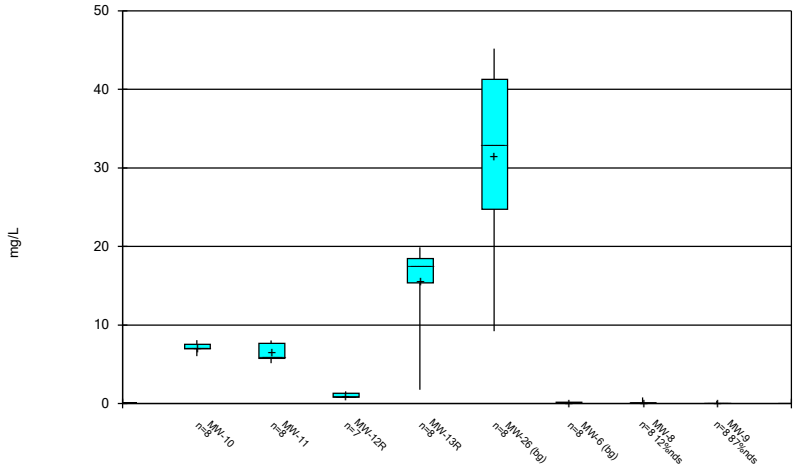
Box & Whiskers Plot



Constituent: Manganese Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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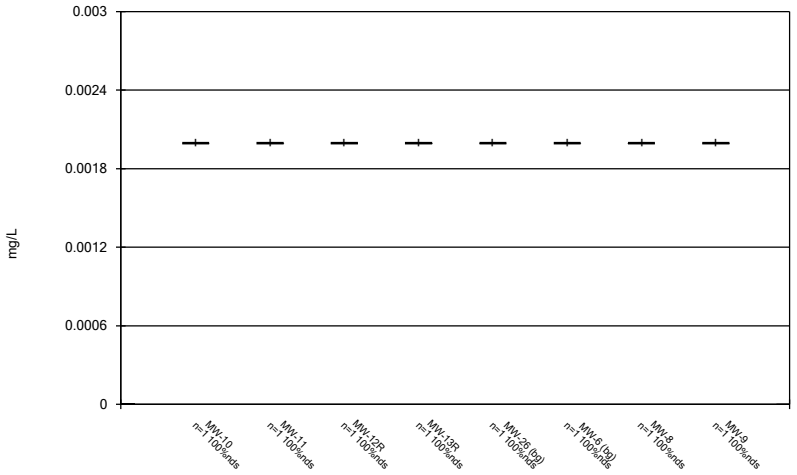
Box & Whiskers Plot



Constituent: Molybdenum Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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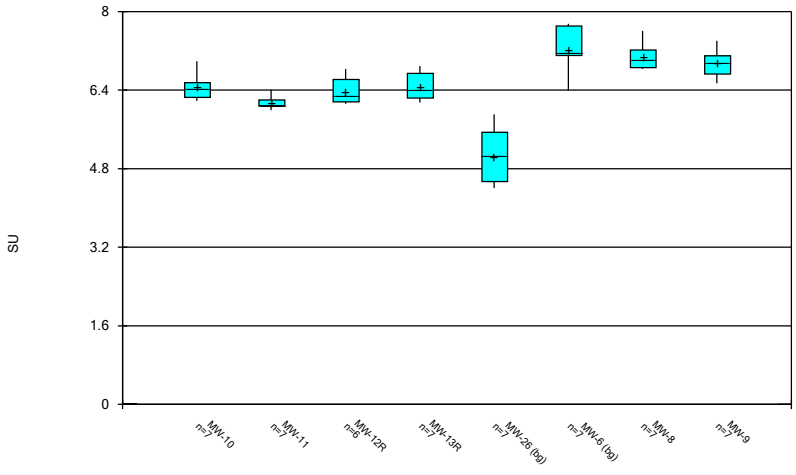
Box & Whiskers Plot



Constituent: pH Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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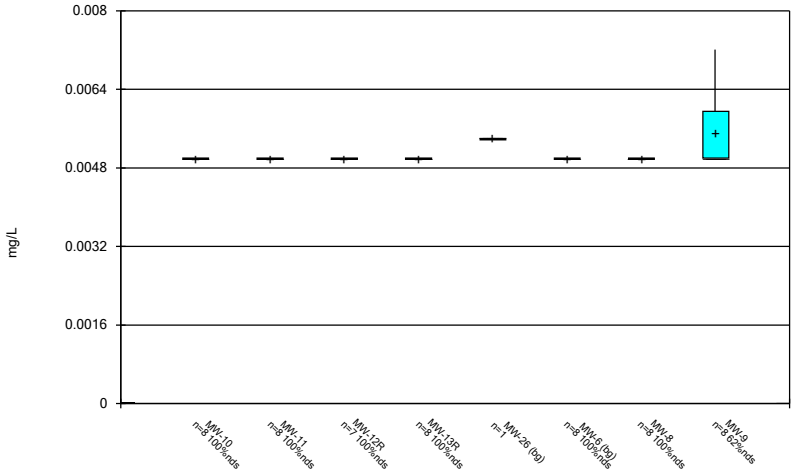
Box & Whiskers Plot



Constituent: Selenium Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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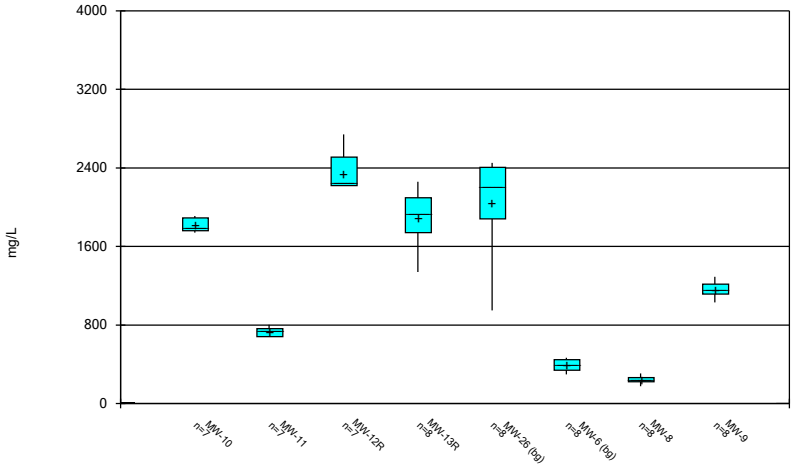
Box & Whiskers Plot



Constituent: Sulfate Analysis Run 10/22/2023 10:16 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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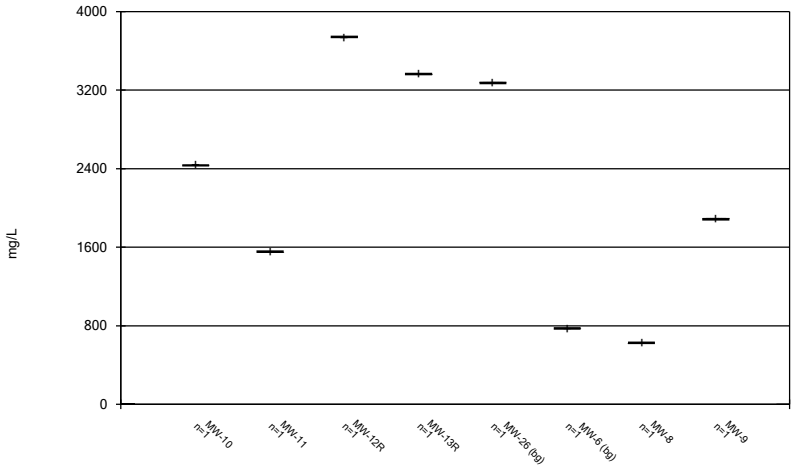
Box & Whiskers Plot



Constituent: Total Dissolved Solids Analysis Run 10/22/2023 10:17 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

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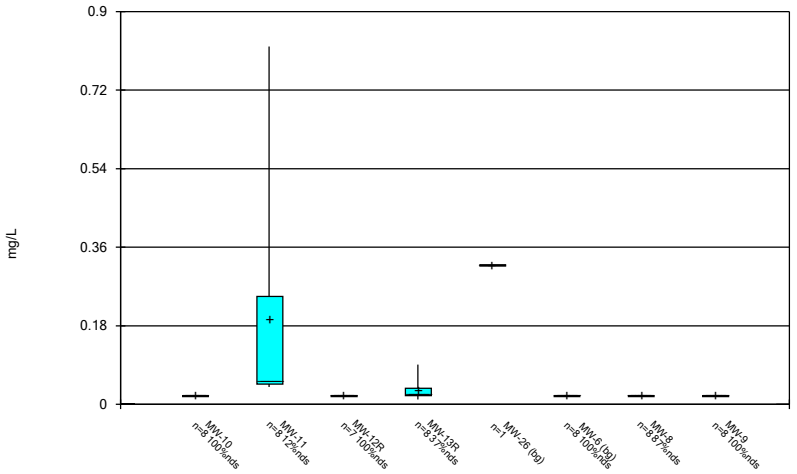
Box & Whiskers Plot



Constituent: Zinc Analysis Run 10/22/2023 10:17 AM View: Descriptive
Cargill CCR LF Client: HR Green Data: Cargill_Import

FIGURE C.

Outlier Summary

Cargill CCR LF Client: HR Green Data: Cargill_Import Printed 10/23/2023, 9:42 AM

	MW-13R Cobalt (mg/L)	MW-13R Copper (mg/L)	MW-8 Iron (mg/L)	MW-13R Lead (mg/L)	MW-10 Sulfate (mg/L)	MW-11 Sulfate (mg/L)
10/4/2016	<0.0005 (o)					
8/10/2017					3600 (o)	
9/26/2018		0.0194 (o)		0.00989 (o)		
9/8/2022						1300 (o)
9/6/2023			1.27 (o)			

Tukey's Outlier Test - Significant Results

Cargill CCR LF Client: HR Green Data: Cargill_Import Printed 10/22/2023, 9:30 AM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Iron (mg/L)	**MW-9**	**Yes**	**0.175**	**NP**	**NaN**	**8**	**0.1103**	**0.02628**	**ln(x)**	**ShapiroWilk**
Sulfate (mg/L)	**MW-10**	**Yes**	**3600**	**NP**	**NaN**	**8**	**2038**	**634.3**	**ln(x)**	**ShapiroWilk**
Sulfate (mg/L)	**MW-11**	**Yes**	**1300**	**NP**	**NaN**	**8**	**805.6**	**203.8**	**ln(x)**	**ShapiroWilk**

Tukey's Outlier Test - All Results

Cargill CCR LF Client: HR Green Data: Cargill_Import Printed 10/22/2023, 9:30 AM

Constituent	Well	Outlier	Value(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Arsenic (mg/L)	MW-10	No	n/a	NP	NaN	8	0.00314	0.0004367	ln(x)	ShapiroWilk
Arsenic (mg/L)	MW-11	No	n/a	NP	NaN	8	0.006126	0.002597	ln(x)	ShapiroWilk
Arsenic (mg/L)	MW-13R	No	n/a	NP	NaN	8	0.003201	0.002175	ln(x)	ShapiroWilk
Barium (mg/L)	MW-10	No	n/a	NP	NaN	8	0.015	0.0008734	ln(x)	ShapiroWilk
Barium (mg/L)	MW-11	No	n/a	NP	NaN	8	0.03463	0.006365	ln(x)	ShapiroWilk
Barium (mg/L)	MW-12R	No	n/a	NP	NaN	7	0.01813	0.005961	ln(x)	ShapiroWilk
Barium (mg/L)	MW-13R	No	n/a	NP	NaN	8	0.02868	0.0178	sqrt(x)	ShapiroWilk
Barium (mg/L)	MW-6 (bg)	No	n/a	NP	NaN	8	0.02479	0.005203	ln(x)	ShapiroWilk
Barium (mg/L)	MW-8	No	n/a	NP	NaN	8	0.03765	0.007191	x^2	ShapiroWilk
Barium (mg/L)	MW-9	No	n/a	NP	NaN	8	0.02316	0.003503	ln(x)	ShapiroWilk
Chloride (mg/L)	MW-10	n/a	n/a	NP	NaN	8	5.023	0.06364	unknown	ShapiroWilk
Chloride (mg/L)	MW-11	No	n/a	NP	NaN	8	6.176	2.439	sqrt(x)	ShapiroWilk
Chloride (mg/L)	MW-12R	No	n/a	NP	NaN	7	7.283	0.7058	ln(x)	ShapiroWilk
Chloride (mg/L)	MW-13R	No	n/a	NP	NaN	8	10.2	4.464	normal	ShapiroWilk
Cobalt (mg/L)	MW-10	No	n/a	NP	NaN	8	0.01848	0.000512	x^6	ShapiroWilk
Cobalt (mg/L)	MW-11	No	n/a	NP	NaN	8	0.03759	0.007093	ln(x)	ShapiroWilk
Cobalt (mg/L)	MW-12R	No	n/a	NP	NaN	7	0.005467	0.00146	ln(x)	ShapiroWilk
Cobalt (mg/L)	MW-13R	No	n/a	NP	NaN	8	0.04952	0.02122	x^3	ShapiroWilk
Cobalt (mg/L)	MW-8	n/a	n/a	NP	NaN	8	0.0006738	0.0004914	unknown	ShapiroWilk
Cobalt (mg/L)	MW-9	n/a	n/a	NP	NaN	8	0.00061	0.0003111	unknown	ShapiroWilk
Copper (mg/L)	MW-13R	n/a	n/a	NP	NaN	8	0.0068	0.005091	unknown	ShapiroWilk
Iron (mg/L)	MW-10	No	n/a	NP	NaN	8	4.915	0.6784	ln(x)	ShapiroWilk
Iron (mg/L)	MW-11	No	n/a	NP	NaN	8	18.77	12.03	x^(1/3)	ShapiroWilk
Iron (mg/L)	MW-12R	No	n/a	NP	NaN	7	4.063	0.6309	normal	ShapiroWilk
Iron (mg/L)	MW-13R	No	n/a	NP	NaN	8	7.784	3.411	x^2	ShapiroWilk
Iron (mg/L)	MW-26 (bg)	No	n/a	NP	NaN	8	0.9355	0.879	ln(x)	ShapiroWilk
Iron (mg/L)	MW-6 (bg)	No	n/a	NP	NaN	8	0.6114	0.361	x^5	ShapiroWilk
Iron (mg/L)	MW-8	No	n/a	NP	NaN	8	0.2941	0.402	ln(x)	ShapiroWilk
Iron (mg/L)	**MW-9**	**Yes**	**0.175**	**NP**	**NaN**	**8**	**0.1103**	**0.02628**	**ln(x)**	**ShapiroWilk**
Lead (mg/L)	MW-12R	No	n/a	NP	NaN	7	0.0005427	0.00008039	ln(x)	ShapiroWilk
Lead (mg/L)	MW-13R	No	n/a	NP	NaN	8	0.002689	0.003183	ln(x)	ShapiroWilk
Lead (mg/L)	MW-8	n/a	n/a	NP	NaN	8	0.0005763	0.0002157	unknown	ShapiroWilk
Magnesium (mg/L)	MW-10	No	n/a	NP	NaN	8	194	9.457	x^3	ShapiroWilk
Magnesium (mg/L)	MW-11	No	n/a	NP	NaN	8	120	17.1	ln(x)	ShapiroWilk
Magnesium (mg/L)	MW-12R	No	n/a	NP	NaN	7	224.3	36.97	ln(x)	ShapiroWilk
Magnesium (mg/L)	MW-13R	No	n/a	NP	NaN	8	207.3	35.71	x^6	ShapiroWilk
Magnesium (mg/L)	MW-26 (bg)	No	n/a	NP	NaN	8	282.6	50.6	ln(x)	ShapiroWilk
Magnesium (mg/L)	MW-6 (bg)	No	n/a	NP	NaN	8	23.63	6.008	x^6	ShapiroWilk
Magnesium (mg/L)	MW-8	No	n/a	NP	NaN	8	41.05	3.071	ln(x)	ShapiroWilk
Magnesium (mg/L)	MW-9	No	n/a	NP	NaN	8	70.08	3.61	x^6	ShapiroWilk
pH (SU)	MW-10	No	n/a	NP	NaN	7	6.466	0.2653	ln(x)	ShapiroWilk
pH (SU)	MW-11	No	n/a	NP	NaN	7	6.145	0.1329	ln(x)	ShapiroWilk
pH (SU)	MW-12R	No	n/a	NP	NaN	6	6.358	0.2567	ln(x)	ShapiroWilk
pH (SU)	MW-13R	No	n/a	NP	NaN	7	6.46	0.2748	ln(x)	ShapiroWilk
pH (SU)	MW-26 (bg)	No	n/a	NP	NaN	7	5.03	0.5675	ln(x)	ShapiroWilk
pH (SU)	MW-6 (bg)	No	n/a	NP	NaN	7	7.224	0.4554	x^5	ShapiroWilk
pH (SU)	MW-8	No	n/a	NP	NaN	7	7.096	0.2738	ln(x)	ShapiroWilk
pH (SU)	MW-9	No	n/a	NP	NaN	7	6.964	0.2794	x^(1/3)	ShapiroWilk
Selenium (mg/L)	MW-9	No	n/a	NP	NaN	8	0.005515	0.0008621	ln(x)	ShapiroWilk
Sulfate (mg/L)	**MW-10**	**Yes**	**3600**	**NP**	**NaN**	**8**	**2038**	**634.3**	**ln(x)**	**ShapiroWilk**
Sulfate (mg/L)	**MW-11**	**Yes**	**1300**	**NP**	**NaN**	**8**	**805.6**	**203.8**	**ln(x)**	**ShapiroWilk**
Sulfate (mg/L)	MW-12R	No	n/a	NP	NaN	7	2350	200.7	ln(x)	ShapiroWilk
Sulfate (mg/L)	MW-13R	No	n/a	NP	NaN	8	1893	290.4	x^3	ShapiroWilk
Sulfate (mg/L)	MW-26 (bg)	No	n/a	NP	NaN	8	2049	510	x^4	ShapiroWilk
Sulfate (mg/L)	MW-6 (bg)	No	n/a	NP	NaN	8	388.5	65.55	x^2	ShapiroWilk
Sulfate (mg/L)	MW-8	No	n/a	NP	NaN	8	241.4	38.87	normal	ShapiroWilk
Sulfate (mg/L)	MW-9	No	n/a	NP	NaN	8	1161	80.08	normal	ShapiroWilk
Zinc (mg/L)	MW-11	No	n/a	NP	NaN	8	0.1944	0.2871	ln(x)	ShapiroWilk
Zinc (mg/L)	MW-13R	No	n/a	NP	NaN	8	0.03301	0.02521	ln(x)	ShapiroWilk
Zinc (mg/L)	MW-8	n/a	n/a	NP	NaN	8	0.02017	0.000495	unknown	ShapiroWilk

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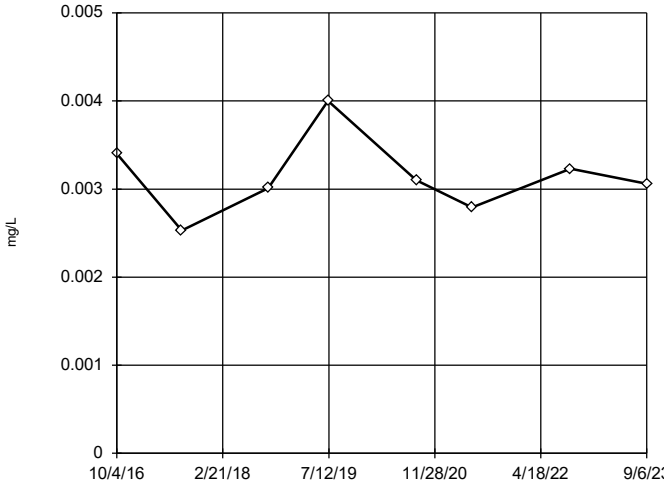
Tukey's Outlier Screening

MW-10



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.004956, low cutoff = 0.001938, based on IQR multiplier of 3.

Constituent: Arsenic Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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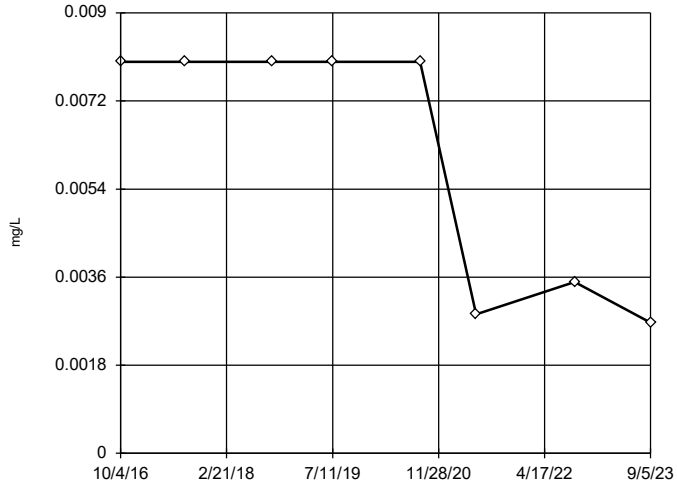
Tukey's Outlier Screening

MW-11



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.1307, low cutoff = 0.000193, based on IQR multiplier of 3.

Constituent: Arsenic Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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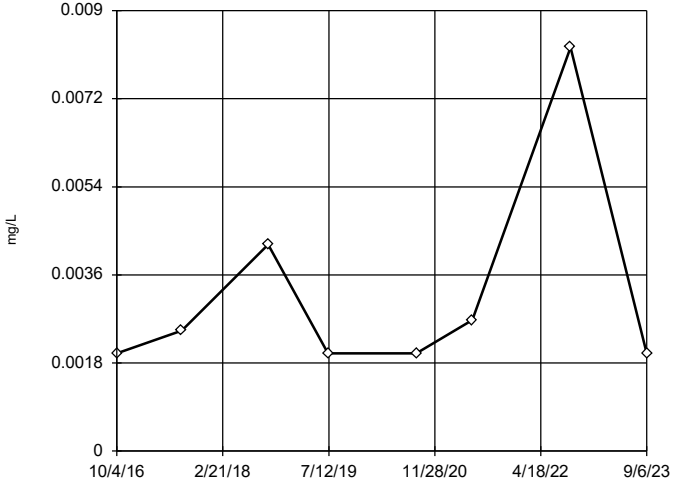
Tukey's Outlier Screening

MW-13R



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.01599, low cutoff = 0.0004207, based on IQR multiplier of 3.

Constituent: Arsenic Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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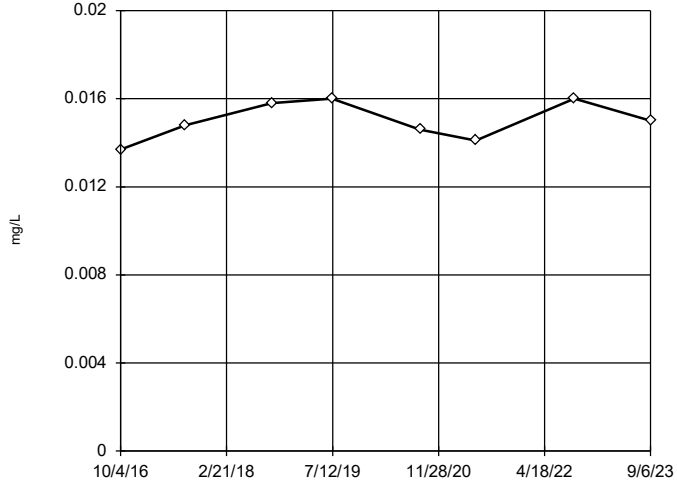
Tukey's Outlier Screening

MW-10



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.02164, low cutoff = 0.01054, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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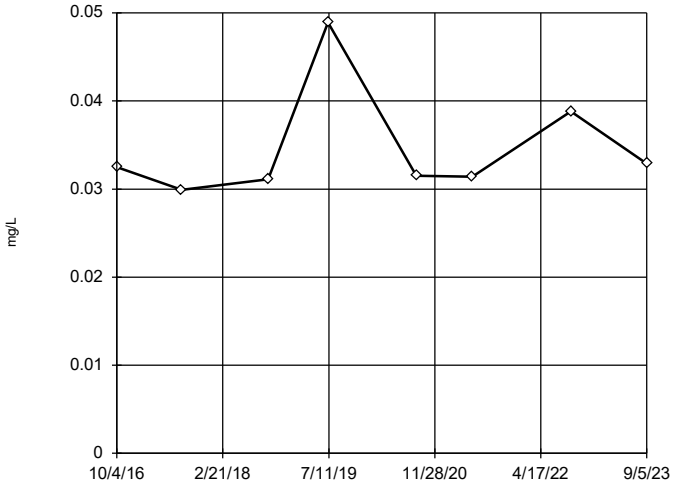
Tukey's Outlier Screening

MW-11



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.0534, low cutoff = 0.02091, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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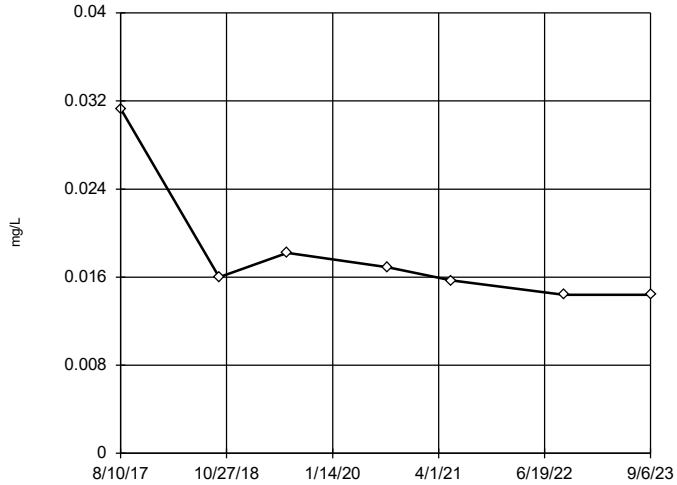
Tukey's Outlier Screening

MW-12R



n = 7

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.03674, low cutoff = 0.007132, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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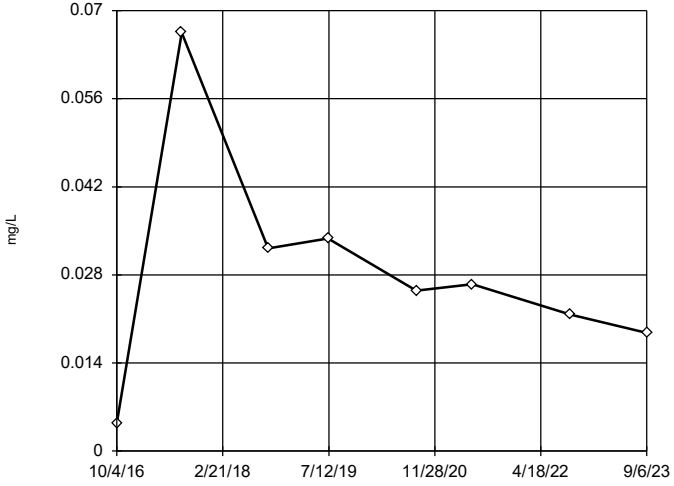
Tukey's Outlier Screening

MW-13R



n = 8

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.08997, low cutoff = 0.0005716, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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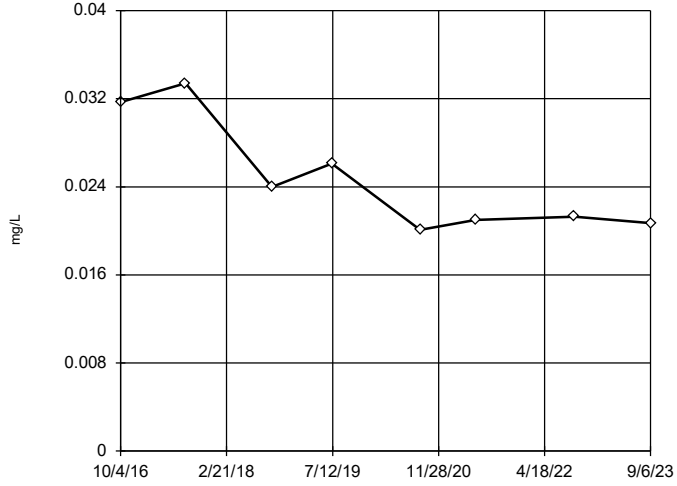
Tukey's Outlier Screening

MW-6 (bg)



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.07553, low cutoff = 0.00794, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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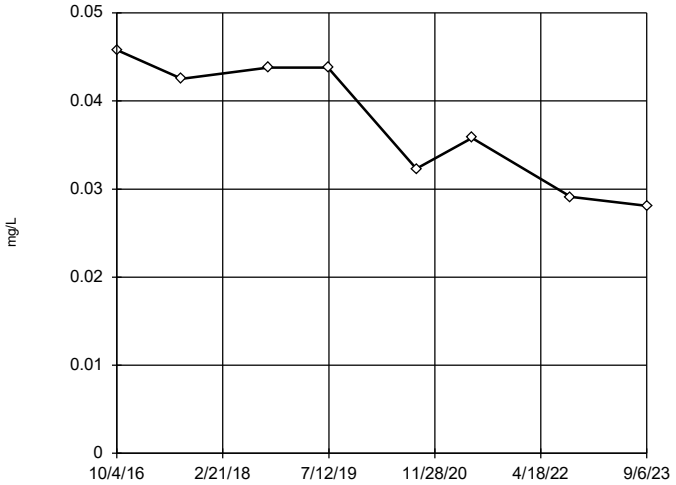
Tukey's Outlier Screening

MW-8



n = 8

No outliers found. Tukey's method selected by user.

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

High cutoff = 0.06956, low cutoff = -0.04444, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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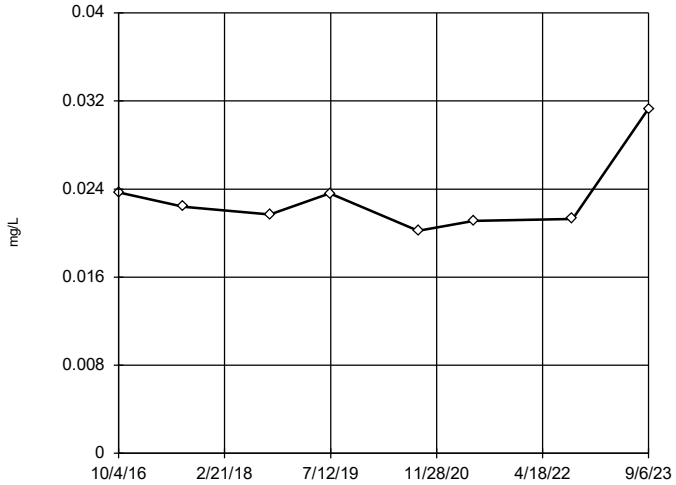
Tukey's Outlier Screening

MW-9



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.03283, low cutoff = 0.01527, based on IQR multiplier of 3.

Constituent: Barium Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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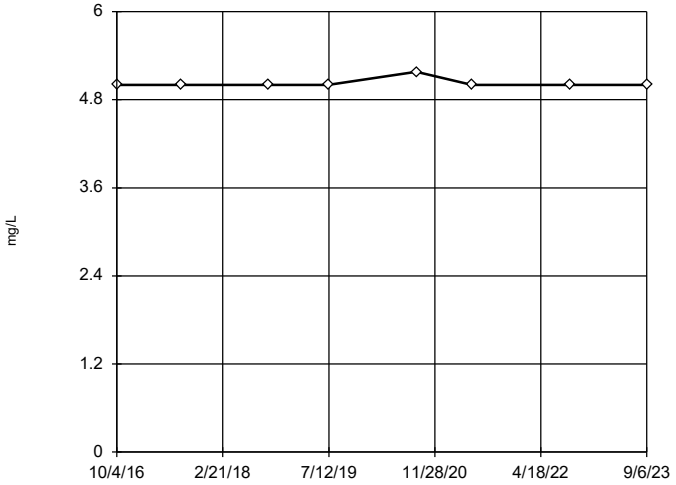
Tukey's Outlier Screening

MW-10



n = 8

No outliers found. Tukey's method selected by user.

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

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Chloride Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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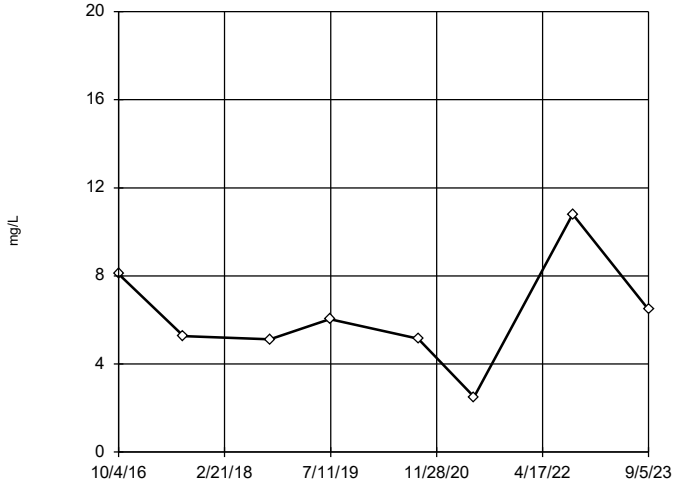
Tukey's Outlier Screening

MW-11



n = 8

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 15.79, low cutoff = 0.9702, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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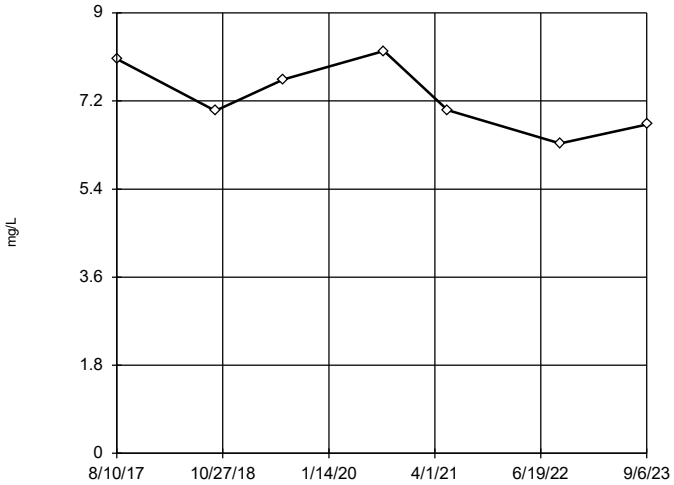
Tukey's Outlier Screening

MW-12R



n = 7

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 13.91, low cutoff = 3.895, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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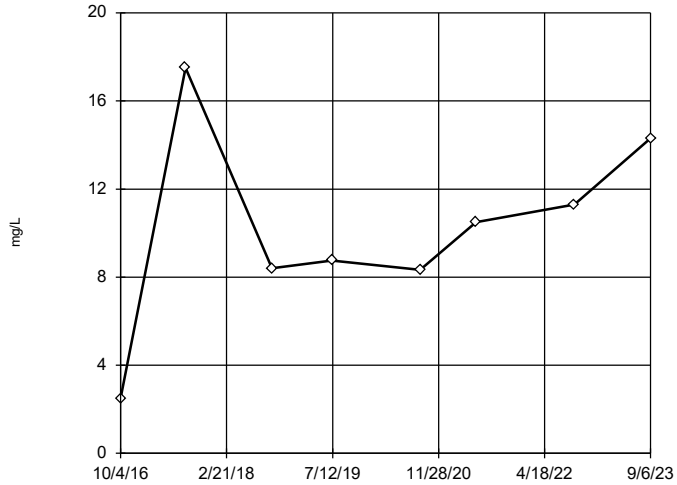
Tukey's Outlier Screening

MW-13R



n = 8

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 26.09, low cutoff = -4.92, based on IQR multiplier of 3.

