SCS ENGINEERS

Transmittal

West Des Moines, IA

PROJECT:	BMC Ag,GW Reporting 2024-2026,IA 27224342.00	DATE:	2/7/2025
SUBJECT:	BMC Aggregates L.C. South Quarry - 07-BUD-20-02 - 2024 Annual Water Quality Report	TRANSMITTAL ID:	00001
PURPOSE:	For your approval	VIA:	Info Exchange

FROM

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

TO

NAME	COMPANY	EMAIL	PHONE
chad.stobbe@dnr.iowa.gov		chad.stobbe@dnr.iowa.gov	

REMARKS:

Good morning Chad-

SCS Engineers, on behalf of BMC Aggregates, L.C., is submitting the attached 2024 Annual Water Quality Report for the South Quarry Beneficial Use site. If you have any questions or comments regarding this report, please contact me at the number below, Thank you.

Nathan Ohrt
Senior Project Professional
SCS Engineers
West Des Moines, Iowa
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nohrt@scsengineers.com

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DESCRIPTION OF CONTENTS

QTY	DATED	TITLE	NOTES
1	2/7/2025	BMC Aggregates L.C. South Quarry - 07-BUD-20-02 - 2024 Annual Water Quality Report.pdf	

Transmittal

DATE: 2/7/2025
TRANSMITTAL ID: 00001

COPIES:

Nathan Ohrt	(SCS Engineers)
Sherman Lundy	(BMC Aggregates, L.C.)
Becky Jolly	

February 7, 2025
File No. 27224342.00

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

Subject: 2024 Annual Water Quality Report
BMC Aggregates L.C. Waterloo South Quarry
Beneficial Use Site
Permit No. 07-BUD-20-02

Dear Chad:

SCS Engineers, on behalf of BMC Aggregates, L.C., has completed the statistical evaluation and annual water quality reporting for the BMC Aggregates L.C. Waterloo South Quarry Beneficial Use Site for the year 2024. Groundwater sampling was performed by BMC Aggregates L.C. personnel. Please find enclosed a copy of the 2024 Annual Water Quality Report and associated statistical evaluation.

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

Sincerely,

Nathan Ohrt
Senior Project Professional
SCS Engineers

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

NPO/TCB

Copies: Mr. Sherman Lundy, BMC Aggregates, L.C.

2024 Annual Water Quality Report
BMC Waterloo South Quarry
Beneficial Use Site
La Porte City, Iowa

Permit #07-BUD-20-02

Project No. 27224342.00
February 2025

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Section 1.0
Introduction

1.1 Purpose

SCS Engineers (SCS), on behalf of BMC Aggregates, L.C., has completed the statistical evaluation of the groundwater data for the Waterloo South Quarry Beneficial Use site (South Quarry). BMC Aggregates, L.C. personnel performed the groundwater sampling. The purpose of this Annual Water Quality Report (AWQR) is to document and statistically evaluate the results for groundwater samples collected during 2024 from monitoring wells associated with the South Quarry.

1.2 Site Location

The South Quarry property is depicted in Figure 1-1, Site Map. The facility is located near the intersection of State Highway V37 (Dysart Road) and East Eagle Road near La Porte City in Black Hawk County, Iowa. The locations of the monitoring wells are also shown in Figure 1-1.

1.3 Background

The *Beneficial Use Determination (BUD)* dated November 18, 2022 (Doc #104627) states that the materials approved for fill are waste foundry sand generated by the John Deere foundry in Waterloo, Iowa and coal combustion residue (CCR) generated by the University of Iowa power plant in Iowa City, Iowa. Previously, the South Quarry also received CCR from power plants at Iowa State University and the University of Northern Iowa.

1.4 Monitoring Program

The reporting period for this AWQR is from January through December 2024 and includes the March and October 2024 sampling events. The field sampling data and laboratory analytical data sheets for the 2024 sampling events are included in Appendices A and B, respectively. The Summary of Groundwater Chemistry is included in Appendix C.

Table 1-1 summarizes the monitoring points and sampling conducted during this reporting period.

Table 1-1
2024 AWQR Reporting Period Monitoring Summary

Monitoring Wells	March 2024	October 2024
Reiter Farm (b)	Indicators, Inorganics, and Organics	Indicators, Inorganics*, and Organics
Well #1	Indicators, Inorganics*, and Organics	Indicators, Inorganics*, and Organics
Well #2	Indicators, Inorganics*, and Organics	Indicators, Inorganics*, and Organics
Well #3	Indicators, Inorganics, and Organics	Indicators, Inorganics*, and Organics
Well #4	Indicators, Inorganics*, and Organics	Indicators, Inorganics*, and Organics

(b) denotes background monitoring well.
See Table 1-2 for the list of parameters.
* - Due to laboratory error, chloride results were unavailable for monitoring wells #1, #3, and #4 during both 2024 sampling events and for monitoring wells #2 and the Reiter Farm well during the October 2024 sampling event, and for fluoride in each monitoring well during the October 2024 sampling event.

Table 1-2 shows the parameters that comprise the sampling list for the South Quarry as required by the permit.

Table 1-2
Permit Parameters

Indicator Parameters	
Chemical Oxygen Demand	Total Organic Halogens
Phenols	Ammonia Nitrogen
Formaldehyde	Total Dissolved Solids
Inorganic Parameters	
Aluminum	Lead
Antimony	Magnesium
Arsenic	Manganese
Barium	Mercury
Beryllium	Molybdenum
Boron	Nickel
Cadmium	Selenium
Chloride	Silver
Chromium	Sulfate
Cobalt	Thallium
Copper	Vanadium
Fluoride	Zinc
Iron	Total Suspended Solids
Organic Parameters Detected in Background TCLP	
Benzene	2-Methylphenol
Chloroform	3/4-Methylphenol
2-Butanone (MEK)	Pyridine

The permit specifies the indicator and inorganic parameters that are to be analyzed during the semi-annual sampling events. Volatile organic compounds (VOCs) and/or semi-volatile organic compounds (SVOCs) detected above the laboratory method detection limit in the approved fill materials are to be analyzed during the semi-annual sampling events. The organic parameters for this reporting period are summarized in Table 1-2.

The groundwater monitoring statistical methods used for the South Quarry were outlier analysis, trend analysis (Mann-Kendall/Sen's Slope), and a confidence interval or confidence band evaluation, as appropriate, for the identification of exceedances of a groundwater protection standard (GWPS) at a statistically significant level (SSL). The results of the 2024 evaluation are included in Appendix D (2024 Statistical Report) and discussed in Section 3.0.

1.5 Field Procedures

BMC Aggregates, L.C. personnel performed the groundwater sampling on March 18 and October 16, 2024. Static water level measurements were obtained utilizing an electronic water level indicator. Samples were collected with bailers with purging of approximately one bailer volume before sampling. Temperature, pH, and conductivity measurements were collected in the field. Summaries of the field data from the March and October 2024 sampling events are included in Appendix A.

Site Map

Legend

- Approximate Location of Groundwater Monitoring Well
- Approximate Property Boundary

BMC Aggregates
South Quarry
La Porte City, Iowa
Project No: 27224342.00
Drawing Date: January 2025

N
W E
S

0 445 890 1,780 2,670
Feet

Figure 1-1

SCS ENGINEERS
environmental consultants and contractors

Section 2.0
Hydrogeologic Site Summary

The *Groundwater Monitoring Plan,* dated August 2010, prepared by Robinson Engineering Company described the geology and hydrogeology of the South Quarry as follows.

2.1 Geology

The geology of the area is represented in the open pit area by the Coralville Formation [immediately beneath the overburden (topsoil)] as the former resource ledge of the quarry with the floor in the Little Cedar Formation. The floor interval, formerly known as the Rapid Member of the old Cedar Valley Formation (now part of the Little Cedar Formation), separates the Coralville Formation in the open pit area from the Solon Member of the now abandoned, water filled underground mine.

2.2 Hydrogeology

In terms of the hydrogeology, Miller Creek, which flows to the northeast and is a minor tributary of the Cedar River, is 1300' north of this beneficial fill and reclamation location. The Cedar River is 4 miles east northeast from this site and all surface waters move towards the east or northeast of the South Quarry. Groundwater movement tends to follow this trend moving to the east and slightly northeast of this site. The proposed placement of the monitoring wells reflects this groundwater and surface water trend.

Section 3.0
Data Evaluation, Summary, and Recommendations

3.1 Data Evaluation

Statistical evaluation was conducted for the inorganic constituents numbered 1 - 25 in Appendix D of the BUD permit (Doc #104627). The results of the statistical evaluation for the groundwater analytical data collected during the March and October 2024 sampling events are located in Appendix D (2024 Statistical Report) of this report. Table 3-1 contains a summary of constituent detections by monitoring point for the reporting period. Following the table are discussions of the analytical data for the monitoring program.

Table 3-1
Constituent Detection Summary

Constituent	Reiter Farm (b)	Well #1	Well #2	Well #3	Well #4
Aluminum	ND	ND	10	10	3,10
Antimony	ND	ND	ND	ND	ND
Arsenic	ND	10	ND	ND	ND
Barium	3,10	3,10	3,10	3,10	3,10
Beryllium	ND	ND	ND	ND	ND
Boron	ND	ND	ND	ND	ND
Cadmium	ND	ND	ND	ND	ND
Chloride	3, NA	NA	3, NA	NA	NA
Chromium	ND	ND	ND	ND	ND
Cobalt	ND	ND	ND	ND	ND
Copper	3,10	3,10	3,10	3,10	10
Fluoride	3, NA	3, NA	3, NA	3, NA	3, NA
Iron	ND	3,10	3,10	3,10	3,10
Lead	10	ND	3	ND	10
Magnesium	3,10	3,10	3,10	3,10	3,10
Manganese	ND	3,10	3,10	3,10	3,10
Mercury	ND	ND	ND	ND	ND
Molybdenum	3,10	ND	3	3,10	3,10
Nickel	ND	ND	ND	ND	ND
Selenium	ND	ND	ND	ND	ND
Silver	ND	ND	ND	ND	ND
Sulfate	3,10	3,10	3,10	3,10	3,10
Thallium	ND	ND	ND	ND	ND
Vanadium	ND	ND	ND	ND	10
Zinc	3,10	ND	ND	ND	ND
Chloroform	ND	3	ND	3	3,10
2-Butanone (MEK)	ND	ND	ND	ND	ND
2-Methylphenol	ND	ND	ND	ND	ND

Constituent	Reiter Farm (b)	Well #1	Well #2	Well #3	Well #4
3/4-Methylphenol	ND	ND	ND	ND	ND
Benzene	ND	ND	ND	ND	ND
Pyridine	ND	ND	ND	ND	ND

(b) denotes background monitoring well.
ND – Not Detected.
3 – March 2024 10 – October 2024
J flag concentrations, which are estimated concentrations greater than the method detection limit but below the laboratory reporting limit, were not considered detections for Table 3-1.
NA – Not available. Due to laboratory error, chloride results were unavailable for monitoring wells #1, #3, and #4 during both 2024 sampling events and for monitoring wells #2 and the Reiter Farm well during the October 2024 sampling event, and for fluoride in each monitoring well during the October 2024 sampling event.

Table 3-1 shows that the majority of parameters were fairly consistently detected within individual monitoring wells - either detected during both sampling events or not detected during this reporting period. However, there were more single detections during the March 2024 sampling event compared to the October 2024 sampling event. No VOCs or SVOCs were detected during this reporting period.

3.2 Summary of Analytical Data

The range of concentrations measured during this reporting period is shown in Figure 3-1 (Reporting Period Detection Summary). The background Reiter Farm monitoring well is sampled for the calculation of site background concentrations but is not statistically evaluated. Mann-Kendall trend analysis and confidence intervals or confidence bands, as appropriate based on diagnostic analyses, were the selected statistical evaluations performed for the constituents numbered 1 - 25 in Appendix D of the BUD permit (Doc #104627). The indicator parameters listed in Appendix D of the permit are not statistically evaluated. Indicator parameter analytical data are included on the last page of Appendix C, Summary of Groundwater Chemistry.

VOCs and SVOCs were not detected in the monitoring well network during this reporting period. Well #2 had four site-wide maximum concentrations, Well #1 had three, Well #4 had one, the Reiter Farm well had five, and Well #3 had no site-wide maximum concentrations.

Groundwater protection standards and their sources for the inorganic parameters are included in Table 3-2. The GWPSs in Table 3-2 were first proposed in correspondence dated May 4, 2020 (Doc #97649).

Table 3-2
Source of GWPS

Constituent	GWPS (mg/L)	Source of GWPS
Aluminum	0.2	SMCL
Antimony	0.006	MCL
Arsenic	0.01	MCL
Barium	2	MCL
Beryllium	0.004	MCL
Boron	6	SWS
Cadmium	0.005	MCL
Chloride	250	SMCL
Chromium	0.1	MCL
Cobalt	0.0021	SWS
Copper	1.3	MCL

Constituent	GWPS (mg/L)	Source of GWPS
Fluoride	2.0	SMCL
Iron	0.3	SMCL
Lead	0.015	MCL
Magnesium	26	SS GWPS
Manganese	0.05	SMCL
Mercury	0.002	MCL
Molybdenum	0.04	SWS
Nickel	0.1	SWS
Selenium	0.05	MCL
Silver	0.1	SMCL
Sulfate	250	SMCL
Thallium	0.002	MCL
Vanadium	0.035	SWS
Zinc	2	SWS

MCL – Maximum Contaminant Level
SMCL – Secondary Maximum Contaminant Level
SWS – Iowa Statewide Standard
SS GWPS – Site-Specific Groundwater Protection Standard

3.3 Summary of Statistics

Table 3-3 summarizes the monitoring points and SSLs measured during this reporting period.

Table 3-3
2024 Statistical Summary Table

Monitoring Well	2024 SSL – Parameters
Well #1	Magnesium
Well #2	Magnesium
Well #3	Magnesium
Well #4	None

The SSLs measured during this reporting period are unchanged from recent years. Magnesium has no health-based regulatory standards. The GWPS for magnesium used in this report was based on the background concentration of the background Reiter Farm water supply well. The Reiter Farm water supply well differs from the groundwater monitoring wells in construction, use, and screened interval, which may contribute to the constituent concentration differences.

The Geological Society of Iowa publication "Geology and Reclamation at the Waterloo South Quarry, Black Hawk County, Iowa (Guidebook 94, April 22, 2017) describes the surficial geology, Devonian stratigraphy, and minerology of the quarry in addition to the beneficial fill/quarry reclamation project that is the basis for this water monitoring project. The publication illustrates that magnesium is prevalent in Iowa geology, including at the South Quarry.

Measured magnesium concentrations in the compliance monitoring wells have remained stable since 2017-2018 and are generally lower than those measured in the pre-2015 time period, indicating apparent improvement in groundwater quality. The reclamation project previously accepted CCR from the Iowa State University and University of Northern Iowa power plants, but those sources have ceased in recent years, with the fill consisting of waste foundry sand from John Deere in Waterloo and CCR from the University of Iowa power plant. It is unclear what effect that change may have had or will have, if any, on measured concentrations.

Mann-Kendall trend analysis was performed at 99% confidence (α=0.01) using the most recent eight samples. A summary of the Mann-Kendall results for the SSL constituent-monitoring point pairs is shown in Table 3-4.

Table 3-4
Trending for SSL Well/Constituent Pairs

Monitoring Well	Constituent	Mann-Kendall Statistic	Trend
Well #1	Magnesium	3	Increasing
Well #2	Magnesium	6	Increasing
Well #3	Magnesium	-5	Decreasing

The magnesium concentration trends in Wells #1 and #2 are increasing and decreasing in Well #3. A Mann-Kendall statistic of -21 would be considered a statistically significant decreasing trend at 99% confidence while a statistic of 21 would be considered a statistically significant increasing trend. Based on the Mann-Kendall Statistics being closer to 0 than 21 or -21 is an indication that the concentrations are relatively stable. A Mann-Kendall/Sen's Slope trend test summary table and graphs and time series plots are included in Appendix D, 2024 Statistical Report.

Although not necessarily statistically significant, Mann-Kendall statistics can provide an indication of general trending in the data. Trend indications for the compliance monitoring wells are shown in Table 3-5. The statistics used to develop the general trending differ from the Mann-Kendall statistics used in the diagnostics section of the statistical report in that a much lower trend threshold is applied for the general trending information (α=0.20 versus α=0.01). Trends classified as decreasing or increasing exhibited a statistically significant trend with 80% confidence using the most recent eight data points. Trends classified as stable did not exhibit a statistically significant trend with 80% confidence using the eight most recent data points. A summary of Mann-Kendall statistics by constituent in each monitoring point is included in Appendix E, Mann-Kendall Output (α=0.20).

Table 3-5
Mann-Kendall Summary Table

Trending in Monitoring Wells				
Monitoring Well	Decreasing Trends	Stable Trends	Increasing Trends	Number of Constituents Analyzed
Well #1	7.69%	76.92%	15.38%	13
Well #2	6.25%	81.25%	12.50%	16
Well #3	0.00%	100.00%	0.00%	19
Well #4	6.67%	93.33%	0.00%	15
Site-Wide	4.76%	88.89%	6.35%	63

Review of the Mann-Kendall statistics indicated that approximately 94% of the Mann-Kendall statistics following the 2024 statistical evaluation were considered stable or declining. The constituents with increasing trends are discussed in Table 3-6.

Table 3-6
Increasing Trends

Monitoring Well	Constituent	Comments
Well #1	Chloride	The concentrations measured in 2023 were consistent with measurements since 2017 and were the lowest concentrations measured at the South Quarry. 2024 measurements were unavailable due to laboratory error.
	Sulfate	Sulfate had recent elevated concentrations, but sulfate concentrations in Well #1 were the lowest observed at the site.
Well #2	Arsenic	The increasing trend was likely due to J flag concentrations, as there were only two quantified detections since 2017.
	Fluoride	There were only 0.4 mg/L of difference in measured concentrations for fluoride in the period of record dating to 2019, and 0.1 mg/L of difference in the last five sampling events. October 2024 measurements were unavailable due to laboratory error.

3.4 QA/QC Information

The QA/QC protocols for the March and October 2024 sampling events included laboratory protocols provided by Microbac Laboratories, Inc.; documentation is included in Appendix B (Laboratory Analytical Data Sheets).

3.5 Recommendations

Review of the data indicated the beneficial use project is not having a significant adverse effect on the groundwater at the South Quarry as represented by groundwater samples collected from the monitoring wells associated with the South Quarry. Based on the groundwater sampling analytical results and the statistical evaluation performed on the data, the following is recommended:

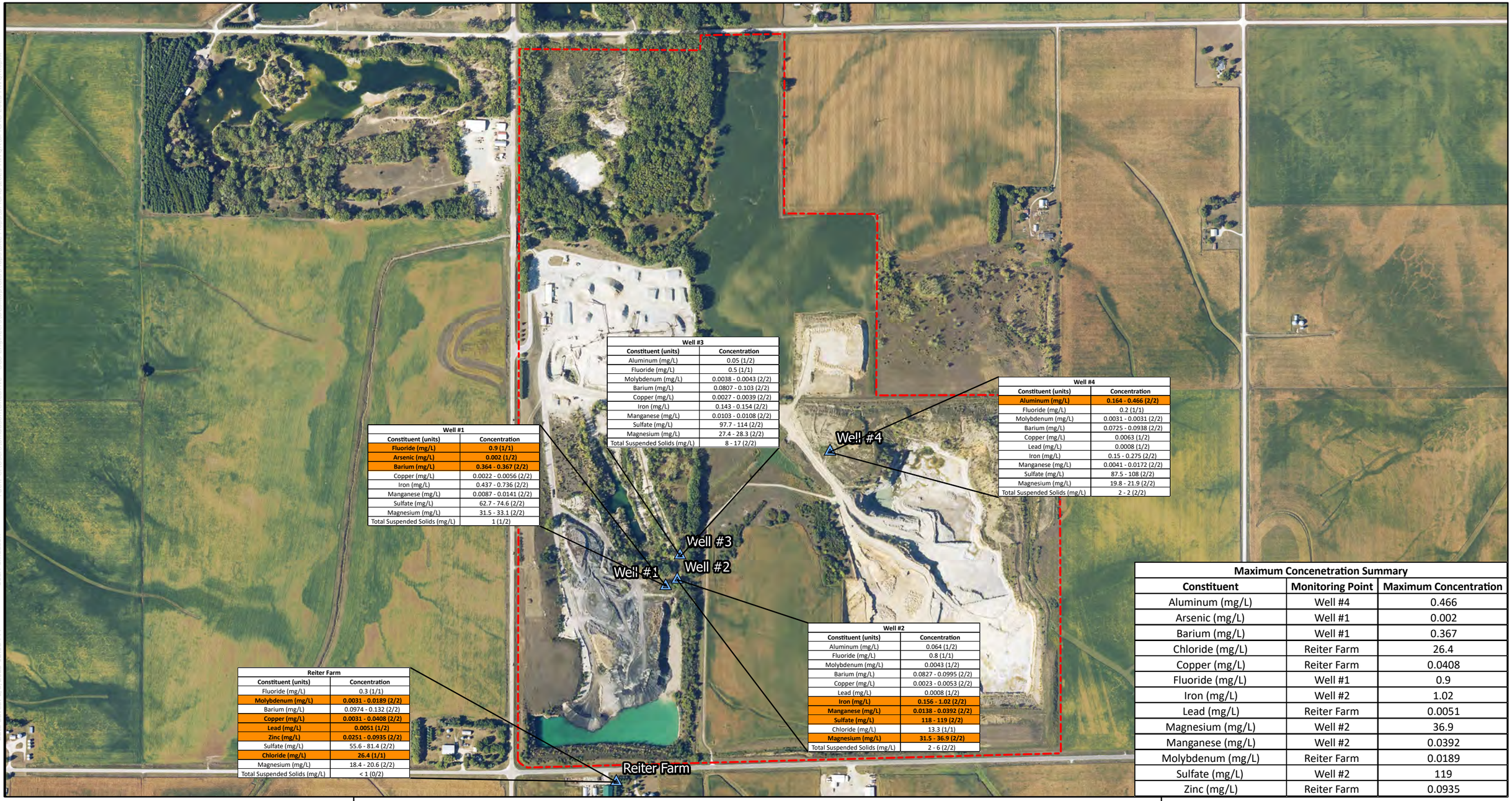
- Continue sampling the Reiter Farm monitoring well and monitoring wells Well #1, Well #2, Well #3, and Well #4 for the permit parameters on a semi-annual schedule.