Constituent: Chloride Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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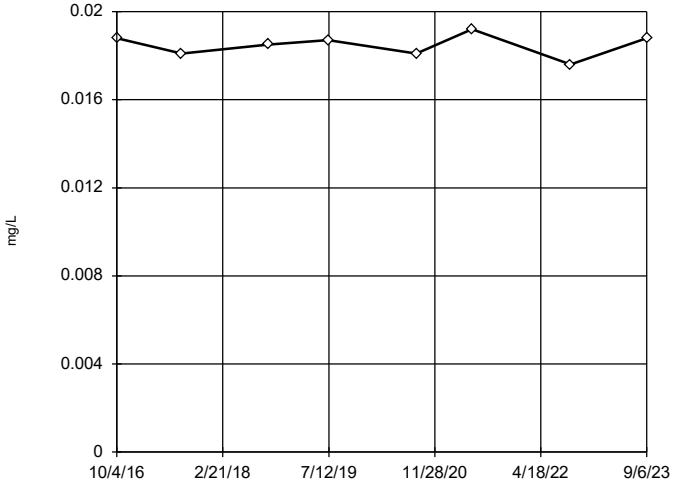
Tukey's Outlier Screening

MW-10



n = 8

No outliers found. Tukey's method selected by user.

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

High cutoff = 0.02035, low cutoff = 0.0142, based on IQR multiplier of 3.

Constituent: Cobalt Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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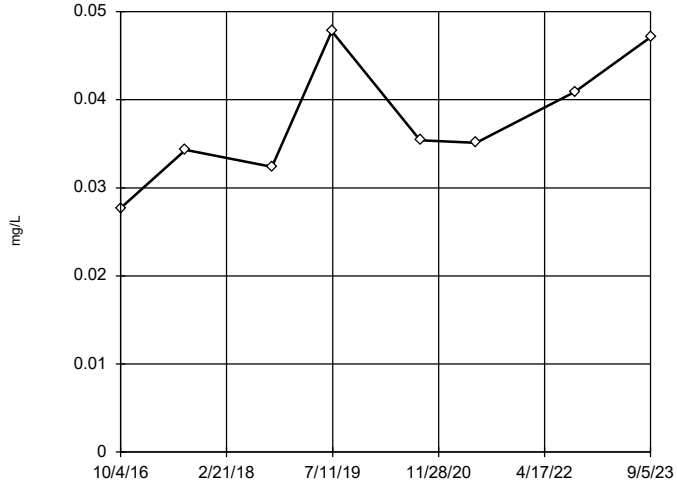
Tukey's Outlier Screening

MW-11



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.1002, low cutoff = 0.01461, based on IQR multiplier of 3.

Constituent: Cobalt Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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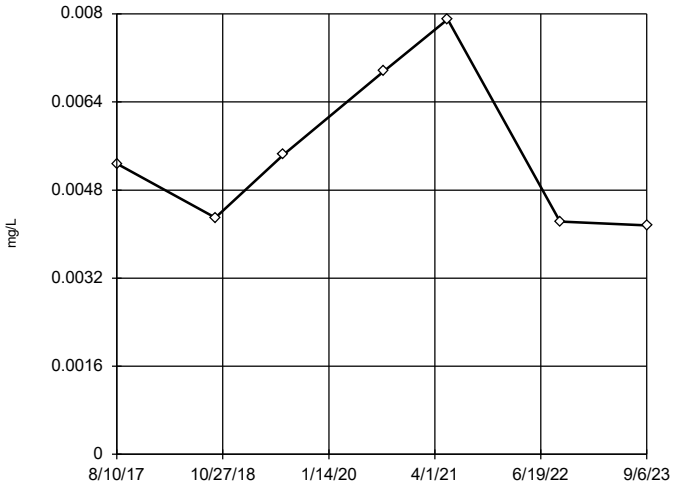
Tukey's Outlier Screening

MW-12R



n = 7

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.031, low cutoff = 0.0009496, based on IQR multiplier of 3.

Constituent: Cobalt Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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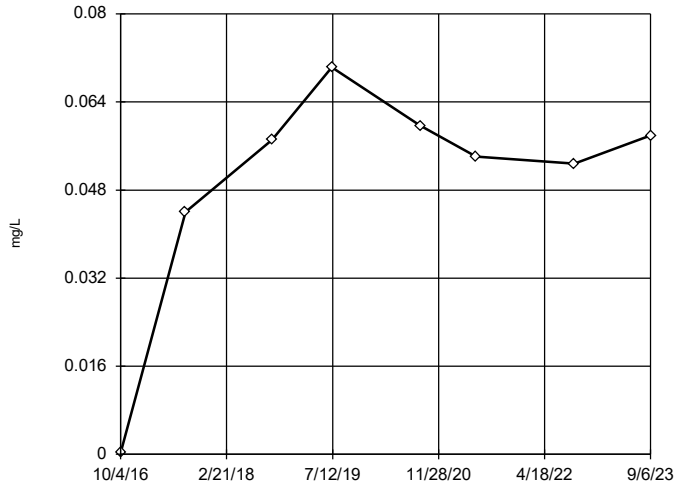
Tukey's Outlier Screening

MW-13R



n = 8

No outliers found. Tukey's method selected by user.

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

High cutoff = 0.07748, low cutoff = -0.0526, based on IQR multiplier of 3.

Constituent: Cobalt Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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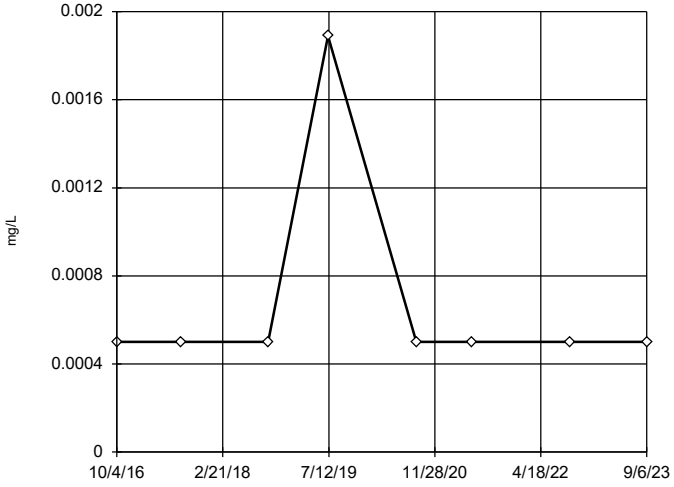
Tukey's Outlier Screening

MW-8



n = 8

No outliers found. Tukey's method selected by user.

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

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Cobalt Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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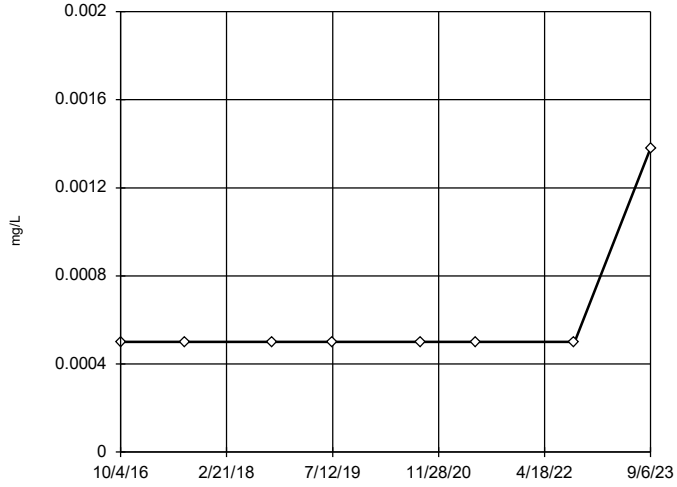
Tukey's Outlier Screening

MW-9



n = 8

No outliers found. Tukey's method selected by user.

Data were square root transformed to achieve best W statistic (graph shown in original units).

The results were invalidated, because the lower and upper quartiles are equal.

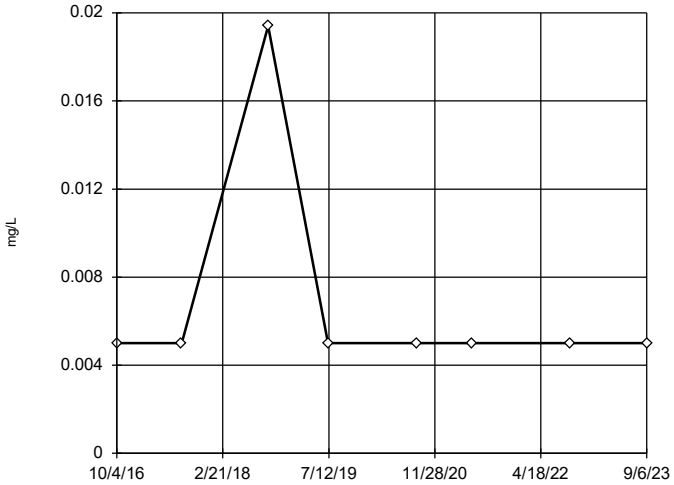
Constituent: Cobalt Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Tukey's Outlier Screening

MW-13R



n = 8

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Copper Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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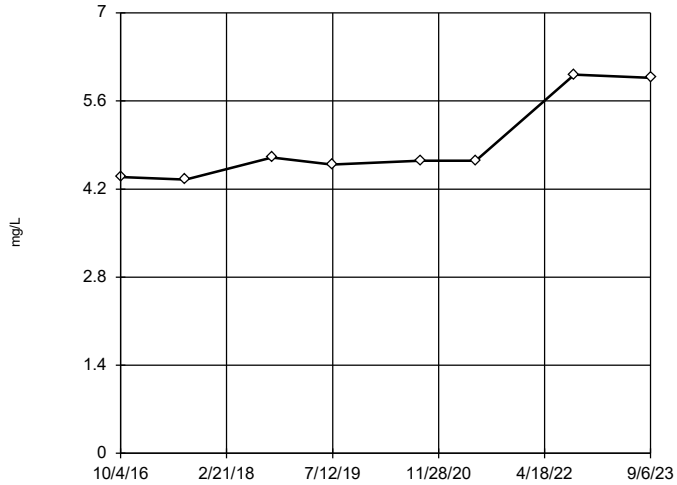
Tukey's Outlier Screening

MW-10



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.704, low cutoff = 2.732, based on IQR multiplier of 3.

Constituent: Iron Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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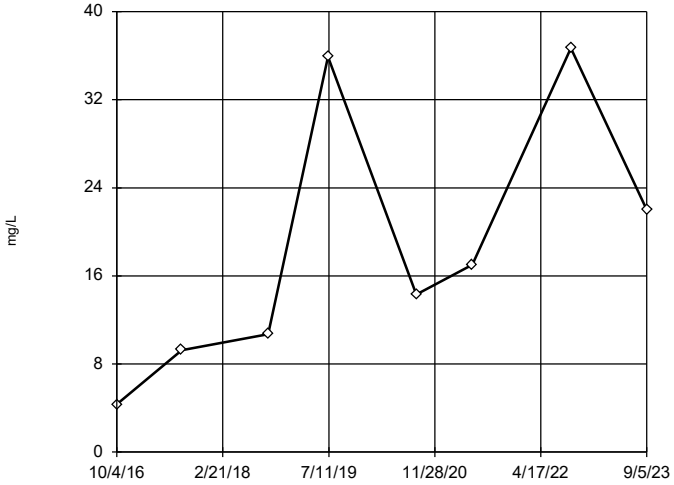
Tukey's Outlier Screening

MW-11



n = 8

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 189.9, low cutoff = -0.1627, based on IQR multiplier of 3.

Constituent: Iron Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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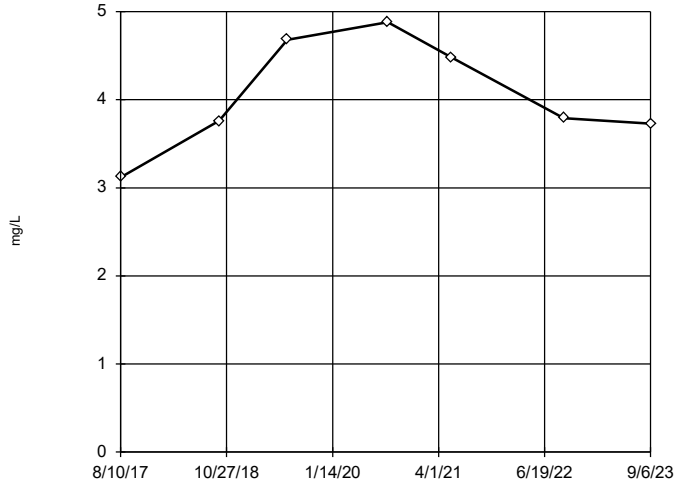
Tukey's Outlier Screening

MW-12R



n = 7

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 7.53, low cutoff = 0.88, based on IQR multiplier of 3.

Constituent: Iron Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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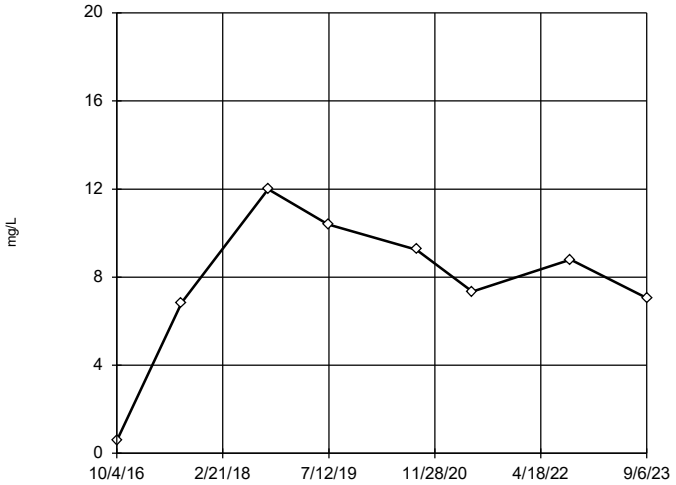
Tukey's Outlier Screening

MW-13R



n = 8

No outliers found. Tukey's method selected by user.

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

High cutoff = 15.57, low cutoff = -9.851, based on IQR multiplier of 3.

Constituent: Iron Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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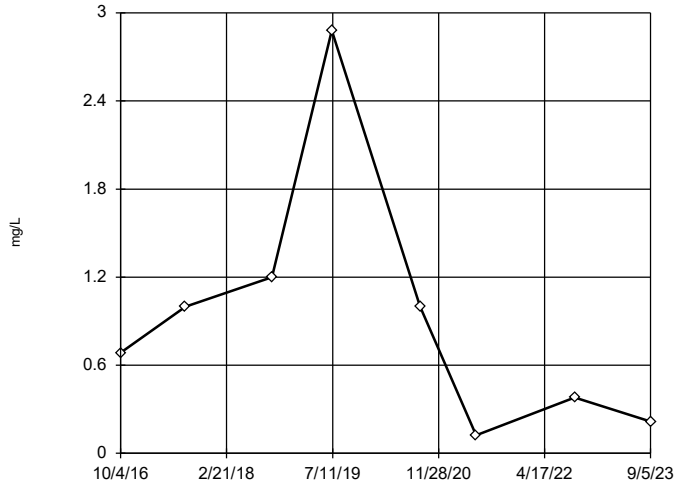
Tukey's Outlier Screening

MW-26 (bg)



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 61.24, low cutoff = 0.005125, based on IQR multiplier of 3.

Constituent: Iron Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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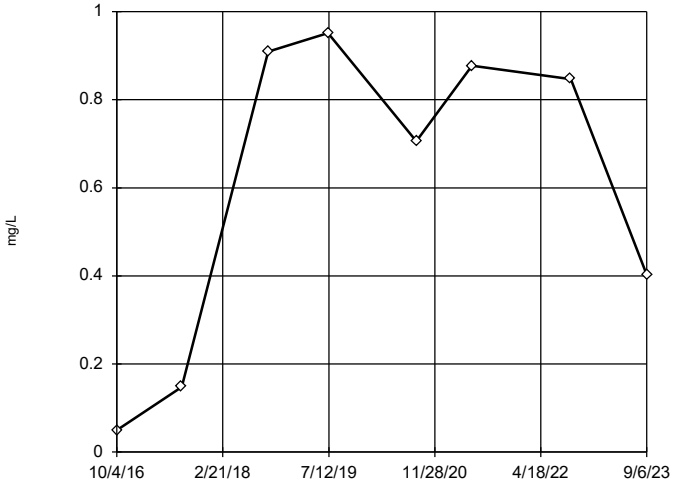
Tukey's Outlier Screening

MW-6 (bg)



n = 8

No outliers found. Tukey's method selected by user.

Data were x^5 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1.177, low cutoff = -1.11, based on IQR multiplier of 3.

Constituent: Iron Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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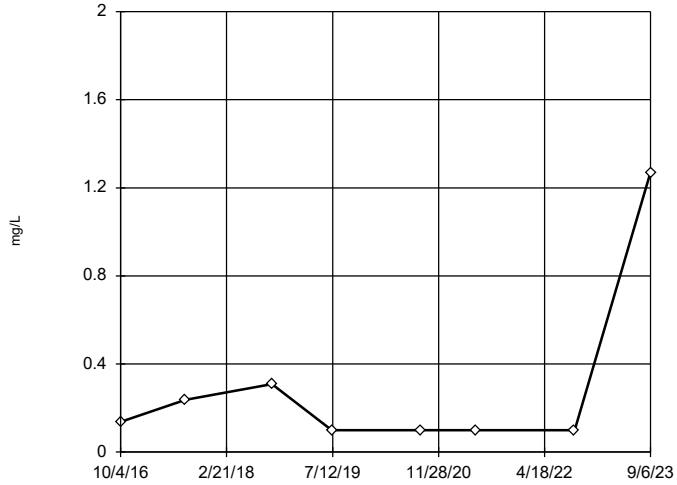
Tukey's Outlier Screening

MW-8



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 5.373, low cutoff = 0.005039, based on IQR multiplier of 3.

Constituent: Iron Analysis Run 10/22/2023 9:27 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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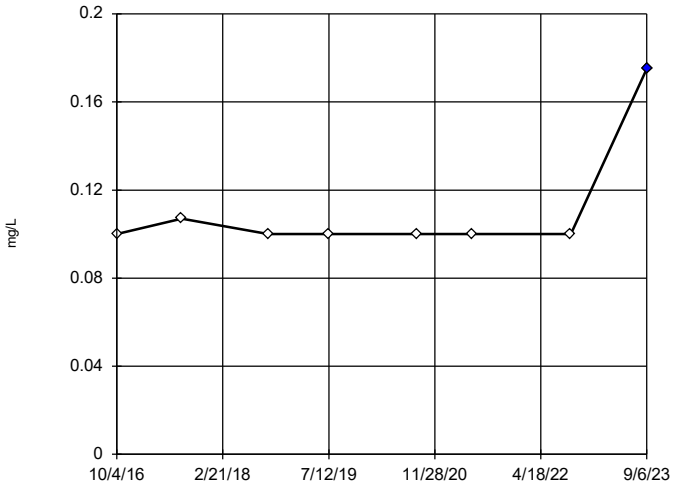
Tukey's Outlier Screening

MW-9



n = 8

Outlier is drawn as solid. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.1145, low cutoff = 0.09035, based on IQR multiplier of 3.

Constituent: Iron Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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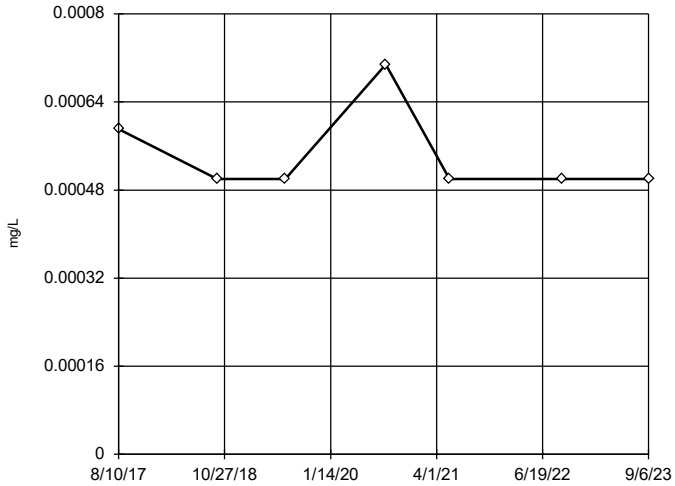
Tukey's Outlier Screening

MW-12R



n = 7

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.000976, low cutoff = 0.0003028, based on IQR multiplier of 3.

Constituent: Lead Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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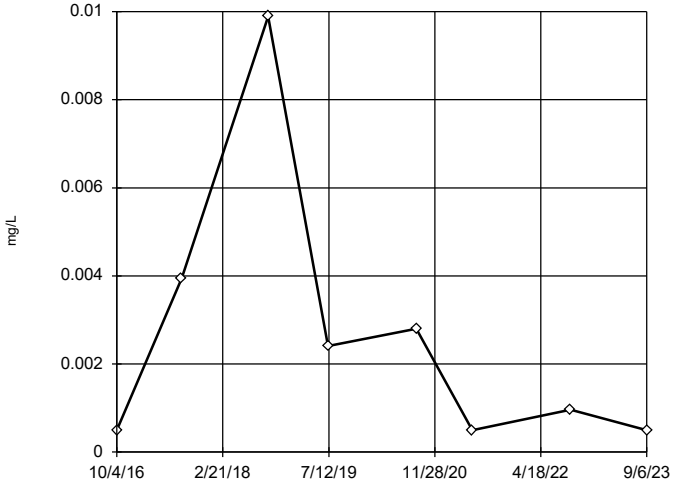
Tukey's Outlier Screening

MW-13R



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.9786, low cutoff = 0.000001699, based on IQR multiplier of 3.

Constituent: Lead Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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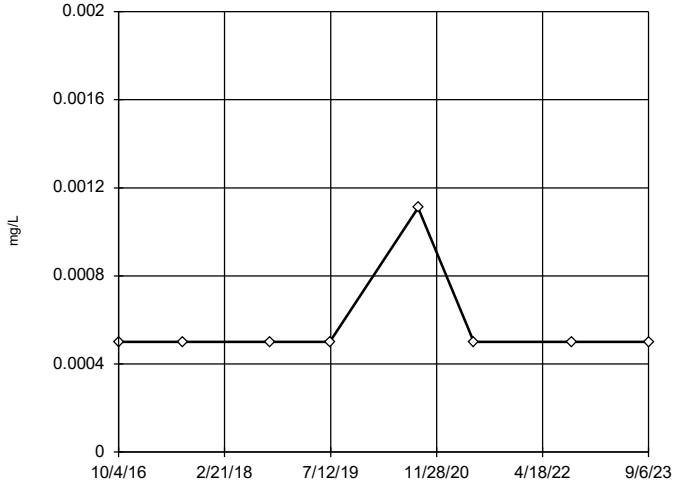
Tukey's Outlier Screening

MW-8



n = 8

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Lead Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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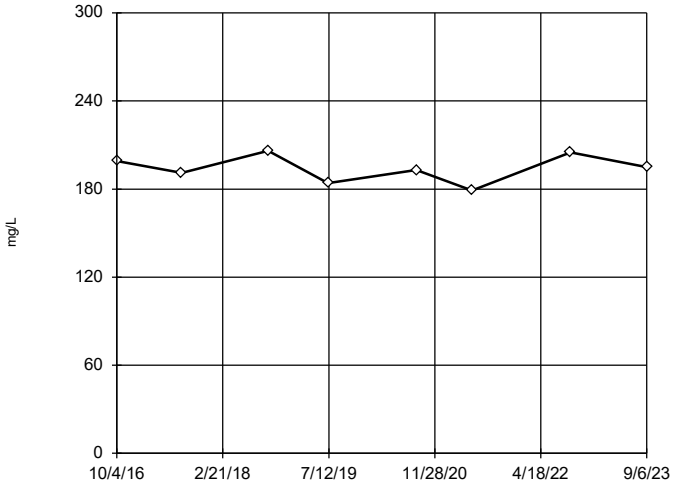
Tukey's Outlier Screening

MW-10



n = 8

No outliers found. Tukey's method selected by user.

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

High cutoff = 236.3, low cutoff = 118.2, based on IQR multiplier of 3.

Constituent: Magnesium Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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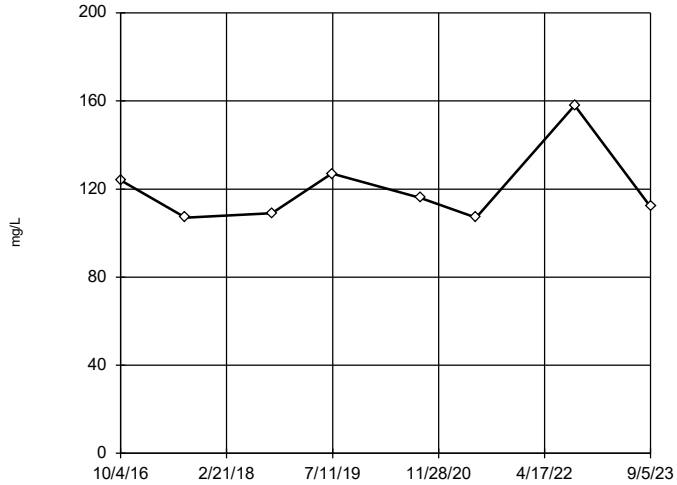
Tukey's Outlier Screening

MW-11



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 196.9, low cutoff = 68.83, based on IQR multiplier of 3.

Constituent: Magnesium Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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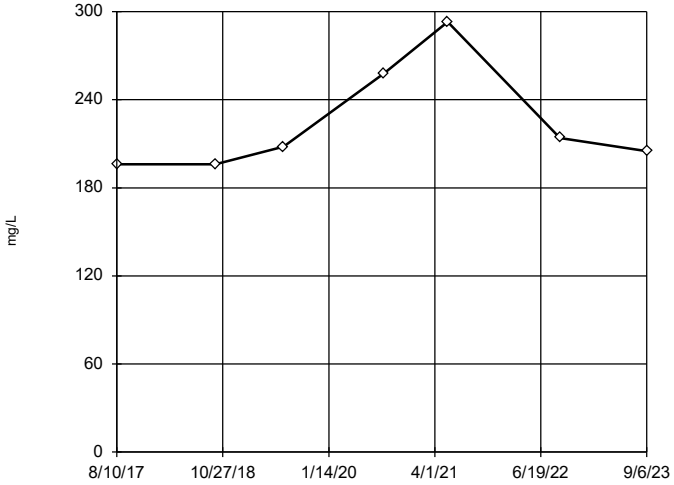
Tukey's Outlier Screening

MW-12R



n = 7

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 588.5, low cutoff = 85.93, based on IQR multiplier of 3.

Constituent: Magnesium Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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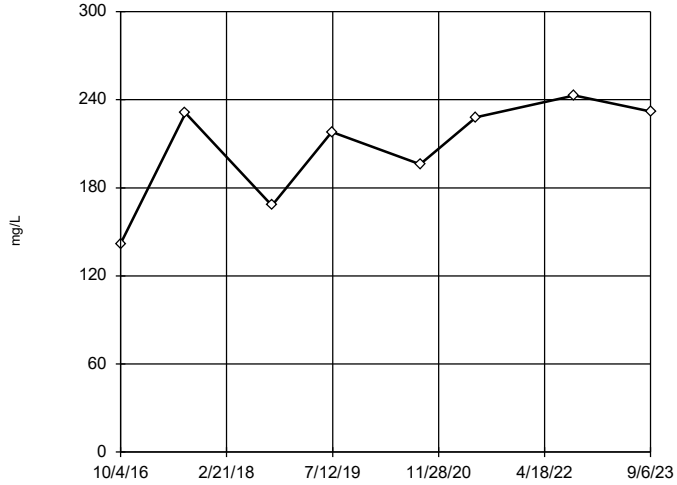
Tukey's Outlier Screening

MW-13R



n = 8

No outliers found. Tukey's method selected by user.

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

High cutoff = 281.4, low cutoff = -259.2, based on IQR multiplier of 3.

Constituent: Magnesium Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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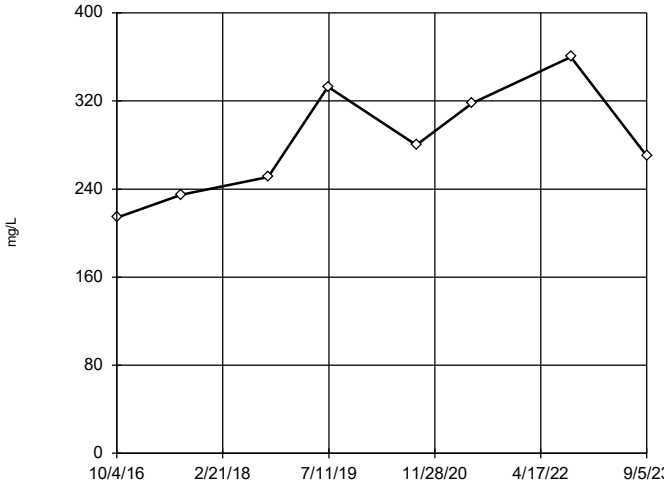
Tukey's Outlier Screening

MW-26 (bg)



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 782.8, low cutoff = 101, based on IQR multiplier of 3.

Constituent: Magnesium Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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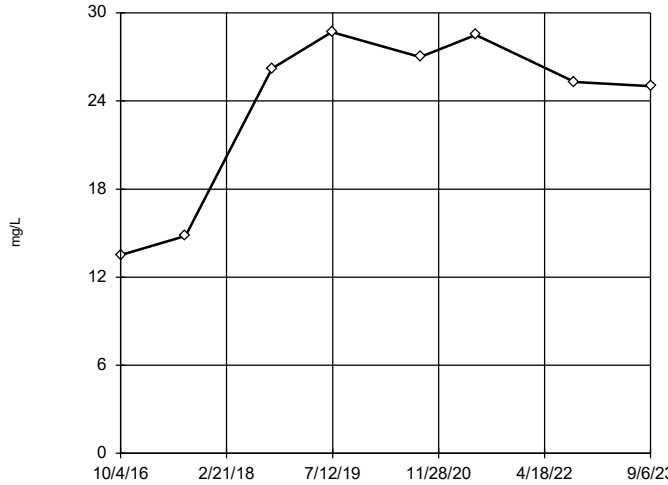
Tukey's Outlier Screening

MW-6 (bg)



n = 8

No outliers found. Tukey's method selected by user.

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

High cutoff = 33.7, low cutoff = -30.93, based on IQR multiplier of 3.

Constituent: Magnesium Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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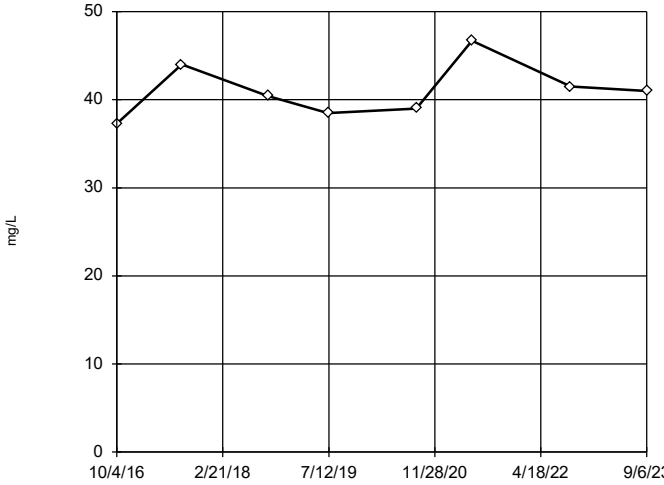
Tukey's Outlier Screening

MW-8



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 57.31, low cutoff = 28.89, based on IQR multiplier of 3.

Constituent: Magnesium Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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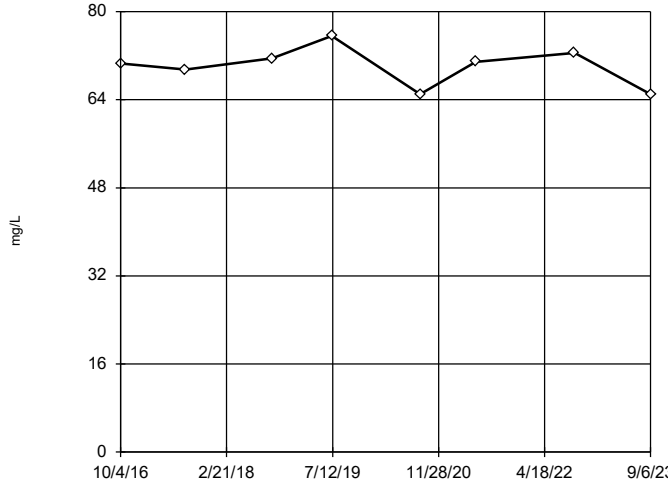
Tukey's Outlier Screening

MW-9



n = 8

No outliers found. Tukey's method selected by user.

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

High cutoff = 80.66, low cutoff = -58.96, based on IQR multiplier of 3.

Constituent: Magnesium Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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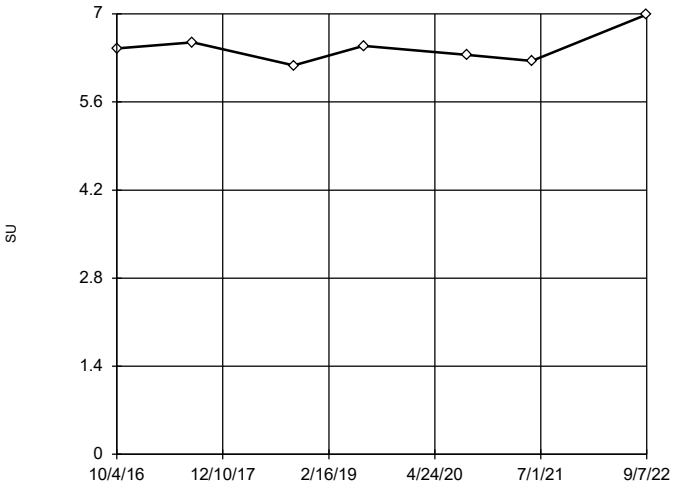
Tukey's Outlier Screening

MW-10



n = 7

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 7.521, low cutoff = 5.447, based on IQR multiplier of 3.

Constituent: pH Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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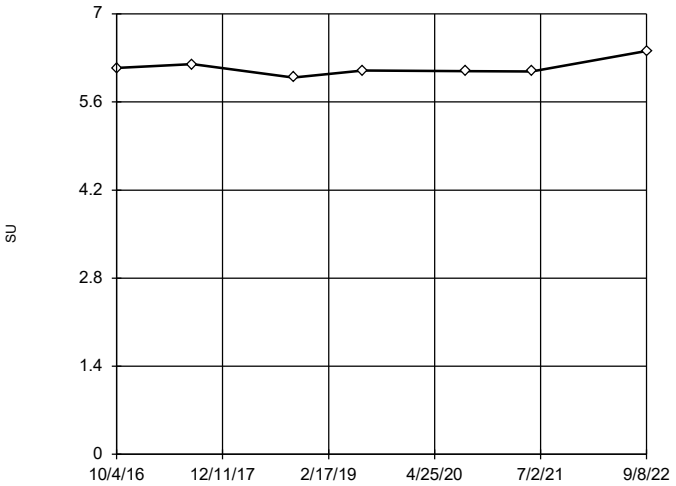
Tukey's Outlier Screening

MW-11



n = 7

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 6.558, low cutoff = 5.753, based on IQR multiplier of 3.

Constituent: pH Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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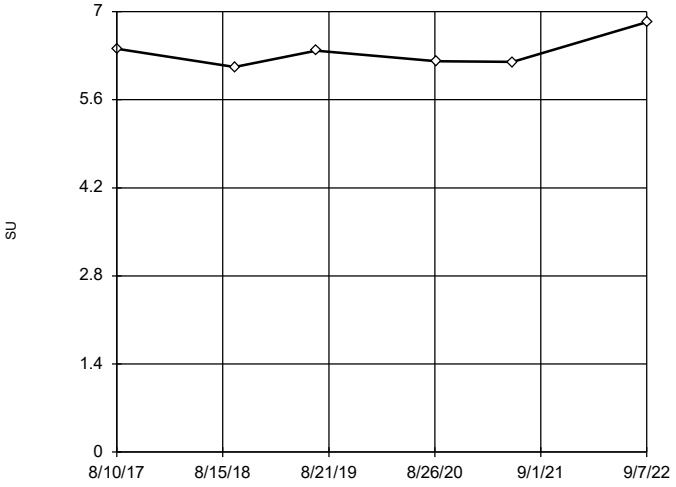
Tukey's Outlier Screening

MW-12R



n = 6

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.201, low cutoff = 4.97, based on IQR multiplier of 3.

Constituent: pH Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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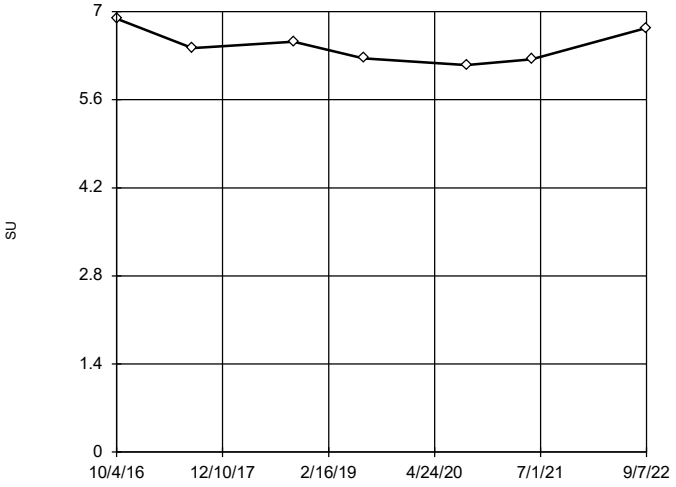
Tukey's Outlier Screening

MW-13R



n = 7

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.493, low cutoff = 4.952, based on IQR multiplier of 3.

Constituent: pH Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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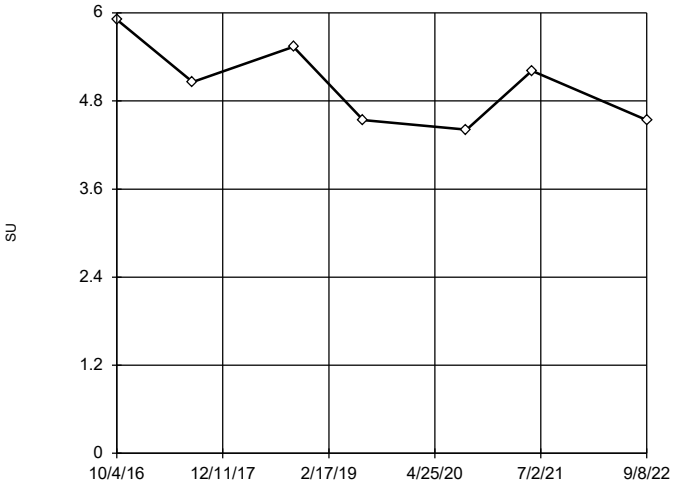
Tukey's Outlier Screening

MW-26 (bg)



n = 7

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 10.07, low cutoff = 2.499, based on IQR multiplier of 3.

Constituent: pH Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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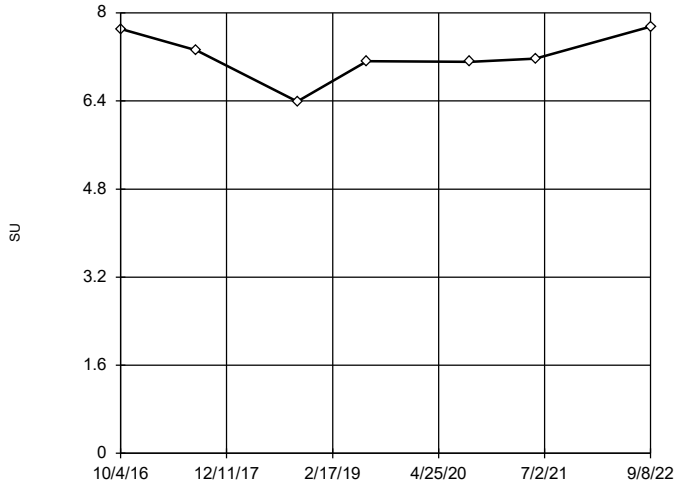
Tukey's Outlier Screening

MW-6 (bg)



n = 7

No outliers found. Tukey's method selected by user.

Data were x^5 transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.856, low cutoff = -6.185, based on IQR multiplier of 3.

Constituent: pH Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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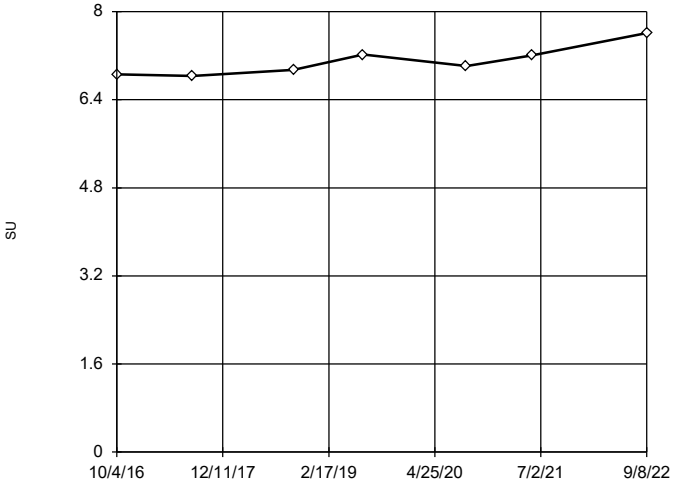
Tukey's Outlier Screening

MW-8



n = 7

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.417, low cutoff = 5.884, based on IQR multiplier of 3.

Constituent: pH Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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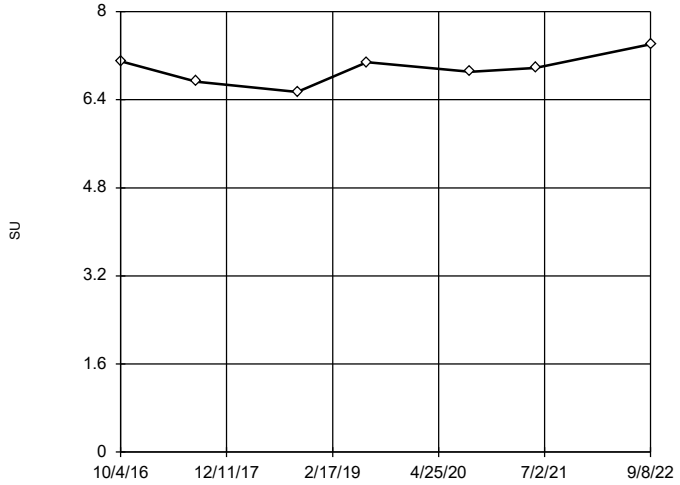
Tukey's Outlier Screening

MW-9



n = 7

No outliers found. Tukey's method selected by user.

Data were cube root transformed to achieve best W statistic (graph shown in original units).

High cutoff = 8.291, low cutoff = 5.698, based on IQR multiplier of 3.

Constituent: pH Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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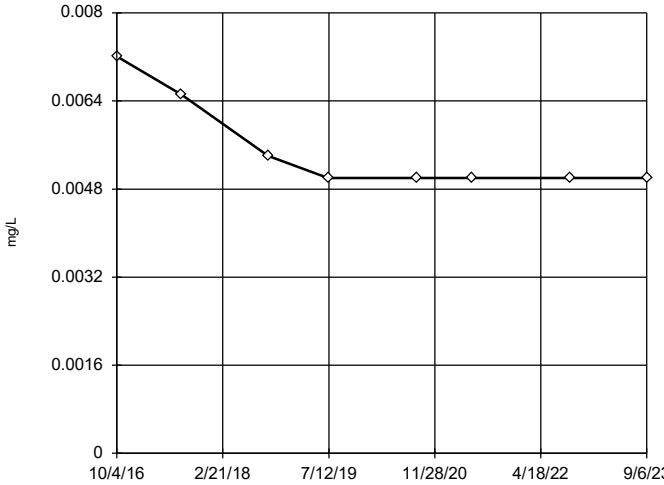
Tukey's Outlier Screening

MW-9



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.009886, low cutoff = 0.002999, based on IQR multiplier of 3.

Constituent: Selenium Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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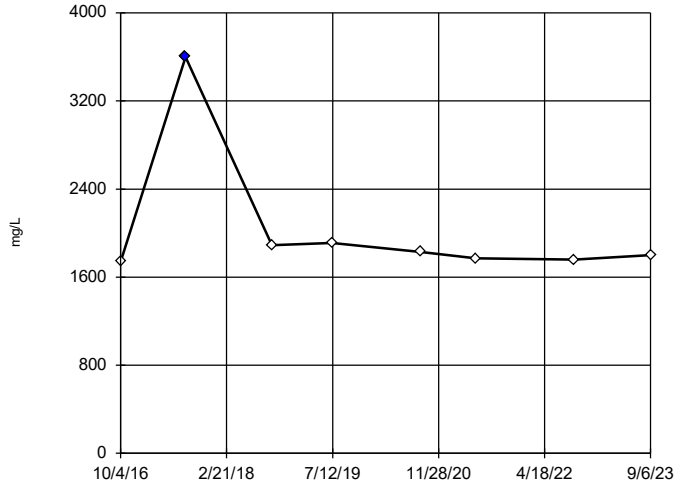
Tukey's Outlier Screening

MW-10



n = 8

Outlier is drawn as solid. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 2370, low cutoff = 1415, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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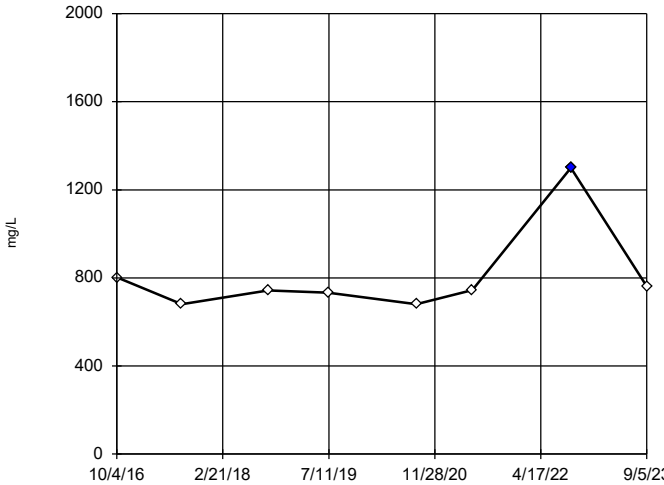
Tukey's Outlier Screening

MW-11



n = 8

Outlier is drawn as solid. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 1059, low cutoff = 521.6, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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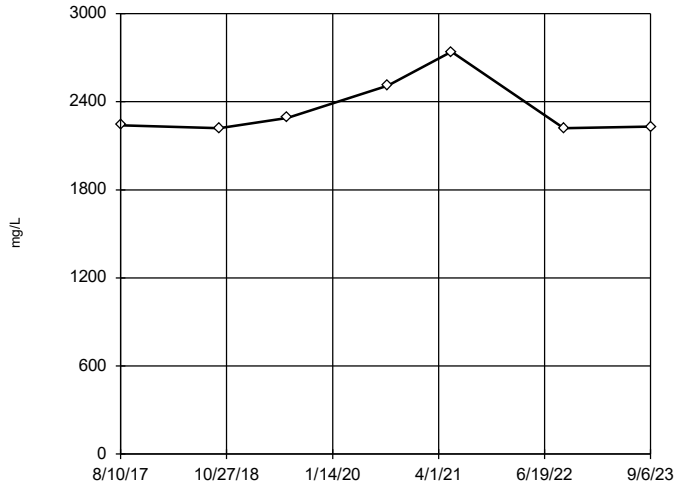
Tukey's Outlier Screening

MW-12R



n = 7

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 3628, low cutoff = 1536, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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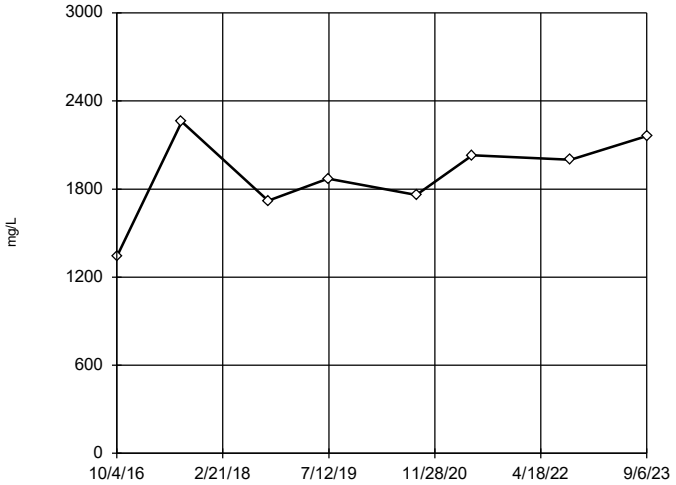
Tukey's Outlier Screening

MW-13R



n = 8

No outliers found. Tukey's method selected by user.

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

High cutoff = 2762, low cutoff = -1874, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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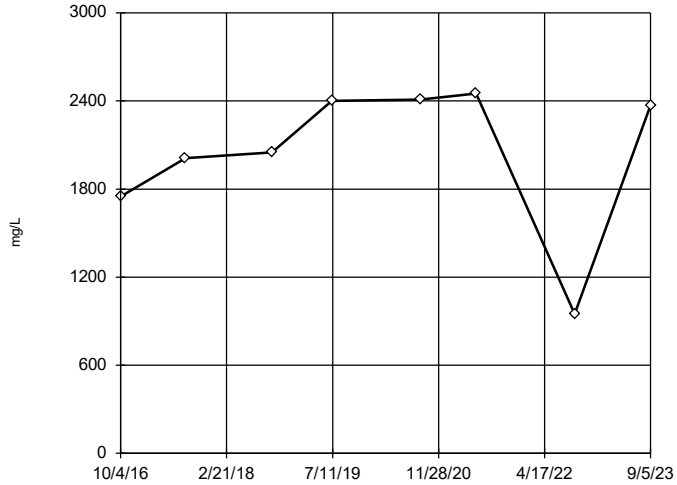
Tukey's Outlier Screening

MW-26 (bg)



n = 8

No outliers found. Tukey's method selected by user.

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

High cutoff = 3124, low cutoff = -2645, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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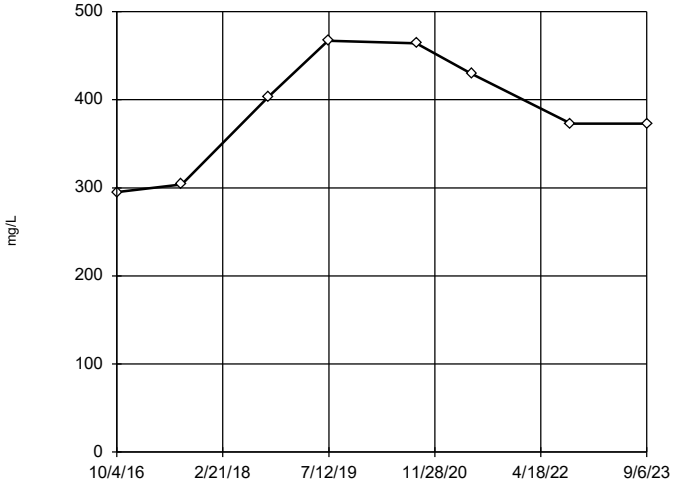
Tukey's Outlier Screening

MW-6 (bg)



n = 8

No outliers found. Tukey's method selected by user.

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

High cutoff = 671.8, low cutoff = -368.7, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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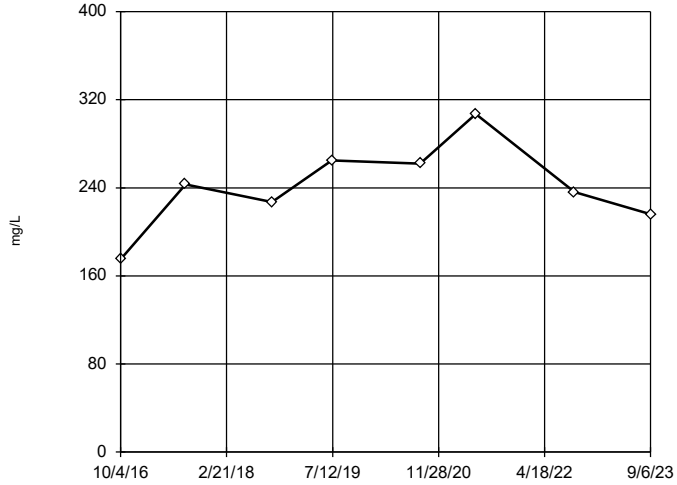
Tukey's Outlier Screening

MW-8



n = 8

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 389.5, low cutoff = 95.5, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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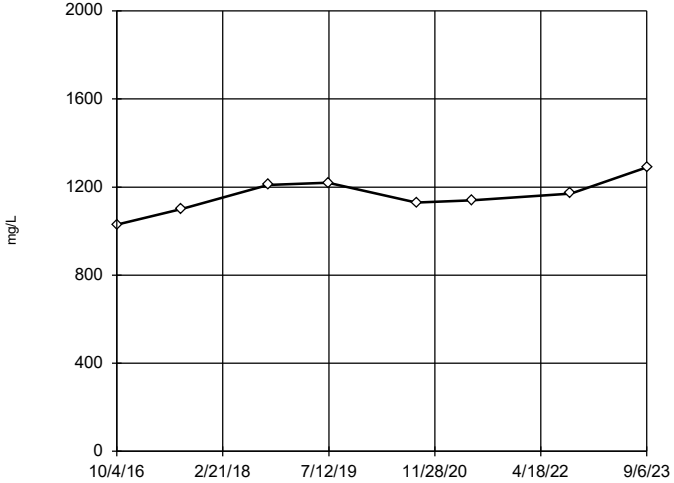
Tukey's Outlier Screening

MW-9



n = 8

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

High cutoff = 1515, low cutoff = 815, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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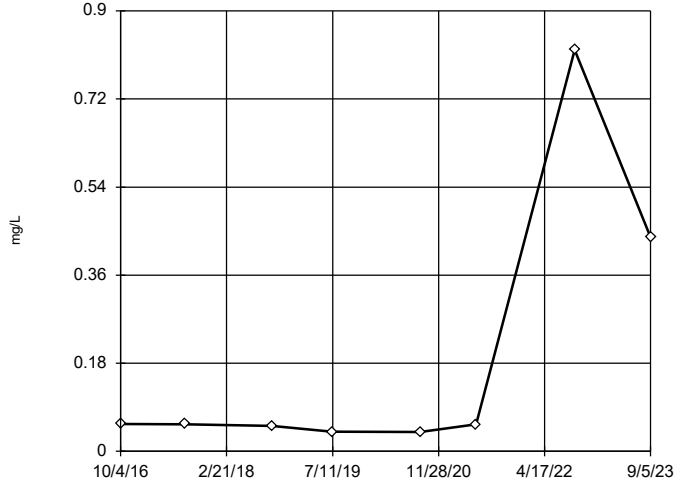
Tukey's Outlier Screening

MW-11



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 6.234, low cutoff = 0.001143, based on IQR multiplier of 3.

Constituent: Zinc Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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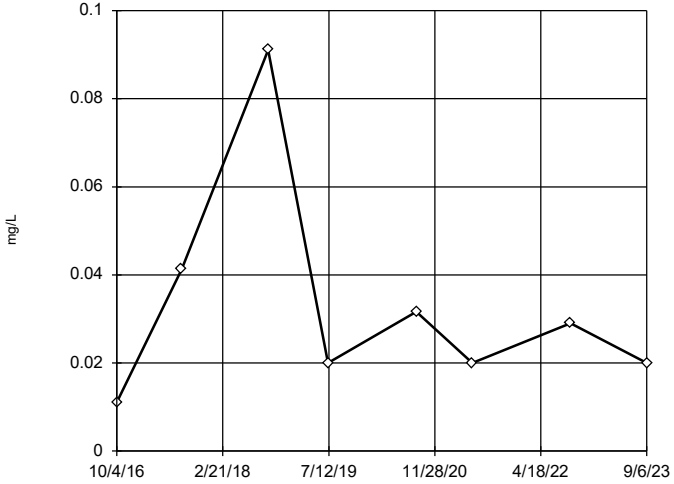
Tukey's Outlier Screening

MW-13R



n = 8

No outliers found. Tukey's method selected by user.

Data were natural log transformed to achieve best W statistic (graph shown in original units).

High cutoff = 0.2129, low cutoff = 0.003394, based on IQR multiplier of 3.

Constituent: Zinc Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

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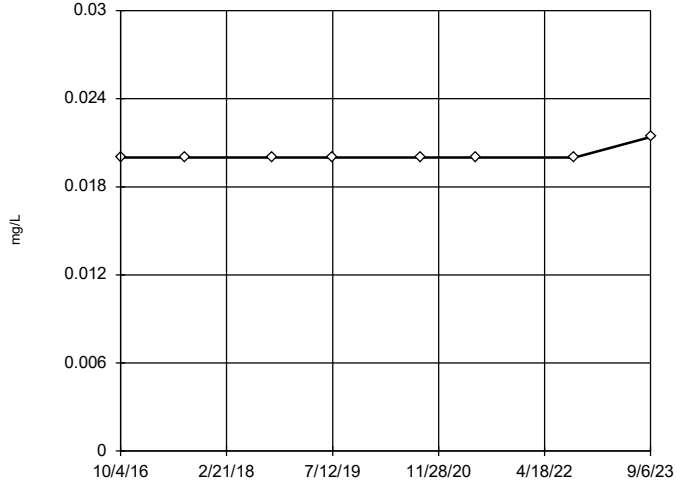
Tukey's Outlier Screening

MW-8



n = 8

No outliers found. Tukey's method selected by user.

Ladder of Powers transformations did not improve normality; analysis run on raw data.

The results were invalidated, because the lower and upper quartiles are equal.

Constituent: Zinc Analysis Run 10/22/2023 9:28 AM View: Screening

Cargill CCR LF Client: HR Green Data: Cargill_Import

FIGURE D.

Trend Tests - All Results (No Significant)

Cargill CCR LF Client: HR Green Data: Cargill_Import Printed 10/23/2023, 10:12 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Arsenic (mg/L)	MW-10	-0.000001584	0	21	No	8	12.5	n/a	n/a	0.01	NP
Arsenic (mg/L)	MW-11	-0.0008034	-16	-21	No	8	62.5	n/a	n/a	0.01	NP
Arsenic (mg/L)	MW-13R	0	4	21	No	8	50	n/a	n/a	0.01	NP
Barium (mg/L)	MW-10	0.0001095	7	21	No	8	0	n/a	n/a	0.01	NP
Barium (mg/L)	MW-11	0.0003796	8	21	No	8	0	n/a	n/a	0.01	NP
Barium (mg/L)	MW-12R	-0.001127	-16	-18	No	7	0	n/a	n/a	0.01	NP
Barium (mg/L)	MW-13R	-0.002808	-10	-21	No	8	0	n/a	n/a	0.01	NP
Barium (mg/L)	MW-6 (bg)	-0.001671	-16	-21	No	8	0	n/a	n/a	0.01	NP
Barium (mg/L)	MW-8	-0.002726	-21	-21	No	8	0	n/a	n/a	0.01	NP
Barium (mg/L)	MW-9	-0.0001588	-4	-21	No	8	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-10	0	1	21	No	8	87.5	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-11	-0.0102	0	21	No	8	12.5	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-12R	-0.2205	-9	-18	No	7	0	n/a	n/a	0.01	NP
Chloride (mg/L)	MW-13R	1.059	12	21	No	8	12.5	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-10	0	0	21	No	8	0	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-11	0.002129	16	21	No	8	0	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-12R	-0.00002829	-3	-18	No	7	0	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-13R	0.0001617	1	18	No	7	0	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-8	0	-1	-21	No	8	87.5	n/a	n/a	0.01	NP
Cobalt (mg/L)	MW-9	0	7	21	No	8	87.5	n/a	n/a	0.01	NP
Iron (mg/L)	MW-10	0.1412	17	21	No	8	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-11	2.55	20	21	No	8	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-12R	0.007594	1	18	No	7	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-13R	-0.04407	0	21	No	8	0	n/a	n/a	0.01	NP
Iron (mg/L)	MW-26 (bg)	-0.1215	-9	-21	No	8	25	n/a	n/a	0.01	NP
Iron (mg/L)	MW-6 (bg)	0.05238	4	21	No	8	12.5	n/a	n/a	0.01	NP
Iron (mg/L)	MW-8	-0.007972	-9	-18	No	7	57.14	n/a	n/a	0.01	NP
Iron (mg/L)	MW-9	0	3	21	No	8	75	n/a	n/a	0.01	NP
Lead (mg/L)	MW-12R	0	-5	-18	No	7	71.43	n/a	n/a	0.01	NP
Lead (mg/L)	MW-13R	-0.0004574	-6	-18	No	7	42.86	n/a	n/a	0.01	NP
Lead (mg/L)	MW-8	0	1	21	No	8	87.5	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-10	-0.4153	-2	-21	No	8	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-11	0.7149	3	21	No	8	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-12R	3.544	8	18	No	7	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-13R	12.44	16	21	No	8	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-26 (bg)	17.79	16	21	No	8	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-6 (bg)	1.596	6	21	No	8	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-8	0.4347	8	21	No	8	0	n/a	n/a	0.01	NP
Magnesium (mg/L)	MW-9	-0.1127	-1	-21	No	8	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-10	0.2114	14	21	No	8	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-11	0.3211	12	21	No	8	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-12R	0.002021	1	18	No	7	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-13R	0.6324	7	21	No	8	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-26 (bg)	4.173	12	21	No	8	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-6 (bg)	0.003449	2	21	No	8	0	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-8	-0.004468	-8	-21	No	8	12.5	n/a	n/a	0.01	NP
Manganese (mg/L)	MW-9	0	7	21	No	8	87.5	n/a	n/a	0.01	NP
pH (SU)	MW-10	0.0145	1	18	No	7	0	n/a	n/a	0.01	NP
pH (SU)	MW-11	-0.006835	-1	-18	No	7	0	n/a	n/a	0.01	NP
pH (SU)	MW-12R	0.03001	1	14	No	6	0	n/a	n/a	0.01	NP
pH (SU)	MW-13R	-0.08379	-7	-18	No	7	0	n/a	n/a	0.01	NP
pH (SU)	MW-26 (bg)	-0.187	-10	-18	No	7	0	n/a	n/a	0.01	NP
pH (SU)	MW-6 (bg)	0.006744	1	18	No	7	0	n/a	n/a	0.01	NP
pH (SU)	MW-8	0.09951	15	18	No	7	0	n/a	n/a	0.01	NP
pH (SU)	MW-9	0.06461	5	18	No	7	0	n/a	n/a	0.01	NP

Trend Tests - All Results (No Significant)

Cargill CCR LF Client: HR Green Data: Cargill_Import Printed 10/23/2023, 10:12 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Normality	Xform	Alpha	Method
Selenium (mg/L)	MW-9	-0.0002276	-18	-21	No	8	62.5	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-10	-9.955	-3	-18	No	7	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-11	0.3751	1	18	No	7	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-12R	2.021	2	18	No	7	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-13R	86.9	12	21	No	8	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-26 (bg)	61.99	10	21	No	8	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-6 (bg)	10.93	5	21	No	8	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-8	6.061	4	21	No	8	0	n/a	n/a	0.01	NP
Sulfate (mg/L)	MW-9	21.53	16	21	No	8	0	n/a	n/a	0.01	NP
Zinc (mg/L)	MW-11	0.004523	2	21	No	8	12.5	n/a	n/a	0.01	NP
Zinc (mg/L)	MW-13R	-0.0006447	-3	-21	No	8	37.5	n/a	n/a	0.01	NP
Zinc (mg/L)	MW-8	0	7	21	No	8	87.5	n/a	n/a	0.01	NP

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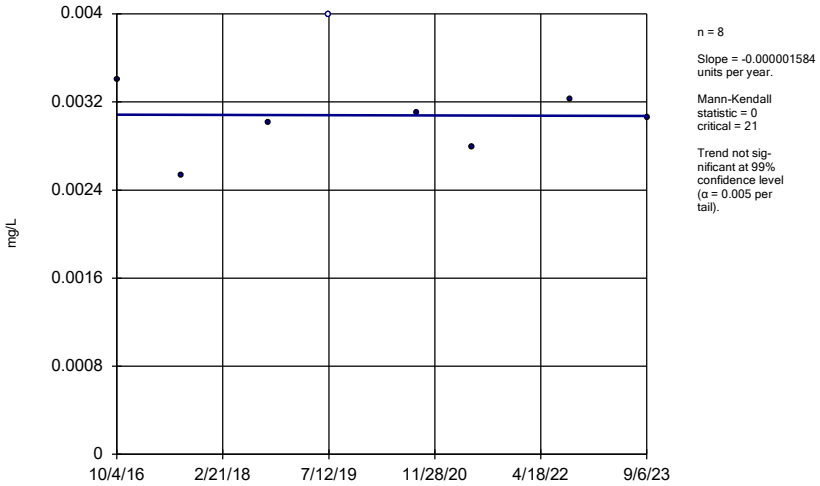
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10



n = 8

Slope = -0.000001584 units per year.

Mann-Kendall statistic = 0
critical = 21

Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

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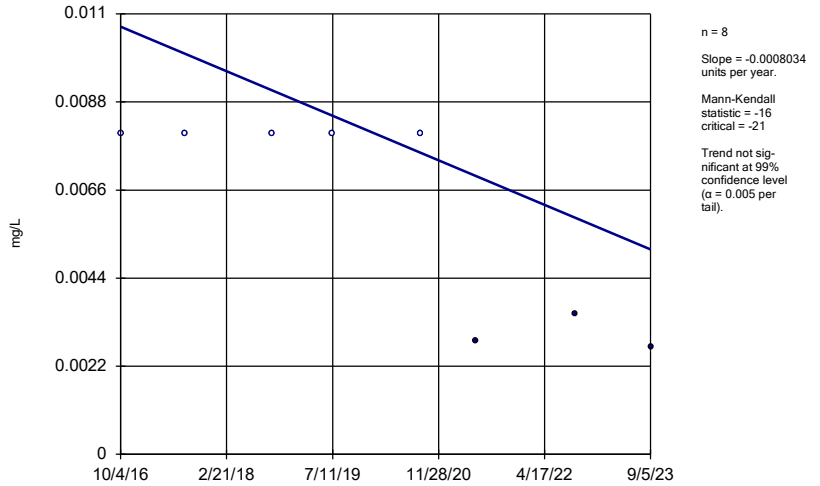
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-11



n = 8

Slope = -0.0008034 units per year.