The recommended sampling schedule for the upcoming reporting period (January through December 2025) is summarized in Table 3-7.

Table 3-7
2025 AWQR Reporting Period Sampling Schedule

Monitoring Point	March 2025	October 2025
Reiter Farm	Permit Parameters	Permit Parameters
Well #1	Permit Parameters	Permit Parameters
Well #2	Permit Parameters	Permit Parameters
Well #3	Permit Parameters	Permit Parameters
Well #4	Permit Parameters	Permit Parameters

See Table 1-2 for the list of current permit parameters. Required organic parameters will be determined by testing performed by the fill material generators.



Well #1	
Constituent (units)	**Concentration**
Fluoride (mg/L)	**0.9 (1/1)**
Arsenic (mg/L)	**0.002 (1/2)**
Barium (mg/L)	**0.364 - 0.367 (2/2)**
Copper (mg/L)	0.0022 - 0.0056 (2/2)
Iron (mg/L)	0.437 - 0.736 (2/2)
Manganese (mg/L)	0.0087 - 0.0141 (2/2)
Sulfate (mg/L)	62.7 - 74.6 (2/2)
Magnesium (mg/L)	31.5 - 33.1 (2/2)
Total Suspended Solids (mg/L)	1 (1/2)

Well #3	
Constituent (units)	**Concentration**
Aluminum (mg/L)	0.05 (1/2)
Fluoride (mg/L)	0.5 (1/1)
Molybdenum (mg/L)	0.0038 - 0.0043 (2/2)
Barium (mg/L)	0.0807 - 0.103 (2/2)
Copper (mg/L)	0.0027 - 0.0039 (2/2)
Iron (mg/L)	0.143 - 0.154 (2/2)
Manganese (mg/L)	0.0103 - 0.0108 (2/2)
Sulfate (mg/L)	97.7 - 114 (2/2)
Magnesium (mg/L)	27.4 - 28.3 (2/2)
Total Suspended Solids (mg/L)	8 - 17 (2/2)

Well #4	
Constituent (units)	**Concentration**
Aluminum (mg/L)	**0.164 - 0.466 (2/2)**
Fluoride (mg/L)	0.2 (1/1)
Molybdenum (mg/L)	0.0031 - 0.0031 (2/2)
Barium (mg/L)	0.0725 - 0.0938 (2/2)
Copper (mg/L)	0.0063 (1/2)
Lead (mg/L)	0.0008 (1/2)
Iron (mg/L)	0.15 - 0.275 (2/2)
Manganese (mg/L)	0.0041 - 0.0172 (2/2)
Sulfate (mg/L)	87.5 - 108 (2/2)
Magnesium (mg/L)	19.8 - 21.9 (2/2)
Total Suspended Solids (mg/L)	2 - 2 (2/2)

Reiter Farm	
Constituent (units)	**Concentration**
Fluoride (mg/L)	0.3 (1/1)
Molybdenum (mg/L)	**0.0031 - 0.0189 (2/2)**
Barium (mg/L)	0.0974 - 0.132 (2/2)
Copper (mg/L)	**0.0031 - 0.0408 (2/2)**
Lead (mg/L)	**0.0051 (1/2)**
Zinc (mg/L)	**0.0251 - 0.0935 (2/2)**
Sulfate (mg/L)	55.6 - 81.4 (2/2)
Chloride (mg/L)	**26.4 (1/1)**
Magnesium (mg/L)	18.4 - 20.6 (2/2)
Total Suspended Solids (mg/L)	< 1 (0/2)

Well #2	
Constituent (units)	**Concentration**
Aluminum (mg/L)	0.064 (1/2)
Fluoride (mg/L)	0.8 (1/1)
Molybdenum (mg/L)	0.0043 (1/2)
Barium (mg/L)	0.0827 - 0.0995 (2/2)
Copper (mg/L)	0.0023 - 0.0053 (2/2)
Lead (mg/L)	0.0008 (1/2)
Iron (mg/L)	**0.156 - 1.02 (2/2)**
Manganese (mg/L)	**0.0138 - 0.0392 (2/2)**
Sulfate (mg/L)	**118 - 119 (2/2)**
Chloride (mg/L)	13.3 (1/1)
Magnesium (mg/L)	**31.5 - 36.9 (2/2)**
Total Suspended Solids (mg/L)	2 - 6 (2/2)

Maximum Concenetration Summary		
Constituent	**Monitoring Point**	**Maximum Concentration**
Aluminum (mg/L)	Well #4	0.466
Arsenic (mg/L)	Well #1	0.002
Barium (mg/L)	Well #1	0.367
Chloride (mg/L)	Reiter Farm	26.4
Copper (mg/L)	Reiter Farm	0.0408
Fluoride (mg/L)	Well #1	0.9
Iron (mg/L)	Well #2	1.02
Lead (mg/L)	Reiter Farm	0.0051
Magnesium (mg/L)	Well #2	36.9
Manganese (mg/L)	Well #2	0.0392
Molybdenum (mg/L)	Reiter Farm	0.0189
Sulfate (mg/L)	Well #2	119
Zinc (mg/L)	Reiter Farm	0.0935

Site Map

Figure 3-1

Legend

- Approximate Location of Groundwater Monitoring Well
- Approximate Property Boundary

BMC Aggregates
South Quarry
La Porte City, Iowa
Project No: 27224342.00
Drawing Date: January 2025

N W E S

0 445 890 1,780 2,670 Feet

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environmental consultants and contractors

Section 4.0
General Comments

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

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

Section 5.0
References

1. Robinson Engineering Company. *Groundwater Monitoring Plan, South Waterloo Quarry, August 2010.*
2. Barker Lemar Engineering Consultants. *Groundwater Statistical Program, BMC Quarry CCR Beneficial Use Site, January 2011.*
3. Geological Society of Iowa. *Geology and Reclamation at the Waterloo South Quarry, Black Hawk County, Iowa. April 22, 2017.*
4. SCS Engineers, *2023 Annual Water Quality Report, BMC Waterloo South Quarry, Beneficial Use Site, February 2024* (Doc #109367).

Appendix A
Field Sampling Information

Waterloo South Quarry Monitoring Well Reports

Beneficial Use Reclamation Project

March 18, 2024

	Well #1	Well #2	Well #3	Well #4	Reiter Farm Well
Water Level (feet)	76.7	74.7	75.0	52.1	Not measured
pH (S.U.)	8.10	8.10	7.90	8.30	7.84
Temperature (° F)	47.7	47.5	46.2	48.5	46.3
Conductivity (µS/cm)	697	811	754	737	621

Note: “ Water Level” refers to the hydrostatic head of the well.

Waterloo South Quarry Monitoring Well Reports

Beneficial Use Reclamation Project

October 16, 2024

	Well #1	Well #2	Well #3	Well #4	Reiter Farm Well
Water Level (feet)	78.8	74.2	72.4	51.6	Not measured
pH (S.U.)	7.51	7.50	7.48	7.54	7.38
Temperature (° F)	50.5	49.7	50.0	52.6	52.0
Conductivity (µS/cm)	635	640	625	673	615

Note: “ Water Level” refers to the hydrostatic head of the well.

Appendix B
Laboratory Analytical Data Sheets

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HC1416

Project Description

Miller Creek Area

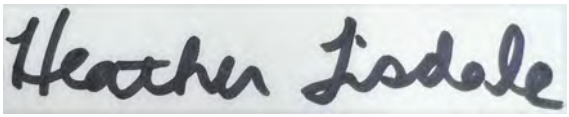
For:

Sherman Lundy

BMC Aggregates L.C.

101 BMC Drive

Elk Run Heights, IA 50707



Heather Tisdale

Customer Relationship Specialist

Friday, May 10, 2024

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc., Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

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Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HC1416

BMC Aggregates L.C.

Sherman Lundy
101 BMC Drive
Elk Run Heights, IA 50707

Project Name: Miller Creek Area

Project / PO Number: Sherman Lundy
Received: 03/21/2024
Reported: 05/10/2024

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
Upgradient Well	1HC1416-01	Aqueous	GRAB		03/18/24 10:00	03/21/24 10:50

Analytical Testing Parameters

Client Sample ID:	Upgradient Well		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HC1416-01	**Collection Date:**	03/18/2024 10:00

Determination of Volatile Organic Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030B/EPA 624									
2-Butanone (MEK)	<10.0	1.4	10.0	ug/L	1		03/27/24 0000	03/27/24 1340	CSM
Chloroform	<1.0	0.4	1.0	ug/L	1		03/27/24 0000	03/27/24 1340	CSM
Benzene	<1.0	0.3	1.0	ug/L	1		03/27/24 0000	03/27/24 1340	CSM
Surrogate: Dibromofluoromethane	91.6	Limit: 79-129		% Rec	1		03/27/24 0000	03/27/24 1340	CSM
Surrogate: 1,2-Dichloroethane-d4	96.2	Limit: 66-134		% Rec	1		03/27/24 0000	03/27/24 1340	CSM
Surrogate: Toluene-d8	97.9	Limit: 91-113		% Rec	1		03/27/24 0000	03/27/24 1340	CSM
Surrogate: 4-Bromofluorobenzene	99.2	Limit: 83-112		% Rec	1		03/27/24 0000	03/27/24 1340	CSM

Determination of Base/Neutral Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
Pyridine	<10	10	10	ug/L	1		03/25/24 1408	04/08/24 1213	EPP

Determination of Acid Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
2-Methylphenol (o-Cresol)	<10.0	2.6	10.0	ug/L	1		03/25/24 1408	04/08/24 1213	EPP
(3 & 4)-Methylphenol	<10.0	2.6	10.0	ug/L	1		03/25/24 1408	04/08/24 1213	EPP
Surrogate: 2-Fluorophenol	70.4	Limit: 19-139		% Rec	1		03/25/24 1408	04/08/24 1213	EPP
Surrogate: Phenol-d6	69.5	Limit: 14-154		% Rec	1		03/25/24 1408	04/08/24 1213	EPP
Surrogate: 2,4,6-Tribromophenol	79.1	Limit: 21-151		% Rec	1		03/25/24 1408	04/08/24 1213	EPP

Determination of Carbonyl Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 8315									
Formaldehyde	<10.0	10.0	10.0	ug/L	1		03/21/24 1318	03/22/24 1426	PDS

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 410.4									
COD, total	<54	24	54	mg/L	1		03/25/24 1138	03/26/24 1648	CHP
Method: EPA 420.1									
Phenols, total	**0.074**	0.024	0.035	mg/L	1		04/02/24 0947	04/03/24 1448	AKK
Method: EPA 9020									
Total Organic Halogens (TOX)	<0.010	0.006	0.010	mg/L	1		04/01/24 0000	04/02/24 0000	LNH
Method: EPA 9050									

CERTIFICATE OF ANALYSIS

1HC1416

Client Sample ID:	Upgradient Well		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HC1416-01	**Collection Date:**	03/18/2024 10:00

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Conductivity	**621**	1.8	2.0	uS/cm	1		04/03/24 1441	04/03/24 1513	BSS
Method: TIMBERLINE									
Nitrogen, Ammonia	<0.10	0.08	0.10	mg/L	1		04/01/24 0908	04/01/24 1400	LJS
Method: USGS I-1750-85									
Total Dissolved Solids (TDS)	**336**	4	5	mg/L	1		03/22/24 0755	03/22/24 1030	MEAH
Method: USGS I-3765-85									
Total Suspended Solids (TSS)	<1	0.9	1	mg/L	1		03/25/24 0905	03/25/24 1415	MEAH

Determination of Inorganic Anions	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 300.0									
Fluoride	**0.3**	0.02	0.1	mg/L	1		04/02/24 0000	04/02/24 1544	MID
Chloride	**26.4**	0.3	1.0	mg/L	1		04/02/24 0000	04/02/24 1544	MID
Method: EPA 9056									
Sulfate	**55.6**	0.4	1.0	mg/L	1		04/02/24 0000	04/02/24 1544	MID

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 200.7									
Iron, total	<0.047	0.047	0.100	mg/L	1		03/22/24 0759	03/25/24 2019	JAR
Magnesium, total	**18.4**	0.06	0.10	mg/L	1		03/22/24 0759	03/25/24 2019	JAR
Method: EPA 200.7									
Aluminum, total	<0.050	0.038	0.050	mg/L	1		03/22/24 0759	03/25/24 2019	JAR
Boron, total	<0.056	0.056	0.100	mg/L	1		03/22/24 0759	03/25/24 2019	JAR
Method: EPA 200.8									
Antimony, total	<0.0008	0.0008	0.0020	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Arsenic, total	**0.0006**	0.0006	0.0020	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Barium, total	**0.0974**	0.0002	0.0020	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Beryllium, total	<0.0001	0.0001	0.0020	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Cadmium, total	<0.00008	0.00008	0.0002	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Chromium, total	<0.0007	0.0007	0.0020	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Cobalt, total	<0.0005	0.0005	0.0020	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Copper, total	**0.0031**	0.0008	0.0020	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Lead, total	<0.0005	0.0005	0.0008	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Manganese, total	<0.0017	0.0017	0.0040	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Molybdenum, total	**0.0031**	0.0006	0.0020	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Nickel, total	<0.0007	0.0007	0.0040	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Selenium, total	**0.0039**	0.0011	0.0040	mg/L	4		03/25/24 0850	03/26/24 0257	RVV

Client Sample ID:	Upgradient Well		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HC1416-01	**Collection Date:**	03/18/2024 10:00

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Silver, total	<0.0015	0.0015	0.0020	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Thallium, total	<0.0004	0.0004	0.0008	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Vanadium, total	<0.0043	0.0043	0.0080	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Zinc, total	**0.0251**	0.0174	0.0200	mg/L	4		03/25/24 0850	03/26/24 0257	RVV
Method: SM 3112B									
Mercury, total	<0.00013	0.00013	0.00020	mg/L	1		03/22/24 1503	03/26/24 1432	JAR

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 8315	1HC1214	1HC1214-BS1	
		1HC1214-BLK1	
		1HC1416-01	Upgradient Well
		1HC1214-MS1	1HC1280-01
		1HC1214-MSD1	1HC1280-01

Method	Batch	Laboratory ID	Client / Source ID
USGS I-1750-85	1HC1249	1HC1416-01	Upgradient Well
		1HC1249-BS1	
		1HC1249-DUP1	1HC1428-01
		1HC1249-BLK1	

Method	Batch	Laboratory ID	Client / Source ID
EPA 200.7	1HC1250	1HC1250-BLK1	
200.7		1HC1250-BLK1	
		1HC1250-BS1	
EPA 200.7		1HC1250-BS1	
200.7		1HC1250-MS1	1HC1217-02
EPA 200.7		1HC1250-MS1	1HC1217-02
		1HC1250-MSD1	1HC1217-02
200.7		1HC1250-MSD1	1HC1217-02
		1HC1250-PS1	1HC1217-02
EPA 200.7		1HC1250-PS1	1HC1217-02
200.7		1HC1416-01	Upgradient Well
EPA 200.7		1HC1416-01	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
SM 3112B	1HC1285	1HC1285-BLK1	
		1HC1285-BS1	
		1HC1285-MS1	1HC1142-01
		1HC1285-MSD1	1HC1142-01
		1HC1416-01	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
EPA 200.8	1HC1319	1HC1319-BLK1	
		1HC1319-BS1	
		1HC1319-MS1	1HC1302-02
		1HC1319-MSD1	1HC1302-02
		1HC1319-PS1	1HC1302-02
		1HC1416-01	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
USGS I-3765-85	1HC1323	1HC1323-BS1	
		1HC1416-01	Upgradient Well
		1HC1323-DUP1	1HC1247-01
		1HC1323-BLK1	

Method	Batch	Laboratory ID	Client / Source ID
EPA 410.4	1HC1337	1HC1337-BLK1	
		1HC1337-BS1	
		1HC1337-MS1	1HC1395-01
		1HC1337-MSD1	1HC1395-01
		1HC1416-01	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
EPA 625	1HC1357	1HC1357-BLK1	
		1HC1357-BLK1	
		1HC1357-BS1	
		1HC1357-BS1	
		1HC1357-BSD1	
		1HC1357-BSD1	
		1HC1416-01	Upgradient Well
		1HC1416-01	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
EPA 624	1HC1543	1HC1543-BS1	
		1HC1543-BSD1	
		1HC1543-BLK1	
		1HC1416-01	Upgradient Well
		1HC1543-MS1	1HC1329-01
		1HC1543-MSD1	1HC1329-01

Method	Batch	Laboratory ID	Client / Source ID
TIMBERLINE	1HD0020	1HD0020-BLK1	
		1HD0020-BS1	
		1HD0020-MS1	1HC1356-02
		1HD0020-MSD1	1HC1356-02
		1HC1416-01	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
EPA 420.1	1HD0125	1HD0125-BS1	
		1HC1416-01	Upgradient Well
		1HD0125-BLK1	
		1HD0125-MS1	1HC1416-01
		1HD0125-MSD1	1HC1416-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 9020	1HD0192	1HD0192-BS1	
		1HD0192-SRM1	
		1HC1416-01	Upgradient Well
		1HD0192-BLK1	
		1HD0192-BS2	
		1HD0192-SRM2	
		1HD0192-SRM3	
		1HD0192-SRM4	

Method	Batch	Laboratory ID	Client / Source ID
EPA 9056	1HD0226	1HD0226-BLK1	
300.0		1HD0226-BLK1	
EPA 9056		1HD0226-MRL1	
300.0		1HD0226-MRL1	
		1HD0226-BS1	
EPA 9056		1HD0226-BS1	
		1HD0226-BSD1	
300.0		1HD0226-BSD1	
EPA 9056		1HD0226-BLK2	
300.0		1HD0226-BLK2	
EPA 9056		1HC1416-01	Upgradient Well
300.0		1HC1416-01	Upgradient Well
EPA 9056		1HD0226-MS1	1HC1878-02
300.0		1HD0226-MS1	1HC1878-02
		1HD0226-MSD1	1HC1878-02
EPA 9056		1HD0226-MSD1	1HC1878-02
300.0		1HD0226-BLK3	
EPA 9056		1HD0226-BLK3	
300.0		1HD0226-BS2	
EPA 9056		1HD0226-BS2	
300.0		1HD0226-BSD2	
EPA 9056		1HD0226-BSD2	
300.0		1HD0226-MS2	1HC1394-02
EPA 9056		1HD0226-MS2	1HC1394-02
300.0		1HD0226-MSD2	1HC1394-02
EPA 9056		1HD0226-MSD2	1HC1394-02

Method	Batch	Laboratory ID	Client / Source ID
EPA 9050	1HD0249	1HC1416-01	Upgradient Well
		1HD0249-SRM1	
		1HD0249-DUP1	1HC1416-01
		1HD0249-BLK1	

Batch Quality Control Summary: Microbac Laboratories, Inc., Newton

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1543 - EPA 5030B - EPA 624										
Blank (1HC1543-BLK1)			Prepared: 03/27/24 00:00 Analyzed: 03/27/24 11:10							
2-Butanone (MEK)	<10.0	10.0	ug/L							
Chloroform	<1.0	1.0	ug/L							
Benzene	<1.0	1.0	ug/L							
Surrogate: Dibromofluoromethane	*56.7*		ug/L	*50.2*		*113*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*60.6*		ug/L	*50.1*		*121*	*66-134*			
Surrogate: Toluene-d8	*42.4*		ug/L	*50.4*		*84.2*	*91-113*			*S-GC*
Surrogate: 4-Bromofluorobenzene	*53.0*		ug/L	*50.1*		*106*	*83-112*			
LCS (1HC1543-BS1)			Prepared: 03/27/24 00:00 Analyzed: 03/27/24 10:02							
2-Butanone (MEK)	88.52	10.0	ug/L	103		85.7	44-158			
Chloroform	47.60	1.0	ug/L	50.0		95.2	76-132			
Benzene	48.42	1.0	ug/L	50.0		96.8	77-130			
Surrogate: Dibromofluoromethane	*47.6*		ug/L	*50.2*		*94.9*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*47.7*		ug/L	*50.1*		*95.2*	*66-134*			
Surrogate: Toluene-d8	*49.9*		ug/L	*50.4*		*99.0*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*49.9*		ug/L	*50.1*		*99.5*	*83-112*			
LCS Dup (1HC1543-BSD1)			Prepared: 03/27/24 00:00 Analyzed: 03/27/24 10:24							
2-Butanone (MEK)	61.42	10.0	ug/L	103		59.5	44-158	36.1	25	QR-02
Chloroform	46.67	1.0	ug/L	50.0		93.3	76-132	1.97	26	
Benzene	47.26	1.0	ug/L	50.0		94.5	77-130	2.42	27	
Surrogate: Dibromofluoromethane	*47.9*		ug/L	*50.2*		*95.4*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*47.3*		ug/L	*50.1*		*94.4*	*66-134*			
Surrogate: Toluene-d8	*49.9*		ug/L	*50.4*		*99.0*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*50.0*		ug/L	*50.1*		*99.6*	*83-112*			
Matrix Spike (1HC1543-MS1)	**Source: 1HC1329-01**		Prepared: 03/27/24 00:00 Analyzed: 03/27/24 18:14							
2-Butanone (MEK)	1092	100	ug/L	1030	ND	106	48-169			
Chloroform	456.3	10.0	ug/L	500	ND	91.3	75-133			
Benzene	480.8	10.0	ug/L	500	ND	96.2	79-128			
Surrogate: Dibromofluoromethane	*462*		ug/L	*502*		*92.0*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*468*		ug/L	*501*		*93.6*	*66-134*			
Surrogate: Toluene-d8	*498*		ug/L	*504*		*98.8*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*502*		ug/L	*501*		*100*	*83-112*			
Matrix Spike Dup (1HC1543-MSD1)	**Source: 1HC1329-01**		Prepared: 03/27/24 00:00 Analyzed: 03/27/24 18:37							
2-Butanone (MEK)	723.4	100	ug/L	1030	ND	70.0	48-169	40.6	17	QR-02
Chloroform	443.9	10.0	ug/L	500	ND	88.8	75-133	2.75	16	
Benzene	465.9	10.0	ug/L	500	ND	93.2	79-128	3.15	12	
Surrogate: Dibromofluoromethane	*463*		ug/L	*502*		*92.3*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*463*		ug/L	*501*		*92.4*	*66-134*			
Surrogate: Toluene-d8	*498*		ug/L	*504*		*98.8*	*91-113*			