Mann-Kendall statistic = -16
critical = -21

Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

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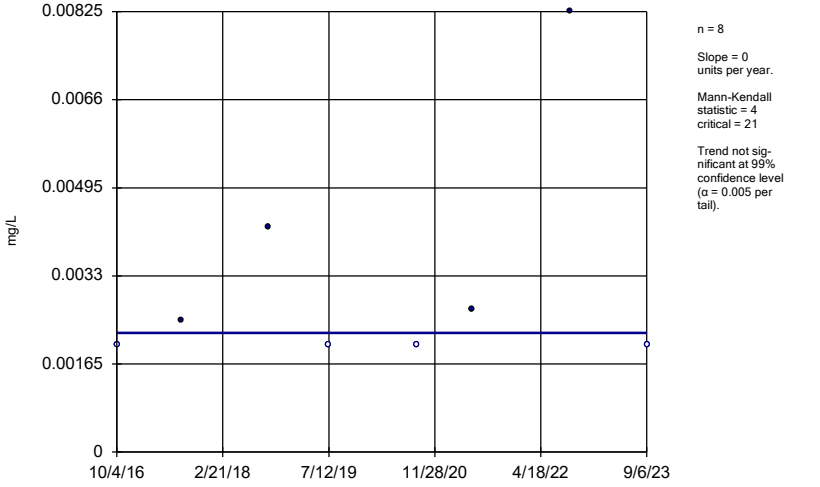
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-13R



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 4
critical = 21

Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

Constituent: Arsenic Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

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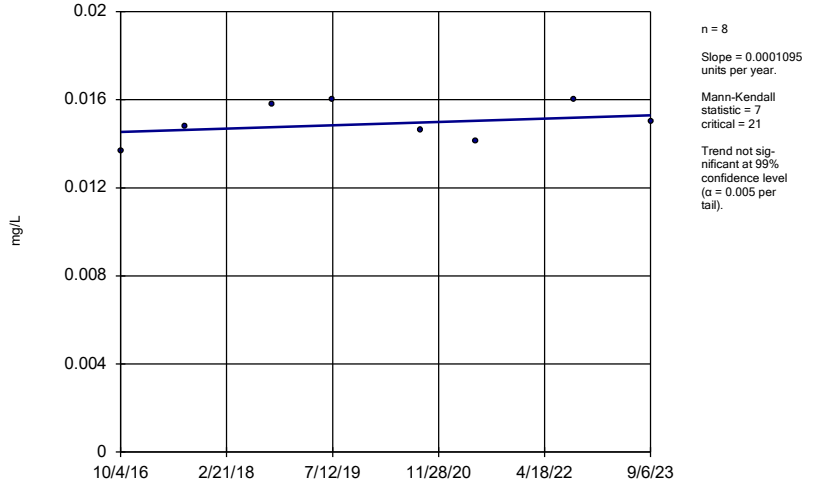
Sen's Slope Estimator

MW-10



n = 8

Slope = 0.0001095 units per year.

Mann-Kendall statistic = 7
critical = 21

Trend not sig-nificant at 99% confidence level (α = 0.005 per tail).

Constituent: Barium Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

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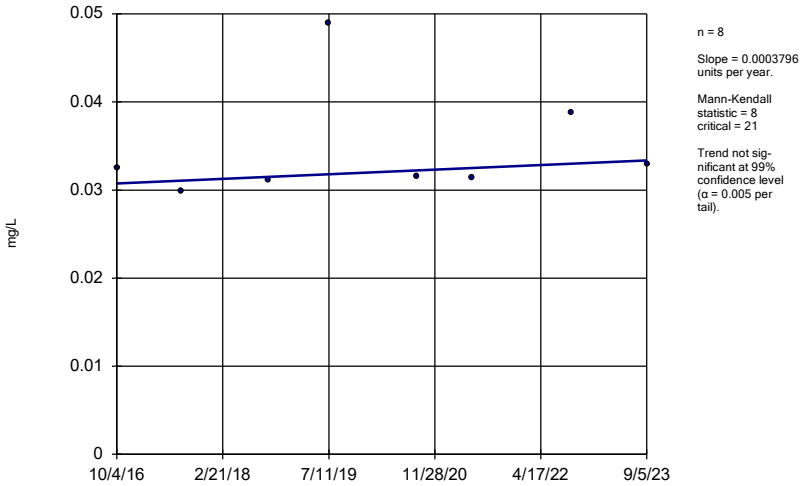
Sen's Slope Estimator

MW-11



n = 8

Slope = 0.0003796 units per year.

Mann-Kendall statistic = 8
critical = 21

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

Constituent: Barium Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

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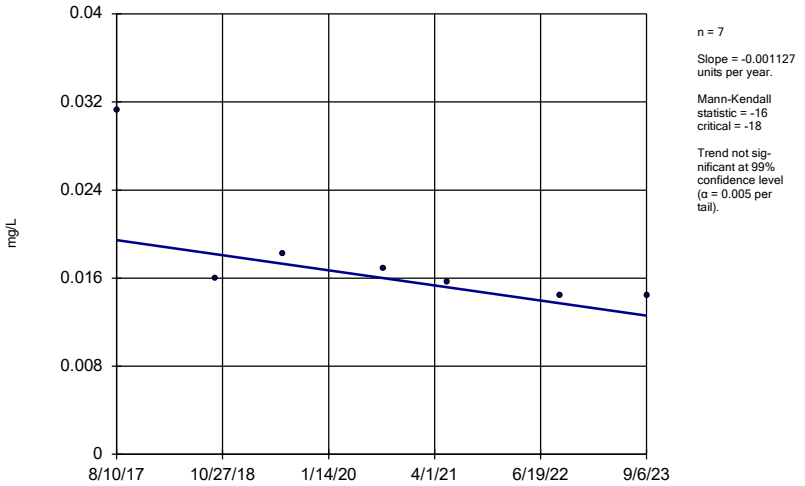
Sen's Slope Estimator

MW-12R



n = 7

Slope = -0.001127 units per year.

Mann-Kendall statistic = -16
critical = -18

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

Constituent: Barium Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

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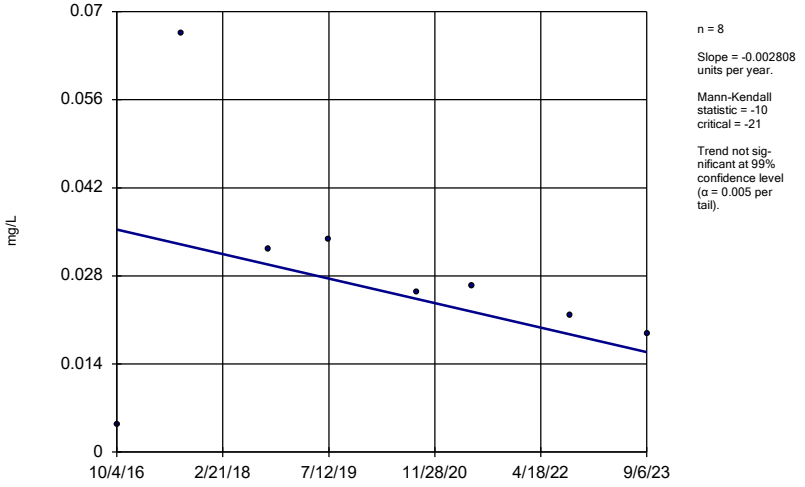
Sen's Slope Estimator

MW-13R



n = 8

Slope = -0.002808 units per year.

Mann-Kendall statistic = -10
critical = -21

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

Constituent: Barium Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

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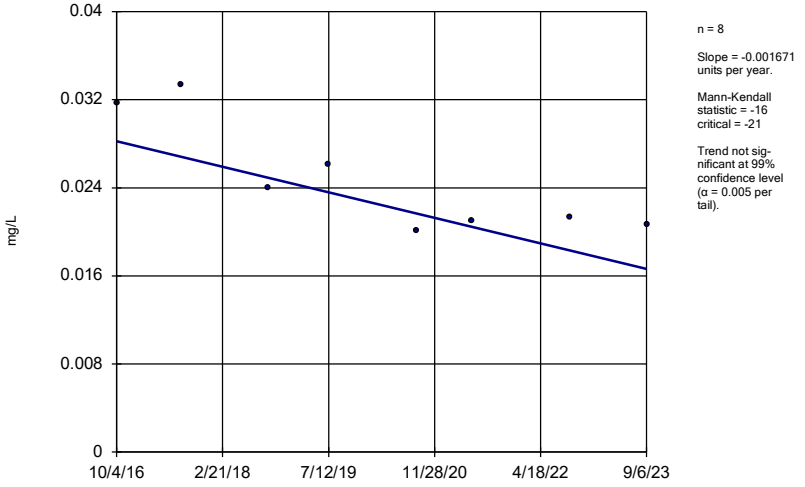
Sen's Slope Estimator

MW-6 (bg)



n = 8

Slope = -0.001671 units per year.

Mann-Kendall statistic = -16
critical = -21

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

Constituent: Barium Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

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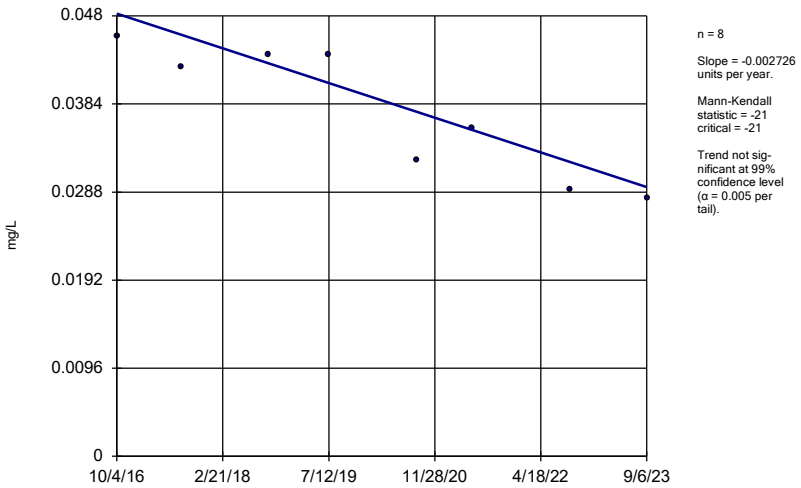
Sen's Slope Estimator

MW-8



n = 8

Slope = -0.002726 units per year.

Mann-Kendall statistic = -21
critical = -21

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

Constituent: Barium Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

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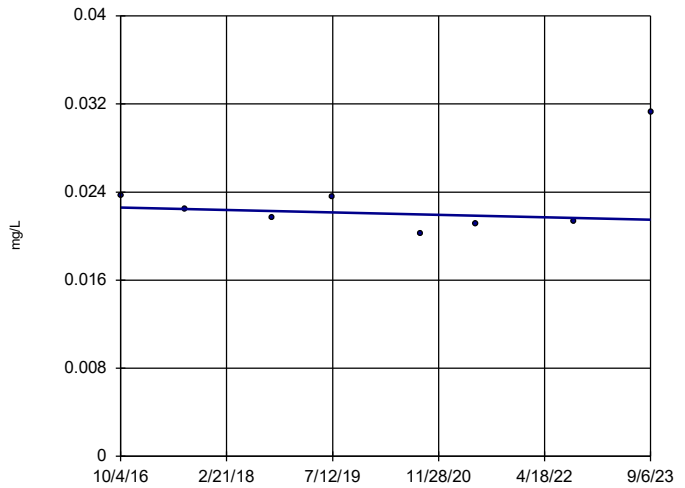
Sen's Slope Estimator

MW-9



n = 8

Slope = -0.0001588 units per year.

Mann-Kendall statistic = -4
critical = -21

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

Constituent: Barium Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

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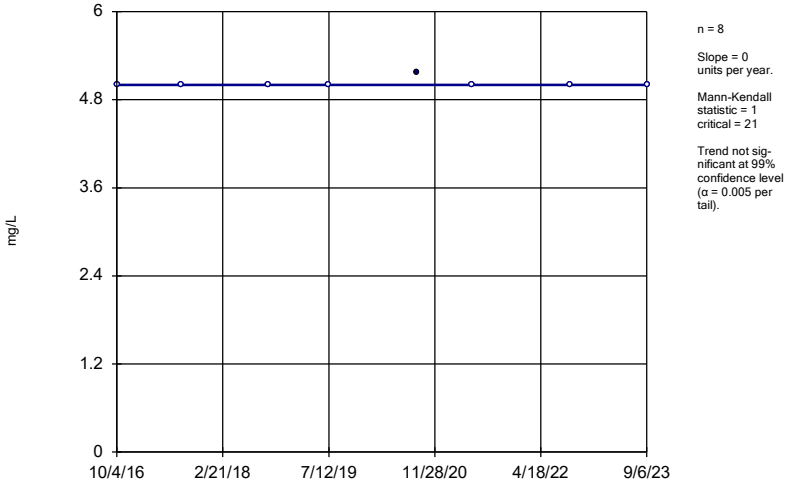
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-10



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 1
critical = 21

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

Constituent: Chloride Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

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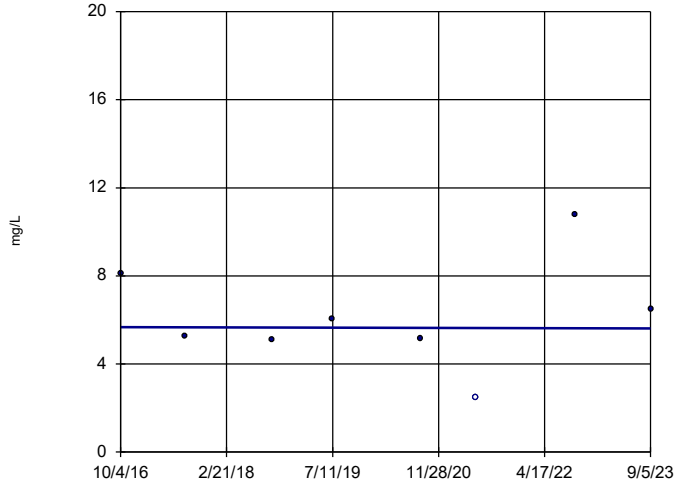
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-11



n = 8

Slope = -0.0102 units per year.

Mann-Kendall statistic = 0
critical = 21

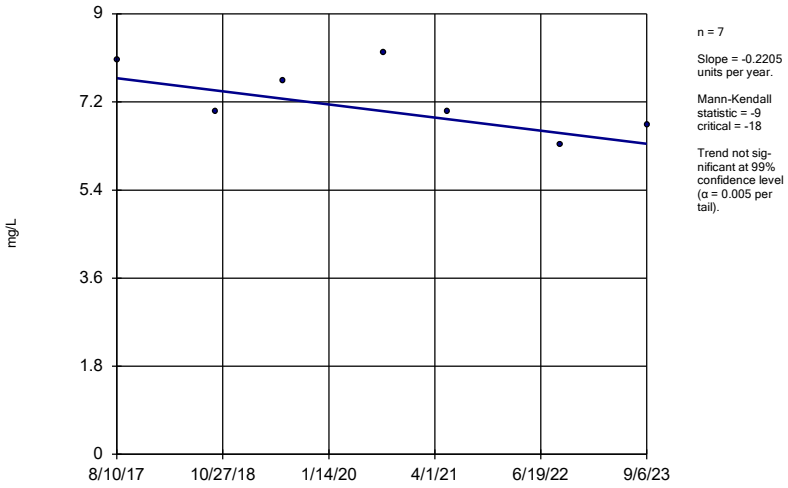
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Chloride Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-12R



n = 7

Slope = -0.2205 units per year.

Mann-Kendall statistic = -9 critical = -18

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

Constituent: Chloride Analysis Run 10/23/2023 10:07 AM View: Trend Tests

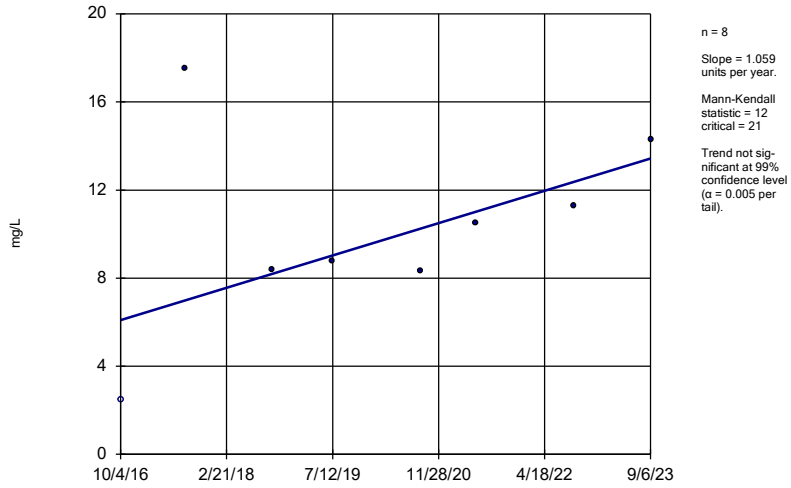
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-13R



n = 8

Slope = 1.059 units per year.

Mann-Kendall statistic = 12 critical = 21

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

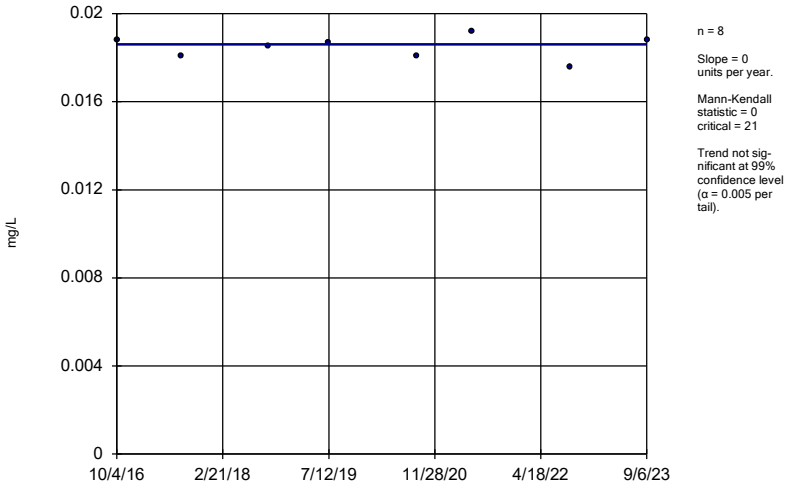
Constituent: Chloride Analysis Run 10/23/2023 10:07 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-10



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 0 critical = 21

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

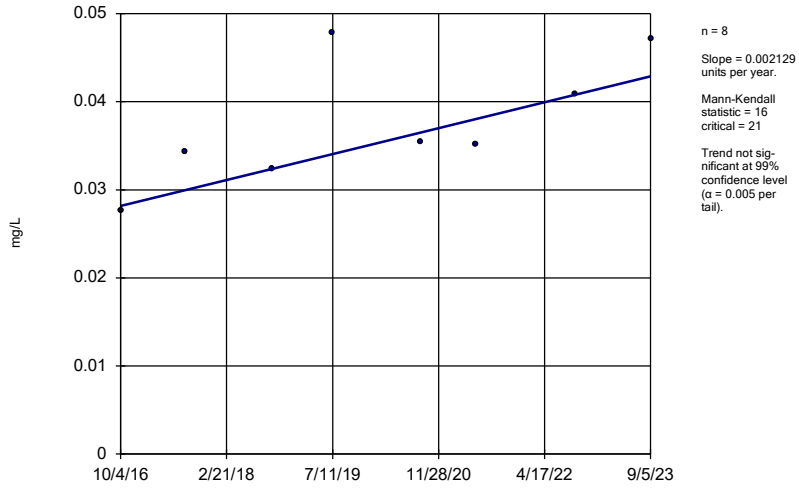
Constituent: Cobalt Analysis Run 10/23/2023 10:07 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-11



n = 8

Slope = 0.002129 units per year.

Mann-Kendall statistic = 16 critical = 21

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

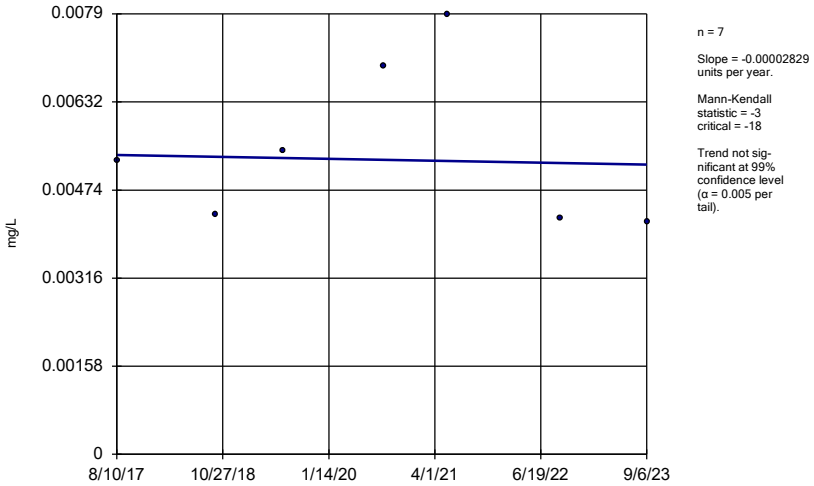
Constituent: Cobalt Analysis Run 10/23/2023 10:07 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-12R



n = 7

Slope = -0.00002829 units per year.

Mann-Kendall statistic = -3
critical = -18

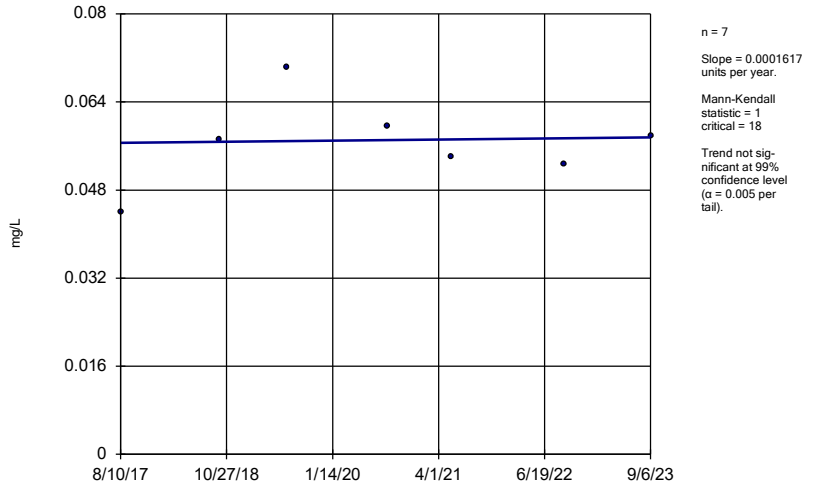
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-13R



n = 7

Slope = 0.0001617 units per year.

Mann-Kendall statistic = 1
critical = 18

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

Constituent: Cobalt Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

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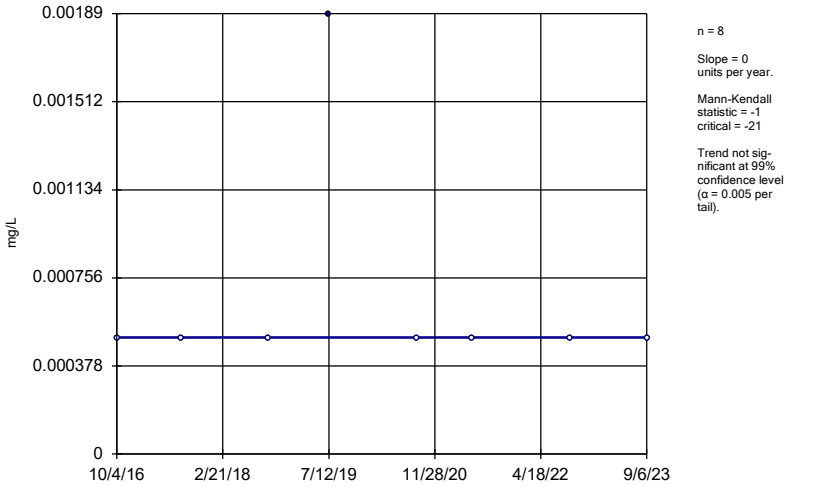
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-8



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = -1
critical = -21

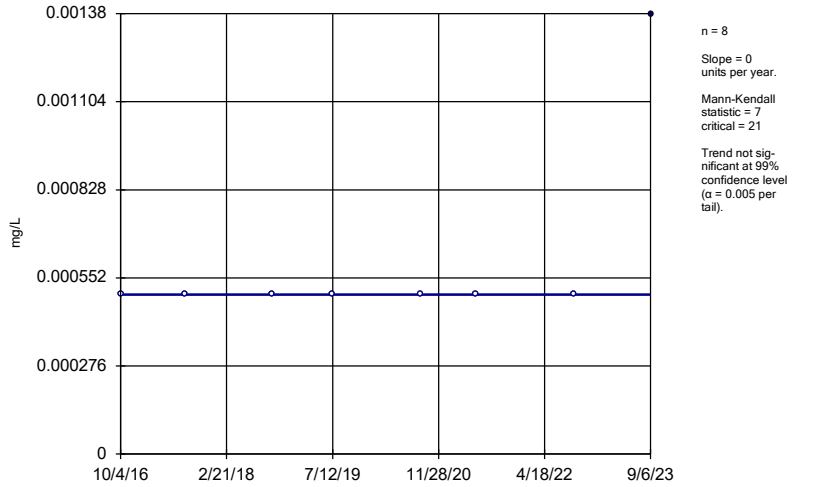
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-9



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 7
critical = 21

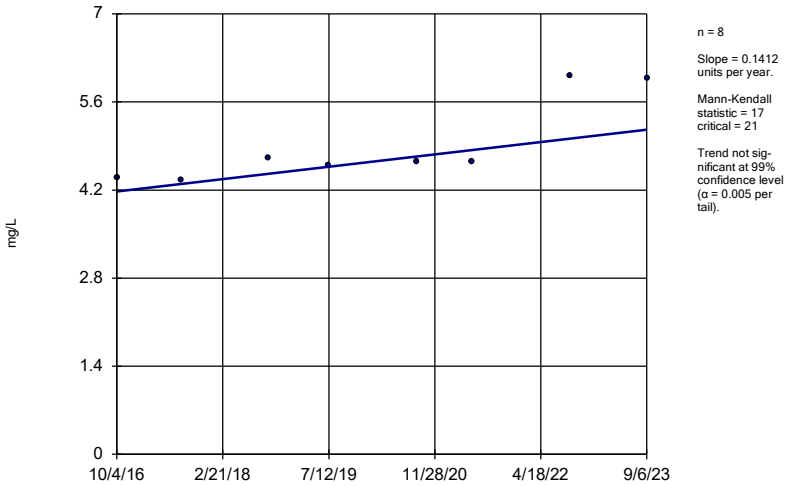
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Cobalt Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-10



n = 8

Slope = 0.1412 units per year.

Mann-Kendall statistic = 17
critical = 21

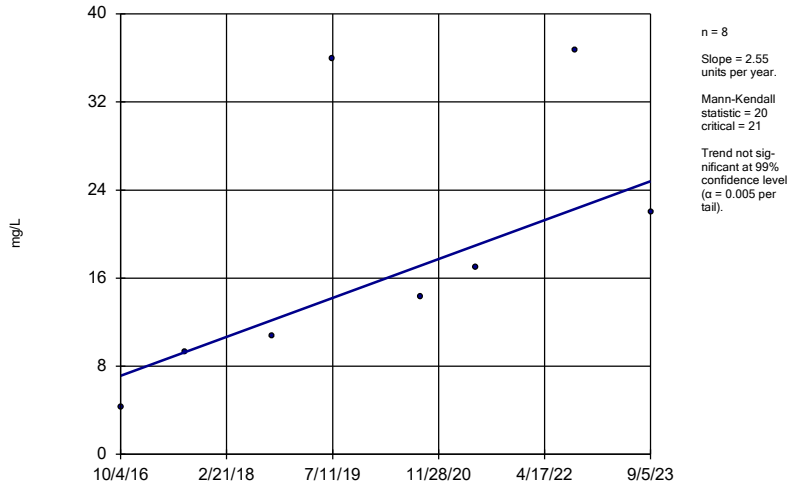
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-11



n = 8

Slope = 2.55 units per year.

Mann-Kendall statistic = 20
critical = 21

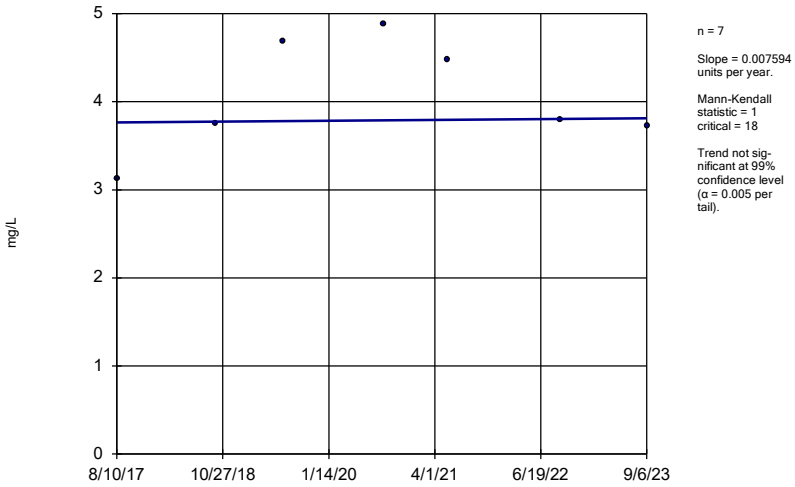
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 10/23/2023 10:07 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-12R



n = 7

Slope = 0.007594 units per year.

Mann-Kendall statistic = 1
critical = 18

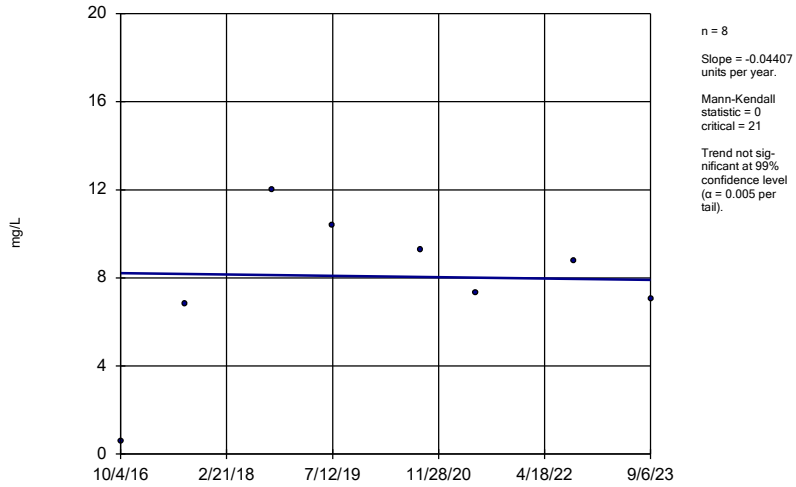
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-13R



n = 8

Slope = -0.04407 units per year.

Mann-Kendall statistic = 0
critical = 21

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

Constituent: Iron Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

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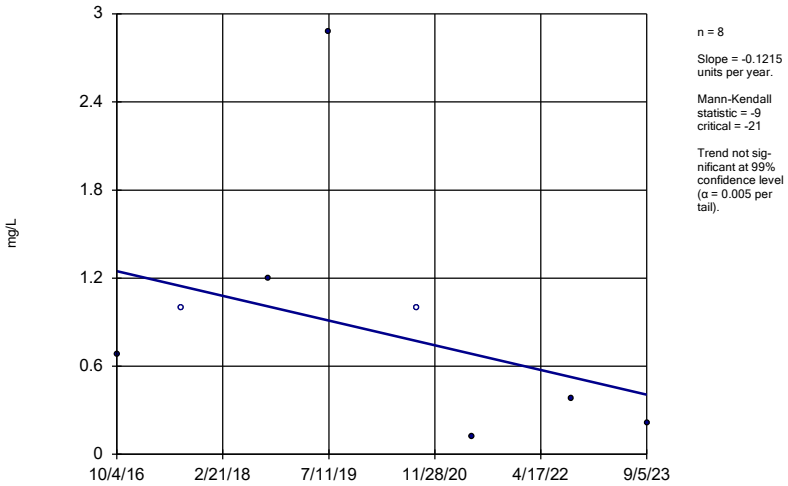
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-26 (bg)



n = 8

Slope = -0.1215 units per year.

Mann-Kendall statistic = -9
critical = -21

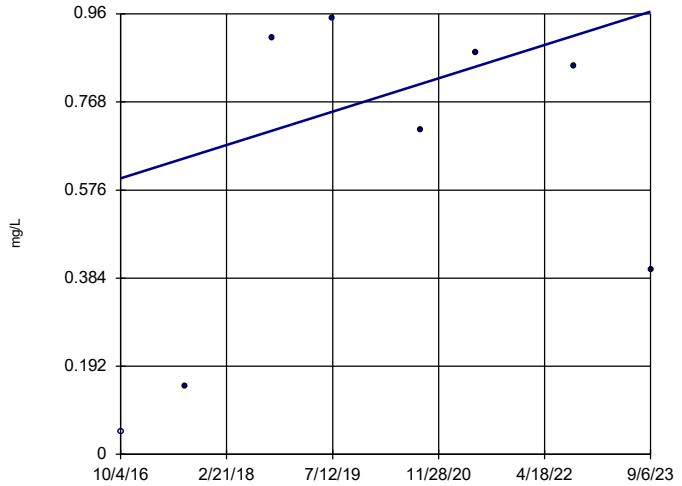
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-6 (bg)



n = 8

Slope = 0.05238 units per year.

Mann-Kendall statistic = 4
critical = 21

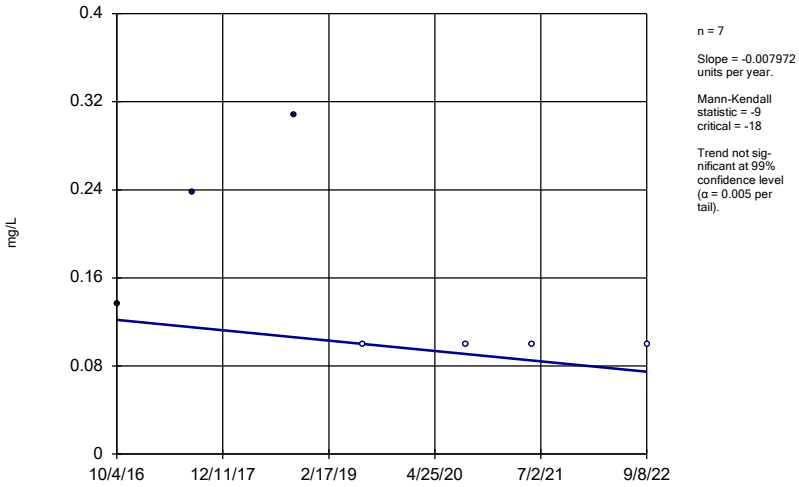
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-8



n = 7

Slope = -0.007972 units per year.

Mann-Kendall statistic = -9
critical = -18

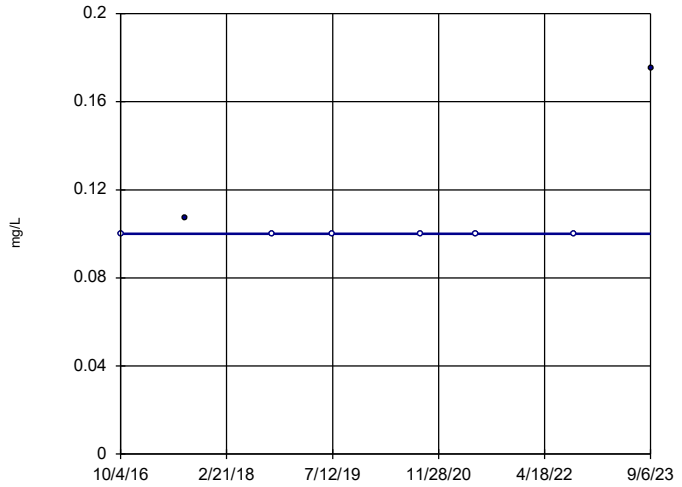
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-9



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 3
critical = 21

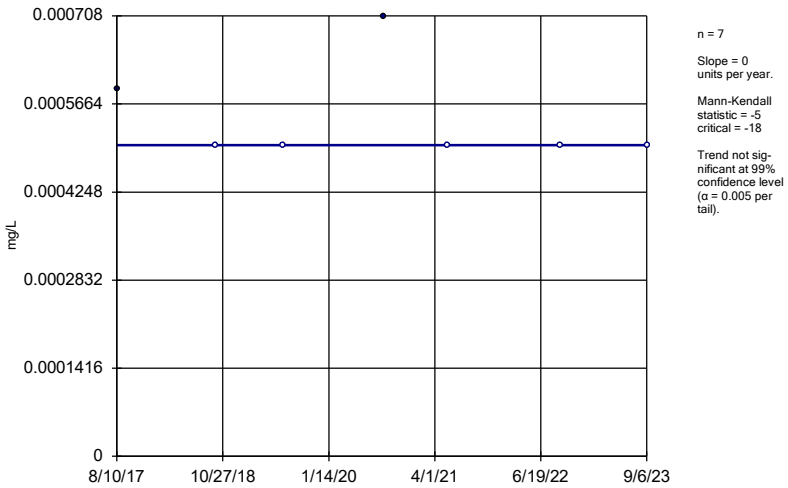
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-12R



n = 7

Slope = 0
units per year.

Mann-Kendall
statistic = -5
critical = -18

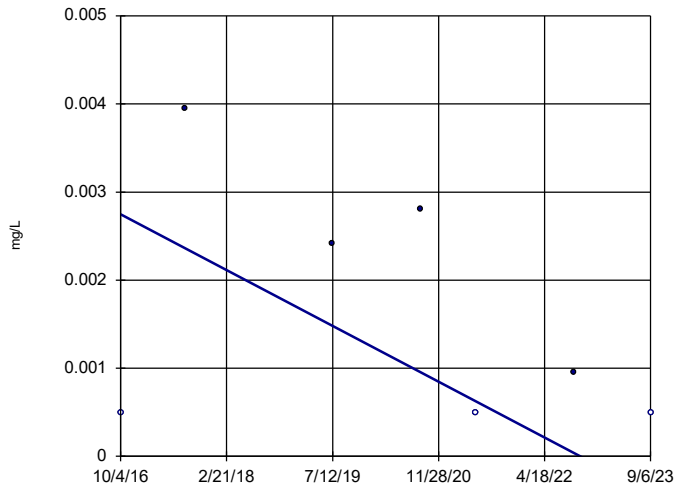
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Lead Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-13R



n = 7

Slope = -0.0004574
units per year.

Mann-Kendall
statistic = -6
critical = -18

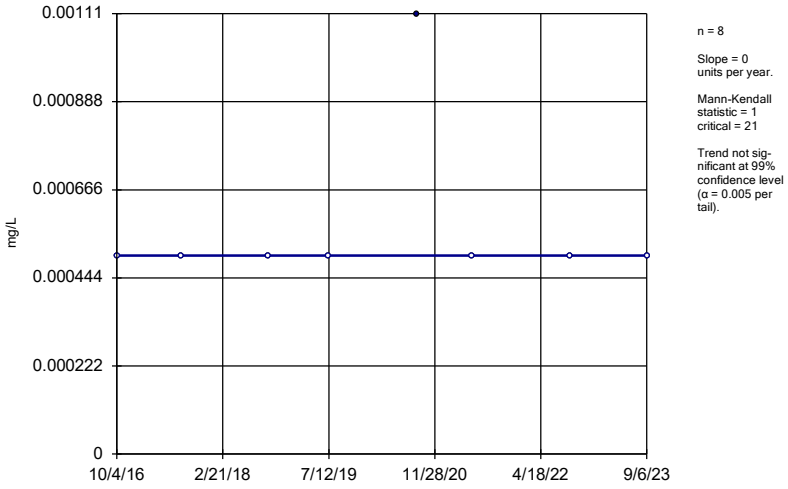
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Lead Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-8



n = 8

Slope = 0
units per year.

Mann-Kendall
statistic = 1
critical = 21

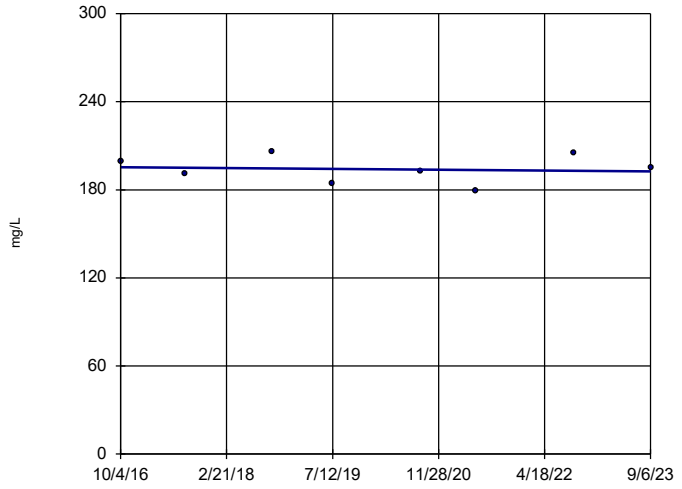
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Lead Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-10



n = 8

Slope = -0.4153
units per year.

Mann-Kendall
statistic = -2
critical = -21

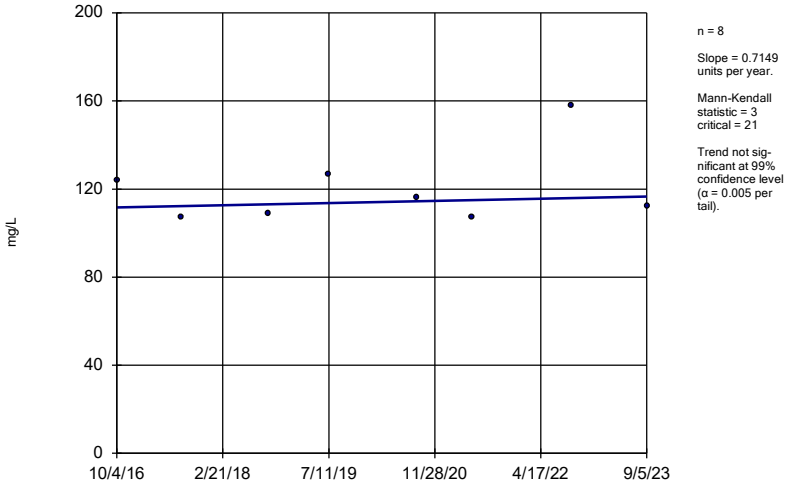
Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Magnesium Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-11



n = 8

Slope = 0.7149 units per year.

Mann-Kendall statistic = 3 critical = 21

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

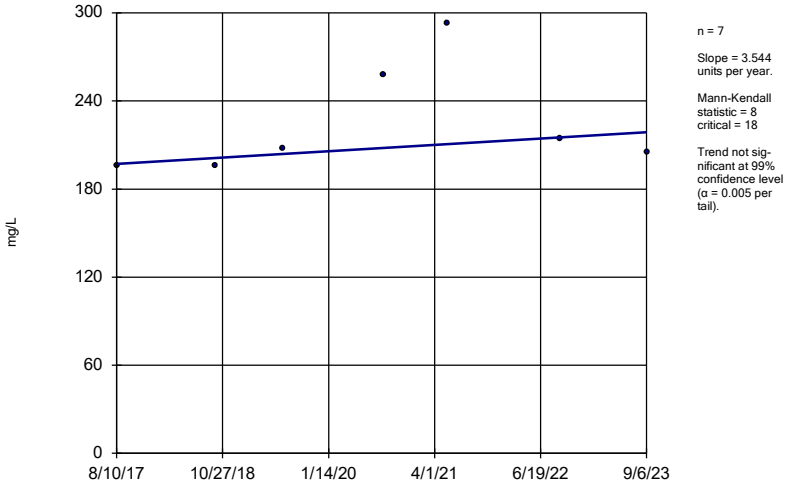
Constituent: Magnesium Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-12R



n = 7

Slope = 3.544 units per year.

Mann-Kendall statistic = 8 critical = 18

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

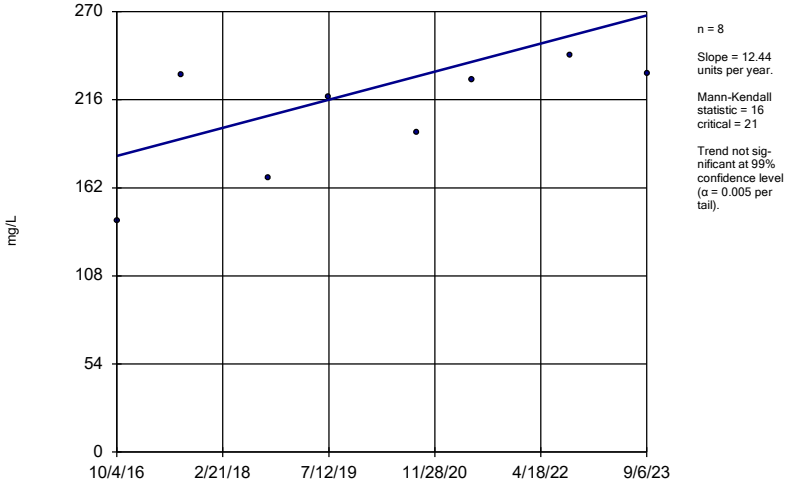
Constituent: Magnesium Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-13R



n = 8

Slope = 12.44 units per year.

Mann-Kendall statistic = 16 critical = 21

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

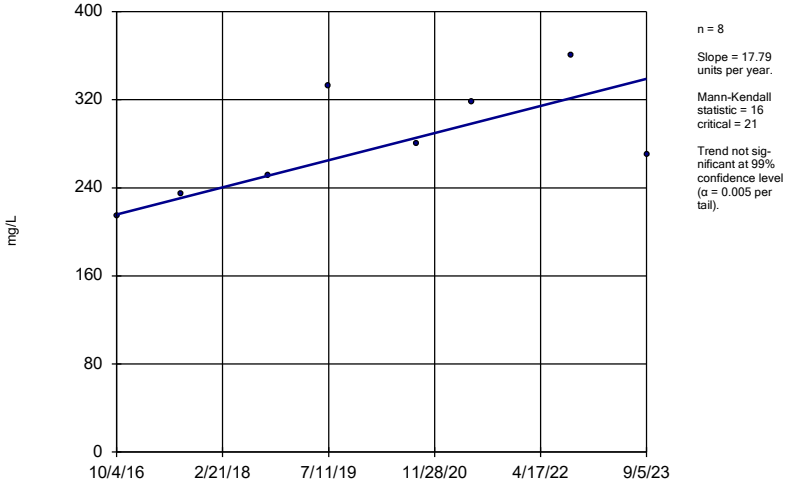
Constituent: Magnesium Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-26 (bg)



n = 8

Slope = 17.79 units per year.

Mann-Kendall statistic = 16 critical = 21

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

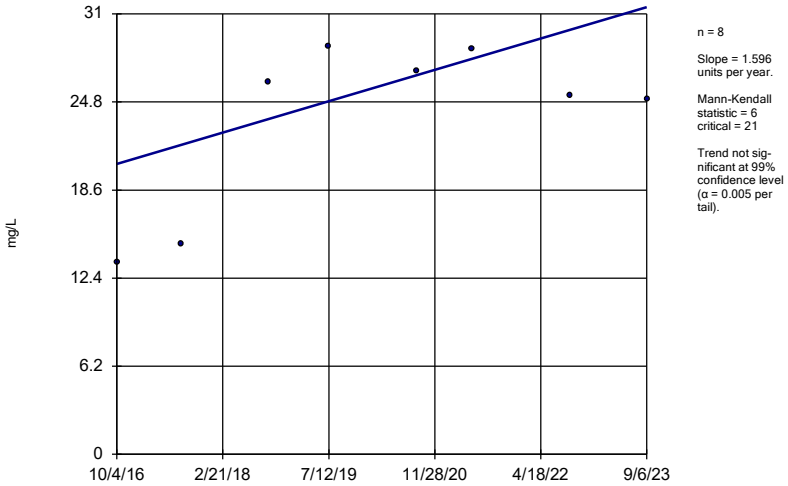
Constituent: Magnesium Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-6 (bg)



n = 8

Slope = 1.596 units per year.

Mann-Kendall statistic = 6 critical = 21

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

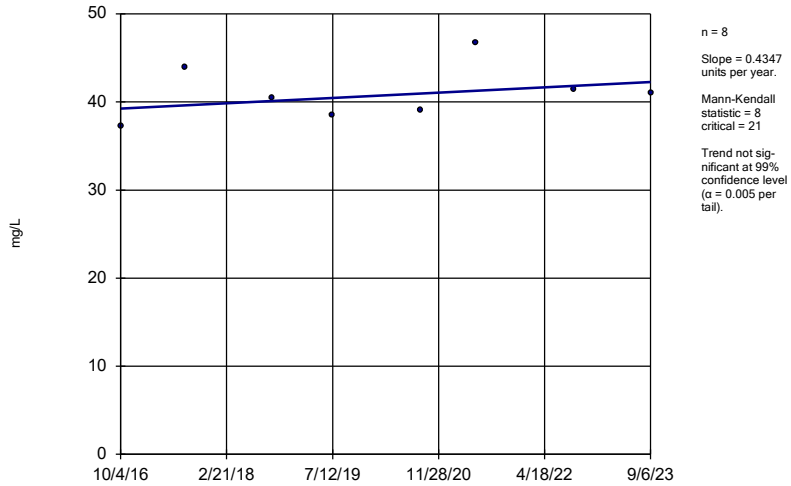
Constituent: Magnesium Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-8



n = 8

Slope = 0.4347 units per year.

Mann-Kendall statistic = 8 critical = 21

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

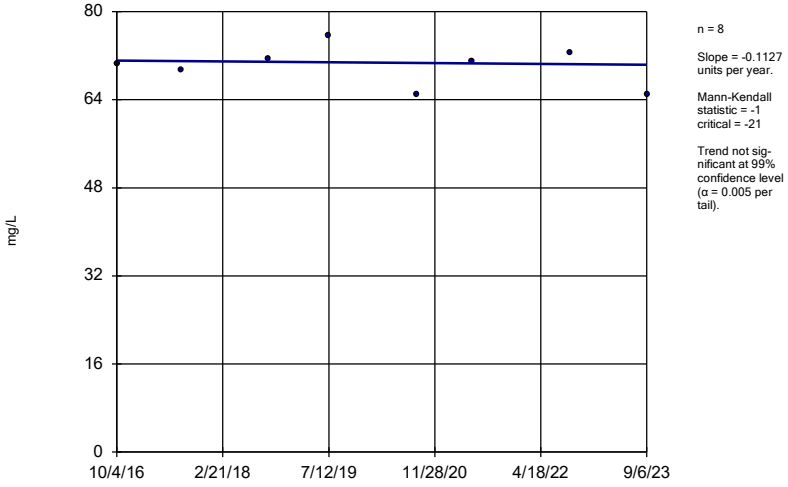
Constituent: Magnesium Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-9



n = 8

Slope = -0.1127 units per year.

Mann-Kendall statistic = -1 critical = -21

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

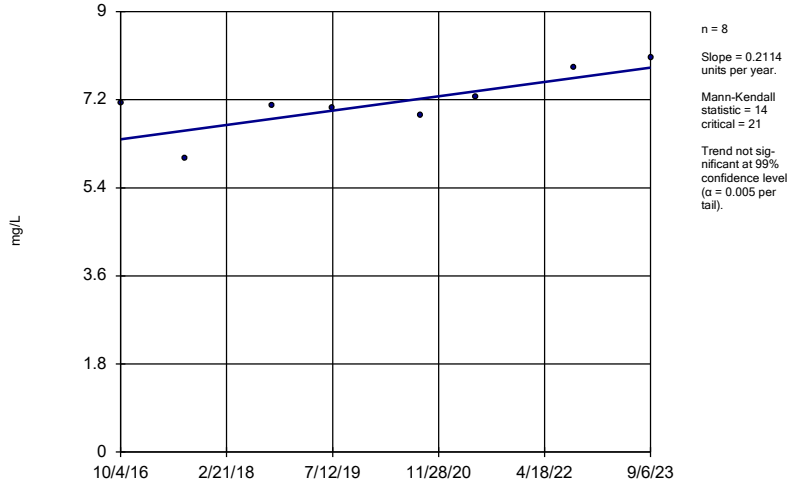
Constituent: Magnesium Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-10



n = 8

Slope = 0.2114 units per year.

Mann-Kendall statistic = 14 critical = 21

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

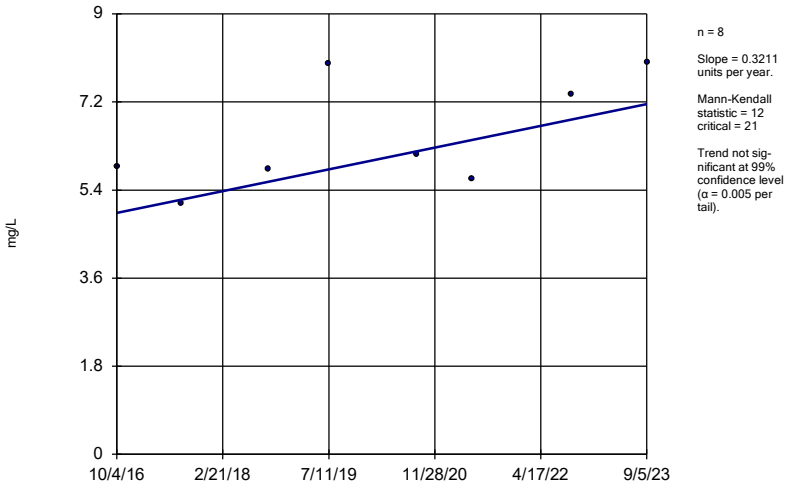
Constituent: Manganese Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-11



n = 8

Slope = 0.3211 units per year.

Mann-Kendall statistic = 12 critical = 21

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

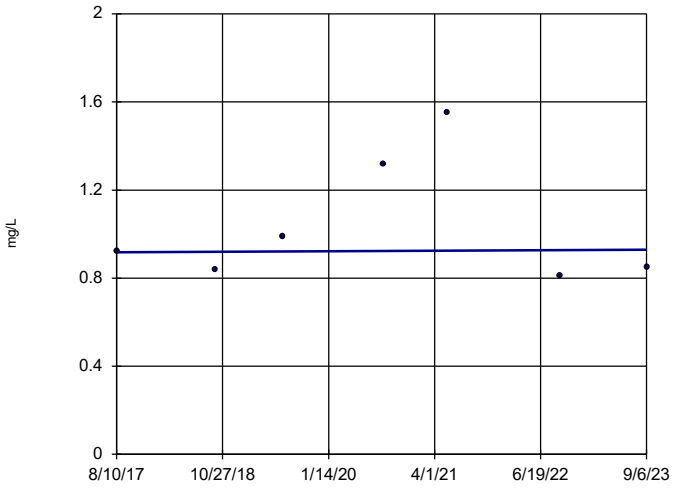
Constituent: Manganese Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-12R



n = 7

Slope = 0.002021 units per year.

Mann-Kendall statistic = 1 critical = 18

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

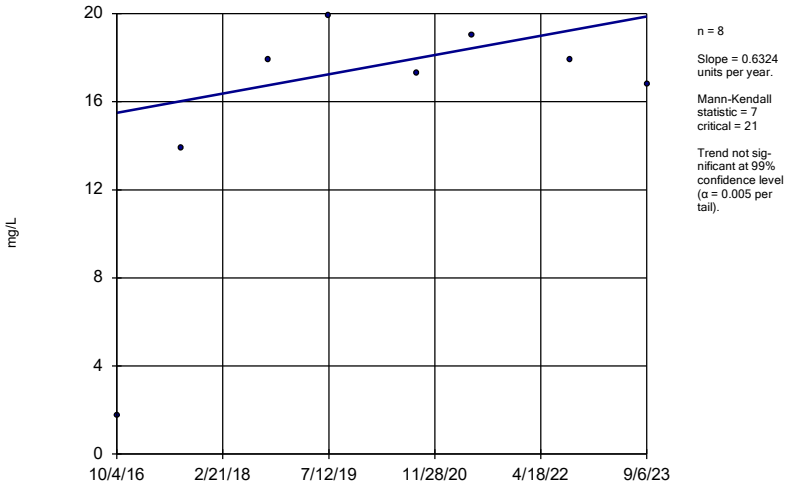
Constituent: Manganese Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-13R



n = 8

Slope = 0.6324 units per year.

Mann-Kendall statistic = 7 critical = 21

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

Constituent: Manganese Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

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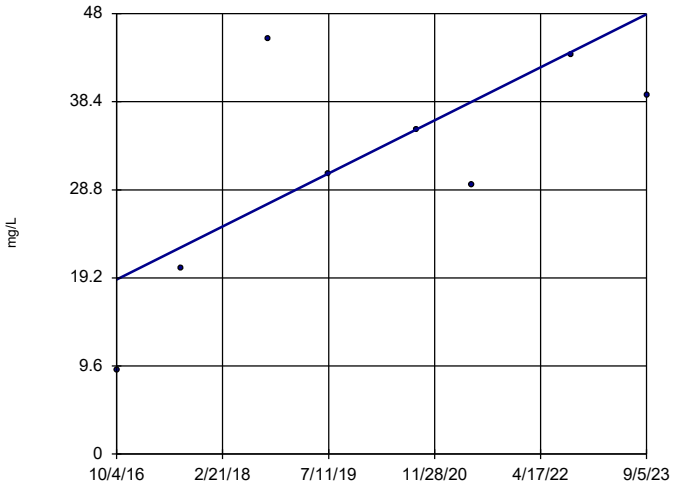
Sen's Slope Estimator

MW-26 (bg)



n = 8

Slope = 4.173 units per year.

Mann-Kendall statistic = 12 critical = 21

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

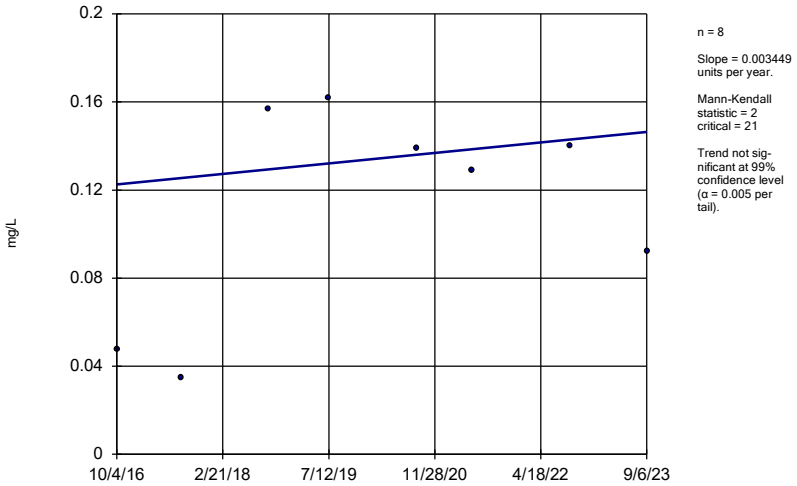
Constituent: Manganese Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-6 (bg)



n = 8

Slope = 0.003449 units per year.

Mann-Kendall statistic = 2
critical = 21

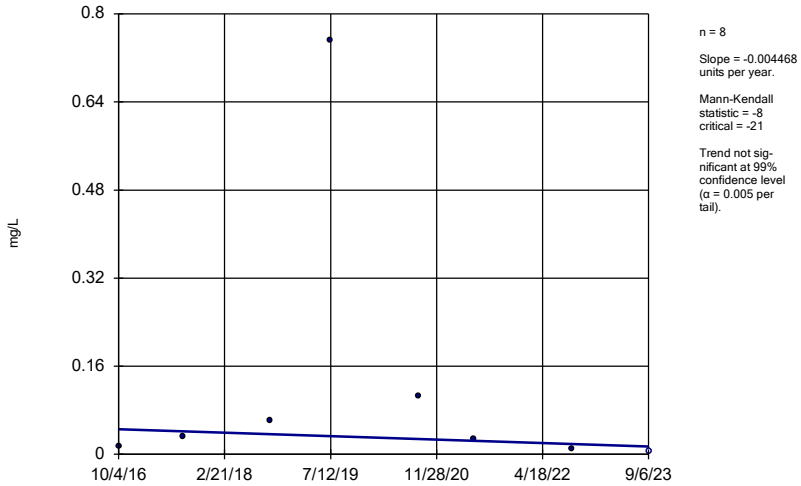
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Manganese Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-8



n = 8

Slope = -0.004468 units per year.

Mann-Kendall statistic = -8
critical = -21

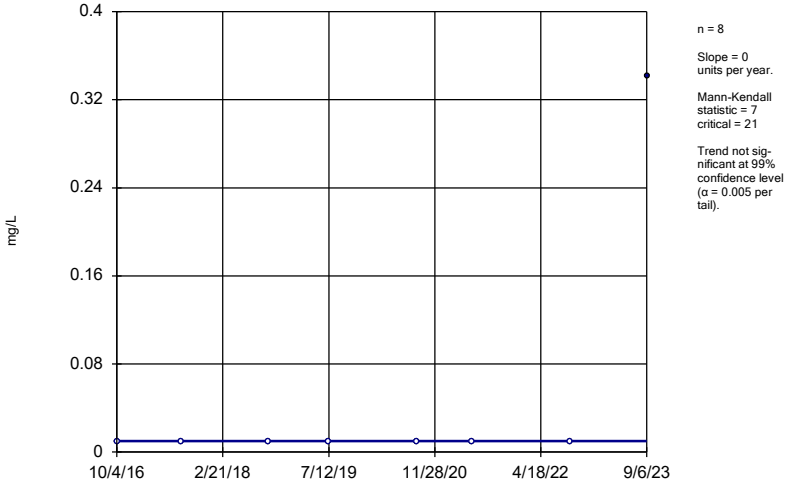
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Manganese Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-9



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 7
critical = 21

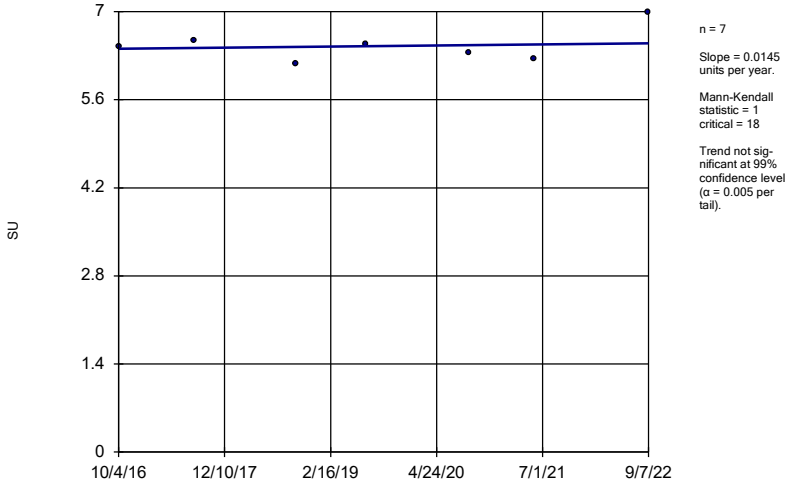
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Manganese Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-10



n = 7

Slope = 0.0145 units per year.

Mann-Kendall statistic = 1
critical = 18

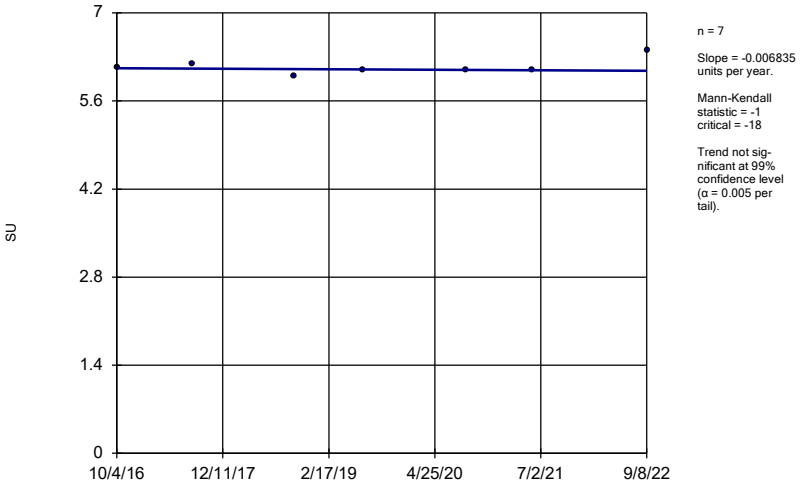
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: pH Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-11



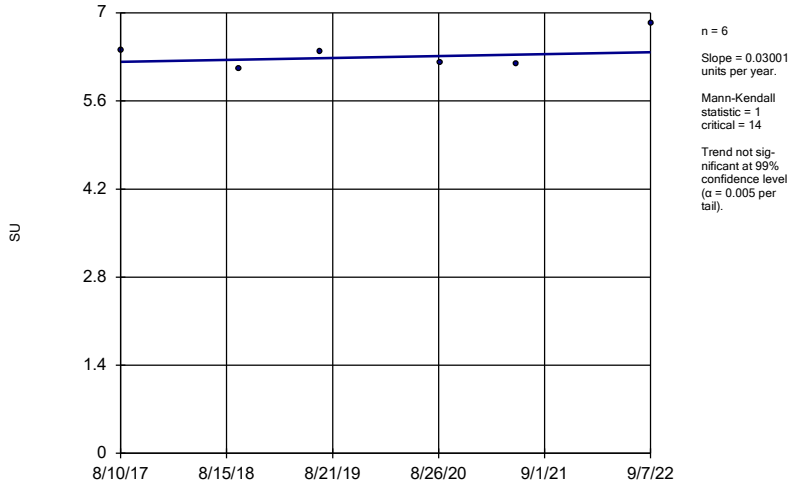
Constituent: pH Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-12R



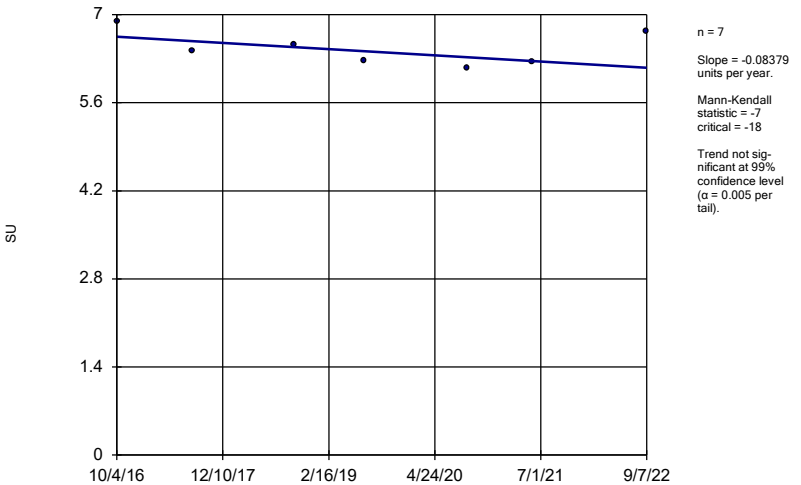
Constituent: pH Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-13R



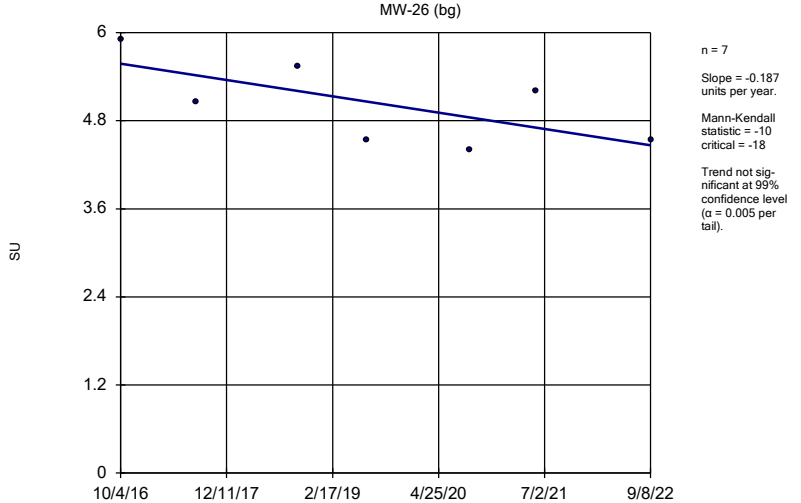
Constituent: pH Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-26 (bg)



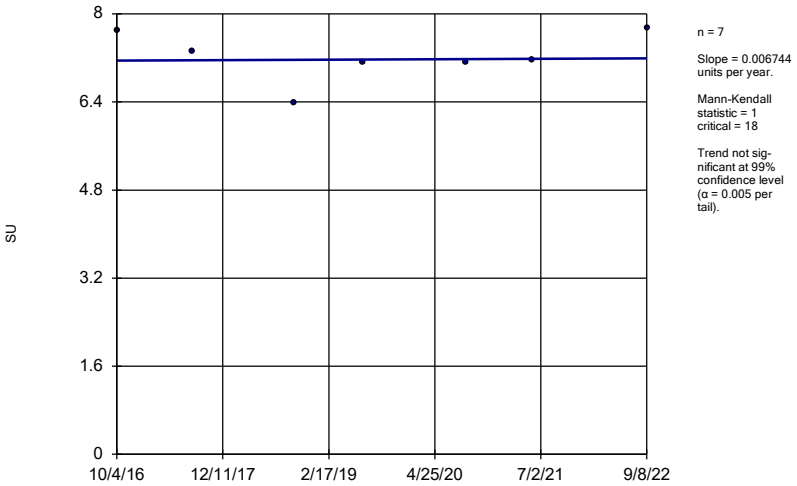
Constituent: pH Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-6 (bg)