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1543 - EPA 5030B - EPA 624										
Matrix Spike Dup (1HC1543-MSD1)	**Source: 1HC1329-01**		Prepared: 03/27/24 00:00 Analyzed: 03/27/24 18:37							
Surrogate: 4-Bromofluorobenzene	*498*		ug/L	*501*		*99.2*	*83-112*			

Determination of Base/Neutral Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1357 - EPA 625 Base Neutral - EPA 625										
Blank (1HC1357-BLK1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 10:59							
Pyridine	<10	10	ug/L							
LCS (1HC1357-BS1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:24							
Pyridine	<10	10	ug/L	25.0		19.2	13-127			
LCS Dup (1HC1357-BSD1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:48							
Pyridine	<10	10	ug/L	25.0			13-127		30	QS-03

Determination of Acid Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1357 - EPA 625 Base Neutral - EPA 625										
Blank (1HC1357-BLK1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 10:59							
2-Methylphenol (o-Cresol)	<10.0	10.0	ug/L							
(3 & 4)-Methylphenol	<10.0	10.0	ug/L							
Surrogate: 2-Fluorophenol	*24.9*		ug/L	*29.6*		*84.0*	*19-139*			
Surrogate: Phenol-d6	*25.7*		ug/L	*30.5*		*84.3*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*25.3*		ug/L	*29.7*		*85.2*	*21-151*			
LCS (1HC1357-BS1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:24							
2-Methylphenol (o-Cresol)	15.0	10.0	ug/L	25.0		59.8	50-138			
(3 & 4)-Methylphenol	14.6	10.0	ug/L	25.0		58.6	56-130			
Surrogate: 2-Fluorophenol	*24.0*		ug/L	*29.6*		*81.2*	*19-139*			
Surrogate: Phenol-d6	*24.5*		ug/L	*30.5*		*80.4*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*26.4*		ug/L	*29.7*		*88.6*	*21-151*			
LCS Dup (1HC1357-BSD1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:48							
2-Methylphenol (o-Cresol)	16.0	10.0	ug/L	25.0		64.1	50-138	6.97	24	
(3 & 4)-Methylphenol	16.1	10.0	ug/L	25.0		64.3	56-130	9.31	26	
Surrogate: 2-Fluorophenol	*21.9*		ug/L	*29.6*		*73.9*	*19-139*			
Surrogate: Phenol-d6	*23.0*		ug/L	*30.5*		*75.3*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*26.6*		ug/L	*29.7*		*89.6*	*21-151*			

Determination of Carbonyl Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1214 - EPA 8315 Aldehydes - EPA 8315										
Blank (1HC1214-BLK1)			Prepared: 03/21/24 13:18 Analyzed: 03/22/24 13:48							
Formaldehyde	<10.0	10.0	ug/L							
LCS (1HC1214-BS1)			Prepared: 03/21/24 13:18 Analyzed: 03/22/24 13:29							
Formaldehyde	494.2	10.0	ug/L	500		98.8	61-142			
Matrix Spike (1HC1214-MS1)		**Source: 1HC1280-01**	Prepared: 03/21/24 13:18 Analyzed: 03/22/24 14:45							
Formaldehyde	505.2	10.0	ug/L	500	ND	101	48-148			
Matrix Spike Dup (1HC1214-MSD1)		**Source: 1HC1280-01**	Prepared: 03/21/24 13:18 Analyzed: 03/22/24 15:04							
Formaldehyde	485.3	10.0	ug/L	500	ND	97.1	48-148	4.02	30	

Determination of Conventional Chemistry Parameters	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1249 - Wet Chem Preparation - USGS I-1750-85										
Blank (1HC1249-BLK1)			Prepared: 03/22/24 07:55 Analyzed: 03/22/24 10:30							
Total Dissolved Solids (TDS)	<5	5	mg/L							
LCS (1HC1249-BS1)			Prepared: 03/22/24 07:55 Analyzed: 03/22/24 10:30							
Total Dissolved Solids (TDS)	99	5	mg/L	100		98.8	71-114			
Duplicate (1HC1249-DUP1)		**Source: 1HC1428-01**	Prepared: 03/22/24 07:55 Analyzed: 03/22/24 10:30							
Total Dissolved Solids (TDS)	2560	5	mg/L		2710			5.68	30	
Batch 1HC1323 - Wet Chem Preparation - USGS I-3765-85										
Blank (1HC1323-BLK1)			Prepared: 03/25/24 09:05 Analyzed: 03/25/24 14:15							
Total Suspended Solids (TSS)	<1	1	mg/L							
LCS (1HC1323-BS1)			Prepared: 03/25/24 09:05 Analyzed: 03/25/24 14:15							
Total Suspended Solids (TSS)	14.1	1	mg/L	15.0		94.0	74-114			
Duplicate (1HC1323-DUP1)		**Source: 1HC1247-01**	Prepared: 03/25/24 09:05 Analyzed: 03/25/24 14:15							
Total Suspended Solids (TSS)	130	1	mg/L		117			10.8	30	
Batch 1HC1337 - Wet Chem Preparation - EPA 410.4										
Blank (1HC1337-BLK1)			Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	<54	54	mg/L							
LCS (1HC1337-BS1)			Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	159	54	mg/L	150		106	90-110			
Matrix Spike (1HC1337-MS1)		**Source: 1HC1395-01**	Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	372	108	mg/L	300	ND	124	90-110			QM-14
Matrix Spike Dup (1HC1337-MSD1)		**Source: 1HC1395-01**	Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	345	108	mg/L	300	ND	115	90-110	7.54	10	QM-14
Batch 1HD0020 - General Prep HPLC/IC - TIMBERLINE										

Determination of Conventional Chemistry Parameters	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0020 - General Prep HPLC/IC - TIMBERLINE										
Blank (1HD0020-BLK1)			Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:48							
Nitrogen, Ammonia	<0.10	0.10	mg/L							
LCS (1HD0020-BS1)			Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:50							
Nitrogen, Ammonia	5.13	0.10	mg/L	5.00		103	90-114			
Matrix Spike (1HD0020-MS1)	**Source: 1HC1356-02**		Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:51							
Nitrogen, Ammonia	5.82	0.10	mg/L	5.00	0.719	102	84-115			
Matrix Spike Dup (1HD0020-MSD1)	**Source: 1HC1356-02**		Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:53							
Nitrogen, Ammonia	5.82	0.10	mg/L	5.00	0.719	102	84-115	0.0128	20	
Batch 1HD0125 - Wet Chem Preparation - EPA 420.1										
Blank (1HD0125-BLK1)			Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	<0.035	0.035	mg/L							
LCS (1HD0125-BS1)			Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	0.419	0.035	mg/L	0.400		105	62-110			
Matrix Spike (1HD0125-MS1)	**Source: 1HC1416-01**		Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	0.268	0.035	mg/L	0.400	0.0738	48.7	57-124			QM-07
Matrix Spike Dup (1HD0125-MSD1)	**Source: 1HC1416-01**		Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	0.398	0.035	mg/L	0.400	0.0738	81.1	57-124	38.9	21	QM-07
Batch 1HD0192 - TOX/TX/EOX - EPA 9020										
Blank (1HD0192-BLK1)			Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	<0.010	0.010	mg/L							
LCS (1HD0192-BS1)			Prepared & Analyzed: 04/01/24 00:00							
Total Organic Halogens (TOX)	0.1020	0.010	mg/L	0.121		84.6	76-114			
LCS (1HD0192-BS2)			Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1476	0.010	mg/L	0.121		122	76-114			QM-21
Reference (1HD0192-SRM1)			Prepared & Analyzed: 04/01/24 00:00							
Total Organic Halogens (TOX)	0.1031	0.010	mg/L	0.111		92.8	90-110			
Reference (1HD0192-SRM2)			Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1150	0.010	mg/L	0.111		104	90-110			
Reference (1HD0192-SRM3)			Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1130	0.010	mg/L	0.111		102	90-110			
Reference (1HD0192-SRM4)			Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1140	0.010	mg/L	0.111		103	90-110			
Batch 1HD0249 - Wet Chem Preparation - EPA 9050										
Blank (1HD0249-BLK1)			Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							
Conductivity	<2.0	2.0	uS/cm							

Determination of Conventional Chemistry Parameters	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0249 - Wet Chem Preparation - EPA 9050											
Duplicate (1HD0249-DUP1)		**Source: 1HC1416-01**		Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							
Conductivity	620		2.0	uS/cm		621			0.0161	10	
Reference (1HD0249-SRM1)				Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							
Conductivity	248		2.0	uS/cm	250		99.4	90-110			

Determination of Inorganic Anions	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0226 - General Prep HPLC/IC - 300.0											
Blank (1HD0226-BLK1)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 09:59							
Fluoride	<0.1		0.1	mg/L							
Chloride	<1.0		1.0	mg/L							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1HD0226-BLK2)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 14:14							
Fluoride	<0.1		0.1	mg/L							
Chloride	<1.0		1.0	mg/L							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1HD0226-BLK3)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 19:22							
Fluoride	<0.1		0.1	mg/L							
Chloride	<1.0		1.0	mg/L							
Sulfate	<0.4	0.4	1.0	mg/L							
LCS (1HD0226-BS1)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 10:36							
Fluoride	1.08		0.1	mg/L	1.17		92.4	90-110			
Chloride	15.16		1.0	mg/L	15.3		99.3	90-110			
Sulfate	33.47	0.4	1.0	mg/L	33.8		98.9	80-120			
LCS (1HD0226-BS2)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 20:17							
Fluoride	1.08		0.1	mg/L	1.17		91.7	90-110			
Chloride	15.12		1.0	mg/L	15.3		99.1	90-110			
Sulfate	33.27	0.4	1.0	mg/L	33.8		98.3	80-120			
LCS Dup (1HD0226-BSD1)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 10:54							
Fluoride	1.08		0.1	mg/L	1.17		91.8	90-110	0.648	10	
Chloride	15.07		1.0	mg/L	15.3		98.7	90-110	0.615	10	
Sulfate	33.40	0.4	1.0	mg/L	33.8		98.7	80-120	0.206	10	
LCS Dup (1HD0226-BSD2)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 20:35							
Fluoride	1.08		0.1	mg/L	1.17		92.0	90-110	0.278	10	
Chloride	15.19		1.0	mg/L	15.3		99.5	90-110	0.409	10	
Sulfate	33.57	0.4	1.0	mg/L	33.8		99.2	80-120	0.895	10	
Matrix Spike (1HD0226-MS1)		**Source: 1HC1878-02**		Prepared: 04/02/24 00:00 Analyzed: 04/02/24 17:15							
Fluoride	12.89		1.0	mg/L	11.7	0.63	105	80-120			
Chloride	558.6		10.0	mg/L	153	401.6	103	80-120			

Determination of Inorganic Anions	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0226 - General Prep HPLC/IC - EPA 9056											
Matrix Spike (1HD0226-MS1)		**Source: 1HC1878-02**		Prepared: 04/02/24 00:00 Analyzed: 04/02/24 17:15							
Sulfate	406.9	3.6	10.0	mg/L	338	48.39	106	87-113			
Matrix Spike (1HD0226-MS2)		**Source: 1HC1394-02**		Prepared: 04/02/24 00:00 Analyzed: 04/02/24 23:55							
Fluoride	13.07		1.0	mg/L	11.7	1.04	103	80-120			
Chloride	412.8		10.0	mg/L	153	261.8	98.9	80-120			
Sulfate	736.6	3.6	10.0	mg/L	338	389.4	103	87-113			
Matrix Spike Dup (1HD0226-MSD1)		**Source: 1HC1878-02**		Prepared: 04/02/24 00:00 Analyzed: 04/02/24 17:33							
Fluoride	13.16		1.0	mg/L	11.7	0.63	107	80-120	2.07	10	
Chloride	559.3		10.0	mg/L	153	401.6	103	80-120	0.132	10	
Sulfate	408.1	3.6	10.0	mg/L	338	48.39	106	87-113	0.297	10	
Matrix Spike Dup (1HD0226-MSD2)		**Source: 1HC1394-02**		Prepared: 04/02/24 00:00 Analyzed: 04/03/24 00:13							
Fluoride	13.18		1.0	mg/L	11.7	1.04	103	80-120	0.838	10	
Chloride	415.0		10.0	mg/L	153	261.8	100	80-120	0.544	10	
Sulfate	738.7	3.6	10.0	mg/L	338	389.4	103	87-113	0.293	10	

Determination of Total Metals	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1250 - EPA 200.2 Total ICP-OES (200.7) - EPA 200.7											
Blank (1HC1250-BLK1)				Prepared: 03/22/24 07:59 Analyzed: 03/25/24 17:48							
Aluminum, total	<0.050		0.050	mg/L							
Boron, total	<0.056	0.056	0.100	mg/L							
Iron, total	<0.047	0.047	0.100	mg/L							
Magnesium, total	<0.06	0.06	0.10	mg/L							
LCS (1HC1250-BS1)				Prepared: 03/22/24 07:59 Analyzed: 03/25/24 17:56							
Aluminum, total	2.19		0.050	mg/L	2.20		99.5	85-115			
Boron, total	0.197	0.056	0.100	mg/L	0.200		98.6	85-115			
Iron, total	2.28	0.047	0.100	mg/L	2.20		104	85-115			
Magnesium, total	2.15	0.06	0.10	mg/L	2.20		97.8	85-115			
Matrix Spike (1HC1250-MS1)		**Source: 1HC1217-02**		Prepared: 03/22/24 07:59 Analyzed: 03/25/24 18:07							
Aluminum, total	2.28		0.050	mg/L	2.20	0.0598	101	70-130			
Boron, total	0.492	0.056	0.100	mg/L	0.200	0.294	99.3	70-130			
Iron, total	2.27	0.047	0.100	mg/L	2.20	0.062	100	70-130			
Magnesium, total	68.1	0.06	0.10	mg/L	2.20	67.0	49.5	70-130			QM-4X
Matrix Spike Dup (1HC1250-MSD1)		**Source: 1HC1217-02**		Prepared: 03/22/24 07:59 Analyzed: 03/25/24 18:13							
Aluminum, total	2.31		0.050	mg/L	2.20	0.0598	102	70-130	1.38	20	
Boron, total	0.487	0.056	0.100	mg/L	0.200	0.294	96.8	70-130	1.04	20	
Iron, total	2.26	0.047	0.100	mg/L	2.20	0.062	99.8	70-130	0.525	20	
Magnesium, total	66.9	0.06	0.10	mg/L	2.20	67.0	NR	70-130	1.79	20	QM-4X
Post Spike (1HC1250-PS1)		**Source: 1HC1217-02**		Prepared: 03/22/24 07:59 Analyzed: 03/25/24 18:31							
Aluminum, total	8.94			mg/L	8.80	0.0598	101	85-115			
Boron, total	1.09			mg/L	0.800	0.294	99.9	85-115			

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1250 - EPA 200.2 Total ICP-OES (200.7) - 200.7											
Post Spike (1HC1250-PS1)		**Source: 1HC1217-02**		Prepared: 03/22/24 07:59 Analyzed: 03/25/24 18:31							
Iron, total	9.00			mg/L	8.80	0.062	102	85-115			
Magnesium, total	77.5			mg/L	8.80	67.0	120	85-115			PS-4X
Batch 1HC1285 - EPA 7470A Hg Water - SM 3112B											
Blank (1HC1285-BLK1)				Prepared: 03/22/24 15:03 Analyzed: 03/26/24 14:00							
Mercury, total	<0.00013	0.00013	0.00020	mg/L							
LCS (1HC1285-BS1)				Prepared: 03/22/24 15:03 Analyzed: 03/26/24 14:02							
Mercury, total	0.00214	0.00013	0.00020	mg/L	0.00250		85.8	87-118			QS-03
Matrix Spike (1HC1285-MS1)		**Source: 1HC1142-01**		Prepared: 03/22/24 15:03 Analyzed: 03/26/24 14:07							
Mercury, total	0.00236	0.00013	0.00020	mg/L	0.00250	ND	94.5	62-131			
Matrix Spike Dup (1HC1285-MSD1)		**Source: 1HC1142-01**		Prepared: 03/22/24 15:03 Analyzed: 03/26/24 14:09							
Mercury, total	0.00242	0.00013	0.00020	mg/L	0.00250	ND	96.8	62-131	2.47	17	
Batch 1HC1319 - EPA 200.2 Total ICP-MS - EPA 200.8											
Blank (1HC1319-BLK1)				Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:13							
Antimony, total	<0.0008	0.0008	0.0020	mg/L							
Arsenic, total	<0.0006	0.0006	0.0020	mg/L							
Barium, total	<0.0002	0.0002	0.0020	mg/L							
Beryllium, total	<0.0001	0.0001	0.0020	mg/L							
Cadmium, total	<0.00008	0.00008	0.0002	mg/L							
Chromium, total	<0.0007	0.0007	0.0008	mg/L							
Cobalt, total	<0.0005	0.0005	0.0020	mg/L							
Copper, total	0.0008	0.0008	0.0020	mg/L							
Lead, total	<0.0005	0.0005	0.0008	mg/L							
Manganese, total	<0.0017	0.0017	0.0040	mg/L							
Molybdenum, total	<0.0006	0.0006	0.0020	mg/L							
Nickel, total	<0.0007	0.0007	0.0040	mg/L							
Selenium, total	<0.0011	0.0011	0.0040	mg/L							
Silver, total	<0.0015	0.0015	0.0020	mg/L							
Thallium, total	<0.0004	0.0004	0.0008	mg/L							
Vanadium, total	<0.0043	0.0043	0.0080	mg/L							
Zinc, total	<0.0174	0.0174	0.0200	mg/L							
LCS (1HC1319-BS1)				Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:20							
Antimony, total	0.0928	0.0008	0.0020	mg/L	0.100		92.8	85-115			
Arsenic, total	0.0943	0.0006	0.0020	mg/L	0.100		94.3	85-115			
Barium, total	0.103	0.0002	0.0020	mg/L	0.100		103	85-115			
Beryllium, total	0.0906	0.0001	0.0020	mg/L	0.100		90.6	85-115			
Cadmium, total	0.0931	0.00008	0.0002	mg/L	0.100		93.1	85-115			
Chromium, total	0.0915	0.0007	0.0008	mg/L	0.100		91.5	85-115			
Cobalt, total	0.101	0.0005	0.0020	mg/L	0.100		101	85-115			
Copper, total	0.0989	0.0008	0.0020	mg/L	0.100		98.9	85-115			
Lead, total	0.0975	0.0005	0.0008	mg/L	0.100		97.5	85-115			

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1319 - EPA 200.2 Total ICP-MS - EPA 200.8											
LCS (1HC1319-BS1)				Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:20							
Manganese, total	0.0877	0.0017	0.0040	mg/L	0.100		87.7	85-115			
Molybdenum, total	0.0958	0.0006	0.0020	mg/L	0.100		95.8	85-115			
Nickel, total	0.0938	0.0007	0.0040	mg/L	0.100		93.8	85-115			
Selenium, total	0.0935	0.0011	0.0040	mg/L	0.100		93.5	85-115			
Silver, total	0.0976	0.0015	0.0020	mg/L	0.100		97.6	85-115			
Thallium, total	0.0982	0.0004	0.0008	mg/L	0.100		98.2	85-115			
Vanadium, total	0.0955	0.0043	0.0080	mg/L	0.100		95.5	85-115			
Zinc, total	0.0956	0.0174	0.0200	mg/L	0.100		95.6	85-115			
Matrix Spike (1HC1319-MS1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:32							
Antimony, total	0.0959	0.0008	0.0020	mg/L	0.100	ND	95.9	70-130			
Arsenic, total	0.0967	0.0006	0.0020	mg/L	0.100	0.0015	95.2	70-130			
Barium, total	0.185	0.0002	0.0020	mg/L	0.100	0.0817	104	70-130			
Beryllium, total	0.0900	0.0001	0.0020	mg/L	0.100	ND	90.0	70-130			
Cadmium, total	0.0916	0.00008	0.0002	mg/L	0.100	ND	91.6	70-130			
Chromium, total	0.0910	0.0007	0.0008	mg/L	0.100	0.0009	90.1	70-130			
Cobalt, total	0.100	0.0005	0.0020	mg/L	0.100	ND	100	70-130			
Copper, total	0.104	0.0008	0.0020	mg/L	0.100	0.0109	93.2	70-130			
Lead, total	0.0911	0.0005	0.0008	mg/L	0.100	ND	91.1	70-130			
Manganese, total	0.0995	0.0017	0.0040	mg/L	0.100	0.0154	84.2	70-130			
Molybdenum, total	0.105	0.0006	0.0020	mg/L	0.100	0.0032	102	70-130			
Nickel, total	0.0930	0.0007	0.0040	mg/L	0.100	0.0022	90.9	70-130			
Selenium, total	0.0908	0.0011	0.0040	mg/L	0.100	0.0012	89.6	70-130			
Silver, total	0.0953	0.0015	0.0020	mg/L	0.100	ND	95.3	70-130			
Thallium, total	0.0928	0.0004	0.0008	mg/L	0.100	ND	92.8	70-130			
Vanadium, total	0.0968	0.0043	0.0080	mg/L	0.100	ND	96.8	70-130			
Zinc, total	0.112	0.0174	0.0200	mg/L	0.100	0.0221	90.4	70-130			
Matrix Spike Dup (1HC1319-MSD1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:38							
Antimony, total	0.0950	0.0008	0.0020	mg/L	0.100	ND	95.0	70-130	0.998	20	
Arsenic, total	0.0953	0.0006	0.0020	mg/L	0.100	0.0015	93.9	70-130	1.42	20	
Barium, total	0.186	0.0002	0.0020	mg/L	0.100	0.0817	104	70-130	0.105	20	
Beryllium, total	0.0893	0.0001	0.0020	mg/L	0.100	ND	89.3	70-130	0.797	20	
Cadmium, total	0.0913	0.00008	0.0002	mg/L	0.100	ND	91.3	70-130	0.343	20	
Chromium, total	0.0904	0.0007	0.0008	mg/L	0.100	0.0009	89.5	70-130	0.693	20	
Cobalt, total	0.0998	0.0005	0.0020	mg/L	0.100	ND	99.8	70-130	0.662	20	
Copper, total	0.105	0.0008	0.0020	mg/L	0.100	0.0109	93.7	70-130	0.434	20	
Lead, total	0.0915	0.0005	0.0008	mg/L	0.100	ND	91.5	70-130	0.401	20	
Manganese, total	0.0991	0.0017	0.0040	mg/L	0.100	0.0154	83.8	70-130	0.398	20	
Molybdenum, total	0.105	0.0006	0.0020	mg/L	0.100	0.0032	102	70-130	0.300	20	
Nickel, total	0.0922	0.0007	0.0040	mg/L	0.100	0.0022	90.0	70-130	0.877	20	
Selenium, total	0.0938	0.0011	0.0040	mg/L	0.100	0.0012	92.6	70-130	3.25	20	
Silver, total	0.0956	0.0015	0.0020	mg/L	0.100	ND	95.6	70-130	0.350	20	
Thallium, total	0.0936	0.0004	0.0008	mg/L	0.100	ND	93.6	70-130	0.795	20	
Vanadium, total	0.0960	0.0043	0.0080	mg/L	0.100	ND	96.0	70-130	0.869	20	

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1319 - EPA 200.2 Total ICP-MS - EPA 200.8											
Matrix Spike Dup (1HC1319-MSD1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:38							
Zinc, total	0.112	0.0174	0.0200	mg/L	0.100	0.0221	89.8	70-130	0.525	20	
Post Spike (1HC1319-PS1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:44							
Antimony, total	0.0812			mg/L	0.0800	0.0006	101	70-130			
Arsenic, total	0.0809			mg/L	0.0800	0.0014	99.4	70-130			
Barium, total	0.167			mg/L	0.0800	0.0801	109	70-130			
Beryllium, total	0.0751			mg/L	0.0800	0.000006	93.9	70-130			
Cadmium, total	0.0768			mg/L	0.0800	0.00001	96.0	70-130			
Chromium, total	0.0763			mg/L	0.0800	0.0008	94.4	70-130			
Cobalt, total	0.0856			mg/L	0.0800	0.0004	106	70-130			
Copper, total	0.0885			mg/L	0.0800	0.0107	97.3	70-130			
Lead, total	0.0790			mg/L	0.0800	0.0004	98.3	70-130			
Manganese, total	0.0857			mg/L	0.0800	0.0150	88.3	70-130			
Molybdenum, total	0.0891			mg/L	0.0800	0.0031	107	70-130			
Nickel, total	0.0792			mg/L	0.0800	0.0021	96.4	70-130			
Selenium, total	0.0755			mg/L	0.0800	0.0011	92.9	70-130			
Silver, total	0.0809			mg/L	0.0800	0.0001	101	70-130			
Thallium, total	0.0806			mg/L	0.0800	0.0001	101	70-130			
Vanadium, total	0.0843			mg/L	0.0800	0.0033	101	70-130			
Zinc, total	0.0965			mg/L	0.0800	0.0217	93.6	70-130			

Definitions

MDL:	Minimum Detection Limit
PS-4X:	The spike recovery was outside of QC acceptance limits for the Post Spike due to analyte concentration at 4 times or greater the spike concentration.
QM-07:	The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-14:	The spike recovery was outside acceptance limits for the MS and/or MSD. However, all other QC was acceptable.
QM-21:	The recovery for the blank spike was outside the established laboratory control limits. The batch was accepted based upon the acceptable recovery of the CCV.
QM-4X:	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration.
QR-02:	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QS-03:	The blank spike recovery was below established acceptance limits.
RL:	Reporting Limit
RPD:	Relative Percent Difference
S-GC:	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

Cooler Receipt Log

Cooler ID:	N1-13111	Temp:	1.4ºC	**Cooler ID:**	N5-13133	Temp:	1.1ºC

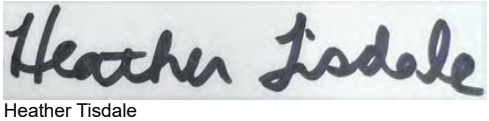
Cooler Inspection Checklist

Custody Seals	No	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Confirmed	No
Received On Ice	Yes		

Report Comments

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. ***The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.***

Reviewed and Approved By:



Heather Tisdale
Customer Relationship Specialist
heather.tisdale@microbac.com
05/10/24 15:40

CHAIN OF CUST

Keystone LABORATORIES
A Microbac Company
600 East 17th Street South
Newton, IA 50208
641-792-9451

1HC1416

BMC Aggregates L.C.
PM: Heather Tisdale

www.keystonelabs

SITE INFORMATION

Sampler: Sherman Lundy

Project: CW Monitoring
Miller Creek Area

REPORT TO

Sherman Lundy
RMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO

Accounts Payable
RMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order 1HC 1416
Temperature 1.1/1.4
Turn-Cooler: No

- ☐ Custody Seal
- ☒ Containers Intact
- ☒ COC/Labels Agree
- ☐ Preservation Confirmed
- ☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
-001	Upgradient Well	Water	GRAB	3/18/24	10AM	12	624@benzene, 624@chloroform, 624@mek, 624-base-analysis, 625@pyridine, 625-126, 8315@Formaldehyde, 9020-100, ag-t-200.8, al-t-200.7, as-t-200.8, ba-t-200.8, be-t-200.8, b-t-200.7, cd-t-200.8, cl-9056-w, cod-t-410.4, co-t-200.8, cr-t-200.8, cu-t-200.8, f-9056, fe-t-200.7, hg-t-3112-low, mg-t-200.7, mn-t-200.8, mo-t-200.8, nh3-timberline, ni-t-200.8, pb-t-200.8, phenol-t-420.1, sb-t-200.8, se-t-200.8, so4-9056-w, tds-t-1750-85, tl-t-200.8, tss-t-3765-85, & Electrical Conductivity	01

Sherman Lundy 3/19/24 3:09 PM
Relinquished By Date/Time

Amy Hochstetler 3/21/24 10:50
Received By Date/Time

Relinquished By Date/Time

Received for Lab By 3-19-24 Date/Time

Remarks: 1509

Original - Lab Copy Yellow - Sampler Copy

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HC1526

Project Description

Miller Creek Area

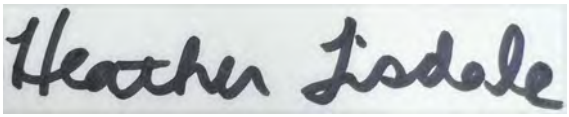
For:

Sherman Lundy

BMC Aggregates L.C.

101 BMC Drive

Elk Run Heights, IA 50707



Heather Tisdale

Customer Relationship Specialist

Monday, February 3, 2025

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc., Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

MICROBAC®

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CERTIFICATE OF ANALYSIS

1HC1526

BMC Aggregates L.C.

Sherman Lundy
101 BMC Drive
Elk Run Heights, IA 50707

Project Name: Miller Creek Area

Project / PO Number: Sherman Lundy
Received: 03/21/2024
Reported: 02/03/2025

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
Well #1	1HC1526-01	Aqueous	GRAB		03/18/24 08:00	03/21/24 10:50

Analytical Testing Parameters

Client Sample ID:	Well #1		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HC1526-01	**Collection Date:**	03/18/2024 8:00

Determination of Volatile Organic Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030B/EPA 624.1									
2-Butanone (MEK)	<10.0	1.4	10.0	ug/L	1		03/27/24 0000	03/27/24 1448	CSM
Chloroform	<1.0	0.4	1.0	ug/L	1		03/27/24 0000	03/27/24 1448	CSM
Benzene	<1.0	0.3	1.0	ug/L	1		03/27/24 0000	03/27/24 1448	CSM
Surrogate: Dibromofluoromethane	92.5	Limit: 79-129		% Rec	1		03/27/24 0000	03/27/24 1448	CSM
Surrogate: 1,2-Dichloroethane-d4	96.3	Limit: 66-134		% Rec	1		03/27/24 0000	03/27/24 1448	CSM
Surrogate: Toluene-d8	97.9	Limit: 91-113		% Rec	1		03/27/24 0000	03/27/24 1448	CSM
Surrogate: 4-Bromofluorobenzene	98.6	Limit: 83-112		% Rec	1		03/27/24 0000	03/27/24 1448	CSM

Determination of Base/Neutral Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1									
Pyridine	<10	10	10	ug/L	1		03/25/24 1408	04/08/24 1237	EPP

Determination of Acid Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1									
2-Methylphenol (o-Cresol)	<10.0	2.6	10.0	ug/L	1		03/25/24 1408	04/08/24 1237	EPP
(3 & 4)-Methylphenol	<10.0	2.6	10.0	ug/L	1		03/25/24 1408	04/08/24 1237	EPP
Surrogate: 2-Fluorophenol	70.8	Limit: 19-139		% Rec	1		03/25/24 1408	04/08/24 1237	EPP
Surrogate: Phenol-d6	64.6	Limit: 14-154		% Rec	1		03/25/24 1408	04/08/24 1237	EPP
Surrogate: 2,4,6-Tribromophenol	82.0	Limit: 21-151		% Rec	1		03/25/24 1408	04/08/24 1237	EPP

Determination of Carbonyl Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 8315									
Formaldehyde	<10.0	10.0	10.0	ug/L	1	**H1**	03/25/24 1142	03/26/24 1540	PDS

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 410.4, Rv. 2 (1993)									
COD, total	<54	24	54	mg/L	1		03/25/24 1138	03/26/24 1648	CHP
Method: EPA 420.1									
Phenols, total	**0.132**	0.024	0.035	mg/L	1		04/02/24 0947	04/03/24 1448	AKK
Method: EPA 9020B									
Total Organic Halogens (TOX)	<0.010	0.006	0.010	mg/L	1	**TX2**	04/01/24 0000	04/02/24 0000	LNH
Method: EPA 9050A									

Client Sample ID:	Well #1		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HC1526-01	**Collection Date:**	03/18/2024 8:00

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Conductivity	**697**	1.8	2.0	uS/cm	1		04/03/24 1441	04/03/24 1513	BSS
Method: TIMBERLINE									
Nitrogen, Ammonia	**0.45**	0.08	0.10	mg/L	1		04/01/24 0908	04/01/24 1403	LJS
Method: USGS I-1750-85									
Total Dissolved Solids (TDS)	**420**	4	5	mg/L	1		03/25/24 0824	03/25/24 1155	MEAH
Method: USGS I-3765-85									
Total Suspended Solids (TSS)	<1	0.9	1	mg/L	1		03/25/24 0905	03/25/24 1415	MEAH

Determination of Inorganic Anions	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 9056A									
Fluoride	**0.9**	0.02	0.1	mg/L	1		04/02/24 0000	04/02/24 1904	MID
Sulfate	**74.6**	0.4	1.0	mg/L	1		04/02/24 0000	04/02/24 1904	MID

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 200.7									
Iron, total	**0.437**	0.047	0.100	mg/L	1		03/25/24 1529	03/26/24 2238	JAR
Magnesium, total	**33.1**	0.06	0.10	mg/L	1		03/25/24 1529	03/26/24 2238	JAR
Method: EPA 200.7, Rv. 4.4 (1994)									
Aluminum, total	<0.050	0.038	0.050	mg/L	1		03/25/24 1529	03/26/24 2238	JAR
Boron, total	<0.056	0.056	0.100	mg/L	1		03/25/24 1529	03/26/24 2238	JAR
Method: EPA 200.8, Rv. 5.4 (1994)									
Antimony, total	<0.0008	0.0008	0.0020	mg/L	4		03/25/24 0850	03/26/24 0358	RVV
Arsenic, total	**0.0016**	0.0006	0.0020	mg/L	4		03/25/24 0850	03/26/24 0358	RVV
Barium, total	**0.367**	0.0002	0.0020	mg/L	4		03/25/24 0850	03/26/24 0358	RVV
Beryllium, total	<0.0001	0.0001	0.0020	mg/L	4		03/25/24 0850	03/26/24 0358	RVV
Cadmium, total	<0.00008	0.00008	0.0002	mg/L	4		03/25/24 0850	03/26/24 0358	RVV
Chromium, total	<0.0007	0.0007	0.0020	mg/L	4		03/25/24 0850	03/26/24 0358	RVV
Cobalt, total	<0.0005	0.0005	0.0020	mg/L	4		03/25/24 0850	03/26/24 0358	RVV
Copper, total	**0.0056**	0.0008	0.0020	mg/L	4		03/25/24 0850	03/26/24 0358	RVV
Lead, total	<0.0005	0.0005	0.0008	mg/L	4		03/25/24 0850	03/26/24 0358	RVV
Manganese, total	**0.0087**	0.0017	0.0040	mg/L	4		03/25/24 0850	03/26/24 0358	RVV
Molybdenum, total	<0.0006	0.0006	0.0020	mg/L	4		03/25/24 0850	03/26/24 0358	RVV
Nickel, total	**0.0011**	0.0007	0.0040	mg/L	4		03/25/24 0850	03/26/24 0358	RVV
Selenium, total	<0.0011	0.0011	0.0040	mg/L	4		03/25/24 0850	03/26/24 0358	RVV
Silver, total	<0.0015	0.0015	0.0020	mg/L	4		03/25/24 0850	03/26/24 0358	RVV
Thallium, total	<0.0004	0.0004	0.0008	mg/L	4		03/25/24 0850	03/26/24 0358	RVV
Vanadium, total	<0.0043	0.0043	0.0080	mg/L	4		03/25/24 0850	03/26/24 0358	RVV

CERTIFICATE OF ANALYSIS

1HC1526

Client Sample ID:	Well #1		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HC1526-01	**Collection Date:**	03/18/2024 8:00

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Zinc, total	<0.0174	0.0174	0.0200	mg/L	4			03/25/24 0850	RVV
Method: SM 3112B									
Mercury, total	<0.00013	0.00013	0.00020	mg/L	1		03/22/24 1503	03/26/24 1452	JAR

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
SM 3112B	1HC1285	1HC1285-BLK1	
		1HC1285-BS1	
		1HC1285-MS1	1HC1142-01
		1HC1285-MSD1	1HC1142-01
		1HC1526-01	Well #1
Method	**Batch**	**Laboratory ID**	**Client / Source ID**
USGS I-1750-85	1HC1310	1HC1310-DUP1	1HC1466-01
		1HC1310-BLK1	
		1HC1526-01	Well #1
		1HC1310-BS1	
Method	**Batch**	**Laboratory ID**	**Client / Source ID**
EPA 200.8, Rv. 5.4 (1994)	1HC1319	1HC1526-01	Well #1
		1HC1319-BLK1	
		1HC1319-BS1	
		1HC1319-MS1	1HC1302-02
		1HC1319-MSD1	1HC1302-02
		1HC1319-PS1	1HC1302-02
		1HC1526-01	Well #1
Method	**Batch**	**Laboratory ID**	**Client / Source ID**
USGS I-3765-85	1HC1323	1HC1526-01	Well #1
		1HC1323-BLK1	
		1HC1323-DUP1	1HC1247-01
		1HC1323-BS1	
Method	**Batch**	**Laboratory ID**	**Client / Source ID**
EPA 410.4, Rv. 2 (1993)	1HC1337	1HC1337-MSD1	1HC1395-01
		1HC1337-BLK1	
		1HC1526-01	Well #1
		1HC1337-BS1	
		1HC1337-MS1	1HC1395-01
Method	**Batch**	**Laboratory ID**	**Client / Source ID**
EPA 8315	1HC1339	1HC1339-BS1	
		1HC1339-BLK1	
		1HC1526-01	Well #1
		1HC1339-MS1	1HC1526-01
		1HC1339-MSD1	1HC1526-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 625.1	1HC1357	1HC1357-BLK1	
		1HC1357-BLK1	
		1HC1357-BS1	
		1HC1357-BS1	
		1HC1357-BSD1	
		1HC1357-BSD1	
		1HC1526-01	Well #1
		1HC1526-01	Well #1

Method	Batch	Laboratory ID	Client / Source ID
EPA 200.7, Rv. 4.4 (1994)	1HC1368	1HC1368-BLK1	
200.7		1HC1368-BLK1	
		1HC1368-BS1	
EPA 200.7, Rv. 4.4 (1994)		1HC1368-BS1	
		1HC1368-MS1	1HC1428-01
200.7		1HC1368-MS1	1HC1428-01
EPA 200.7, Rv. 4.4 (1994)		1HC1368-MSD1	1HC1428-01
200.7		1HC1368-MSD1	1HC1428-01
EPA 200.7, Rv. 4.4 (1994)		1HC1368-PS1	1HC1428-01
200.7		1HC1368-PS1	1HC1428-01
		1HC1526-01	Well #1
EPA 200.7, Rv. 4.4 (1994)		1HC1526-01	Well #1

Method	Batch	Laboratory ID	Client / Source ID
EPA 624.1	1HC1543	1HC1543-BS1	
		1HC1543-BSD1	
		1HC1543-BLK1	
		1HC1526-01	Well #1
		1HC1543-MS1	1HC1329-01
		1HC1543-MSD1	1HC1329-01

Method	Batch	Laboratory ID	Client / Source ID
TIMBERLINE	1HD0020	1HD0020-BLK1	
		1HD0020-BS1	
		1HD0020-MS1	1HC1356-02
		1HD0020-MSD1	1HC1356-02
		1HC1526-01	Well #1

Method	Batch	Laboratory ID	Client / Source ID
EPA 420.1	1HD0125	1HD0125-BS1	
		1HD0125-BLK1	
		1HD0125-MSD1	1HC1416-01

EPA 420.1	1HD0125	1HC1526-01	Well #1
		1HD0125-MS1	1HC1416-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 9020B	1HD0192	1HD0192-SRM1	
		1HD0192-BS1	
		1HD0192-SRM2	
		1HD0192-SRM3	
		1HD0192-SRM4	
		1HC1526-01	Well #1
		1HD0192-BS2	
		1HD0192-BLK1	

Method	Batch	Laboratory ID	Client / Source ID
EPA 9056A	1HD0226	1HD0226-BLK1	
		1HD0226-BLK1	
		1HD0226-MRL1	
		1HD0226-MRL1	
		1HD0226-BS1	
		1HD0226-BS1	
		1HD0226-BSD1	
		1HD0226-BSD1	
		1HD0226-BLK2	
		1HD0226-BLK2	
		1HD0226-MS1	1HC1878-02
		1HD0226-MS1	1HC1878-02
		1HD0226-MSD1	1HC1878-02
		1HD0226-MSD1	1HC1878-02
		1HC1526-01	Well #1
		1HC1526-01	Well #1
		1HD0226-BLK3	
		1HD0226-BLK3	
		1HD0226-BS2	
		1HD0226-BS2	
		1HD0226-BSD2	
		1HD0226-BSD2	
		1HD0226-MS2	1HC1394-02
		1HD0226-MS2	1HC1394-02
		1HD0226-MSD2	1HC1394-02
		1HD0226-MSD2	1HC1394-02

Method	Batch	Laboratory ID	Client / Source ID
EPA 9050A	1HD0249	1HC1526-01	Well #1
		1HD0249-SRM1	

EPA 9050A | 1HD0249 | 1HD0249-DUP1 | 1HC1416-01
1HD0249-BLK1

Batch Quality Control Summary: Microbac Laboratories, Inc., Newton

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1543 - EPA 5030B - EPA 624.1										
Blank (1HC1543-BLK1)			Prepared: 03/27/24 00:00 Analyzed: 03/27/24 11:10							
2-Butanone (MEK)	<10.0	10.0	ug/L							
Chloroform	<1.0	1.0	ug/L							
Benzene	<1.0	1.0	ug/L							
Surrogate: Dibromofluoromethane	*56.7*		ug/L	*50.2*		*113*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*60.6*		ug/L	*50.1*		*121*	*66-134*			
Surrogate: Toluene-d8	*42.4*		ug/L	*50.4*		*84.2*	*91-113*			*ZZZS-GC*
Surrogate: 4-Bromofluorobenzene	*53.0*		ug/L	*50.1*		*106*	*83-112*			
LCS (1HC1543-BS1)			Prepared: 03/27/24 00:00 Analyzed: 03/27/24 10:02							
2-Butanone (MEK)	88.52	10.0	ug/L	103		85.7	44-158			
Chloroform	47.60	1.0	ug/L	50.0		95.2	76-132			
Benzene	48.42	1.0	ug/L	50.0		96.8	77-130			
Surrogate: Dibromofluoromethane	*47.6*		ug/L	*50.2*		*94.9*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*47.7*		ug/L	*50.1*		*95.2*	*66-134*			
Surrogate: Toluene-d8	*49.9*		ug/L	*50.4*		*99.0*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*49.9*		ug/L	*50.1*		*99.5*	*83-112*			
LCS Dup (1HC1543-BSD1)			Prepared: 03/27/24 00:00 Analyzed: 03/27/24 10:24							
2-Butanone (MEK)	61.42	10.0	ug/L	103		59.5	44-158	36.1	25	ZZZQR-02
Chloroform	46.67	1.0	ug/L	50.0		93.3	76-132	1.97	26	
Benzene	47.26	1.0	ug/L	50.0		94.5	77-130	2.42	27	
Surrogate: Dibromofluoromethane	*47.9*		ug/L	*50.2*		*95.4*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*47.3*		ug/L	*50.1*		*94.4*	*66-134*			
Surrogate: Toluene-d8	*49.9*		ug/L	*50.4*		*99.0*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*50.0*		ug/L	*50.1*		*99.6*	*83-112*			
Matrix Spike (1HC1543-MS1)	**Source: 1HC1329-01**		Prepared: 03/27/24 00:00 Analyzed: 03/27/24 18:14							
2-Butanone (MEK)	1092	100	ug/L	1030	ND	106	48-169			
Chloroform	456.3	10.0	ug/L	500	ND	91.3	75-133			
Benzene	480.8	10.0	ug/L	500	ND	96.2	79-128			
Surrogate: Dibromofluoromethane	*462*		ug/L	*502*		*92.0*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*468*		ug/L	*501*		*93.6*	*66-134*			
Surrogate: Toluene-d8	*498*		ug/L	*504*		*98.8*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*502*		ug/L	*501*		*100*	*83-112*			
Matrix Spike Dup (1HC1543-MSD1)	**Source: 1HC1329-01**		Prepared: 03/27/24 00:00 Analyzed: 03/27/24 18:37							
2-Butanone (MEK)	723.4	100	ug/L	1030	ND	70.0	48-169	40.6	17	ZZZQR-02
Chloroform	443.9	10.0	ug/L	500	ND	88.8	75-133	2.75	16	