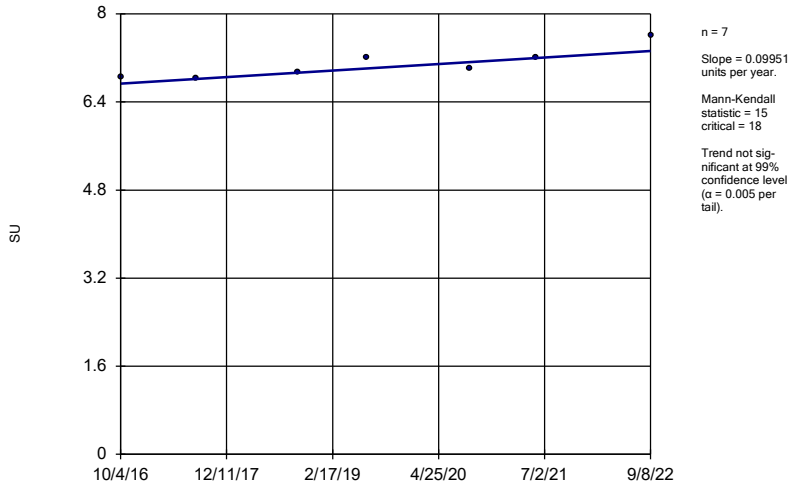
Constituent: pH Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-8



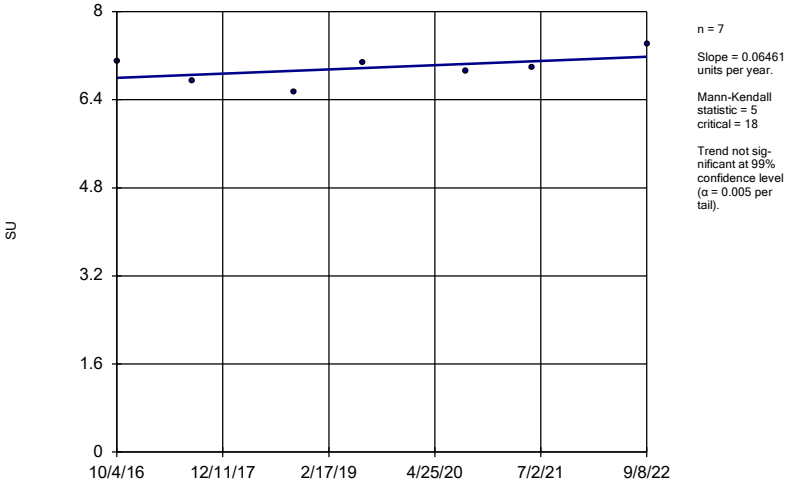
Constituent: pH Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-9



Constituent: pH Analysis Run 10/23/2023 10:08 AM View: Trend Tests

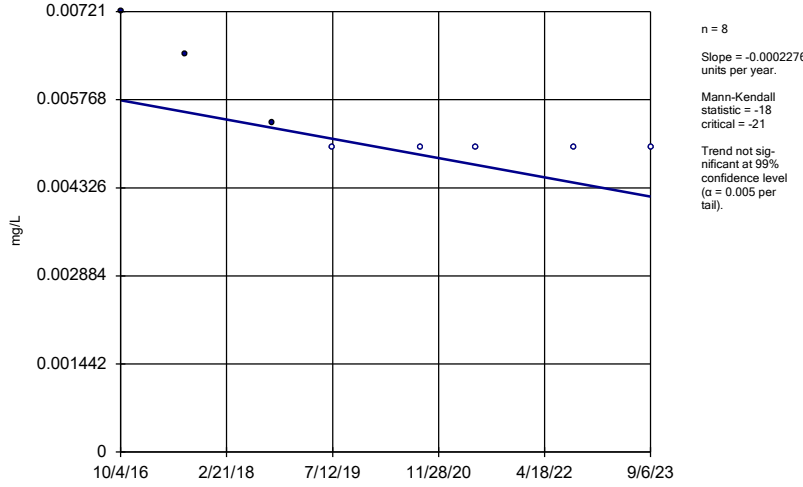
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-9



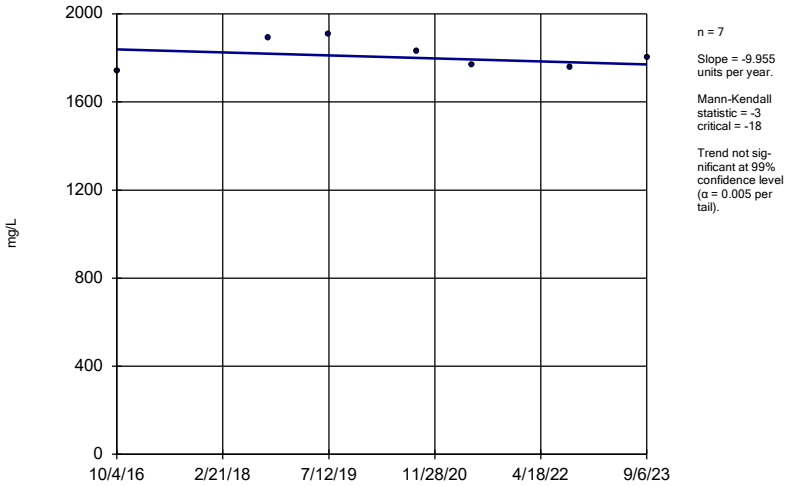
Constituent: Selenium Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-10



n = 7

Slope = -9.955 units per year.

Mann-Kendall statistic = -3
critical = -18

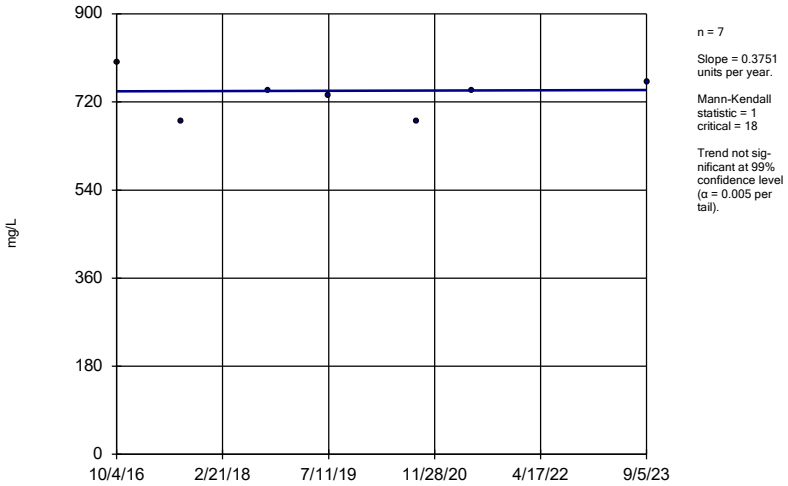
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-11



n = 7

Slope = 0.3751 units per year.

Mann-Kendall statistic = 1
critical = 18

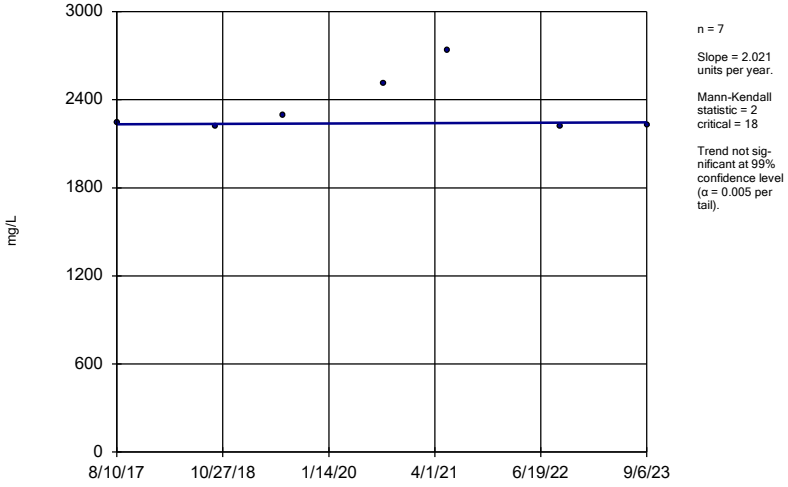
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-12R



n = 7

Slope = 2.021 units per year.

Mann-Kendall statistic = 2
critical = 18

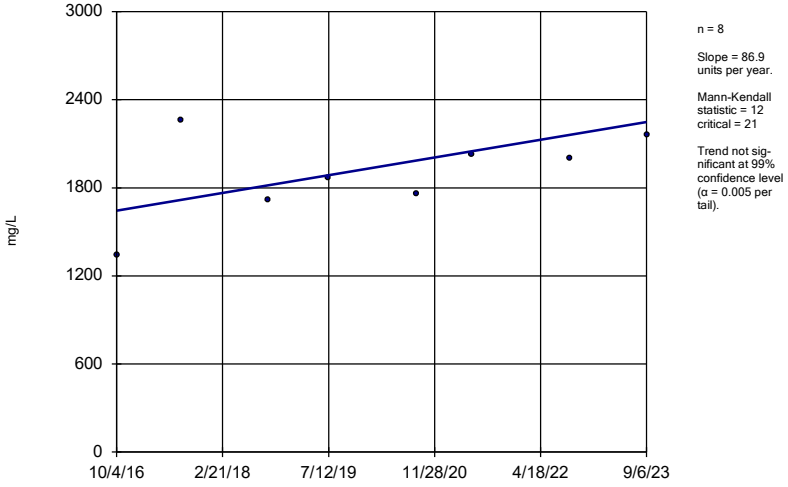
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-13R



n = 8

Slope = 86.9 units per year.

Mann-Kendall statistic = 12
critical = 21

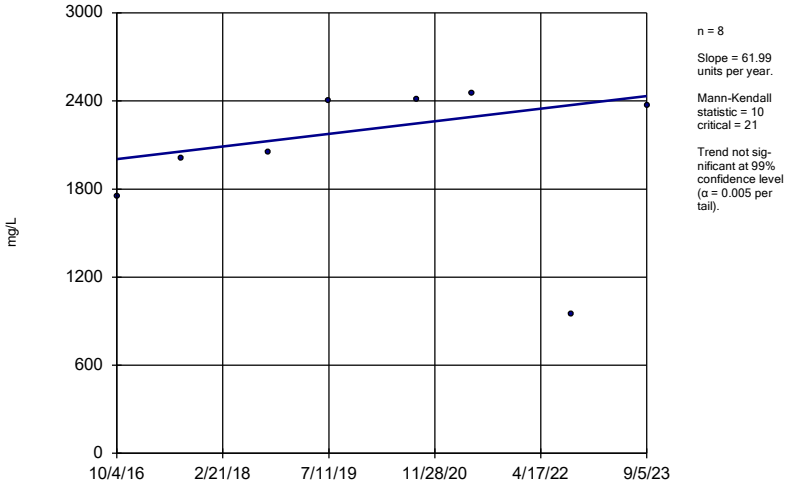
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Sulfate Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-26 (bg)



n = 8

Slope = 61.99 units per year.

Mann-Kendall statistic = 10 critical = 21

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

Constituent: Sulfate Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

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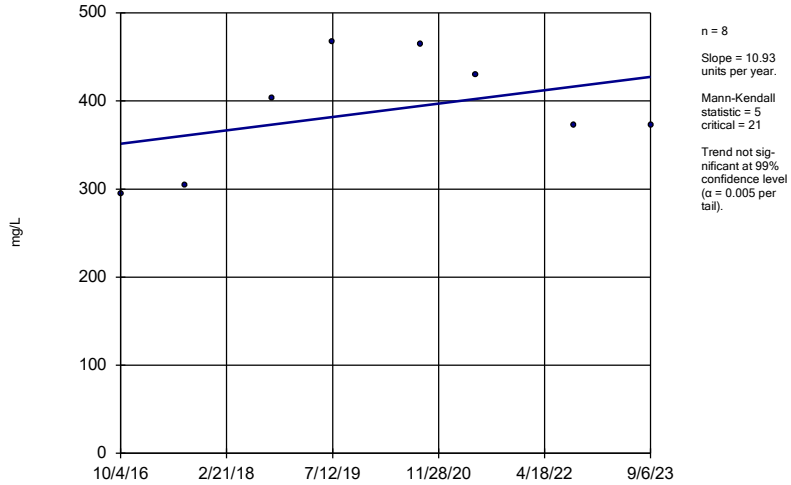
Sen's Slope Estimator

MW-6 (bg)



n = 8

Slope = 10.93 units per year.

Mann-Kendall statistic = 5 critical = 21

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

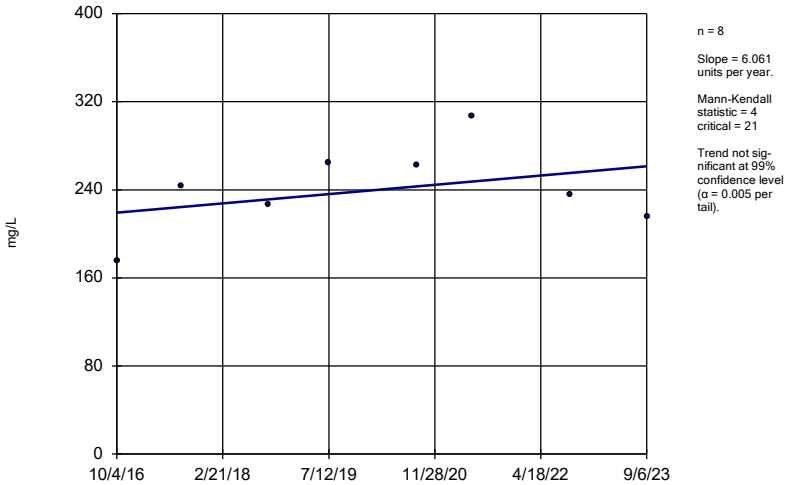
Constituent: Sulfate Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-8



n = 8

Slope = 6.061 units per year.

Mann-Kendall statistic = 4 critical = 21

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

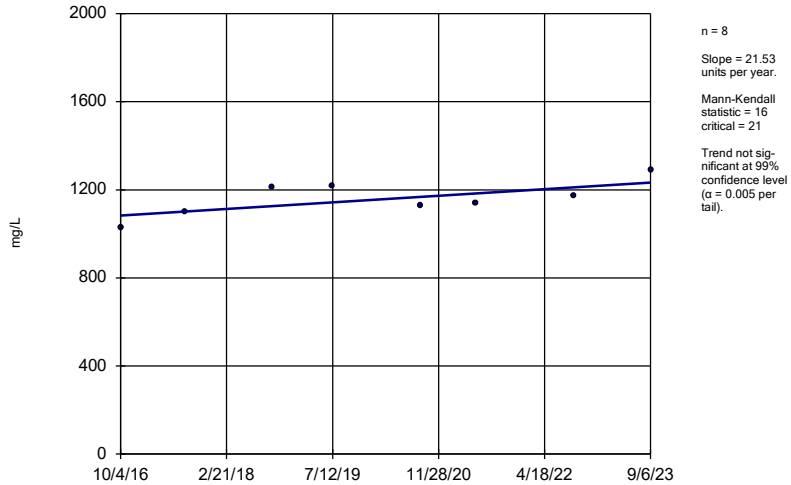
Constituent: Sulfate Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Sen's Slope Estimator

MW-9



n = 8

Slope = 21.53 units per year.

Mann-Kendall statistic = 16 critical = 21

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

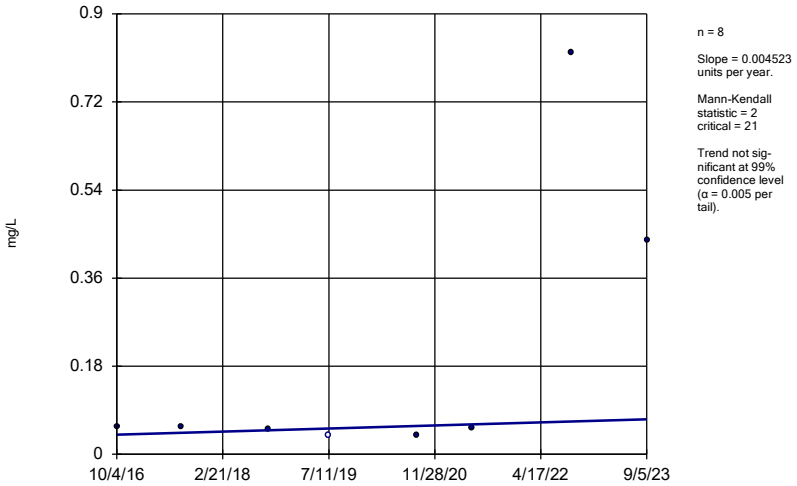
Constituent: Sulfate Analysis Run 10/23/2023 10:08 AM View: Trend Tests

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-11



n = 8

Slope = 0.004523 units per year.

Mann-Kendall statistic = 2
critical = 21

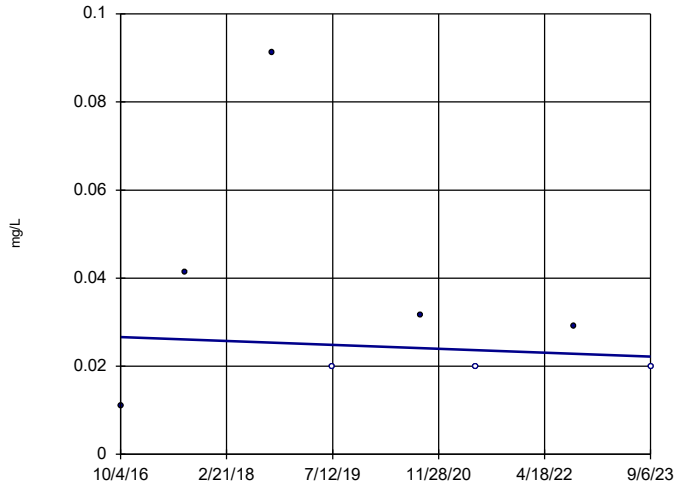
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Zinc Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-13R



n = 8

Slope = -0.0006447 units per year.

Mann-Kendall statistic = -3
critical = -21

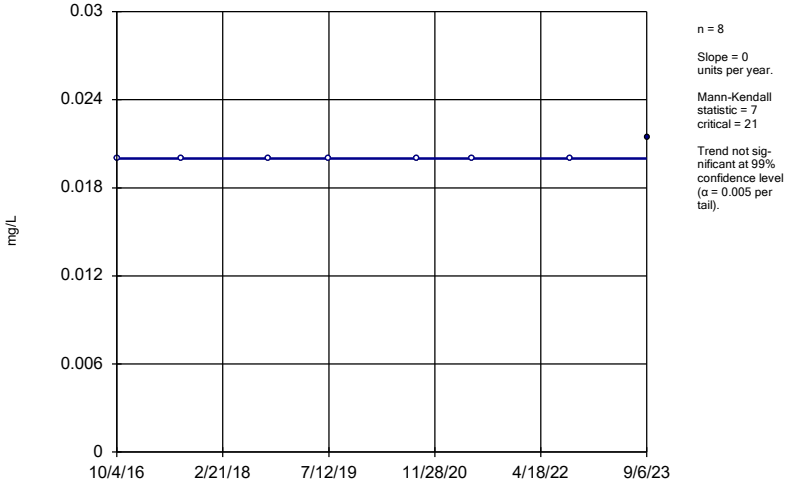
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Zinc Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

MW-8



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: Zinc Analysis Run 10/23/2023 10:08 AM View: Trend Tests
Cargill CCR LF Client: HR Green Data: Cargill_Import

FIGURE E.

Intrawell Prediction Limit Summary

Cargill CCR LF Client: HR Green Data: Cargill_Import Printed 10/23/2023, 10:34 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Arsenic (mg/L)	MW-10	0.004557	n/a	n/a	1 future	n/a	8	0.00314	0.0004367	12.5	None	No	0.0006269	Param Intra 1 of 2
Arsenic (mg/L)	MW-11	0.008	n/a	n/a	1 future	n/a	8	n/a	n/a	62.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Arsenic (mg/L)	MW-13R	0.00825	n/a	n/a	1 future	n/a	8	n/a	n/a	50	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Barium (mg/L)	MW-10	0.01783	n/a	n/a	1 future	n/a	8	0.015	0.0008734	0	None	No	0.0006269	Param Intra 1 of 2
Barium (mg/L)	MW-11	0.0489	n/a	n/a	1 future	n/a	8	n/a	n/a	0	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Barium (mg/L)	MW-12R	0.0313	n/a	n/a	1 future	n/a	7	n/a	n/a	0	n/a	n/a	0.02765	NP Intra (normality) 1 of 2
Barium (mg/L)	MW-13R	0.08641	n/a	n/a	1 future	n/a	8	0.02868	0.0178	0	None	No	0.0006269	Param Intra 1 of 2
Barium (mg/L)	MW-6	0.04644	n/a	n/a	1 future	n/a	8	-3.715	0.1991	0	None	ln(x)	0.0006269	Param Intra 1 of 2
Barium (mg/L)	MW-8	0.06098	n/a	n/a	1 future	n/a	8	0.03765	0.007191	0	None	No	0.0006269	Param Intra 1 of 2
Barium (mg/L)	MW-9	0.0313	n/a	n/a	1 future	n/a	8	n/a	n/a	0	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Chloride (mg/L)	MW-10	5.18	n/a	n/a	1 future	n/a	8	n/a	n/a	87.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Chloride (mg/L)	MW-11	14.09	n/a	n/a	1 future	n/a	8	6.176	2.439	12.5	None	No	0.0006269	Param Intra 1 of 2
Chloride (mg/L)	MW-12R	9.859	n/a	n/a	1 future	n/a	7	7.283	0.7058	0	None	No	0.0006269	Param Intra 1 of 2
Chloride (mg/L)	MW-13R	24.68	n/a	n/a	1 future	n/a	8	10.2	4.464	12.5	None	No	0.0006269	Param Intra 1 of 2
Cobalt (mg/L)	MW-10	0.02014	n/a	n/a	1 future	n/a	8	0.01848	0.000512	0	None	No	0.0006269	Param Intra 1 of 2
Cobalt (mg/L)	MW-11	0.0606	n/a	n/a	1 future	n/a	8	0.03759	0.007093	0	None	No	0.0006269	Param Intra 1 of 2
Cobalt (mg/L)	MW-12R	0.0108	n/a	n/a	1 future	n/a	7	0.005467	0.00146	0	None	No	0.0006269	Param Intra 1 of 2
Cobalt (mg/L)	MW-13R	0.08555	n/a	n/a	1 future	n/a	7	0.05656	0.007944	0	None	No	0.0006269	Param Intra 1 of 2
Cobalt (mg/L)	MW-8	0.00189	n/a	n/a	1 future	n/a	8	n/a	n/a	87.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Cobalt (mg/L)	MW-9	0.00138	n/a	n/a	1 future	n/a	8	n/a	n/a	87.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Iron (mg/L)	MW-10	6.02	n/a	n/a	1 future	n/a	8	n/a	n/a	0	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Iron (mg/L)	MW-11	57.79	n/a	n/a	1 future	n/a	8	18.77	12.03	0	None	No	0.0006269	Param Intra 1 of 2
Iron (mg/L)	MW-12R	6.366	n/a	n/a	1 future	n/a	7	4.063	0.6309	0	None	No	0.0006269	Param Intra 1 of 2
Iron (mg/L)	MW-13R	18.85	n/a	n/a	1 future	n/a	8	7.784	3.411	0	None	No	0.0006269	Param Intra 1 of 2
Iron (mg/L)	MW-26	4.555	n/a	n/a	1 future	n/a	8	0.7727	0.4197	25	Kaplan-Meier	sqrt(x)	0.0006269	Param Intra 1 of 2
Iron (mg/L)	MW-6	1.304	n/a	n/a	1 future	n/a	8	0.4878	0.3739	12.5	None	x^2	0.0006269	Param Intra 1 of 2
Iron (mg/L)	MW-8	0.308	n/a	n/a	1 future	n/a	7	n/a	n/a	57.14	n/a	n/a	0.02765	NP Intra (NDs) 1 of 2
Iron (mg/L)	MW-9	0.175	n/a	n/a	1 future	n/a	8	n/a	n/a	75	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Lead (mg/L)	MW-12R	0.000708	n/a	n/a	1 future	n/a	7	n/a	n/a	71.43	n/a	n/a	0.02765	NP Intra (NDs) 1 of 2
Lead (mg/L)	MW-13R	0.00906	n/a	n/a	1 future	n/a	7	0.03756	0.01579	42.86	Kaplan-Meier	sqrt(x)	0.0006269	Param Intra 1 of 2
Lead (mg/L)	MW-8	0.00111	n/a	n/a	1 future	n/a	8	n/a	n/a	87.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Magnesium (mg/L)	MW-10	224.7	n/a	n/a	1 future	n/a	8	194	9.457	0	None	No	0.0006269	Param Intra 1 of 2
Magnesium (mg/L)	MW-11	158	n/a	n/a	1 future	n/a	8	n/a	n/a	0	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Magnesium (mg/L)	MW-12R	293	n/a	n/a	1 future	n/a	7	n/a	n/a	0	n/a	n/a	0.02765	NP Intra (normality) 1 of 2
Magnesium (mg/L)	MW-13R	323.1	n/a	n/a	1 future	n/a	8	207.3	35.71	0	None	No	0.0006269	Param Intra 1 of 2
Magnesium (mg/L)	MW-26	446.8	n/a	n/a	1 future	n/a	8	282.6	50.6	0	None	No	0.0006269	Param Intra 1 of 2
Magnesium (mg/L)	MW-6	33.12	n/a	n/a	1 future	n/a	8	402799	246672	0	None	x^4	0.0006269	Param Intra 1 of 2
Magnesium (mg/L)	MW-8	51.01	n/a	n/a	1 future	n/a	8	41.05	3.071	0	None	No	0.0006269	Param Intra 1 of 2
Magnesium (mg/L)	MW-9	81.79	n/a	n/a	1 future	n/a	8	70.08	3.61	0	None	No	0.0006269	Param Intra 1 of 2
pH (SU)	MW-10	7.435	5.498	n/a	1 future	n/a	7	6.466	0.2653	0	None	No	0.0003135	Param Intra 1 of 2
pH (SU)	MW-11	6.63	5.66	n/a	1 future	n/a	7	6.145	0.1329	0	None	No	0.0003135	Param Intra 1 of 2
pH (SU)	MW-12R	7.4	5.317	n/a	1 future	n/a	6	6.358	0.2567	0	None	No	0.0003135	Param Intra 1 of 2
pH (SU)	MW-13R	7.463	5.457	n/a	1 future	n/a	7	6.46	0.2748	0	None	No	0.0003135	Param Intra 1 of 2
pH (SU)	MW-26	7.101	2.959	n/a	1 future	n/a	7	5.03	0.5675	0	None	No	0.0003135	Param Intra 1 of 2
pH (SU)	MW-6	8.887	5.562	n/a	1 future	n/a	7	7.224	0.4554	0	None	No	0.0003135	Param Intra 1 of 2
pH (SU)	MW-8	8.096	6.097	n/a	1 future	n/a	7	7.096	0.2738	0	None	No	0.0003135	Param Intra 1 of 2
pH (SU)	MW-9	7.983	5.944	n/a	1 future	n/a	7	6.964	0.2794	0	None	No	0.0003135	Param Intra 1 of 2
Selenium (mg/L)	MW-9	0.00721	n/a	n/a	1 future	n/a	8	n/a	n/a	62.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2
Sulfate (mg/L)	MW-10	2053	n/a	n/a	1 future	n/a	7	1814	65.54	0	None	No	0.0006269	Param Intra 1 of 2
Sulfate (mg/L)	MW-11	893.5	n/a	n/a	1 future	n/a	7	735	43.41	0	None	No	0.0006269	Param Intra 1 of 2
Sulfate (mg/L)	MW-12R	2740	n/a	n/a	1 future	n/a	7	n/a	n/a	0	n/a	n/a	0.02765	NP Intra (normality) 1 of 2
Sulfate (mg/L)	MW-13R	2834	n/a	n/a	1 future	n/a	8	1893	290.4	0	None	No	0.0006269	Param Intra 1 of 2
Sulfate (mg/L)	MW-26	3192	n/a	n/a	1 future	n/a	8	4423913	1776559	0	None	x^2	0.0006269	Param Intra 1 of 2
Sulfate (mg/L)	MW-6	601.1	n/a	n/a	1 future	n/a	8	388.5	65.55	0	None	No	0.0006269	Param Intra 1 of 2
Sulfate (mg/L)	MW-8	367.5	n/a	n/a	1 future	n/a	8	241.4	38.87	0	None	No	0.0006269	Param Intra 1 of 2
Sulfate (mg/L)	MW-9	1421	n/a	n/a	1 future	n/a	8	1161	80.08	0	None	No	0.0006269	Param Intra 1 of 2

Intrawell Prediction Limit Summary

Cargill CCR LF Client: HR Green Data: Cargill_Import Printed 10/23/2023, 10:34 AM

Constituent	Well	Upper Lim.	Lower Lim.	Date	Observ.	Sig.	Bg N	Bg Mean	Std. Dev.	%NDs	ND Adj.	Transform	Alpha	Method
Zinc (mg/L)	MW-11	0.82	n/a	n/a	1 future	n/a	8	n/a	n/a	12.5	n/a	n/a	0.02144	NP Intra (normality) 1 of 2
Zinc (mg/L)	MW-13R	0.1383	n/a	n/a	1 future	n/a	8	0.1593	0.06552	37.5	Kaplan-Meier	sqrt(x)	0.0006269	Param Intra 1 of 2
Zinc (mg/L)	MW-8	0.0214	n/a	n/a	1 future	n/a	8	n/a	n/a	87.5	n/a	n/a	0.02144	NP Intra (NDs) 1 of 2

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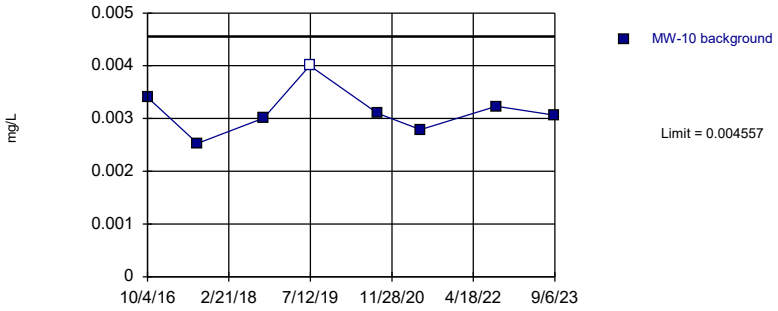
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Parametric, MW-10



Background Data Summary: Mean=0.00314, Std. Dev.=0.0004367, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9452, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Arsenic Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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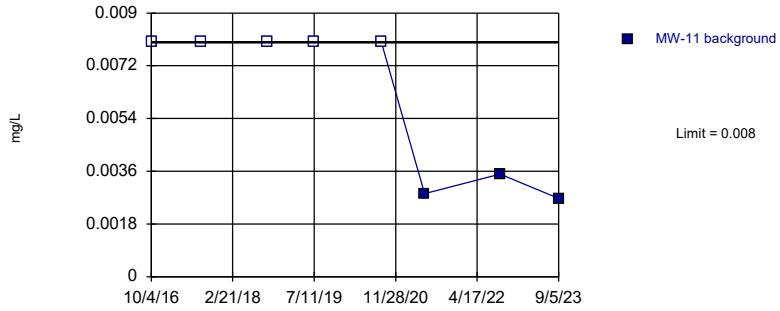
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, MW-11



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 62.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2). Assumes 1 future value.

Constituent: Arsenic Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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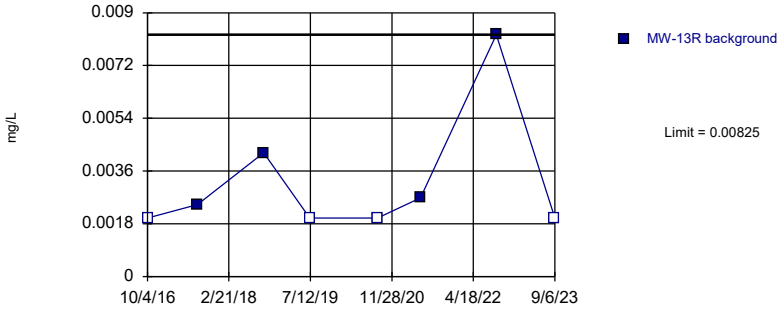
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, MW-13R



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 0.1 alpha level. Limit is highest of 8 background values. 50% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2). Assumes 1 future value.

Constituent: Arsenic Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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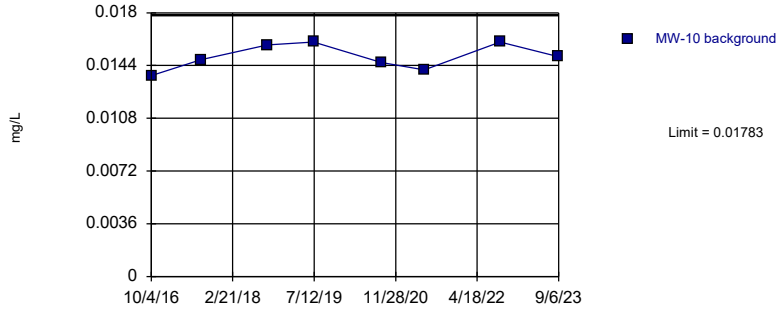
Prediction Limit

Intrawell Parametric, MW-10



Background Data Summary: Mean=0.015, Std. Dev.=0.0008734, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9175, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Barium Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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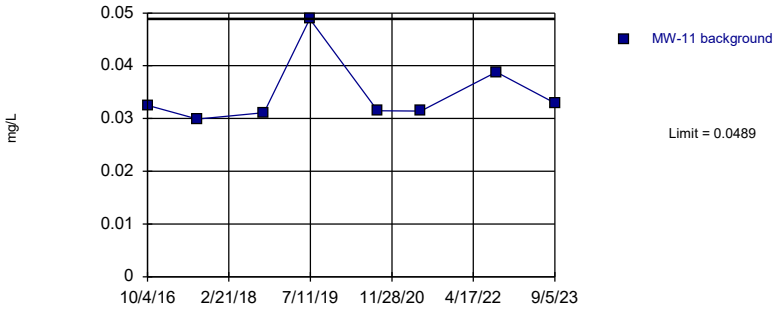
Prediction Limit

Intrawell Non-parametric, MW-11



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 0.1 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2). Assumes 1 future value.