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1543 - EPA 5030B - EPA 624.1										
Matrix Spike Dup (1HC1543-MSD1)	**Source: 1HC1329-01**		Prepared: 03/27/24 00:00 Analyzed: 03/27/24 18:37							
Benzene	465.9	10.0	ug/L	500	ND	93.2	79-128	3.15	12	
Surrogate: Dibromofluoromethane	*463*		ug/L	*502*		*92.3*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*463*		ug/L	*501*		*92.4*	*66-134*			
Surrogate: Toluene-d8	*498*		ug/L	*504*		*98.8*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*498*		ug/L	*501*		*99.2*	*83-112*			

Determination of Base/Neutral Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1357 - EPA 625 Base Neutral - EPA 625.1										
Blank (1HC1357-BLK1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 10:59							
Pyridine	<10	10	ug/L							
LCS (1HC1357-BS1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:24							
Pyridine	<10	10	ug/L	25.0		19.2	13-127			
LCS Dup (1HC1357-BSD1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:48							
Pyridine	<10	10	ug/L	25.0			13-127		30	ZZZQS-03

Determination of Acid Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1357 - EPA 625 Base Neutral - EPA 625.1										
Blank (1HC1357-BLK1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 10:59							
2-Methylphenol (o-Cresol)	<10.0	10.0	ug/L							
(3 & 4)-Methylphenol	<10.0	10.0	ug/L							
Surrogate: 2-Fluorophenol	*24.9*		ug/L	*29.6*		*84.0*	*19-139*			
Surrogate: Phenol-d6	*25.7*		ug/L	*30.5*		*84.3*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*25.3*		ug/L	*29.7*		*85.2*	*21-151*			
LCS (1HC1357-BS1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:24							
2-Methylphenol (o-Cresol)	15.0	10.0	ug/L	25.0		59.8	50-138			
(3 & 4)-Methylphenol	14.6	10.0	ug/L	25.0		58.6	56-130			
Surrogate: 2-Fluorophenol	*24.0*		ug/L	*29.6*		*81.2*	*19-139*			
Surrogate: Phenol-d6	*24.5*		ug/L	*30.5*		*80.4*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*26.4*		ug/L	*29.7*		*88.6*	*21-151*			
LCS Dup (1HC1357-BSD1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:48							
2-Methylphenol (o-Cresol)	16.0	10.0	ug/L	25.0		64.1	50-138	6.97	24	
(3 & 4)-Methylphenol	16.1	10.0	ug/L	25.0		64.3	56-130	9.31	26	
Surrogate: 2-Fluorophenol	*21.9*		ug/L	*29.6*		*73.9*	*19-139*			

Determination of Acid Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1357 - EPA 625 Base Neutral - EPA 625.1										
LCS Dup (1HC1357-BSD1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:48							
Surrogate: Phenol-d6	*23.0*		ug/L	*30.5*		*75.3*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*26.6*		ug/L	*29.7*		*89.6*	*21-151*			

Determination of Carbonyl Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1339 - EPA 8315 Aldehydes - EPA 8315										
Blank (1HC1339-BLK1)			Prepared: 03/25/24 11:42 Analyzed: 03/26/24 15:21							
Formaldehyde	<10.0	10.0	ug/L							
LCS (1HC1339-BS1)			Prepared: 03/25/24 11:42 Analyzed: 03/26/24 15:02							
Formaldehyde	472.5	10.0	ug/L	500		94.5	61-142			
Matrix Spike (1HC1339-MS1)	**Source: 1HC1526-01**		Prepared: 03/25/24 11:42 Analyzed: 03/26/24 16:57							
Formaldehyde	463.5	10.0	ug/L	500	ND	92.7	48-148			
Matrix Spike Dup (1HC1339-MSD1)	**Source: 1HC1526-01**		Prepared: 03/25/24 11:42 Analyzed: 03/26/24 17:16							
Formaldehyde	431.7	10.0	ug/L	500	ND	86.3	48-148	7.10	30	

Determination of Conventional Chemistry Parameters	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1310 - Wet Chem Preparation - USGS I-1750-85										
Blank (1HC1310-BLK1)			Prepared: 03/25/24 08:24 Analyzed: 03/25/24 11:55							
Total Dissolved Solids (TDS)	<5	5	mg/L							
LCS (1HC1310-BS1)			Prepared: 03/25/24 08:24 Analyzed: 03/25/24 11:55							
Total Dissolved Solids (TDS)	97	5	mg/L	100		97.4	71-114			
Duplicate (1HC1310-DUP1)	**Source: 1HC1466-01**		Prepared: 03/25/24 08:24 Analyzed: 03/25/24 11:55							
Total Dissolved Solids (TDS)	1780	5	mg/L		1820			2.11	30	
Batch 1HC1323 - Wet Chem Preparation - USGS I-3765-85										
Blank (1HC1323-BLK1)			Prepared: 03/25/24 09:05 Analyzed: 03/25/24 14:15							
Total Suspended Solids (TSS)	<1	1	mg/L							
LCS (1HC1323-BS1)			Prepared: 03/25/24 09:05 Analyzed: 03/25/24 14:15							
Total Suspended Solids (TSS)	14.1	1	mg/L	15.0		94.0	74-114			
Duplicate (1HC1323-DUP1)	**Source: 1HC1247-01**		Prepared: 03/25/24 09:05 Analyzed: 03/25/24 14:15							
Total Suspended Solids (TSS)	130	1	mg/L		117			10.8	30	
Batch 1HC1337 - Wet Chem Preparation - EPA 410.4, Rv. 2 (1993)										
Blank (1HC1337-BLK1)			Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							

Determination of Conventional Chemistry Parameters	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1337 - Wet Chem Preparation - EPA 410.4, Rv. 2 (1993)										
Blank (1HC1337-BLK1)			Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	<54	54	mg/L							
LCS (1HC1337-BS1)			Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	159	54	mg/L	150		106	90-110			
Matrix Spike (1HC1337-MS1)		**Source: 1HC1395-01**	Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	372	108	mg/L	300	ND	124	90-110			ZZZQM-14
Matrix Spike Dup (1HC1337-MSD1)		**Source: 1HC1395-01**	Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	345	108	mg/L	300	ND	115	90-110	7.54	10	ZZZQM-14
Batch 1HD0020 - General Prep HPLC/IC - TIMBERLINE										
Blank (1HD0020-BLK1)			Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:48							
Nitrogen, Ammonia	<0.10	0.10	mg/L							
LCS (1HD0020-BS1)			Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:50							
Nitrogen, Ammonia	5.13	0.10	mg/L	5.00		103	90-114			
Matrix Spike (1HD0020-MS1)		**Source: 1HC1356-02**	Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:51							
Nitrogen, Ammonia	5.82	0.10	mg/L	5.00	0.719	102	84-115			
Matrix Spike Dup (1HD0020-MSD1)		**Source: 1HC1356-02**	Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:53							
Nitrogen, Ammonia	5.82	0.10	mg/L	5.00	0.719	102	84-115	0.0128	20	
Batch 1HD0125 - Wet Chem Preparation - EPA 420.1										
Blank (1HD0125-BLK1)			Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	<0.035	0.035	mg/L							
LCS (1HD0125-BS1)			Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	0.419	0.035	mg/L	0.400		105	62-110			
Matrix Spike (1HD0125-MS1)		**Source: 1HC1416-01**	Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	0.268	0.035	mg/L	0.400	0.0738	48.7	57-124			ZZZQM-07
Matrix Spike Dup (1HD0125-MSD1)		**Source: 1HC1416-01**	Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	0.398	0.035	mg/L	0.400	0.0738	81.1	57-124	38.9	21	ZZZQM-07
Batch 1HD0192 - TOX/TX/EOX - EPA 9020B										
Blank (1HD0192-BLK1)			Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	<0.010	0.010	mg/L							
LCS (1HD0192-BS1)			Prepared & Analyzed: 04/01/24 00:00							
Total Organic Halogens (TOX)	0.1020	0.010	mg/L	0.121		84.6	76-114			
LCS (1HD0192-BS2)			Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							

Determination of Conventional Chemistry Parameters	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0192 - TOX/TX/EOX - EPA 9020B											
LCS (1HD0192-BS2)				Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1476		0.010	mg/L	0.121		122	76-114			ZZZQM-21
Reference (1HD0192-SRM1)				Prepared & Analyzed: 04/01/24 00:00							
Total Organic Halogens (TOX)	0.1031		0.010	mg/L	0.111		92.8	90-110			
Reference (1HD0192-SRM2)				Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1150		0.010	mg/L	0.111		104	90-110			
Reference (1HD0192-SRM3)				Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1130		0.010	mg/L	0.111		102	90-110			
Reference (1HD0192-SRM4)				Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1140		0.010	mg/L	0.111		103	90-110			
Batch 1HD0249 - Wet Chem Preparation - EPA 9050A											
Blank (1HD0249-BLK1)				Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							
Conductivity	<2.0		2.0	uS/cm							
Duplicate (1HD0249-DUP1)		**Source: 1HC1416-01**		Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							
Conductivity	620		2.0	uS/cm		621			0.0161	10	
Reference (1HD0249-SRM1)				Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							
Conductivity	248		2.0	uS/cm	250		99.4	90-110			

Determination of Inorganic Anions	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0226 - General Prep HPLC/IC - EPA 9056A											
Blank (1HD0226-BLK1)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 09:59							
Fluoride	<0.1		0.1	mg/L							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1HD0226-BLK2)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 14:14							
Fluoride	<0.1		0.1	mg/L							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1HD0226-BLK3)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 19:22							
Fluoride	<0.1		0.1	mg/L							
Sulfate	<0.4	0.4	1.0	mg/L							
LCS (1HD0226-BS1)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 10:36							
Fluoride	1.08		0.1	mg/L	1.17		92.4	80-120			
Sulfate	33.47	0.4	1.0	mg/L	33.8		98.9	80-120			
LCS (1HD0226-BS2)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 20:17							
Fluoride	1.08		0.1	mg/L	1.17		91.7	80-120			
Sulfate	33.27	0.4	1.0	mg/L	33.8		98.3	80-120			

Determination of Inorganic Anions	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0226 - General Prep HPLC/IC - EPA 9056A											
LCS Dup (1HD0226-BSD1)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 10:54							
Fluoride	1.08		0.1	mg/L	1.17		91.8	80-120	0.648	10	
Sulfate	33.40	0.4	1.0	mg/L	33.8		98.7	80-120	0.206	10	
LCS Dup (1HD0226-BSD2)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 20:35							
Fluoride	1.08		0.1	mg/L	1.17		92.0	80-120	0.278	10	
Sulfate	33.57	0.4	1.0	mg/L	33.8		99.2	80-120	0.895	10	
Matrix Spike (1HD0226-MS1)		**Source: 1HC1878-02**		Prepared: 04/02/24 00:00 Analyzed: 04/02/24 17:15							
Fluoride	12.89		1.0	mg/L	11.7	0.63	105	77-121			
Sulfate	406.9	3.6	10.0	mg/L	338	48.39	106	87-113			
Matrix Spike (1HD0226-MS2)		**Source: 1HC1394-02**		Prepared: 04/02/24 00:00 Analyzed: 04/02/24 23:55							
Fluoride	13.07		1.0	mg/L	11.7	1.04	103	77-121			
Sulfate	736.6	3.6	10.0	mg/L	338	389.4	103	87-113			
Matrix Spike Dup (1HD0226-MSD1)		**Source: 1HC1878-02**		Prepared: 04/02/24 00:00 Analyzed: 04/02/24 17:33							
Fluoride	13.16		1.0	mg/L	11.7	0.63	107	77-121	2.07	10	
Sulfate	408.1	3.6	10.0	mg/L	338	48.39	106	87-113	0.297	10	
Matrix Spike Dup (1HD0226-MSD2)		**Source: 1HC1394-02**		Prepared: 04/02/24 00:00 Analyzed: 04/03/24 00:13							
Fluoride	13.18		1.0	mg/L	11.7	1.04	103	77-121	0.838	10	
Sulfate	738.7	3.6	10.0	mg/L	338	389.4	103	87-113	0.293	10	

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1285 - EPA 7470A Hg Water - SM 3112B											
Blank (1HC1285-BLK1)				Prepared: 03/22/24 15:03 Analyzed: 03/26/24 14:00							
Mercury, total	<0.00013	0.00013	0.00020	mg/L							
LCS (1HC1285-BS1)				Prepared: 03/22/24 15:03 Analyzed: 03/26/24 14:02							
Mercury, total	0.00214	0.00013	0.00020	mg/L	0.00250		85.8	87-118			ZZZQS-03
Matrix Spike (1HC1285-MS1)		**Source: 1HC1142-01**		Prepared: 03/22/24 15:03 Analyzed: 03/26/24 14:07							
Mercury, total	0.00236	0.00013	0.00020	mg/L	0.00250	ND	94.5	62-131			
Matrix Spike Dup (1HC1285-MSD1)		**Source: 1HC1142-01**		Prepared: 03/22/24 15:03 Analyzed: 03/26/24 14:09							
Mercury, total	0.00242	0.00013	0.00020	mg/L	0.00250	ND	96.8	62-131	2.47	17	
Batch 1HC1319 - EPA 200.2 Total ICP-MS - EPA 200.8, Rv. 5.4 (1994)											
Blank (1HC1319-BLK1)				Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:13							
Antimony, total	<0.0008	0.0008	0.0020	mg/L							
Arsenic, total	<0.0006	0.0006	0.0020	mg/L							
Barium, total	<0.0002	0.0002	0.0020	mg/L							
Beryllium, total	<0.0001	0.0001	0.0020	mg/L							
Cadmium, total	<0.00008	0.00008	0.0002	mg/L							
Chromium, total	<0.0007	0.0007	0.0008	mg/L							
Cobalt, total	<0.0005	0.0005	0.0020	mg/L							

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1319 - EPA 200.2 Total ICP-MS - EPA 200.8, Rv. 5.4 (1994)											
Blank (1HC1319-BLK1)				Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:13							
Copper, total	0.0008	0.0008	0.0020	mg/L							
Lead, total	<0.0005	0.0005	0.0008	mg/L							
Manganese, total	<0.0017	0.0017	0.0040	mg/L							
Molybdenum, total	<0.0006	0.0006	0.0020	mg/L							
Nickel, total	<0.0007	0.0007	0.0040	mg/L							
Selenium, total	<0.0011	0.0011	0.0040	mg/L							
Silver, total	<0.0015	0.0015	0.0020	mg/L							
Thallium, total	<0.0004	0.0004	0.0008	mg/L							
Vanadium, total	<0.0043	0.0043	0.0080	mg/L							
Zinc, total	<0.0174	0.0174	0.0200	mg/L							
LCS (1HC1319-BS1)				Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:20							
Antimony, total	0.0928	0.0008	0.0020	mg/L	0.100		92.8	85-115			
Arsenic, total	0.0943	0.0006	0.0020	mg/L	0.100		94.3	85-115			
Barium, total	0.103	0.0002	0.0020	mg/L	0.100		103	85-115			
Beryllium, total	0.0906	0.0001	0.0020	mg/L	0.100		90.6	85-115			
Cadmium, total	0.0931	0.00008	0.0002	mg/L	0.100		93.1	85-115			
Chromium, total	0.0915	0.0007	0.0008	mg/L	0.100		91.5	85-115			
Cobalt, total	0.101	0.0005	0.0020	mg/L	0.100		101	85-115			
Copper, total	0.0989	0.0008	0.0020	mg/L	0.100		98.9	85-115			
Lead, total	0.0975	0.0005	0.0008	mg/L	0.100		97.5	85-115			
Manganese, total	0.0877	0.0017	0.0040	mg/L	0.100		87.7	85-115			
Molybdenum, total	0.0958	0.0006	0.0020	mg/L	0.100		95.8	85-115			
Nickel, total	0.0938	0.0007	0.0040	mg/L	0.100		93.8	85-115			
Selenium, total	0.0935	0.0011	0.0040	mg/L	0.100		93.5	85-115			
Silver, total	0.0976	0.0015	0.0020	mg/L	0.100		97.6	85-115			
Thallium, total	0.0982	0.0004	0.0008	mg/L	0.100		98.2	85-115			
Vanadium, total	0.0955	0.0043	0.0080	mg/L	0.100		95.5	85-115			
Zinc, total	0.0956	0.0174	0.0200	mg/L	0.100		95.6	85-115			
Matrix Spike (1HC1319-MS1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:32							
Antimony, total	0.0959	0.0008	0.0020	mg/L	0.100	ND	95.9	70-130			
Arsenic, total	0.0967	0.0006	0.0020	mg/L	0.100	0.0015	95.2	70-130			
Barium, total	0.185	0.0002	0.0020	mg/L	0.100	0.0817	104	70-130			
Beryllium, total	0.0900	0.0001	0.0020	mg/L	0.100	ND	90.0	70-130			
Cadmium, total	0.0916	0.00008	0.0002	mg/L	0.100	ND	91.6	70-130			
Chromium, total	0.0910	0.0007	0.0008	mg/L	0.100	0.0009	90.1	70-130			
Cobalt, total	0.100	0.0005	0.0020	mg/L	0.100	ND	100	70-130			
Copper, total	0.104	0.0008	0.0020	mg/L	0.100	0.0109	93.2	70-130			
Lead, total	0.0911	0.0005	0.0008	mg/L	0.100	ND	91.1	70-130			
Manganese, total	0.0995	0.0017	0.0040	mg/L	0.100	0.0154	84.2	70-130			
Molybdenum, total	0.105	0.0006	0.0020	mg/L	0.100	0.0032	102	70-130			
Nickel, total	0.0930	0.0007	0.0040	mg/L	0.100	0.0022	90.9	70-130			
Selenium, total	0.0908	0.0011	0.0040	mg/L	0.100	0.0012	89.6	70-130			
Silver, total	0.0953	0.0015	0.0020	mg/L	0.100	ND	95.3	70-130			

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1319 - EPA 200.2 Total ICP-MS - EPA 200.8, Rv. 5.4 (1994)											
Matrix Spike (1HC1319-MS1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:32							
Thallium, total	0.0928	0.0004	0.0008	mg/L	0.100	ND	92.8	70-130			
Vanadium, total	0.0968	0.0043	0.0080	mg/L	0.100	ND	96.8	70-130			
Zinc, total	0.112	0.0174	0.0200	mg/L	0.100	0.0221	90.4	70-130			
Matrix Spike Dup (1HC1319-MSD1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:38							
Antimony, total	0.0950	0.0008	0.0020	mg/L	0.100	ND	95.0	70-130	0.998	20	
Arsenic, total	0.0953	0.0006	0.0020	mg/L	0.100	0.0015	93.9	70-130	1.42	20	
Barium, total	0.186	0.0002	0.0020	mg/L	0.100	0.0817	104	70-130	0.105	20	
Beryllium, total	0.0893	0.0001	0.0020	mg/L	0.100	ND	89.3	70-130	0.797	20	
Cadmium, total	0.0913	0.00008	0.0002	mg/L	0.100	ND	91.3	70-130	0.343	20	
Chromium, total	0.0904	0.0007	0.0008	mg/L	0.100	0.0009	89.5	70-130	0.693	20	
Cobalt, total	0.0998	0.0005	0.0020	mg/L	0.100	ND	99.8	70-130	0.662	20	
Copper, total	0.105	0.0008	0.0020	mg/L	0.100	0.0109	93.7	70-130	0.434	20	
Lead, total	0.0915	0.0005	0.0008	mg/L	0.100	ND	91.5	70-130	0.401	20	
Manganese, total	0.0991	0.0017	0.0040	mg/L	0.100	0.0154	83.8	70-130	0.398	20	
Molybdenum, total	0.105	0.0006	0.0020	mg/L	0.100	0.0032	102	70-130	0.300	20	
Nickel, total	0.0922	0.0007	0.0040	mg/L	0.100	0.0022	90.0	70-130	0.877	20	
Selenium, total	0.0938	0.0011	0.0040	mg/L	0.100	0.0012	92.6	70-130	3.25	20	
Silver, total	0.0956	0.0015	0.0020	mg/L	0.100	ND	95.6	70-130	0.350	20	
Thallium, total	0.0936	0.0004	0.0008	mg/L	0.100	ND	93.6	70-130	0.795	20	
Vanadium, total	0.0960	0.0043	0.0080	mg/L	0.100	ND	96.0	70-130	0.869	20	
Zinc, total	0.112	0.0174	0.0200	mg/L	0.100	0.0221	89.8	70-130	0.525	20	
Post Spike (1HC1319-PS1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:44							
Antimony, total	0.0812			mg/L	0.0800	0.0006	101	70-130			
Arsenic, total	0.0809			mg/L	0.0800	0.0014	99.4	70-130			
Barium, total	0.167			mg/L	0.0800	0.0801	109	70-130			
Beryllium, total	0.0751			mg/L	0.0800	0.000006	93.9	70-130			
Cadmium, total	0.0768			mg/L	0.0800	0.00001	96.0	70-130			
Chromium, total	0.0763			mg/L	0.0800	0.0008	94.4	70-130			
Cobalt, total	0.0856			mg/L	0.0800	0.0004	106	70-130			
Copper, total	0.0885			mg/L	0.0800	0.0107	97.3	70-130			
Lead, total	0.0790			mg/L	0.0800	0.0004	98.3	70-130			
Manganese, total	0.0857			mg/L	0.0800	0.0150	88.3	70-130			
Molybdenum, total	0.0891			mg/L	0.0800	0.0031	107	70-130			
Nickel, total	0.0792			mg/L	0.0800	0.0021	96.4	70-130			
Selenium, total	0.0755			mg/L	0.0800	0.0011	92.9	70-130			
Silver, total	0.0809			mg/L	0.0800	0.0001	101	70-130			
Thallium, total	0.0806			mg/L	0.0800	0.0001	101	70-130			
Vanadium, total	0.0843			mg/L	0.0800	0.0033	101	70-130			
Zinc, total	0.0965			mg/L	0.0800	0.0217	93.6	70-130			
Batch 1HC1368 - EPA 200.2 Total ICP-OES (200.7) - EPA 200.7, Rv. 4.4 (1994)											
Blank (1HC1368-BLK1)				Prepared: 03/25/24 15:29 Analyzed: 03/26/24 19:44							
Aluminum, total	<0.050		0.050	mg/L							

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1368 - EPA 200.2 Total ICP-OES (200.7) - EPA 200.7, Rv. 4.4 (1994)											
Blank (1HC1368-BLK1)				Prepared: 03/25/24 15:29 Analyzed: 03/26/24 19:44							
Boron, total	<0.056	0.056	0.100	mg/L							
Iron, total	<0.047	0.047	0.100	mg/L							
Magnesium, total	<0.06	0.06	0.10	mg/L							
LCS (1HC1368-BS1)				Prepared: 03/25/24 15:29 Analyzed: 03/26/24 19:49							
Aluminum, total	2.22		0.050	mg/L	2.20		101	85-115			
Boron, total	0.202	0.056	0.100	mg/L	0.200		101	85-115			
Iron, total	2.37	0.047	0.100	mg/L	2.20		108	85-115			
Magnesium, total	2.29	0.06	0.10	mg/L	2.20		104	85-115			
Matrix Spike (1HC1368-MS1)		**Source: 1HC1428-01**		Prepared: 03/25/24 15:29 Analyzed: 03/26/24 20:06							
Aluminum, total	4.19		0.050	mg/L	2.20	1.34	129	70-130			
Boron, total	6.13	0.056	0.100	mg/L	0.200	5.43	350	70-130			ZZZQM-4X
Iron, total	43.7	0.047	0.100	mg/L	2.20	38.6	235	70-130			ZZZQM-4X
Magnesium, total	117	0.06	0.10	mg/L	2.20	108	423	70-130			ZZZQM-4X
Matrix Spike Dup (1HC1368-MSD1)		**Source: 1HC1428-01**		Prepared: 03/25/24 15:29 Analyzed: 03/26/24 20:27							
Aluminum, total	4.38		0.050	mg/L	2.20	1.34	138	70-130	4.46	20	ZZZQM-07
Boron, total	6.12	0.056	0.100	mg/L	0.200	5.43	346	70-130	0.131	20	ZZZQM-4X
Iron, total	44.2	0.047	0.100	mg/L	2.20	38.6	254	70-130	0.926	20	ZZZQM-4X
Magnesium, total	120	0.06	0.10	mg/L	2.20	108	546	70-130	2.28	20	ZZZQM-4X
Post Spike (1HC1368-PS1)		**Source: 1HC1428-01**		Prepared: 03/25/24 15:29 Analyzed: 03/26/24 20:37							
Aluminum, total	10.5			mg/L	8.80	1.34	104	85-115			
Boron, total	6.13			mg/L	0.800	5.43	87.6	85-115			
Iron, total	47.8			mg/L	8.80	38.6	104	85-115			
Magnesium, total	123			mg/L	8.80	108	172	85-115			ZZZPS-4X

Definitions

H1:	Sample was received past holding time.
MDL:	Minimum Detection Limit
RL:	Reporting Limit
RPD:	Relative Percent Difference
TX2:	The RPD value for the sample duplicates are outside of acceptance limits due to matrix interference. The reported value is an average of all test measurements.
ZZZPS-4X:	The spike recovery was outside of QC acceptance limits for the Post Spike due to analyte concentration at 4 times or greater the spike concentration.
ZZZQM-07:	The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
ZZZQM-14:	The spike recovery was outside acceptance limits for the MS and/or MSD. However, all other QC was acceptable.
ZZZQM-21:	The recovery for the blank spike was outside the established laboratory control limits. The batch was accepted based upon the acceptable recovery of the CCV.
ZZZQM-4X:	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration.
ZZZQR-02:	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
ZZZQS-03:	The blank spike recovery was below established acceptance limits.
ZZZS-GC:	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.

Cooler Receipt Log

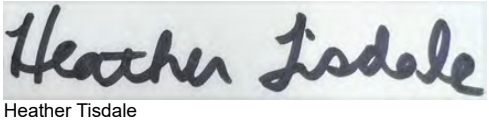
Cooler ID: Default Cooler Temp: 1.1ºC

Cooler Inspection Checklist

Custody Seals	No	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Confirmed	No
Received On Ice	Yes		

Report Comments

Reviewed and Approved By:



Heather Tisdale
Customer Relationship Specialist
heather.tisdale@microbac.com
02/03/25 13:49

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES
A Microbac Company
600 East 17th Street South
Newton, IA 50208
641-792-8451

1HC1526

BMC Aggregates L.C.
PM: Heather Tisdale

Printed: 3/11/2024 10:50:35A
www.keystonelabs.com

SITE INFORMATION
Sampler: Sherman Lundy
Project: GW Monitoring
Miller Creek Area

REPORT TO
Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

SPECIAL INSTRUCTIONS
None

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY
Work Order 1HC1526
Temperature 1.1
Turn-Cooler: No

- ☐ Custody Seal
- ☒ Containers Intact
- ☑ COC/Labels Agree
- ☐ Preservation Confirmed
- ☑ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
-001	Well #1	Water	GRAB	3/18/24	8AM	12	624@benzene, 624@chloroform, 624@mek, 624-base-analysis, 625@pyridine, 625-126, 8315@Formaldehyde, 9020-100, ag-t-200.8, al-t-200.7, as-t-200.8, ba-t-200.8, be-t-200.8, b-t-200.7, cd-t-200.8, cl-9056-w, cod-t-410.4, co-t-200.8, cr-t-200.8, cu-t-200.8, f-9056, fe-t-200.7, hg-t-3112-low, mg-t-200.7, mn-t-200.8, mo-t-200.8, nh3-timberline, ni-t-200.8, pb-t-200.8, phenol-t-420.1, sb-t-200.8, se-t-200.8, so4-9056-w, tds-i-1750-85, tl-t-200.8, tss-i-3765-85 + Electrical Conductivity	01

Sherman Lundy 3/19/24 3:09PM
Relinquished By Date/Time

Relinquished By Date/Time

Received By 3/21/24 10:50
Received By Date/Time

Received for Lab By 3-19-24 15
Received for Lab By Date/Time

Remarks:

Original - Lab Copy Yellow - Sampler Copy

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HC1541

Project Description

Miller Creek Area

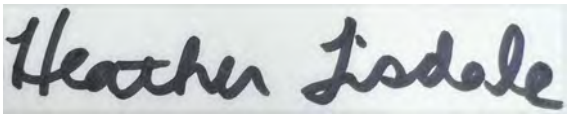
For:

Sherman Lundy

BMC Aggregates L.C.

101 BMC Drive

Elk Run Heights, IA 50707



Heather Tisdale

Customer Relationship Specialist

Friday, May 10, 2024

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc., Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

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Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HC1541

BMC Aggregates L.C.

Sherman Lundy
101 BMC Drive
Elk Run Heights, IA 50707

Project Name: Miller Creek Area

Project / PO Number: Sherman Lundy
Received: 03/21/2024
Reported: 05/10/2024

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
Well #2	1HC1541-01	Aqueous	GRAB		03/18/24 08:30	03/21/24 10:50

Analytical Testing Parameters

Client Sample ID:	Well #2		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HC1541-01	**Collection Date:**	03/18/2024 8:30

Determination of Volatile Organic Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030B/EPA 624									
2-Butanone (MEK)	<10.0	1.4	10.0	ug/L	1		03/27/24 0000	03/27/24 1511	CSM
Chloroform	<1.0	0.4	1.0	ug/L	1		03/27/24 0000	03/27/24 1511	CSM
Benzene	<1.0	0.3	1.0	ug/L	1		03/27/24 0000	03/27/24 1511	CSM
Surrogate: Dibromofluoromethane	92.0	Limit: 79-129		% Rec	1		03/27/24 0000	03/27/24 1511	CSM
Surrogate: 1,2-Dichloroethane-d4	96.9	Limit: 66-134		% Rec	1		03/27/24 0000	03/27/24 1511	CSM
Surrogate: Toluene-d8	97.5	Limit: 91-113		% Rec	1		03/27/24 0000	03/27/24 1511	CSM
Surrogate: 4-Bromofluorobenzene	98.1	Limit: 83-112		% Rec	1		03/27/24 0000	03/27/24 1511	CSM

Determination of Base/Neutral Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
Pyridine	<10	10	10	ug/L	1		03/25/24 1408	04/08/24 1302	EPP

Determination of Acid Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
2-Methylphenol (o-Cresol)	<10.0	2.6	10.0	ug/L	1		03/25/24 1408	04/08/24 1302	EPP
(3 & 4)-Methylphenol	<10.0	2.6	10.0	ug/L	1		03/25/24 1408	04/08/24 1302	EPP
Surrogate: 2-Fluorophenol	67.6	Limit: 19-139		% Rec	1		03/25/24 1408	04/08/24 1302	EPP
Surrogate: Phenol-d6	61.0	Limit: 14-154		% Rec	1		03/25/24 1408	04/08/24 1302	EPP
Surrogate: 2,4,6-Tribromophenol	76.6	Limit: 21-151		% Rec	1		03/25/24 1408	04/08/24 1302	EPP

Determination of Carbonyl Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 8315									
Formaldehyde	<10.0	10.0	10.0	ug/L	1	**I-05**	03/25/24 1142	03/26/24 1559	PDS

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 410.4									
COD, total	<54	24	54	mg/L	1		03/25/24 1138	03/26/24 1648	CHP
Method: EPA 420.1									
Phenols, total	**0.094**	0.024	0.035	mg/L	1		04/02/24 0947	04/03/24 1448	AKK
Method: EPA 9020									
Total Organic Halogens (TOX)	<0.010	0.006	0.010	mg/L	1	**TOX-3**	04/01/24 0000	04/02/24 0000	LNH
Method: EPA 9050									

CERTIFICATE OF ANALYSIS

1HC1541

Client Sample ID:	Well #2		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HC1541-01	**Collection Date:**	03/18/2024 8:30

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Conductivity	**811**	1.8	2.0	uS/cm	1		04/03/24 1441	04/03/24 1513	BSS
Method: TIMBERLINE									
Nitrogen, Ammonia	<0.10	0.08	0.10	mg/L	1		04/01/24 0908	04/01/24 1411	LJS
Method: USGS I-1750-85									
Total Dissolved Solids (TDS)	**565**	4	5	mg/L	1		03/25/24 0824	03/25/24 1155	MEAH
Method: USGS I-3765-85									
Total Suspended Solids (TSS)	**6**	0.9	1	mg/L	1		03/25/24 0905	03/25/24 1415	MEAH

Determination of Inorganic Anions	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 300.0									
Fluoride	**0.8**	0.02	0.1	mg/L	1		04/03/24 1450	04/04/24 1048	MID
Chloride	**13.3**	0.3	1.0	mg/L	1		04/03/24 1450	04/04/24 1048	MID
Method: EPA 9056									
Sulfate	**118**	1.8	5.0	mg/L	5			04/03/24 1450	MID

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 200.7									
Iron, total	**0.156**	0.047	0.100	mg/L	1		03/25/24 1529	03/26/24 2302	JAR
Magnesium, total	**31.5**	0.06	0.10	mg/L	1		03/25/24 1529	03/26/24 2302	JAR
Method: EPA 200.7									
Aluminum, total	<0.050	0.038	0.050	mg/L	1		03/25/24 1529	03/26/24 2302	JAR
Boron, total	<0.056	0.056	0.100	mg/L	1		03/25/24 1529	03/26/24 2302	JAR
Method: EPA 200.8									
Antimony, total	<0.0008	0.0008	0.0020	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Arsenic, total	**0.0011**	0.0006	0.0020	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Barium, total	**0.0995**	0.0002	0.0020	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Beryllium, total	<0.0001	0.0001	0.0020	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Cadmium, total	<0.00008	0.00008	0.0002	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Chromium, total	<0.0007	0.0007	0.0020	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Cobalt, total	<0.0005	0.0005	0.0020	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Copper, total	**0.0053**	0.0008	0.0020	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Lead, total	**0.0008**	0.0005	0.0008	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Manganese, total	**0.0138**	0.0017	0.0040	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Molybdenum, total	**0.0043**	0.0006	0.0020	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Nickel, total	**0.0021**	0.0007	0.0040	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Selenium, total	**0.0011**	0.0011	0.0040	mg/L	4		03/25/24 0850	03/26/24 0411	RVV

Client Sample ID:	Well #2		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HC1541-01	**Collection Date:**	03/18/2024 8:30

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Silver, total	<0.0015	0.0015	0.0020	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Thallium, total	<0.0004	0.0004	0.0008	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Vanadium, total	<0.0043	0.0043	0.0080	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Zinc, total	<0.0174	0.0174	0.0200	mg/L	4		03/25/24 0850	03/26/24 0411	RVV
Method: SM 3112B									
Mercury, total	<0.00013	0.00013	0.00020	mg/L	1		04/01/24 1539	04/02/24 1621	JAR

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
USGS I-1750-85	1HC1310	1HC1541-01	Well #2
		1HC1310-BS1	
		1HC1310-DUP1	1HC1466-01
		1HC1310-BLK1	

Method	Batch	Laboratory ID	Client / Source ID
EPA 200.8	1HC1319	1HC1319-BLK1	
		1HC1319-BS1	
		1HC1319-MS1	1HC1302-02
		1HC1319-MSD1	1HC1302-02
		1HC1319-PS1	1HC1302-02
		1HC1541-01	Well #2

Method	Batch	Laboratory ID	Client / Source ID
USGS I-3765-85	1HC1323	1HC1323-BLK1	
		1HC1323-DUP1	1HC1247-01
		1HC1323-BS1	
		1HC1541-01	Well #2

Method	Batch	Laboratory ID	Client / Source ID
EPA 410.4	1HC1337	1HC1541-01	Well #2
		1HC1337-BLK1	
		1HC1337-BS1	
		1HC1337-MS1	1HC1395-01
		1HC1337-MSD1	1HC1395-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 8315	1HC1339	1HC1339-BS1	
		1HC1339-BLK1	
		1HC1541-01	Well #2
		1HC1339-MS1	1HC1526-01
		1HC1339-MSD1	1HC1526-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 625	1HC1357	1HC1357-BLK1	
		1HC1357-BLK1	
		1HC1357-BS1	
		1HC1357-BS1	
		1HC1357-BSD1	
		1HC1357-BSD1	
		1HC1541-01	Well #2

EPA 625	1HC1357	1HC1541-01	Well #2

Method	Batch	Laboratory ID	Client / Source ID
200.7	1HC1368	1HC1368-BLK1	
EPA 200.7		1HC1368-BLK1	
		1HC1368-BS1	
200.7		1HC1368-BS1	
		1HC1368-MS1	1HC1428-01
EPA 200.7		1HC1368-MS1	1HC1428-01
		1HC1368-MSD1	1HC1428-01
200.7		1HC1368-MSD1	1HC1428-01
		1HC1368-PS1	1HC1428-01
EPA 200.7		1HC1368-PS1	1HC1428-01
200.7		1HC1541-01	Well #2
EPA 200.7		1HC1541-01	Well #2

Method	Batch	Laboratory ID	Client / Source ID
EPA 624	1HC1543	1HC1543-BS1	
		1HC1543-BSD1	
		1HC1543-BLK1	
		1HC1541-01	Well #2
		1HC1543-MS1	1HC1329-01
		1HC1543-MSD1	1HC1329-01

Method	Batch	Laboratory ID	Client / Source ID
TIMBERLINE	1HD0020	1HD0020-BLK1	
		1HD0020-BS1	
		1HD0020-MS1	1HC1356-02
		1HD0020-MSD1	1HC1356-02
		1HC1541-01	Well #2

Method	Batch	Laboratory ID	Client / Source ID
SM 3112B	1HD0077	1HD0077-BLK1	
		1HD0077-BS1	
		1HC1541-01	Well #2
		1HD0077-MS1	1HC1541-01
		1HD0077-MSD1	1HC1541-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 420.1	1HD0125	1HC1541-01	Well #2
		1HD0125-MSD1	1HC1416-01
		1HD0125-MS1	1HC1416-01
		1HD0125-BS1	
		1HD0125-BLK1	

Method	Batch	Laboratory ID	Client / Source ID
EPA 9020	1HD0192	1HD0192-BS1	
		1HD0192-SRM1	
		1HC1541-01	Well #2
		1HD0192-SRM4	
		1HD0192-SRM3	
		1HD0192-BS2	
		1HD0192-BLK1	
		1HD0192-SRM2	

Method	Batch	Laboratory ID	Client / Source ID
EPA 9050	1HD0249	1HC1541-01	Well #2
		1HD0249-SRM1	
		1HD0249-DUP1	1HC1416-01
		1HD0249-BLK1	

Method	Batch	Laboratory ID	Client / Source ID
EPA 9056	1HD0332	1HD0332-BLK1	
300.0		1HD0332-BLK1	
		1HD0332-MRL1	
EPA 9056		1HD0332-MRL1	
300.0		1HD0332-BS1	
EPA 9056		1HD0332-BS1	
		1HD0332-BSD1	
300.0		1HD0332-BSD1	
EPA 9056		1HC1541-01	Well #2
		1HD0332-BLK2	
300.0		1HD0332-BLK2	
EPA 9056		1HD0332-BLK3	
300.0		1HD0332-BLK3	
EPA 9056		1HD0332-BLK4	
300.0		1HD0332-BLK4	
		1HD0332-BS2	
EPA 9056		1HD0332-BS2	
300.0		1HD0332-BSD2	
EPA 9056		1HD0332-BSD2	
300.0		1HD0332-MS1	1HC1595-01
EPA 9056		1HD0332-MS1	1HC1595-01
300.0		1HD0332-MSD1	1HC1595-01
EPA 9056		1HD0332-MSD1	1HC1595-01
		1HD0332-MS2	1HC1434-01
300.0		1HD0332-MS2	1HC1434-01
		1HD0332-MSD2	1HC1434-01

EPA 9056	1HD0332	1HD0332-MSD2	1HC1434-01
300.0		1HC1541-01	Well #2

Batch Quality Control Summary: Microbac Laboratories, Inc., Newton

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1543 - EPA 5030B - EPA 624										
Blank (1HC1543-BLK1)			Prepared: 03/27/24 00:00 Analyzed: 03/27/24 11:10							
2-Butanone (MEK)	<10.0	10.0	ug/L							
Chloroform	<1.0	1.0	ug/L							
Benzene	<1.0	1.0	ug/L							
Surrogate: Dibromofluoromethane	*56.7*		ug/L	*50.2*		*113*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*60.6*		ug/L	*50.1*		*121*	*66-134*			
Surrogate: Toluene-d8	*42.4*		ug/L	*50.4*		*84.2*	*91-113*			*S-GC*
Surrogate: 4-Bromofluorobenzene	*53.0*		ug/L	*50.1*		*106*	*83-112*			
LCS (1HC1543-BS1)			Prepared: 03/27/24 00:00 Analyzed: 03/27/24 10:02							
2-Butanone (MEK)	88.52	10.0	ug/L	103		85.7	44-158			
Chloroform	47.60	1.0	ug/L	50.0		95.2	76-132			
Benzene	48.42	1.0	ug/L	50.0		96.8	77-130			
Surrogate: Dibromofluoromethane	*47.6*		ug/L	*50.2*		*94.9*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*47.7*		ug/L	*50.1*		*95.2*	*66-134*			
Surrogate: Toluene-d8	*49.9*		ug/L	*50.4*		*99.0*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*49.9*		ug/L	*50.1*		*99.5*	*83-112*			
LCS Dup (1HC1543-BSD1)			Prepared: 03/27/24 00:00 Analyzed: 03/27/24 10:24							
2-Butanone (MEK)	61.42	10.0	ug/L	103		59.5	44-158	36.1	25	QR-02
Chloroform	46.67	1.0	ug/L	50.0		93.3	76-132	1.97	26	
Benzene	47.26	1.0	ug/L	50.0		94.5	77-130	2.42	27	
Surrogate: Dibromofluoromethane	*47.9*		ug/L	*50.2*		*95.4*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*47.3*		ug/L	*50.1*		*94.4*	*66-134*			
Surrogate: Toluene-d8	*49.9*		ug/L	*50.4*		*99.0*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*50.0*		ug/L	*50.1*		*99.6*	*83-112*			
Matrix Spike (1HC1543-MS1)	**Source: 1HC1329-01**		Prepared: 03/27/24 00:00 Analyzed: 03/27/24 18:14							
2-Butanone (MEK)	1092	100	ug/L	1030	ND	106	48-169			
Chloroform	456.3	10.0	ug/L	500	ND	91.3	75-133			
Benzene	480.8	10.0	ug/L	500	ND	96.2	79-128			
Surrogate: Dibromofluoromethane	*462*		ug/L	*502*		*92.0*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*468*		ug/L	*501*		*93.6*	*66-134*			
Surrogate: Toluene-d8	*498*		ug/L	*504*		*98.8*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*502*		ug/L	*501*		*100*	*83-112*			
Matrix Spike Dup (1HC1543-MSD1)	**Source: 1HC1329-01**		Prepared: 03/27/24 00:00 Analyzed: 03/27/24 18:37							
2-Butanone (MEK)	723.4	100	ug/L	1030	ND	70.0	48-169	40.6	17	QR-02
Chloroform	443.9	10.0	ug/L	500	ND	88.8	75-133	2.75	16	
Benzene	465.9	10.0	ug/L	500	ND	93.2	79-128	3.15	12	

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1543 - EPA 5030B - EPA 624										
Matrix Spike Dup (1HC1543-MSD1)	**Source: 1HC1329-01**		Prepared: 03/27/24 00:00 Analyzed: 03/27/24 18:37							
Surrogate: Dibromofluoromethane	*463*		ug/L	*502*		*92.3*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*463*		ug/L	*501*		*92.4*	*66-134*			
Surrogate: Toluene-d8	*498*		ug/L	*504*		*98.8*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*498*		ug/L	*501*		*99.2*	*83-112*			

Determination of Base/Neutral Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1357 - EPA 625 Base Neutral - EPA 625										
Blank (1HC1357-BLK1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 10:59							
Pyridine	<10	10	ug/L							
LCS (1HC1357-BS1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:24							
Pyridine	<10	10	ug/L	25.0		19.2	13-127			
LCS Dup (1HC1357-BSD1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:48							
Pyridine	<10	10	ug/L	25.0			13-127		30	QS-03