Constituent: Barium Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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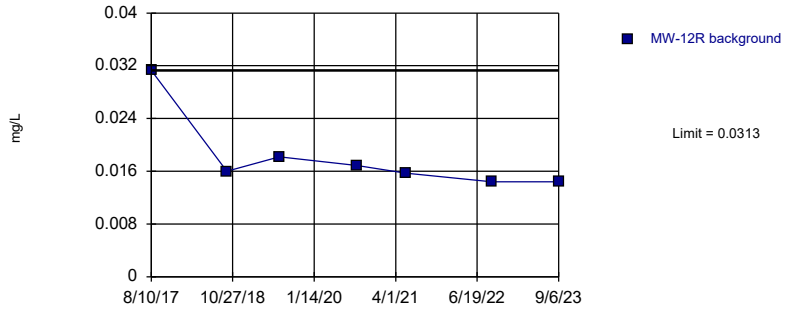
Prediction Limit

Intrawell Non-parametric, MW-12R



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 0.1 alpha level. Limit is highest of 7 background values. Well-constituent pair annual alpha = 0.05455. Individual comparison alpha = 0.02765 (1 of 2). Assumes 1 future value.

Constituent: Barium Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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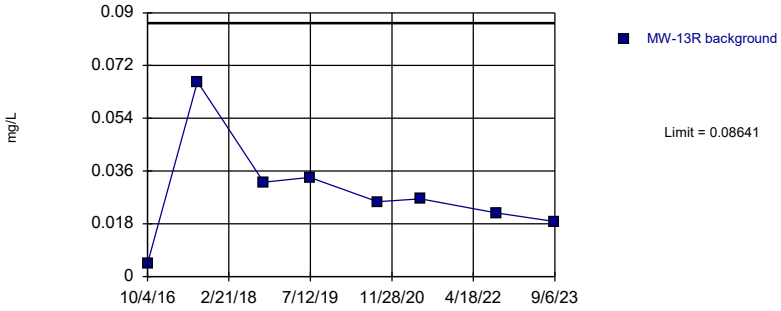
Prediction Limit

Intrawell Parametric, MW-13R



Background Data Summary: Mean=0.02868, Std. Dev.=0.0178, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8805, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Barium Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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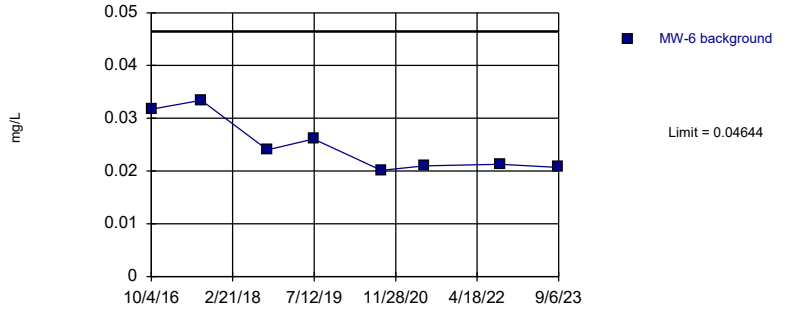
Prediction Limit

Intrawell Parametric, MW-6 (bg)



Background Data Summary (based on natural log transformation): Mean=-3.715, Std. Dev.=0.1991, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.854, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Barium Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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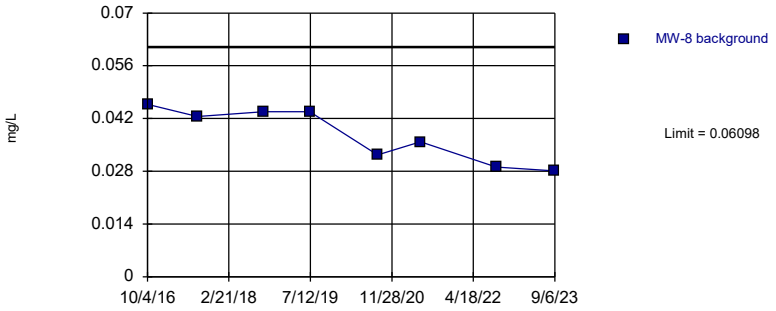
Prediction Limit

Intrawell Parametric, MW-8



Background Data Summary: Mean=0.03765, Std. Dev.=0.007191, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8698, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Barium Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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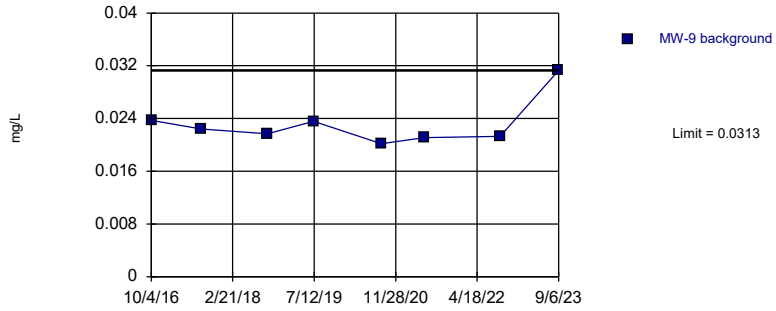
Prediction Limit

Intrawell Non-parametric, MW-9



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 0.1 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2). Assumes 1 future value.

Constituent: Barium Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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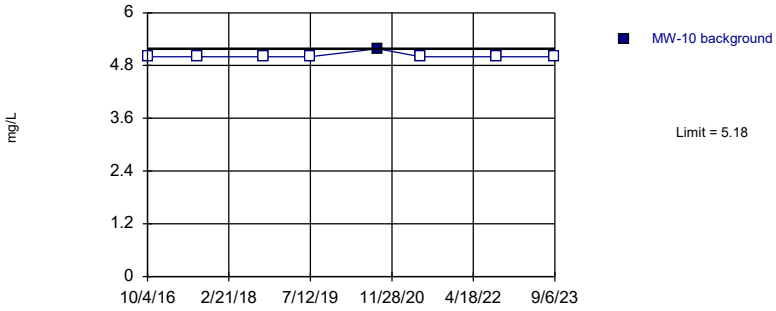
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, MW-10



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2). Assumes 1 future value.

Constituent: Chloride Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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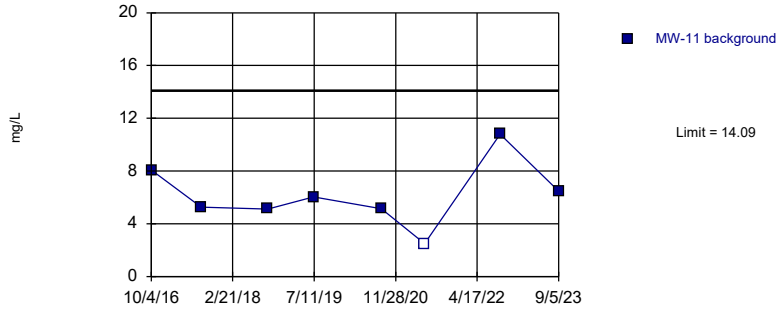
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Parametric, MW-11



Background Data Summary: Mean=6.176, Std. Dev.=2.439, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9331, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Chloride Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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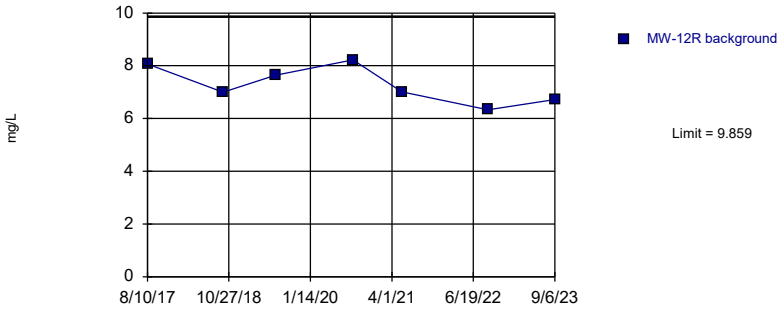
Prediction Limit

Intrawell Parametric, MW-12R



Background Data Summary: Mean=7.283, Std. Dev.=0.7058, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9374, critical = 0.838. Kappa = 3.65 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Chloride Analysis Run 10/23/2023 10:30 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

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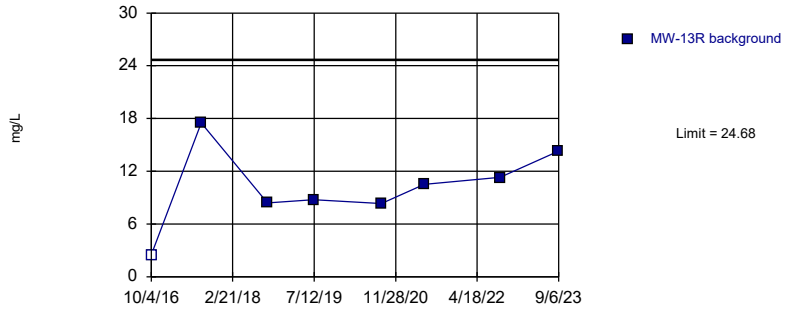
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Parametric, MW-13R



Background Data Summary: Mean=10.2, Std. Dev.=4.464, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9595, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Chloride Analysis Run 10/23/2023 10:30 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

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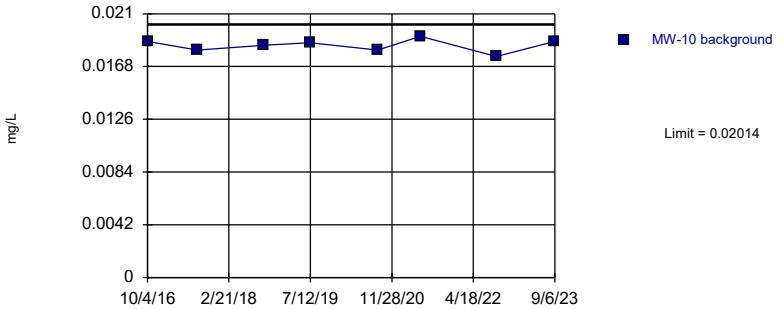
Prediction Limit

Intrawell Parametric, MW-10



Background Data Summary: Mean=0.01848, Std. Dev.=0.000512, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9539, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Cobalt Analysis Run 10/23/2023 10:30 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

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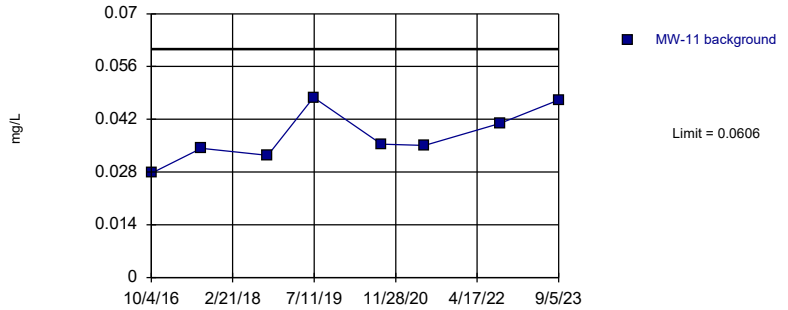
Prediction Limit

Intrawell Parametric, MW-11



Background Data Summary: Mean=0.03759, Std. Dev.=0.007093, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9182, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Cobalt Analysis Run 10/23/2023 10:30 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

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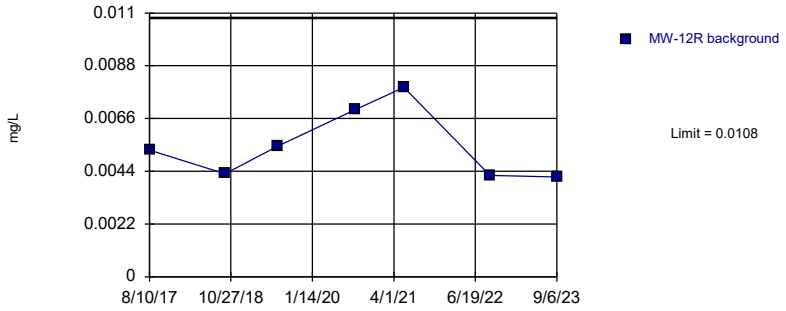
Prediction Limit

Intrawell Parametric, MW-12R



Background Data Summary: Mean=0.005467, Std. Dev.=0.00146, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8613, critical = 0.838. Kappa = 3.65 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Cobalt Analysis Run 10/23/2023 10:30 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

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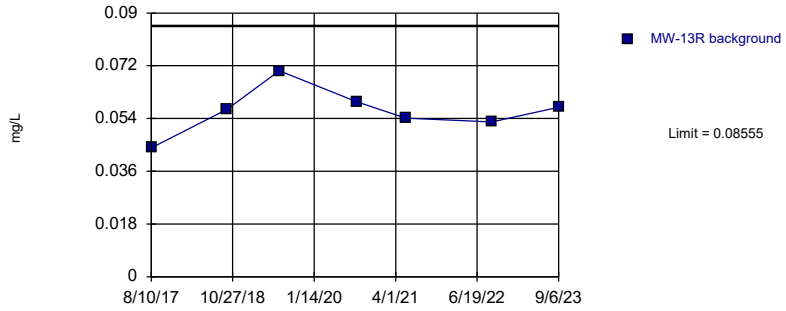
Prediction Limit

Intrawell Parametric, MW-13R



Background Data Summary: Mean=0.05656, Std. Dev.=0.007944, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.955, critical = 0.838. Kappa = 3.65 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Cobalt Analysis Run 10/23/2023 10:30 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

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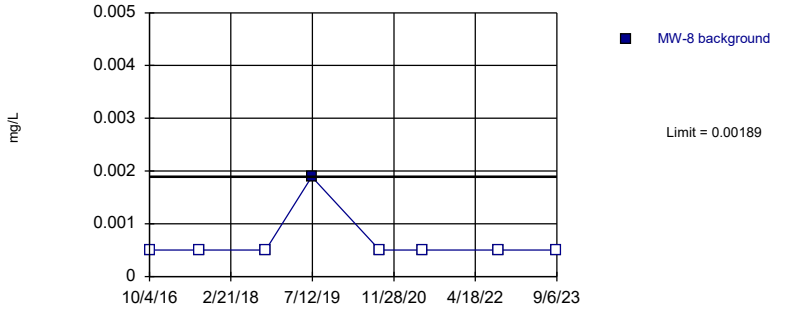
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, MW-8



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2). Assumes 1 future value.

Constituent: Cobalt Analysis Run 10/23/2023 10:30 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

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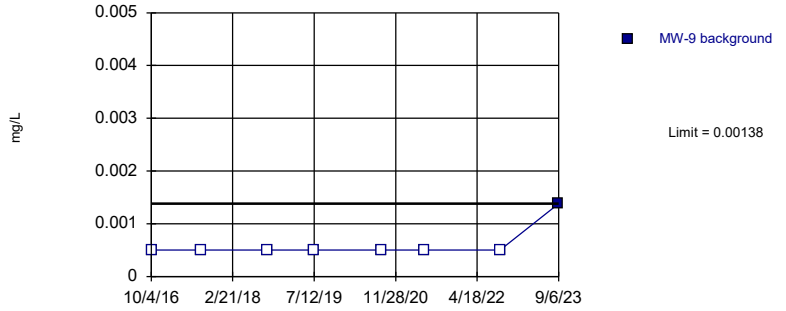
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, MW-9



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2). Assumes 1 future value.

Constituent: Cobalt Analysis Run 10/23/2023 10:30 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

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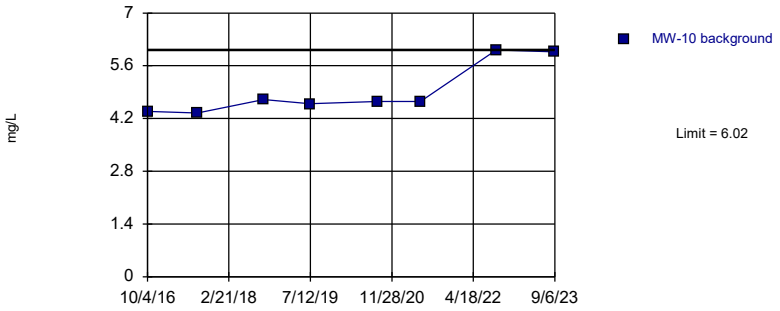
Prediction Limit

Intrawell Non-parametric, MW-10



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 0.1 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2). Assumes 1 future value.

Constituent: Iron Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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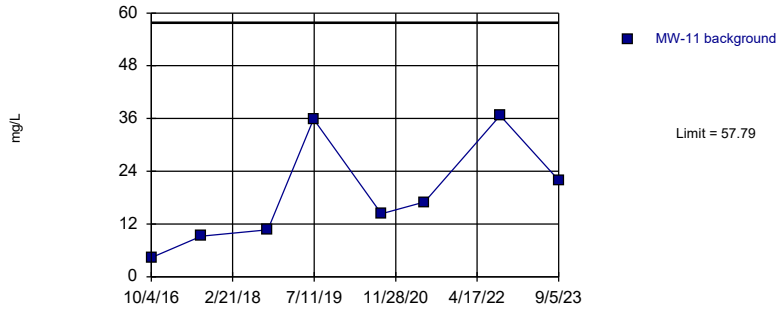
Prediction Limit

Intrawell Parametric, MW-11



Background Data Summary: Mean=18.77, Std. Dev.=12.03, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8972, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Iron Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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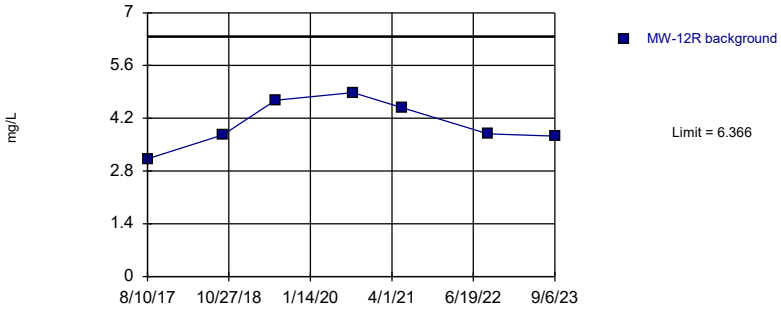
Prediction Limit

Intrawell Parametric, MW-12R



Background Data Summary: Mean=4.063, Std. Dev.=0.6309, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9243, critical = 0.838. Kappa = 3.65 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Iron Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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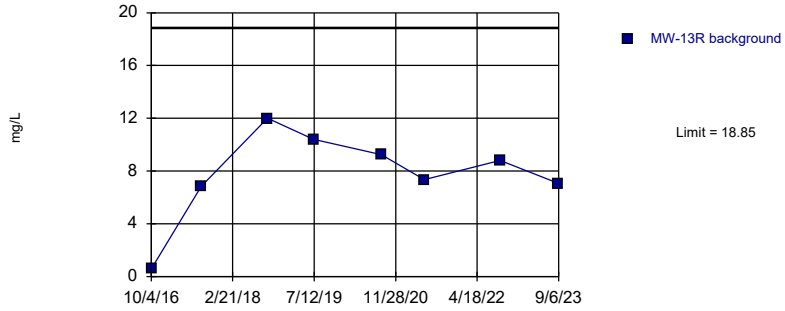
Prediction Limit

Intrawell Parametric, MW-13R



Background Data Summary: Mean=7.784, Std. Dev.=3.411, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8881, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Iron Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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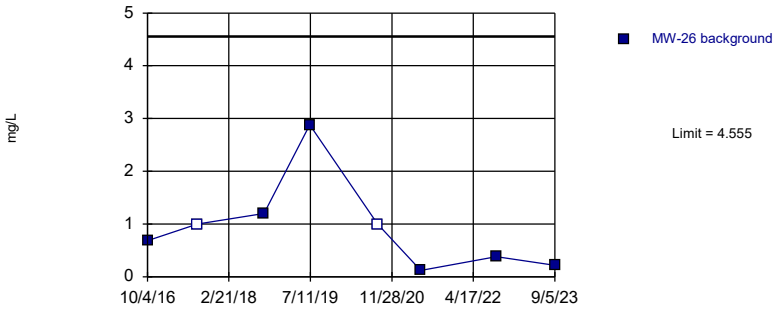
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Parametric, MW-26 (bg)



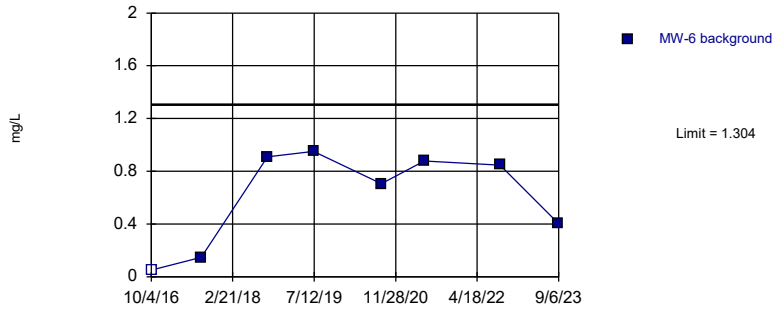
Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.7727, Std. Dev.=0.4197, n=8, 25% NDs. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9388, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Iron Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Parametric, MW-6 (bg)



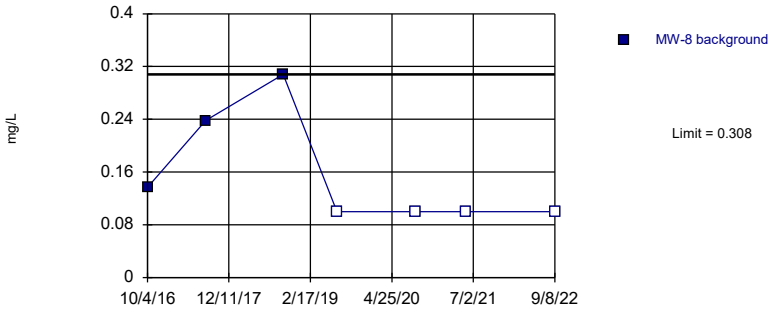
Background Data Summary (based on square transformation): Mean=0.4878, Std. Dev.=0.3739, n=8, 12.5% NDs. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8619, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Iron Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, MW-8



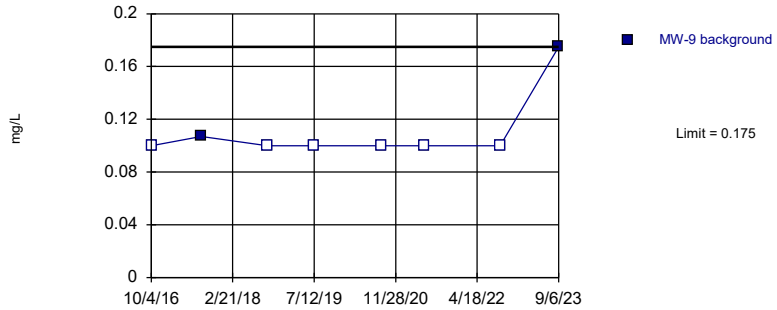
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 7 background values. 57.14% NDs. Well-constituent pair annual alpha = 0.05455. Individual comparison alpha = 0.02765 (1 of 2). Assumes 1 future value.

Constituent: Iron Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, MW-9



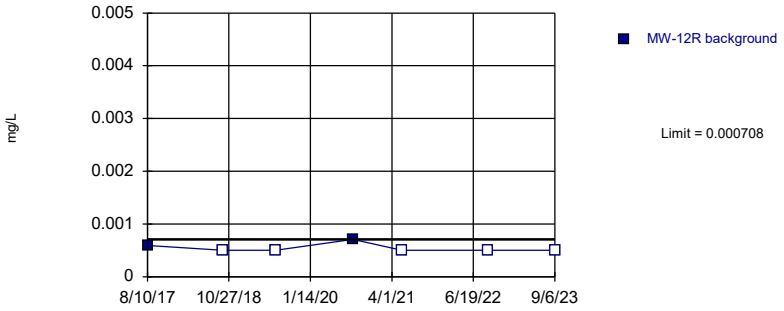
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 75% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2). Assumes 1 future value.

Constituent: Iron Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, MW-12R



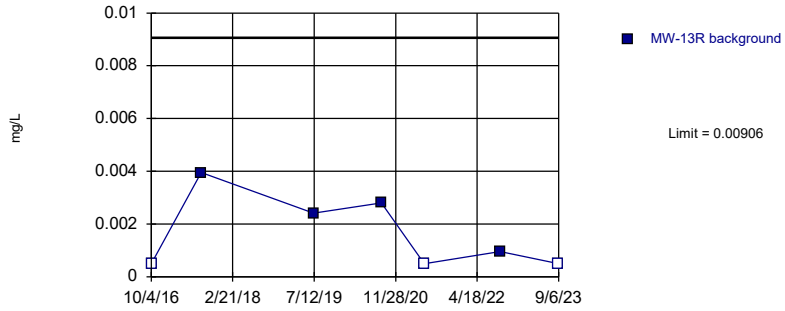
Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 7 background values. 71.43% NDs. Well-constituent pair annual alpha = 0.05455. Individual comparison alpha = 0.02765 (1 of 2). Assumes 1 future value.

Constituent: Lead Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Parametric, MW-13R



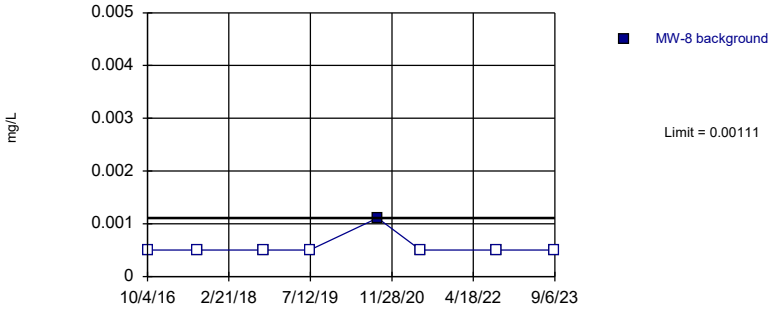
Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.03756, Std. Dev.=0.01579, n=7, 42.86% NDs. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8383, critical = 0.838. Kappa = 3.65 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Lead Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, MW-8



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2). Assumes 1 future value.

Constituent: Lead Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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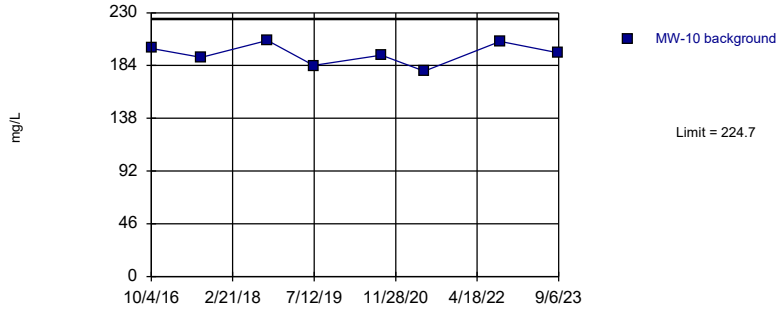
Prediction Limit

Intrawell Parametric, MW-10



Background Data Summary: Mean=194, Std. Dev.=9.457, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9582, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Magnesium Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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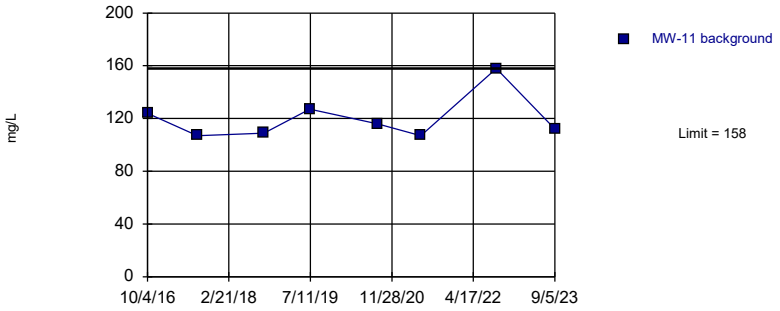
Prediction Limit

Intrawell Non-parametric, MW-11



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 0.1 alpha level. Limit is highest of 8 background values. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2). Assumes 1 future value.

Constituent: Magnesium Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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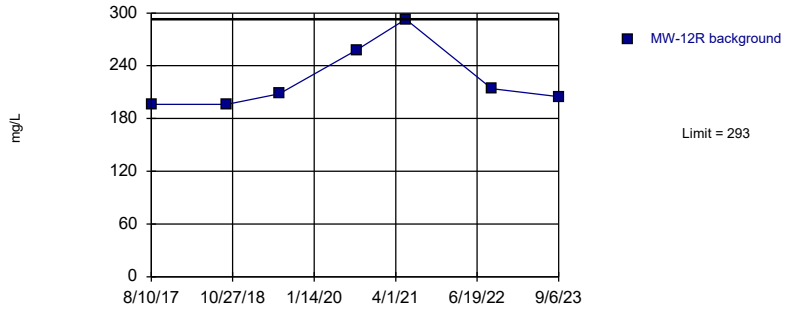
Prediction Limit

Intrawell Non-parametric, MW-12R



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 0.1 alpha level. Limit is highest of 7 background values. Well-constituent pair annual alpha = 0.05455. Individual comparison alpha = 0.02765 (1 of 2). Assumes 1 future value.

Constituent: Magnesium Analysis Run 10/23/2023 10:30 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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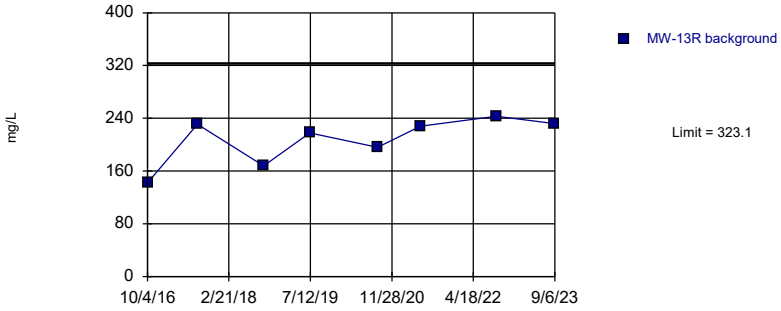
Prediction Limit

Intrawell Parametric, MW-13R



Background Data Summary: Mean=207.3, Std. Dev.=35.71, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8683, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Magnesium Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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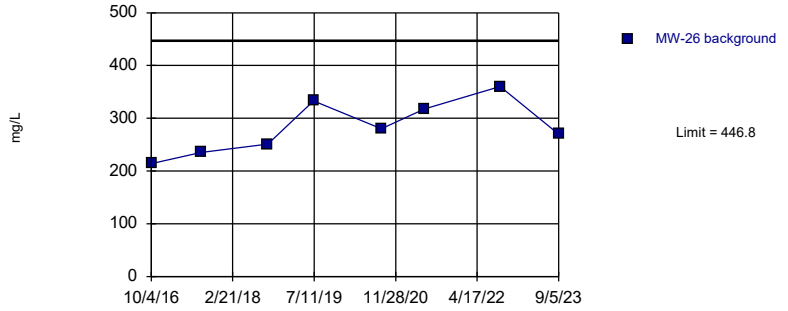
Prediction Limit

Intrawell Parametric, MW-26 (bg)



Background Data Summary: Mean=282.6, Std. Dev.=50.6, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9665, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Magnesium Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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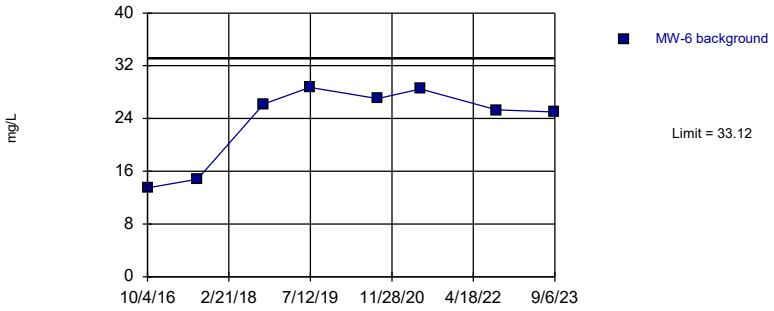
Prediction Limit

Intrawell Parametric, MW-6 (bg)



Background Data Summary (based on x^4 transformation): Mean=402799, Std. Dev.=246672, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8795, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Magnesium Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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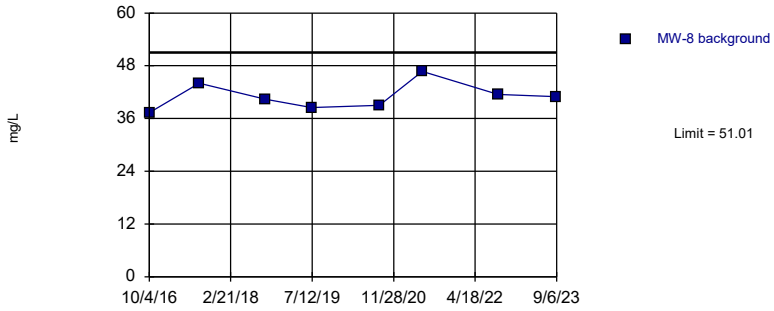
Prediction Limit

Intrawell Parametric, MW-8



Background Data Summary: Mean=41.05, Std. Dev.=3.071, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.945, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Magnesium Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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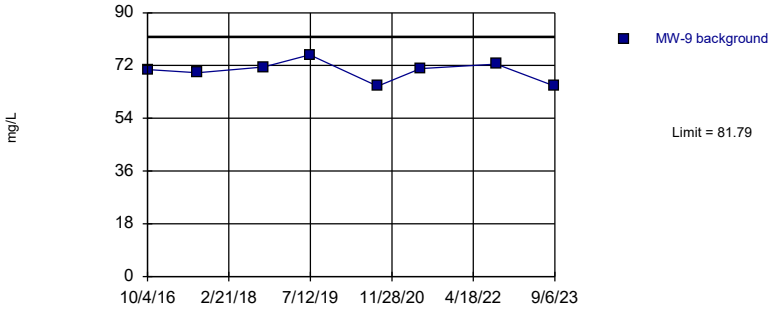
Prediction Limit

Intrawell Parametric, MW-9



Background Data Summary: Mean=70.08, Std. Dev.=3.61, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9184, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Magnesium Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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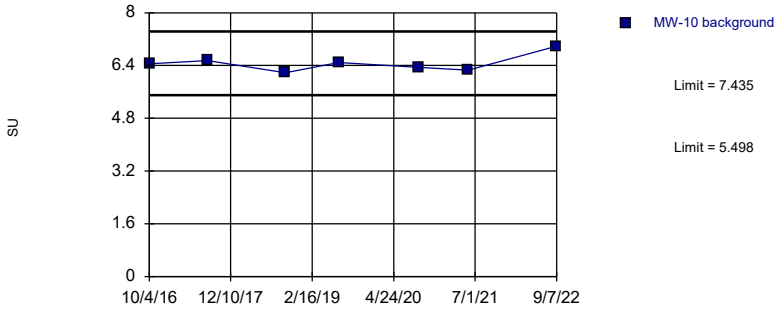
Prediction Limit