Determination of Acid Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1357 - EPA 625 Base Neutral - EPA 625										
Blank (1HC1357-BLK1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 10:59							
2-Methylphenol (o-Cresol)	<10.0	10.0	ug/L							
(3 & 4)-Methylphenol	<10.0	10.0	ug/L							
Surrogate: 2-Fluorophenol	*24.9*		ug/L	*29.6*		*84.0*	*19-139*			
Surrogate: Phenol-d6	*25.7*		ug/L	*30.5*		*84.3*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*25.3*		ug/L	*29.7*		*85.2*	*21-151*			
LCS (1HC1357-BS1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:24							
2-Methylphenol (o-Cresol)	15.0	10.0	ug/L	25.0		59.8	50-138			
(3 & 4)-Methylphenol	14.6	10.0	ug/L	25.0		58.6	56-130			
Surrogate: 2-Fluorophenol	*24.0*		ug/L	*29.6*		*81.2*	*19-139*			
Surrogate: Phenol-d6	*24.5*		ug/L	*30.5*		*80.4*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*26.4*		ug/L	*29.7*		*88.6*	*21-151*			
LCS Dup (1HC1357-BSD1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:48							
2-Methylphenol (o-Cresol)	16.0	10.0	ug/L	25.0		64.1	50-138	6.97	24	
(3 & 4)-Methylphenol	16.1	10.0	ug/L	25.0		64.3	56-130	9.31	26	
Surrogate: 2-Fluorophenol	*21.9*		ug/L	*29.6*		*73.9*	*19-139*			
Surrogate: Phenol-d6	*23.0*		ug/L	*30.5*		*75.3*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*26.6*		ug/L	*29.7*		*89.6*	*21-151*			

Determination of Carbonyl Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1339 - EPA 8315 Aldehydes - EPA 8315										
Blank (1HC1339-BLK1)			Prepared: 03/25/24 11:42 Analyzed: 03/26/24 15:21							
Formaldehyde	<10.0	10.0	ug/L							
LCS (1HC1339-BS1)			Prepared: 03/25/24 11:42 Analyzed: 03/26/24 15:02							
Formaldehyde	472.5	10.0	ug/L	500		94.5	61-142			
Matrix Spike (1HC1339-MS1)		**Source: 1HC1526-01**	Prepared: 03/25/24 11:42 Analyzed: 03/26/24 16:57							
Formaldehyde	463.5	10.0	ug/L	500	ND	92.7	48-148			
Matrix Spike Dup (1HC1339-MSD1)		**Source: 1HC1526-01**	Prepared: 03/25/24 11:42 Analyzed: 03/26/24 17:16							
Formaldehyde	431.7	10.0	ug/L	500	ND	86.3	48-148	7.10	30	

Determination of Conventional Chemistry Parameters	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1310 - Wet Chem Preparation - USGS I-1750-85										
Blank (1HC1310-BLK1)			Prepared: 03/25/24 08:24 Analyzed: 03/25/24 11:55							
Total Dissolved Solids (TDS)	<5	5	mg/L							
LCS (1HC1310-BS1)			Prepared: 03/25/24 08:24 Analyzed: 03/25/24 11:55							
Total Dissolved Solids (TDS)	97	5	mg/L	100		97.4	71-114			
Duplicate (1HC1310-DUP1)		**Source: 1HC1466-01**	Prepared: 03/25/24 08:24 Analyzed: 03/25/24 11:55							
Total Dissolved Solids (TDS)	1780	5	mg/L		1820			2.11	30	
Batch 1HC1323 - Wet Chem Preparation - USGS I-3765-85										
Blank (1HC1323-BLK1)			Prepared: 03/25/24 09:05 Analyzed: 03/25/24 14:15							
Total Suspended Solids (TSS)	<1	1	mg/L							
LCS (1HC1323-BS1)			Prepared: 03/25/24 09:05 Analyzed: 03/25/24 14:15							
Total Suspended Solids (TSS)	14.1	1	mg/L	15.0		94.0	74-114			
Duplicate (1HC1323-DUP1)		**Source: 1HC1247-01**	Prepared: 03/25/24 09:05 Analyzed: 03/25/24 14:15							
Total Suspended Solids (TSS)	130	1	mg/L		117			10.8	30	
Batch 1HC1337 - Wet Chem Preparation - EPA 410.4										
Blank (1HC1337-BLK1)			Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	<54	54	mg/L							
LCS (1HC1337-BS1)			Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	159	54	mg/L	150		106	90-110			
Matrix Spike (1HC1337-MS1)		**Source: 1HC1395-01**	Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	372	108	mg/L	300	ND	124	90-110			QM-14
Matrix Spike Dup (1HC1337-MSD1)		**Source: 1HC1395-01**	Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	345	108	mg/L	300	ND	115	90-110	7.54	10	QM-14
Batch 1HD0020 - General Prep HPLC/IC - TIMBERLINE										

Determination of Conventional Chemistry Parameters	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (1HD0020-BLK1)				Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:48							
Nitrogen, Ammonia	<0.10		0.10	mg/L							
LCS (1HD0020-BS1)				Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:50							
Nitrogen, Ammonia	5.13		0.10	mg/L	5.00		103	90-114			
Matrix Spike (1HD0020-MS1)		**Source: 1HC1356-02**		Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:51							
Nitrogen, Ammonia	5.82		0.10	mg/L	5.00	0.719	102	84-115			
Matrix Spike Dup (1HD0020-MSD1)		**Source: 1HC1356-02**		Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:53							
Nitrogen, Ammonia	5.82		0.10	mg/L	5.00	0.719	102	84-115	0.0128	20	
Batch 1HD0125 - Wet Chem Preparation - EPA 420.1											
Blank (1HD0125-BLK1)				Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	<0.035		0.035	mg/L							
LCS (1HD0125-BS1)				Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	0.419		0.035	mg/L	0.400		105	62-110			
Matrix Spike (1HD0125-MS1)		**Source: 1HC1416-01**		Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	0.268		0.035	mg/L	0.400	0.0738	48.7	57-124			QM-07
Matrix Spike Dup (1HD0125-MSD1)		**Source: 1HC1416-01**		Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	0.398		0.035	mg/L	0.400	0.0738	81.1	57-124	38.9	21	QM-07
Batch 1HD0192 - TOX/TX/EOX - EPA 9020											
Blank (1HD0192-BLK1)				Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	<0.010		0.010	mg/L							
LCS (1HD0192-BS1)				Prepared & Analyzed: 04/01/24 00:00							
Total Organic Halogens (TOX)	0.1020		0.010	mg/L	0.121		84.6	76-114			
LCS (1HD0192-BS2)				Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1476		0.010	mg/L	0.121		122	76-114			QM-21
Reference (1HD0192-SRM1)				Prepared & Analyzed: 04/01/24 00:00							
Total Organic Halogens (TOX)	0.1031		0.010	mg/L	0.111		92.8	90-110			
Reference (1HD0192-SRM2)				Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1150		0.010	mg/L	0.111		104	90-110			
Reference (1HD0192-SRM3)				Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1130		0.010	mg/L	0.111		102	90-110			
Reference (1HD0192-SRM4)				Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1140		0.010	mg/L	0.111		103	90-110			
Batch 1HD0249 - Wet Chem Preparation - EPA 9050											
Blank (1HD0249-BLK1)				Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							
Conductivity	<2.0		2.0	uS/cm							
Duplicate (1HD0249-DUP1)		**Source: 1HC1416-01**		Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							

Determination of Conventional Chemistry Parameters	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0249 - Wet Chem Preparation - EPA 9050											
Duplicate (1HD0249-DUP1)		**Source: 1HC1416-01**		Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							
Conductivity	620		2.0	uS/cm		621			0.0161	10	
Reference (1HD0249-SRM1)				Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							
Conductivity	248		2.0	uS/cm	250		99.4	90-110			

Determination of Inorganic Anions	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0332 - General Prep HPLC/IC - 300.0											
Blank (1HD0332-BLK1)				Prepared & Analyzed: 04/03/24 10:00							
Fluoride	<0.1		0.1	mg/L							
Chloride	<1.0		1.0	mg/L							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1HD0332-BLK2)				Prepared & Analyzed: 04/03/24 15:27							
Fluoride	<0.1		0.1	mg/L							
Chloride	<1.0		1.0	mg/L							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1HD0332-BLK3)				Prepared & Analyzed: 04/03/24 19:23							
Fluoride	<0.1		0.1	mg/L							
Chloride	<1.0		1.0	mg/L							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1HD0332-BLK4)				Prepared & Analyzed: 04/03/24 23:55							
Fluoride	<0.1		0.1	mg/L							
Chloride	<1.0		1.0	mg/L							
Sulfate	<0.4	0.4	1.0	mg/L							
LCS (1HD0332-BS1)				Prepared & Analyzed: 04/03/24 10:36							
Fluoride	1.13		0.1	mg/L	1.17		96.6	90-110			
Chloride	15.06		1.0	mg/L	15.3		98.7	90-110			
Sulfate	33.53	0.4	1.0	mg/L	33.8		99.1	80-120			
LCS (1HD0332-BS2)				Prepared & Analyzed: 04/04/24 00:49							
Fluoride	1.08		0.1	mg/L	1.17		91.6	90-110			
Chloride	15.07		1.0	mg/L	15.3		98.7	90-110			
Sulfate	33.50	0.4	1.0	mg/L	33.8		99.0	80-120			
LCS Dup (1HD0332-BSD1)				Prepared & Analyzed: 04/03/24 10:54							
Fluoride	1.13		0.1	mg/L	1.17		96.4	90-110	0.177	10	
Chloride	15.09		1.0	mg/L	15.3		98.9	90-110	0.199	10	
Sulfate	33.39	0.4	1.0	mg/L	33.8		98.7	80-120	0.415	10	
LCS Dup (1HD0332-BSD2)				Prepared & Analyzed: 04/04/24 01:08							
Fluoride	1.09		0.1	mg/L	1.17		92.8	90-110	1.20	10	
Chloride	15.07		1.0	mg/L	15.3		98.7	90-110	0.0332	10	

Determination of Inorganic Anions	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0332 - General Prep HPLC/IC - EPA 9056											
LCS Dup (1HD0332-BSD2)				Prepared & Analyzed: 04/04/24 01:08							
Sulfate	33.53	0.4	1.0	mg/L	33.8		99.1	80-120	0.101	10	
Matrix Spike (1HD0332-MS1)		**Source: 1HC1595-01**		Prepared & Analyzed: 04/04/24 01:44							
Fluoride	11.50		1.0	mg/L	11.7	ND	98.0	80-120			
Chloride	282.9		10.0	mg/L	153	132.6	98.4	80-120			
Sulfate	403.3	3.6	10.0	mg/L	338	74.18	97.3	87-113			
Matrix Spike (1HD0332-MS2)		**Source: 1HC1434-01**		Prepared & Analyzed: 04/04/24 03:15							
Fluoride	6.03		0.5	mg/L	5.86	0.17	99.9	80-120			
Chloride	79.00		5.0	mg/L	76.3	2.58	100	80-120			
Sulfate	179.4	1.8	5.0	mg/L	169	4.67	103	87-113			
Matrix Spike Dup (1HD0332-MSD1)		**Source: 1HC1595-01**		Prepared & Analyzed: 04/04/24 02:02							
Fluoride	11.53		1.0	mg/L	11.7	ND	98.3	80-120	0.261	10	
Chloride	284.3		10.0	mg/L	153	132.6	99.3	80-120	0.490	10	
Sulfate	408.1	3.6	10.0	mg/L	338	74.18	98.7	87-113	1.18	10	
Matrix Spike Dup (1HD0332-MSD2)		**Source: 1HC1434-01**		Prepared & Analyzed: 04/04/24 03:33							
Fluoride	6.04		0.5	mg/L	5.86	0.17	99.9	80-120	0.0829	10	
Chloride	78.98		5.0	mg/L	76.3	2.58	100	80-120	0.0316	10	
Sulfate	180.0	1.8	5.0	mg/L	169	4.67	104	87-113	0.359	10	

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1319 - EPA 200.2 Total ICP-MS - EPA 200.8											
Blank (1HC1319-BLK1)				Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:13							
Antimony, total	<0.0008	0.0008	0.0020	mg/L							
Arsenic, total	<0.0006	0.0006	0.0020	mg/L							
Barium, total	<0.0002	0.0002	0.0020	mg/L							
Beryllium, total	<0.0001	0.0001	0.0020	mg/L							
Cadmium, total	<0.00008	0.00008	0.0002	mg/L							
Chromium, total	<0.0007	0.0007	0.0008	mg/L							
Cobalt, total	<0.0005	0.0005	0.0020	mg/L							
Copper, total	0.0008	0.0008	0.0020	mg/L							
Lead, total	<0.0005	0.0005	0.0008	mg/L							
Manganese, total	<0.0017	0.0017	0.0040	mg/L							
Molybdenum, total	<0.0006	0.0006	0.0020	mg/L							
Nickel, total	<0.0007	0.0007	0.0040	mg/L							
Selenium, total	<0.0011	0.0011	0.0040	mg/L							
Silver, total	<0.0015	0.0015	0.0020	mg/L							
Thallium, total	<0.0004	0.0004	0.0008	mg/L							
Vanadium, total	<0.0043	0.0043	0.0080	mg/L							
Zinc, total	<0.0174	0.0174	0.0200	mg/L							
LCS (1HC1319-BS1)				Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:20							
Antimony, total	0.0928	0.0008	0.0020	mg/L	0.100		92.8	85-115			

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1319 - EPA 200.2 Total ICP-MS - EPA 200.8											
LCS (1HC1319-BS1)					Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:20						
Arsenic, total	0.0943	0.0006	0.0020	mg/L	0.100		94.3	85-115			
Barium, total	0.103	0.0002	0.0020	mg/L	0.100		103	85-115			
Beryllium, total	0.0906	0.0001	0.0020	mg/L	0.100		90.6	85-115			
Cadmium, total	0.0931	0.00008	0.0002	mg/L	0.100		93.1	85-115			
Chromium, total	0.0915	0.0007	0.0008	mg/L	0.100		91.5	85-115			
Cobalt, total	0.101	0.0005	0.0020	mg/L	0.100		101	85-115			
Copper, total	0.0989	0.0008	0.0020	mg/L	0.100		98.9	85-115			
Lead, total	0.0975	0.0005	0.0008	mg/L	0.100		97.5	85-115			
Manganese, total	0.0877	0.0017	0.0040	mg/L	0.100		87.7	85-115			
Molybdenum, total	0.0958	0.0006	0.0020	mg/L	0.100		95.8	85-115			
Nickel, total	0.0938	0.0007	0.0040	mg/L	0.100		93.8	85-115			
Selenium, total	0.0935	0.0011	0.0040	mg/L	0.100		93.5	85-115			
Silver, total	0.0976	0.0015	0.0020	mg/L	0.100		97.6	85-115			
Thallium, total	0.0982	0.0004	0.0008	mg/L	0.100		98.2	85-115			
Vanadium, total	0.0955	0.0043	0.0080	mg/L	0.100		95.5	85-115			
Zinc, total	0.0956	0.0174	0.0200	mg/L	0.100		95.6	85-115			
Matrix Spike (1HC1319-MS1)		**Source: 1HC1302-02**			Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:32						
Antimony, total	0.0959	0.0008	0.0020	mg/L	0.100	ND	95.9	70-130			
Arsenic, total	0.0967	0.0006	0.0020	mg/L	0.100	0.0015	95.2	70-130			
Barium, total	0.185	0.0002	0.0020	mg/L	0.100	0.0817	104	70-130			
Beryllium, total	0.0900	0.0001	0.0020	mg/L	0.100	ND	90.0	70-130			
Cadmium, total	0.0916	0.00008	0.0002	mg/L	0.100	ND	91.6	70-130			
Chromium, total	0.0910	0.0007	0.0008	mg/L	0.100	0.0009	90.1	70-130			
Cobalt, total	0.100	0.0005	0.0020	mg/L	0.100	ND	100	70-130			
Copper, total	0.104	0.0008	0.0020	mg/L	0.100	0.0109	93.2	70-130			
Lead, total	0.0911	0.0005	0.0008	mg/L	0.100	ND	91.1	70-130			
Manganese, total	0.0995	0.0017	0.0040	mg/L	0.100	0.0154	84.2	70-130			
Molybdenum, total	0.105	0.0006	0.0020	mg/L	0.100	0.0032	102	70-130			
Nickel, total	0.0930	0.0007	0.0040	mg/L	0.100	0.0022	90.9	70-130			
Selenium, total	0.0908	0.0011	0.0040	mg/L	0.100	0.0012	89.6	70-130			
Silver, total	0.0953	0.0015	0.0020	mg/L	0.100	ND	95.3	70-130			
Thallium, total	0.0928	0.0004	0.0008	mg/L	0.100	ND	92.8	70-130			
Vanadium, total	0.0968	0.0043	0.0080	mg/L	0.100	ND	96.8	70-130			
Zinc, total	0.112	0.0174	0.0200	mg/L	0.100	0.0221	90.4	70-130			
Matrix Spike Dup (1HC1319-MSD1)		**Source: 1HC1302-02**			Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:38						
Antimony, total	0.0950	0.0008	0.0020	mg/L	0.100	ND	95.0	70-130	0.998	20	
Arsenic, total	0.0953	0.0006	0.0020	mg/L	0.100	0.0015	93.9	70-130	1.42	20	
Barium, total	0.186	0.0002	0.0020	mg/L	0.100	0.0817	104	70-130	0.105	20	
Beryllium, total	0.0893	0.0001	0.0020	mg/L	0.100	ND	89.3	70-130	0.797	20	
Cadmium, total	0.0913	0.00008	0.0002	mg/L	0.100	ND	91.3	70-130	0.343	20	
Chromium, total	0.0904	0.0007	0.0008	mg/L	0.100	0.0009	89.5	70-130	0.693	20	
Cobalt, total	0.0998	0.0005	0.0020	mg/L	0.100	ND	99.8	70-130	0.662	20	
Copper, total	0.105	0.0008	0.0020	mg/L	0.100	0.0109	93.7	70-130	0.434	20	

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1319 - EPA 200.2 Total ICP-MS - EPA 200.8											
Matrix Spike Dup (1HC1319-MSD1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:38							
Lead, total	0.0915	0.0005	0.0008	mg/L	0.100	ND	91.5	70-130	0.401	20	
Manganese, total	0.0991	0.0017	0.0040	mg/L	0.100	0.0154	83.8	70-130	0.398	20	
Molybdenum, total	0.105	0.0006	0.0020	mg/L	0.100	0.0032	102	70-130	0.300	20	
Nickel, total	0.0922	0.0007	0.0040	mg/L	0.100	0.0022	90.0	70-130	0.877	20	
Selenium, total	0.0938	0.0011	0.0040	mg/L	0.100	0.0012	92.6	70-130	3.25	20	
Silver, total	0.0956	0.0015	0.0020	mg/L	0.100	ND	95.6	70-130	0.350	20	
Thallium, total	0.0936	0.0004	0.0008	mg/L	0.100	ND	93.6	70-130	0.795	20	
Vanadium, total	0.0960	0.0043	0.0080	mg/L	0.100	ND	96.0	70-130	0.869	20	
Zinc, total	0.112	0.0174	0.0200	mg/L	0.100	0.0221	89.8	70-130	0.525	20	
Post Spike (1HC1319-PS1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:44							
Antimony, total	0.0812			mg/L	0.0800	0.0006	101	70-130			
Arsenic, total	0.0809			mg/L	0.0800	0.0014	99.4	70-130			
Barium, total	0.167			mg/L	0.0800	0.0801	109	70-130			
Beryllium, total	0.0751			mg/L	0.0800	0.000006	93.9	70-130			
Cadmium, total	0.0768			mg/L	0.0800	0.00001	96.0	70-130			
Chromium, total	0.0763			mg/L	0.0800	0.0008	94.4	70-130			
Cobalt, total	0.0856			mg/L	0.0800	0.0004	106	70-130			
Copper, total	0.0885			mg/L	0.0800	0.0107	97.3	70-130			
Lead, total	0.0790			mg/L	0.0800	0.0004	98.3	70-130			
Manganese, total	0.0857			mg/L	0.0800	0.0150	88.3	70-130			
Molybdenum, total	0.0891			mg/L	0.0800	0.0031	107	70-130			
Nickel, total	0.0792			mg/L	0.0800	0.0021	96.4	70-130			
Selenium, total	0.0755			mg/L	0.0800	0.0011	92.9	70-130			
Silver, total	0.0809			mg/L	0.0800	0.0001	101	70-130			
Thallium, total	0.0806			mg/L	0.0800	0.0001	101	70-130			
Vanadium, total	0.0843			mg/L	0.0800	0.0033	101	70-130			
Zinc, total	0.0965			mg/L	0.0800	0.0217	93.6	70-130			
Batch 1HC1368 - EPA 200.2 Total ICP-OES (200.7) - EPA 200.7											
Blank (1HC1368-BLK1)				Prepared: 03/25/24 15:29 Analyzed: 03/26/24 19:44							
Aluminum, total	<0.050		0.050	mg/L							
Boron, total	<0.056	0.056	0.100	mg/L							
Iron, total	<0.047	0.047	0.100	mg/L							
Magnesium, total	<0.06	0.06	0.10	mg/L							
LCS (1HC1368-BS1)				Prepared: 03/25/24 15:29 Analyzed: 03/26/24 19:49							
Aluminum, total	2.22		0.050	mg/L	2.20		101	85-115			
Boron, total	0.202	0.056	0.100	mg/L	0.200		101	85-115			
Iron, total	2.37	0.047	0.100	mg/L	2.20		108	85-115			
Magnesium, total	2.29	0.06	0.10	mg/L	2.20		104	85-115			
Matrix Spike (1HC1368-MS1)		**Source: 1HC1428-01**		Prepared: 03/25/24 15:29 Analyzed: 03/26/24 20:06							
Aluminum, total	4.19		0.050	mg/L	2.20	1.34	129	70-130			
Boron, total	6.13	0.056	0.100	mg/L	0.200	5.43	350	70-130			QM-4X

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1368 - EPA 200.2 Total ICP-OES (200.7) - 200.7											
Matrix Spike (1HC1368-MS1)		**Source: 1HC1428-01**		Prepared: 03/25/24 15:29 Analyzed: 03/26/24 20:06							
Iron, total	43.7	0.047	0.100	mg/L	2.20	38.6	235	70-130			QM-4X
Magnesium, total	117	0.06	0.10	mg/L	2.20	108	423	70-130			QM-4X
Matrix Spike Dup (1HC1368-MSD1)		**Source: 1HC1428-01**		Prepared: 03/25/24 15:29 Analyzed: 03/26/24 20:27							
Aluminum, total	4.38		0.050	mg/L	2.20	1.34	138	70-130	4.46	20	QM-07
Boron, total	6.12	0.056	0.100	mg/L	0.200	5.43	346	70-130	0.131	20	QM-4X
Iron, total	44.2	0.047	0.100	mg/L	2.20	38.6	254	70-130	0.926	20	QM-4X
Magnesium, total	120	0.06	0.10	mg/L	2.20	108	546	70-130	2.28	20	QM-4X
Post Spike (1HC1368-PS1)		**Source: 1HC1428-01**		Prepared: 03/25/24 15:29 Analyzed: 03/26/24 20:37							
Aluminum, total	10.5			mg/L	8.80	1.34	104	85-115			
Boron, total	6.13			mg/L	0.800	5.43	87.6	85-115			
Iron, total	47.8			mg/L	8.80	38.6	104	85-115			
Magnesium, total	123			mg/L	8.80	108	172	85-115			PS-4X
Batch 1HD0077 - EPA 7470A Hg Water - SM 3112B											
Blank (1HD0077-BLK1)				Prepared: 04/01/24 15:39 Analyzed: 04/02/24 16:17							
Mercury, total	<0.00013	0.00013	0.00020	mg/L							
LCS (1HD0077-BS1)				Prepared: 04/01/24 15:39 Analyzed: 04/02/24 16:19							
Mercury, total	0.00249	0.00013	0.00020	mg/L	0.00250		99.7	87-118			
Matrix Spike (1HD0077-MS1)		**Source: 1HC1541-01**		Prepared: 04/01/24 15:39 Analyzed: 04/02/24 16:24							
Mercury, total	0.00261	0.00013	0.00020	mg/L	0.00250	ND	105	62-131			
Matrix Spike Dup (1HD0077-MSD1)		**Source: 1HC1541-01**		Prepared: 04/01/24 15:39 Analyzed: 04/02/24 16:26							
Mercury, total	0.00253	0.00013	0.00020	mg/L	0.00250	ND	101	62-131	3.45	17	

Definitions

I-05:	Sample received at laboratory past hold time for this analyte.
MDL:	Minimum Detection Limit
PS-4X:	The spike recovery was outside of QC acceptance limits for the Post Spike due to analyte concentration at 4 times or greater the spike concentration.
QM-07:	The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-14:	The spike recovery was outside acceptance limits for the MS and/or MSD. However, all other QC was acceptable.
QM-21:	The recovery for the blank spike was outside the established laboratory control limits. The batch was accepted based upon the acceptable recovery of the CCV.
QM-4X:	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration.
QR-02:	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QS-03:	The blank spike recovery was below established acceptance limits.
RL:	Reporting Limit
RPD:	Relative Percent Difference
S-GC:	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
TOX-3:	The RPD value for the sample duplicates are outside of acceptance limits due to matrix interference. The reported value is an average of all test measurements.