Intrawell Parametric, MW-10



Background Data Summary: Mean=6.466, Std. Dev.=0.2653, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8926, critical = 0.838. Kappa = 3.65 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: pH Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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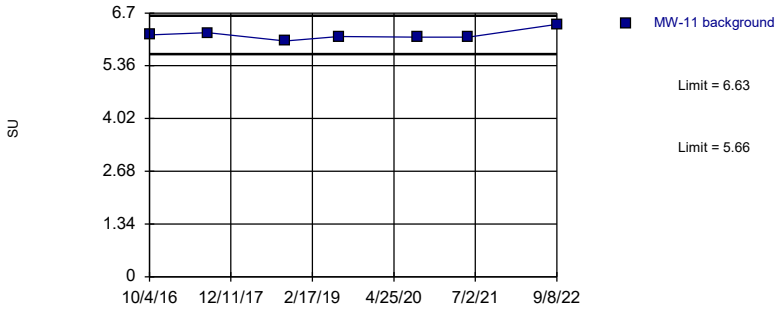
Prediction Limit

Intrawell Parametric, MW-11



Background Data Summary: Mean=6.145, Std. Dev.=0.1329, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8702, critical = 0.838. Kappa = 3.65 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: pH Analysis Run 10/23/2023 10:31 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

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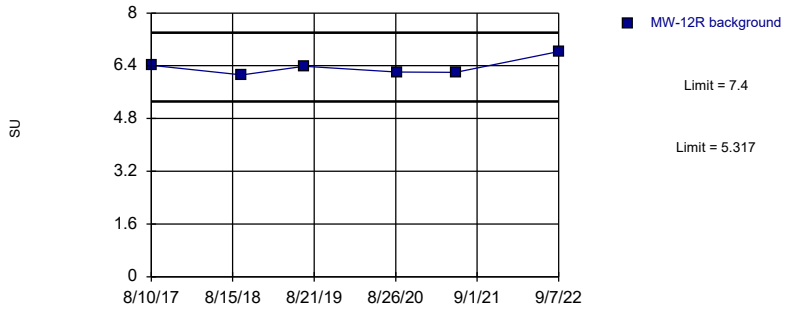
Prediction Limit

Intrawell Parametric, MW-12R



Background Data Summary: Mean=6.358, Std. Dev.=0.2567, n=6. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8538, critical = 0.826. Kappa = 4.056 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: pH Analysis Run 10/23/2023 10:31 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

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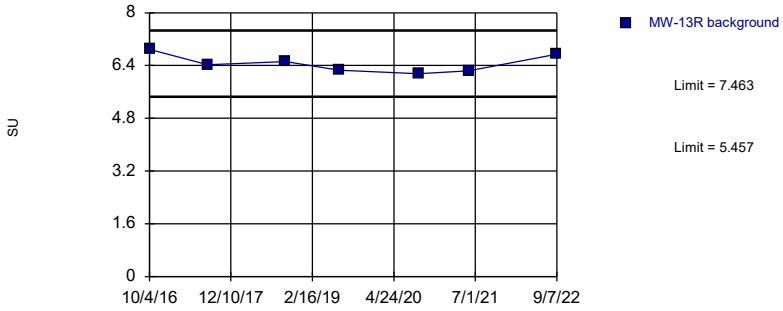
Prediction Limit

Intrawell Parametric, MW-13R



Background Data Summary: Mean=6.46, Std. Dev.=0.2748, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9304, critical = 0.838. Kappa = 3.65 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

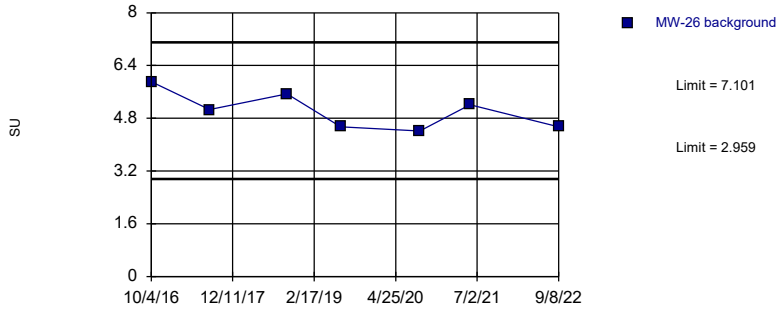
Constituent: pH Analysis Run 10/23/2023 10:31 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Prediction Limit

Intrawell Parametric, MW-26 (bg)



Background Data Summary: Mean=5.03, Std. Dev.=0.5675, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.918, critical = 0.838. Kappa = 3.65 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: pH Analysis Run 10/23/2023 10:31 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

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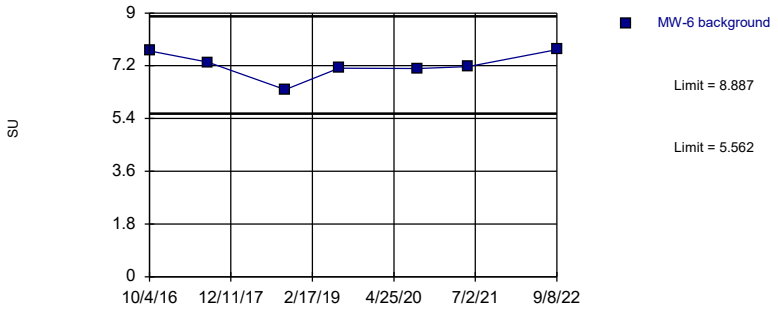
Prediction Limit

Intrawell Parametric, MW-6 (bg)



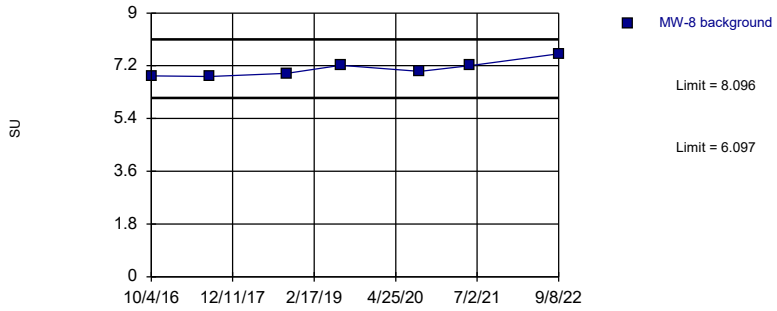
Background Data Summary: Mean=7.224, Std. Dev.=0.4554, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8988, critical = 0.838. Kappa = 3.65 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: pH Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG

Prediction Limit

Intrawell Parametric, MW-8



Background Data Summary: Mean=7.096, Std. Dev.=0.2738, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8895, critical = 0.838. Kappa = 3.65 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: pH Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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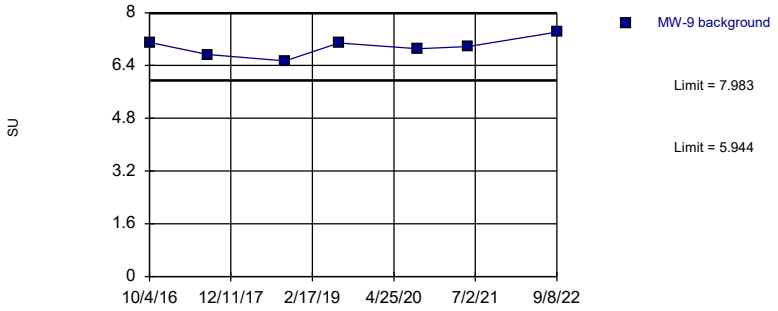
Prediction Limit

Intrawell Parametric, MW-9



Background Data Summary: Mean=6.964, Std. Dev.=0.2794, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.982, critical = 0.838. Kappa = 3.65 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: pH Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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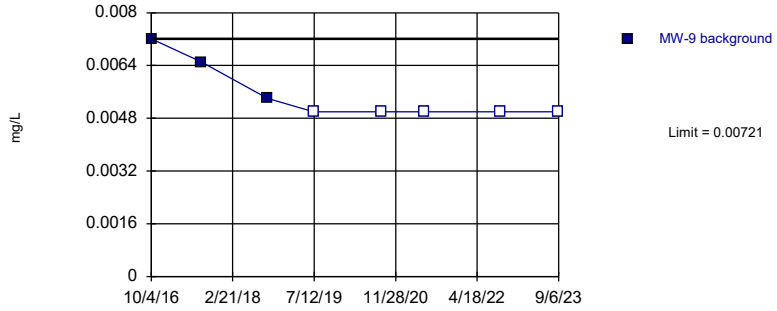
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, MW-9



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 62.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2). Assumes 1 future value.

Constituent: Selenium Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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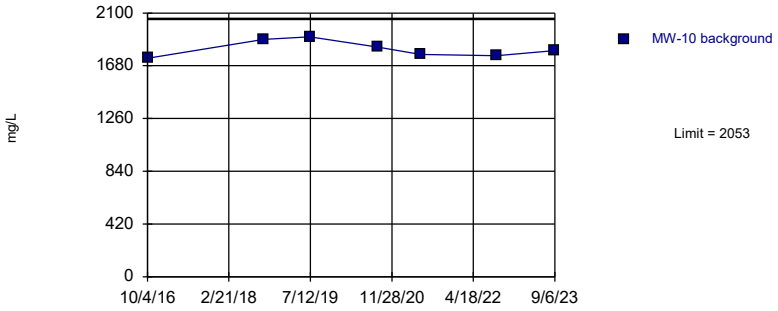
Prediction Limit

Intrawell Parametric, MW-10



Background Data Summary: Mean=1814, Std. Dev.=65.54, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9175, critical = 0.838. Kappa = 3.65 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Sulfate Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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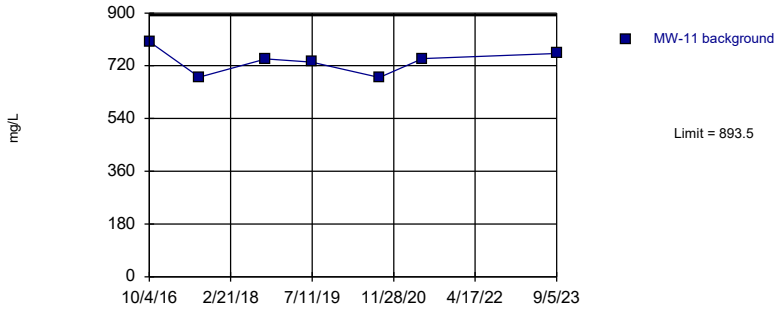
Prediction Limit

Intrawell Parametric, MW-11



Background Data Summary: Mean=735, Std. Dev.=43.41, n=7. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9225, critical = 0.838. Kappa = 3.65 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Sulfate Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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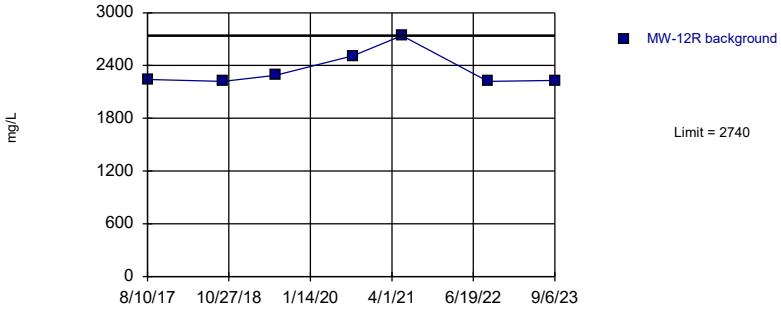
Prediction Limit

Intrawell Non-parametric, MW-12R



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 0.1 alpha level. Limit is highest of 7 background values. Well-constituent pair annual alpha = 0.05455. Individual comparison alpha = 0.02765 (1 of 2). Assumes 1 future value.

Constituent: Sulfate Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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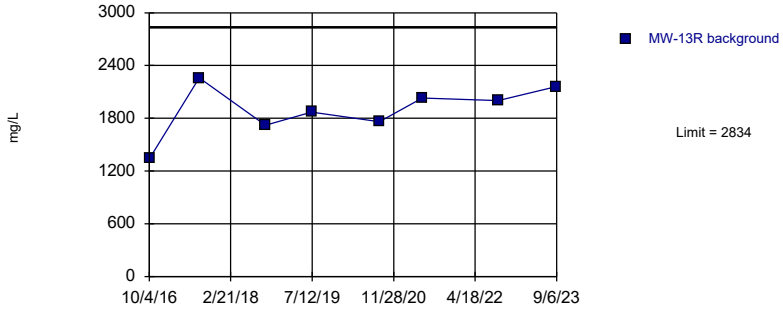
Prediction Limit

Intrawell Parametric, MW-13R



Background Data Summary: Mean=1893, Std. Dev.=290.4, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.954, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Sulfate Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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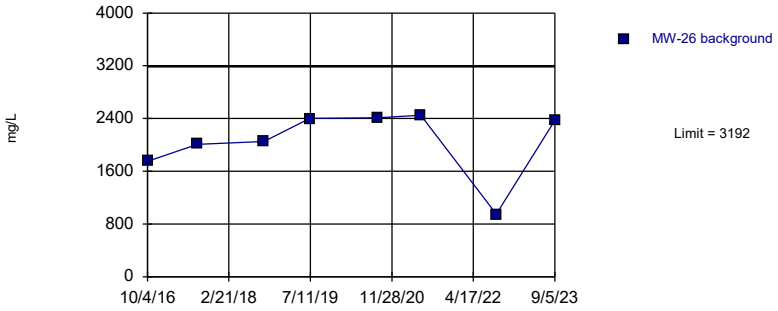
Prediction Limit

Intrawell Parametric, MW-26 (bg)



Background Data Summary (based on square transformation): Mean=4423913, Std. Dev.=1776559, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8512, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Sulfate Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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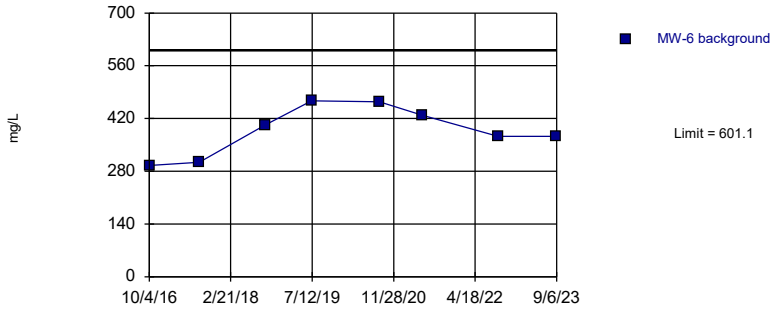
Prediction Limit

Intrawell Parametric, MW-6 (bg)



Background Data Summary: Mean=388.5, Std. Dev.=65.55, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.918, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Sulfate Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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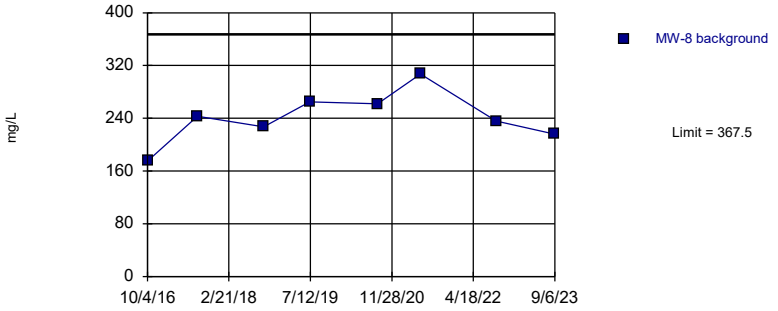
Prediction Limit

Intrawell Parametric, MW-8



Background Data Summary: Mean=241.4, Std. Dev.=38.87, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9813, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Sulfate Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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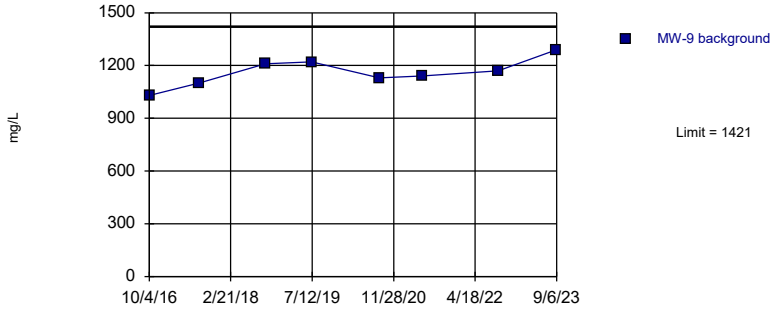
Prediction Limit

Intrawell Parametric, MW-9



Background Data Summary: Mean=1161, Std. Dev.=80.08, n=8. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.9913, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Sulfate Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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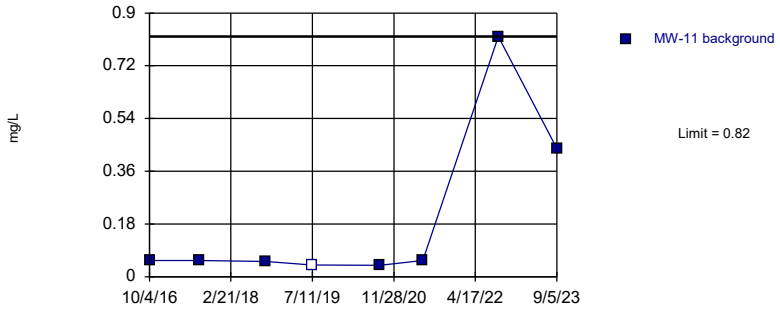
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, MW-11



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 0.1 alpha level. Limit is highest of 8 background values. 12.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2). Assumes 1 future value.

Constituent: Zinc Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

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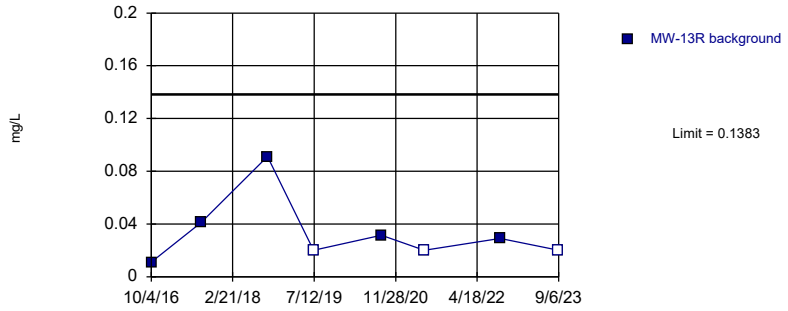
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Parametric, MW-13R



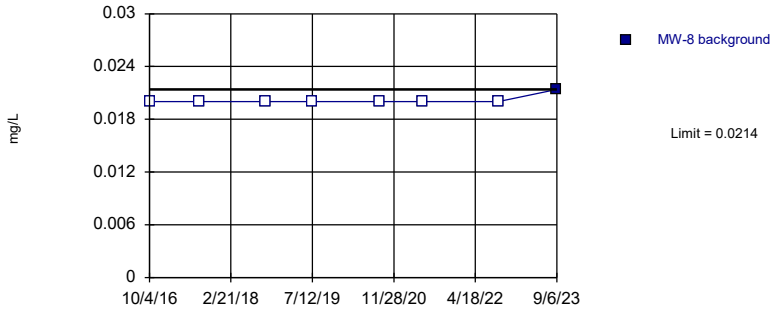
Background Data Summary (based on square root transformation) (after Kaplan-Meier Adjustment): Mean=0.1593, Std. Dev.=0.06552, n=8, 37.5% NDs. Normality test: Shapiro Wilk @alpha = 0.1, calculated = 0.8538, critical = 0.851. Kappa = 3.244 (c=14, w=6, 1 of 2, event alpha = 0.05132). Report alpha = 0.0006269. Assumes 1 future value.

Constituent: Zinc Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

Sanitas™ v.10.0.13 Software licensed to Groundwater Stats Consulting. UG
Hollow symbols indicate censored values.

Prediction Limit

Intrawell Non-parametric, MW-8



Non-parametric test used in lieu of parametric prediction limit because censored data exceeded 50%. Limit is highest of 8 background values. 87.5% NDs. Well-constituent pair annual alpha = 0.04242. Individual comparison alpha = 0.02144 (1 of 2). Assumes 1 future value.

Constituent: Zinc Analysis Run 10/23/2023 10:31 AM View: PLs
Cargill CCR LF Client: HR Green Data: Cargill_Import

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10
10/4/2016	0.0034
8/10/2017	0.00253
9/26/2018	0.00301
7/8/2019	<0.008
9/1/2020	0.0031
5/25/2021	0.00279
9/7/2022	0.00323
9/6/2023	0.00306

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-11
10/4/2016	<0.008
8/10/2017	<0.008
9/26/2018	<0.008
7/8/2019	<0.008
9/1/2020	<0.008
5/26/2021	0.00284
9/8/2022	0.0035
9/5/2023	0.00267

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Arsenic (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-13R
10/4/2016	<0.002
8/10/2017	0.00246
9/26/2018	0.00422
7/8/2019	<0.002
9/1/2020	<0.002
5/26/2021	0.00268
9/7/2022	0.00825
9/6/2023	<0.002

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10
10/4/2016	0.0137
8/10/2017	0.0148
9/26/2018	0.0158
7/8/2019	0.016
9/1/2020	0.0146
5/25/2021	0.0141
9/7/2022	0.016
9/6/2023	0.015

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-11
10/4/2016	0.0325
8/10/2017	0.0299
9/26/2018	0.0311
7/8/2019	0.0489
9/1/2020	0.0315
5/26/2021	0.0314
9/8/2022	0.0388
9/5/2023	0.0329

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-12R
8/10/2017	0.0313
9/26/2018	0.016
7/8/2019	0.0182
9/1/2020	0.0169
5/26/2021	0.0157
9/7/2022	0.0144
9/6/2023	0.0144

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-13R
10/4/2016	0.00446
8/10/2017	0.0665
9/26/2018	0.0322
7/8/2019	0.0338
9/1/2020	0.0255
5/26/2021	0.0265
9/7/2022	0.0217
9/6/2023	0.0188

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-6
10/4/2016	0.0317
8/10/2017	0.0334
9/26/2018	0.024
7/8/2019	0.0261
9/1/2020	0.0201
5/25/2021	0.021
9/8/2022	0.0213
9/6/2023	0.0207

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-8
10/4/2016	0.0458
8/10/2017	0.0425
9/26/2018	0.0438
7/8/2019	0.0438
9/1/2020	0.0323
5/25/2021	0.0358
9/8/2022	0.0291
9/6/2023	0.0281

Prediction Limit

Constituent: Barium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-9
10/4/2016	0.0237
8/10/2017	0.0224
9/26/2018	0.0217
7/8/2019	0.0236
9/1/2020	0.0202
5/25/2021	0.0211
9/8/2022	0.0213
9/6/2023	0.0313

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10
10/4/2016	<5
8/10/2017	<5
9/26/2018	<5
7/8/2019	<5
9/1/2020	5.18
5/25/2021	<5
9/7/2022	<5
9/6/2023	<5

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-11
10/4/2016	8.08
8/10/2017	5.26
9/26/2018	5.12
7/8/2019	6.03
9/1/2020	5.15
5/26/2021	<5
9/8/2022	10.8
9/5/2023	6.47

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-12R
8/10/2017	8.06
9/26/2018	7
7/8/2019	7.64
9/1/2020	8.22
5/26/2021	7.01
9/7/2022	6.33
9/6/2023	6.72

Prediction Limit

Constituent: Chloride (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-13R
10/4/2016	<5
8/10/2017	17.5
9/26/2018	8.41
7/8/2019	8.75
9/1/2020	8.33
5/26/2021	10.5
9/7/2022	11.3
9/6/2023	14.3

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10
10/4/2016	0.0188
8/10/2017	0.0181
9/26/2018	0.0185
7/8/2019	0.0187
9/1/2020	0.0181
5/25/2021	0.0192
9/7/2022	0.0176
9/6/2023	0.0188

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-11
10/4/2016	0.0277
8/10/2017	0.0343
9/26/2018	0.0324
7/8/2019	0.0478
9/1/2020	0.0354
5/26/2021	0.0351
9/8/2022	0.0409
9/5/2023	0.0471

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-12R
8/10/2017	0.00528
9/26/2018	0.0043
7/8/2019	0.00544
9/1/2020	0.00696
5/26/2021	0.0079
9/7/2022	0.00423
9/6/2023	0.00416

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-13R
10/4/2016	<0.0005 (o)
8/10/2017	0.044
9/26/2018	0.0571
7/8/2019	0.0703
9/1/2020	0.0597
5/26/2021	0.0541
9/7/2022	0.0528
9/6/2023	0.0579

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-8
10/4/2016	<0.0005
8/10/2017	<0.0005
9/26/2018	<0.0005
7/8/2019	0.00189
9/1/2020	<0.0005
5/25/2021	<0.0005
9/8/2022	<0.0005
9/6/2023	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Cobalt (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-9
10/4/2016	<0.0005
8/10/2017	<0.0005
9/26/2018	<0.0005
7/8/2019	<0.0005
9/1/2020	<0.0005
5/25/2021	<0.0005
9/8/2022	<0.0005
9/6/2023	0.00138

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10
10/4/2016	4.39
8/10/2017	4.35
9/26/2018	4.7
7/8/2019	4.59
9/1/2020	4.65
5/25/2021	4.65
9/7/2022	6.02
9/6/2023	5.97

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-11
10/4/2016	4.33
8/10/2017	9.25
9/26/2018	10.7
7/8/2019	35.9
9/1/2020	14.3
5/26/2021	17
9/8/2022	36.7
9/5/2023	22

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-12R
8/10/2017	3.12
9/26/2018	3.76
7/8/2019	4.68
9/1/2020	4.88
5/26/2021	4.48
9/7/2022	3.79
9/6/2023	3.73

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-13R
10/4/2016	0.569
8/10/2017	6.85
9/26/2018	12
7/8/2019	10.4
9/1/2020	9.25
5/26/2021	7.34
9/7/2022	8.8
9/6/2023	7.06

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26
10/4/2016	0.685
8/10/2017	<1
9/26/2018	1.2
7/8/2019	2.88
9/1/2020	<1
5/26/2021	0.123
9/8/2022	0.38
9/5/2023	0.216

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-6
10/4/2016	<0.1
8/10/2017	0.148
9/26/2018	0.909
7/8/2019	0.951
9/1/2020	0.706
5/25/2021	0.877
9/8/2022	0.847
9/6/2023	0.403

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-8
10/4/2016	0.137
8/10/2017	0.238
9/26/2018	0.308
7/8/2019	<0.1
9/1/2020	<0.1
5/25/2021	<0.1
9/8/2022	<0.1
9/6/2023	1.27 (o)

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Iron (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-9
10/4/2016	<0.1
8/10/2017	0.107
9/26/2018	<0.1
7/8/2019	<0.1
9/1/2020	<0.1
5/25/2021	<0.1
9/8/2022	<0.1
9/6/2023	0.175

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-12R
8/10/2017	0.000591
9/26/2018	<0.0005
7/8/2019	<0.0005
9/1/2020	0.000708
5/26/2021	<0.0005
9/7/2022	<0.0005
9/6/2023	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-13R
10/4/2016	<0.0005
8/10/2017	0.00395
9/26/2018	0.00989 (o)
7/8/2019	0.00241
9/1/2020	0.0028
5/26/2021	<0.0005
9/7/2022	0.00096
9/6/2023	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Lead (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-8
10/4/2016	<0.0005
8/10/2017	<0.0005
9/26/2018	<0.0005
7/8/2019	<0.0005
9/1/2020	0.00111
5/25/2021	<0.0005
9/8/2022	<0.0005
9/6/2023	<0.0005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10
10/4/2016	199
8/10/2017	191
9/26/2018	206
7/8/2019	184
9/1/2020	193
5/25/2021	179
9/7/2022	205
9/6/2023	195

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-11
10/4/2016	124
8/10/2017	107
9/26/2018	109
7/8/2019	127
9/1/2020	116
5/26/2021	107
9/8/2022	158
9/5/2023	112

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-12R
8/10/2017	196
9/26/2018	196
7/8/2019	208
9/1/2020	258
5/26/2021	293
9/7/2022	214
9/6/2023	205

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-13R
10/4/2016	142
8/10/2017	231
9/26/2018	168
7/8/2019	218
9/1/2020	196
5/26/2021	228
9/7/2022	243
9/6/2023	232

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26
10/4/2016	214
8/10/2017	235
9/26/2018	251
7/8/2019	333
9/1/2020	280
5/26/2021	318
9/8/2022	360
9/5/2023	270

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-6
10/4/2016	13.5
8/10/2017	14.8
9/26/2018	26.2
7/8/2019	28.7
9/1/2020	27
5/25/2021	28.5
9/8/2022	25.3
9/6/2023	25

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-8
10/4/2016	37.3
8/10/2017	44
9/26/2018	40.4
7/8/2019	38.5
9/1/2020	39
5/25/2021	46.7
9/8/2022	41.5
9/6/2023	41

Prediction Limit

Constituent: Magnesium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-9
10/4/2016	70.6
8/10/2017	69.5
9/26/2018	71.5
7/8/2019	75.6
9/1/2020	65
5/25/2021	70.9
9/8/2022	72.5
9/6/2023	65

Prediction Limit

Constituent: pH (SU) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10
10/4/2016	6.45
8/10/2017	6.55
9/26/2018	6.18
7/8/2019	6.49
9/1/2020	6.35
5/25/2021	6.255 (D)
9/7/2022	6.99

Prediction Limit

Constituent: pH (SU) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-11
10/4/2016	6.14
8/10/2017	6.2
9/26/2018	5.99
7/8/2019	6.1
9/1/2020	6.09
5/26/2021	6.085 (D)
9/8/2022	6.41

Prediction Limit

Constituent: pH (SU) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-12R
8/10/2017	6.41
9/26/2018	6.12
7/8/2019	6.38
9/1/2020	6.21
5/26/2021	6.2 (D)
9/7/2022	6.83

Prediction Limit

Constituent: pH (SU) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-13R
10/4/2016	6.89
8/10/2017	6.42
9/26/2018	6.52
7/8/2019	6.26
9/1/2020	6.15
5/26/2021	6.24 (D)
9/7/2022	6.74

Prediction Limit

Constituent: pH (SU) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26
10/4/2016	5.91
8/10/2017	5.06
9/26/2018	5.54
7/8/2019	4.54
9/1/2020	4.41
5/26/2021	5.21 (D)
9/8/2022	4.54

Prediction Limit

Constituent: pH (SU) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-6
10/4/2016	7.71
8/10/2017	7.32
9/26/2018	6.39
7/8/2019	7.12
9/1/2020	7.11
5/25/2021	7.17 (D)
9/8/2022	7.75

Prediction Limit

Constituent: pH (SU) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-8
10/4/2016	6.86
8/10/2017	6.83
9/26/2018	6.94
7/8/2019	7.22
9/1/2020	7.01
5/25/2021	7.205 (D)
9/8/2022	7.61

Prediction Limit

Constituent: pH (SU) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-9
10/4/2016	7.1
8/10/2017	6.73
9/26/2018	6.54
7/8/2019	7.08
9/1/2020	6.91
5/25/2021	6.975 (D)
9/8/2022	7.41

Prediction Limit

Constituent: Selenium (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-9
10/4/2016	0.00721
8/10/2017	0.00651
9/26/2018	0.0054
7/8/2019	<0.005
9/1/2020	<0.005
5/25/2021	<0.005
9/8/2022	<0.005
9/6/2023	<0.005

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-10
10/4/2016	1740
8/10/2017	3600 (o)
9/26/2018	1890
7/8/2019	1910
9/1/2020	1830
5/25/2021	1770
9/7/2022	1760
9/6/2023	1800

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-11
10/4/2016	802
8/10/2017	681
9/26/2018	743
7/8/2019	733
9/1/2020	680
5/26/2021	744
9/8/2022	1300 (o)
9/5/2023	762

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-12R
8/10/2017	2240
9/26/2018	2220
7/8/2019	2290
9/1/2020	2510
5/26/2021	2740
9/7/2022	2220
9/6/2023	2230

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-13R
10/4/2016	1340
8/10/2017	2260
9/26/2018	1720
7/8/2019	1870
9/1/2020	1760
5/26/2021	2030
9/7/2022	2000
9/6/2023	2160

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-26
10/4/2016	1750
8/10/2017	2010
9/26/2018	2050
7/8/2019	2400
9/1/2020	2410
5/26/2021	2450
9/8/2022	948
9/5/2023	2370

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-6
10/4/2016	295
8/10/2017	304
9/26/2018	403
7/8/2019	467
9/1/2020	464
5/25/2021	429
9/8/2022	373
9/6/2023	373

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-8
10/4/2016	175
8/10/2017	243
9/26/2018	227
7/8/2019	265
9/1/2020	262
5/25/2021	307
9/8/2022	236
9/6/2023	216

Prediction Limit

Constituent: Sulfate (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-9
10/4/2016	1030
8/10/2017	1100
9/26/2018	1210
7/8/2019	1220
9/1/2020	1130
5/25/2021	1140
9/8/2022	1170
9/6/2023	1290

Prediction Limit

Constituent: Zinc (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-11
10/4/2016	0.0556
8/10/2017	0.0554
9/26/2018	0.0521
7/8/2019	<0.08
9/1/2020	0.0392
5/26/2021	0.055
9/8/2022	0.82
9/5/2023	0.438

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Zinc (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-13R
10/4/2016	0.0111
8/10/2017	0.0413
9/26/2018	0.0911
7/8/2019	<0.02
9/1/2020	0.0316
5/26/2021	<0.02
9/7/2022	0.029
9/6/2023	<0.02

ND substitution: RL or RL/2 if <15% NDs.

Prediction Limit

Constituent: Zinc (mg/L) Analysis Run 10/23/2023 10:34 AM View: PLs

Cargill CCR LF Client: HR Green Data: Cargill_Import

	MW-8
10/4/2016	<0.02
8/10/2017	<0.02
9/26/2018	<0.02
7/8/2019	<0.02
9/1/2020	<0.02
5/25/2021	<0.02
9/8/2022	<0.02
9/6/2023	0.0214

ND substitution: RL or RL/2 if <15% NDs.