Cooler Receipt Log

Cooler ID:	N1-13098	Temp:	0.7ºC	**Cooler ID:**	N1-13111	Temp:	1.4ºC
Cooler ID:	N5-13133	Temp:	1.1ºC				

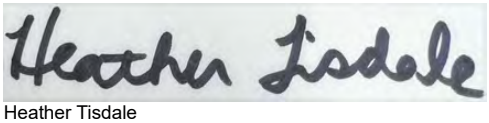
Cooler Inspection Checklist

Custody Seals	No	Containers Intact	No
COC/Labels Agree	No	Preservation Confirmed	No
Received On Ice	No		

Report Comments

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. ***The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.***

Reviewed and Approved By:



Heather Tisdale
Customer Relationship Specialist
heather.tisdale@microbac.com
05/10/24 15:39

CHAIN OF CU

Keystone LABORATORIES
A Microbac Company

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Newton, IA 50208
641-792-8451

1HC1541

BMC Aggregates L.C.
PM: Heather Tisdale

www.keystonelabs.com

SITE INFORMATION

Sampler: Sherman Lundy

Project: GW Monitoring
Miller Creek Area

REPORT TO

Sherman Lundy
RMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

Accounts Payable
RMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order 1HC1541

Temperature 0.7/1.1/1.4

Turn-Cooler: No

- ☐ Custody Seal
- ☒ Containers Intact
- ☒ COC/Labels Agree
- ☐ Preservation Confirmed
- ☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
-001	Well #2	Water	GRAB	3/18/24	8:30AM	12	624@benzene; 624@chloroform; 624@mek; 624-base-analysis; 625@pyridine; 625-126; 8315@Formaldehyde; 9020-100; ag-t-200.8; al-t-200.7; as-t-200.8; ba-t-200.8; be-t-200.8; b-t-200.7; cd-t-200.8; cl-9056-w; cod-t-410.4; co-t-200.8; cr-t-200.8; cu-t-200.8; f-9056; fe-t-200.7; hg-t-3112-low; mg-t-200.7; mn-t-200.8; mo-t-200.8; nh3-tunberline; ni-t-200.8; pb-t-200.8; phenol-t-420.1; sb-t-200.8; se-t-200.8; so4-9056-w; tds-i-1750-85; tl-t-200.8; tss-i-3765-85; + Electrical Conductivity	01

Sherman Lundy 3/19/24 3:09 PM
Relinquished By Date/Time

Relinquished By Date/Time

3/21/24 1050
Received By Date/Time

3-19-24 1509
Received for Lab By Date/Time

Remarks:

Original - Lab Copy Yellow - Sampler Copy

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HC1543

Project Description

Miller Creek Area

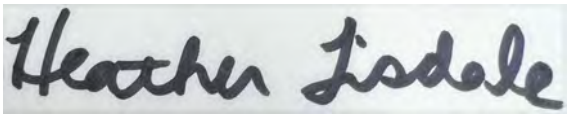
For:

Sherman Lundy

BMC Aggregates L.C.

101 BMC Drive

Elk Run Heights, IA 50707



Heather Tisdale

Customer Relationship Specialist

Wednesday, May 15, 2024

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc., Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

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Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HC1543

BMC Aggregates L.C.

Sherman Lundy
101 BMC Drive
Elk Run Heights, IA 50707

Project Name: Miller Creek Area

Project / PO Number: Sherman Lundy
Received: 03/21/2024
Reported: 05/15/2024

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
Well #3	1HC1543-01	Aqueous	GRAB		03/18/24 09:00	03/21/24 10:50

Analytical Testing Parameters

Client Sample ID:	Well #3		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HC1543-01	**Collection Date:**	03/18/2024 9:00

Determination of Volatile Organic Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030B/EPA 624									
2-Butanone (MEK)	<10.0	1.4	10.0	ug/L	1		03/27/24 0000	03/27/24 1534	CSM
Chloroform	<1.0	0.4	1.0	ug/L	1		03/27/24 0000	03/27/24 1534	CSM
Benzene	<1.0	0.3	1.0	ug/L	1		03/27/24 0000	03/27/24 1534	CSM
Surrogate: Dibromofluoromethane	91.7	Limit: 79-129		% Rec	1		03/27/24 0000	03/27/24 1534	CSM
Surrogate: 1,2-Dichloroethane-d4	97.0	Limit: 66-134		% Rec	1		03/27/24 0000	03/27/24 1534	CSM
Surrogate: Toluene-d8	97.9	Limit: 91-113		% Rec	1		03/27/24 0000	03/27/24 1534	CSM
Surrogate: 4-Bromofluorobenzene	97.1	Limit: 83-112		% Rec	1		03/27/24 0000	03/27/24 1534	CSM

Determination of Base/Neutral Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
Pyridine	<10	10	10	ug/L	1		03/25/24 1408	04/08/24 1326	EPP

Determination of Acid Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
2-Methylphenol (o-Cresol)	<10.0	2.6	10.0	ug/L	1		03/25/24 1408	04/08/24 1326	EPP
(3 & 4)-Methylphenol	<10.0	2.6	10.0	ug/L	1		03/25/24 1408	04/08/24 1326	EPP
Surrogate: 2-Fluorophenol	78.4	Limit: 19-139		% Rec	1		03/25/24 1408	04/08/24 1326	EPP
Surrogate: Phenol-d6	75.8	Limit: 14-154		% Rec	1		03/25/24 1408	04/08/24 1326	EPP
Surrogate: 2,4,6-Tribromophenol	87.2	Limit: 21-151		% Rec	1		03/25/24 1408	04/08/24 1326	EPP

Determination of Carbonyl Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 8315									
Formaldehyde	<10.0	10.0	10.0	ug/L	1	**I-05**	03/25/24 1142	03/26/24 1619	PDS

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 410.4									
COD, total	<54	24	54	mg/L	1		03/25/24 1138	03/26/24 1648	CHP
Method: EPA 420.1									
Phenols, total	**0.070**	0.024	0.035	mg/L	1		04/02/24 0947	04/03/24 1448	AKK
Method: EPA 9020									
Total Organic Halogens (TOX)	**0.055**	0.006	0.010	mg/L	1	**TOX-3**	04/01/24 0000	04/02/24 0000	LNH
Method: EPA 9050									

Client Sample ID:	Well #3		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HC1543-01	**Collection Date:**	03/18/2024 9:00

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Conductivity	**754**	1.8	2.0	uS/cm	1		04/03/24 1441	04/03/24 1513	BSS
Method: TIMBERLINE									
Nitrogen, Ammonia	<0.10	0.08	0.10	mg/L	1		04/01/24 0908	04/01/24 1412	LJS
Method: USGS I-1750-85									
Total Dissolved Solids (TDS)	**428**	4	5	mg/L	1		03/25/24 0824	03/25/24 1155	MEAH
Method: USGS I-3765-85									
Total Suspended Solids (TSS)	**17**	0.9	1	mg/L	1		03/25/24 0905	03/25/24 1415	MEAH

Determination of Inorganic Anions	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 9056									
Fluoride	**0.5**	0.02	0.1	mg/L	1		04/02/24 0000	04/02/24 2111	MID
Sulfate	**114**	1.8	5.0	mg/L	5			04/03/24 1508	MID

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 200.7									
Iron, total	**0.143**	0.047	0.100	mg/L	1		03/26/24 1540	03/28/24 1822	JAR
Magnesium, total	**27.4**	0.06	0.10	mg/L	1		03/26/24 1540	03/28/24 1822	JAR
Method: EPA 200.7									
Aluminum, total	<0.050	0.038	0.050	mg/L	1		03/26/24 1540	03/28/24 1822	JAR
Boron, total	<0.056	0.056	0.100	mg/L	1		03/26/24 1540	03/28/24 1822	JAR
Method: EPA 200.8									
Antimony, total	<0.0008	0.0008	0.0020	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Arsenic, total	**0.0011**	0.0006	0.0020	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Barium, total	**0.103**	0.0002	0.0020	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Beryllium, total	<0.0001	0.0001	0.0020	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Cadmium, total	<0.00008	0.00008	0.0002	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Chromium, total	<0.0007	0.0007	0.0020	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Cobalt, total	<0.0005	0.0005	0.0020	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Copper, total	**0.0027**	0.0008	0.0020	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Lead, total	<0.0005	0.0005	0.0008	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Manganese, total	**0.0108**	0.0017	0.0040	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Molybdenum, total	**0.0043**	0.0006	0.0020	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Nickel, total	**0.0020**	0.0007	0.0040	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Selenium, total	<0.0011	0.0011	0.0040	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Silver, total	<0.0015	0.0015	0.0020	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Thallium, total	<0.0004	0.0004	0.0008	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Vanadium, total	<0.0043	0.0043	0.0080	mg/L	4		03/25/24 0850	03/26/24 0417	RVV

CERTIFICATE OF ANALYSIS

1HC1543

Client Sample ID:	Well #3		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HC1543-01	**Collection Date:**	03/18/2024 9:00

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Zinc, total	<0.0174	0.0174	0.0200	mg/L	4		03/25/24 0850	03/26/24 0417	RVV
Method: SM 3112B									
Mercury, total	<0.00013	0.00013	0.00020	mg/L	1		04/01/24 1539	04/02/24 1633	JAR

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
USGS I-1750-85	1HC1310	1HC1310-BLK1	
		1HC1310-DUP1	1HC1466-01
		1HC1543-01	Well #3
		1HC1310-BS1	

Method	Batch	Laboratory ID	Client / Source ID
EPA 200.8	1HC1319	1HC1319-BLK1	
		1HC1319-BS1	
		1HC1319-MS1	1HC1302-02
		1HC1319-MSD1	1HC1302-02
		1HC1319-PS1	1HC1302-02
		1HC1543-01	Well #3

Method	Batch	Laboratory ID	Client / Source ID
USGS I-3765-85	1HC1323	1HC1323-DUP1	1HC1247-01
		1HC1323-BLK1	
		1HC1323-BS1	
		1HC1543-01	Well #3

Method	Batch	Laboratory ID	Client / Source ID
EPA 410.4	1HC1337	1HC1337-MSD1	1HC1395-01
		1HC1337-BLK1	
		1HC1337-MS1	1HC1395-01
		1HC1543-01	Well #3
		1HC1337-BS1	

Method	Batch	Laboratory ID	Client / Source ID
EPA 8315	1HC1339	1HC1339-BS1	
		1HC1339-BLK1	
		1HC1543-01	Well #3
		1HC1339-MS1	1HC1526-01
		1HC1339-MSD1	1HC1526-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 625	1HC1357	1HC1357-BLK1	
		1HC1357-BLK1	
		1HC1357-BS1	
		1HC1357-BS1	
		1HC1357-BSD1	
		1HC1357-BSD1	
		1HC1543-01	Well #3

EPA 625	1HC1357	1HC1543-01	Well #3

Method	Batch	Laboratory ID	Client / Source ID
200.7	1HC1442	1HC1442-BLK1	
EPA 200.7		1HC1442-BLK1	
200.7		1HC1442-BS1	
EPA 200.7		1HC1442-BS1	
		1HC1442-MS1	1HC1502-01
200.7		1HC1442-MS1	1HC1502-01
		1HC1442-MSD1	1HC1502-01
EPA 200.7		1HC1442-MSD1	1HC1502-01
		1HC1442-PS1	1HC1502-01
200.7		1HC1442-PS1	1HC1502-01
		1HC1543-01	Well #3
EPA 200.7		1HC1543-01	Well #3

Method	Batch	Laboratory ID	Client / Source ID
EPA 624	1HC1543	1HC1543-BS1	
		1HC1543-BSD1	
		1HC1543-BLK1	
		1HC1543-01	Well #3
		1HC1543-MS1	1HC1329-01
		1HC1543-MSD1	1HC1329-01

Method	Batch	Laboratory ID	Client / Source ID
TIMBERLINE	1HD0020	1HD0020-BLK1	
		1HD0020-BS1	
		1HD0020-MS1	1HC1356-02
		1HD0020-MSD1	1HC1356-02
		1HC1543-01	Well #3

Method	Batch	Laboratory ID	Client / Source ID
SM 3112B	1HD0077	1HD0077-BLK1	
		1HD0077-BS1	
		1HD0077-MS1	1HC1541-01
		1HD0077-MSD1	1HC1541-01
		1HC1543-01	Well #3

Method	Batch	Laboratory ID	Client / Source ID
EPA 420.1	1HD0125	1HD0125-MS1	1HC1416-01
		1HD0125-BLK1	
		1HC1543-01	Well #3
		1HD0125-BS1	
		1HD0125-MSD1	1HC1416-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 9020	1HD0192	1HD0192-SRM1	
		1HD0192-BS1	
		1HC1543-01	Well #3
		1HD0192-SRM4	
		1HD0192-SRM3	
		1HD0192-BS2	
		1HD0192-BLK1	
		1HD0192-SRM2	

Method	Batch	Laboratory ID	Client / Source ID
EPA 9056	1HD0226	1HD0226-BLK1	
		1HD0226-MRL1	
		1HD0226-BS1	
		1HD0226-BSD1	
		1HD0226-BLK2	
		1HD0226-MS1	1HC1878-02
		1HD0226-MSD1	1HC1878-02
		1HD0226-BLK3	
		1HD0226-BS2	
		1HD0226-BSD2	
		1HC1543-01	Well #3
		1HD0226-MS2	1HC1394-02
		1HD0226-MSD2	1HC1394-02

Method	Batch	Laboratory ID	Client / Source ID
EPA 9050	1HD0249	1HC1543-01	Well #3
		1HD0249-SRM1	
		1HD0249-DUP1	1HC1416-01
		1HD0249-BLK1	

Method	Batch	Laboratory ID	Client / Source ID
EPA 9056	1HD0332	1HD0332-BLK1	
		1HD0332-MRL1	
		1HD0332-BS1	
		1HD0332-BSD1	
		1HC1543-01	Well #3
		1HD0332-BLK2	
		1HD0332-BLK3	
		1HD0332-BLK4	
		1HD0332-BS2	
		1HD0332-BSD2	
		1HD0332-MS1	1HC1595-01

EPA 9056	1HD0332	1HD0332-MSD1	1HC1595-01
		1HD0332-MS2	1HC1434-01
		1HD0332-MSD2	1HC1434-01

Batch Quality Control Summary: Microbac Laboratories, Inc., Newton

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1543 - EPA 5030B - EPA 624										
Blank (1HC1543-BLK1)			Prepared: 03/27/24 00:00 Analyzed: 03/27/24 11:10							
2-Butanone (MEK)	<10.0	10.0	ug/L							
Chloroform	<1.0	1.0	ug/L							
Benzene	<1.0	1.0	ug/L							
Surrogate: Dibromofluoromethane	*56.7*		ug/L	*50.2*		*113*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*60.6*		ug/L	*50.1*		*121*	*66-134*			
Surrogate: Toluene-d8	*42.4*		ug/L	*50.4*		*84.2*	*91-113*			*S-GC*
Surrogate: 4-Bromofluorobenzene	*53.0*		ug/L	*50.1*		*106*	*83-112*			
LCS (1HC1543-BS1)			Prepared: 03/27/24 00:00 Analyzed: 03/27/24 10:02							
2-Butanone (MEK)	88.52	10.0	ug/L	103		85.7	44-158			
Chloroform	47.60	1.0	ug/L	50.0		95.2	76-132			
Benzene	48.42	1.0	ug/L	50.0		96.8	77-130			
Surrogate: Dibromofluoromethane	*47.6*		ug/L	*50.2*		*94.9*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*47.7*		ug/L	*50.1*		*95.2*	*66-134*			
Surrogate: Toluene-d8	*49.9*		ug/L	*50.4*		*99.0*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*49.9*		ug/L	*50.1*		*99.5*	*83-112*			
LCS Dup (1HC1543-BSD1)			Prepared: 03/27/24 00:00 Analyzed: 03/27/24 10:24							
2-Butanone (MEK)	61.42	10.0	ug/L	103		59.5	44-158	36.1	25	QR-02
Chloroform	46.67	1.0	ug/L	50.0		93.3	76-132	1.97	26	
Benzene	47.26	1.0	ug/L	50.0		94.5	77-130	2.42	27	
Surrogate: Dibromofluoromethane	*47.9*		ug/L	*50.2*		*95.4*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*47.3*		ug/L	*50.1*		*94.4*	*66-134*			
Surrogate: Toluene-d8	*49.9*		ug/L	*50.4*		*99.0*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*50.0*		ug/L	*50.1*		*99.6*	*83-112*			
Matrix Spike (1HC1543-MS1)	**Source: 1HC1329-01**		Prepared: 03/27/24 00:00 Analyzed: 03/27/24 18:14							
2-Butanone (MEK)	1092	100	ug/L	1030	ND	106	48-169			
Chloroform	456.3	10.0	ug/L	500	ND	91.3	75-133			
Benzene	480.8	10.0	ug/L	500	ND	96.2	79-128			
Surrogate: Dibromofluoromethane	*462*		ug/L	*502*		*92.0*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*468*		ug/L	*501*		*93.6*	*66-134*			
Surrogate: Toluene-d8	*498*		ug/L	*504*		*98.8*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*502*		ug/L	*501*		*100*	*83-112*			
Matrix Spike Dup (1HC1543-MSD1)	**Source: 1HC1329-01**		Prepared: 03/27/24 00:00 Analyzed: 03/27/24 18:37							
2-Butanone (MEK)	723.4	100	ug/L	1030	ND	70.0	48-169	40.6	17	QR-02
Chloroform	443.9	10.0	ug/L	500	ND	88.8	75-133	2.75	16	
Benzene	465.9	10.0	ug/L	500	ND	93.2	79-128	3.15	12	

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1543 - EPA 5030B - EPA 624										
Matrix Spike Dup (1HC1543-MSD1)	**Source: 1HC1329-01**		Prepared: 03/27/24 00:00 Analyzed: 03/27/24 18:37							
Surrogate: Dibromofluoromethane	*463*		ug/L	*502*		*92.3*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*463*		ug/L	*501*		*92.4*	*66-134*			
Surrogate: Toluene-d8	*498*		ug/L	*504*		*98.8*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*498*		ug/L	*501*		*99.2*	*83-112*			

Determination of Base/Neutral Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1357 - EPA 625 Base Neutral - EPA 625										
Blank (1HC1357-BLK1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 10:59							
Pyridine	<10	10	ug/L							
LCS (1HC1357-BS1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:24							
Pyridine	<10	10	ug/L	25.0		19.2	13-127			
LCS Dup (1HC1357-BSD1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:48							
Pyridine	<10	10	ug/L	25.0			13-127		30	QS-03

Determination of Acid Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1357 - EPA 625 Base Neutral - EPA 625										
Blank (1HC1357-BLK1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 10:59							
2-Methylphenol (o-Cresol)	<10.0	10.0	ug/L							
(3 & 4)-Methylphenol	<10.0	10.0	ug/L							
Surrogate: 2-Fluorophenol	*24.9*		ug/L	*29.6*		*84.0*	*19-139*			
Surrogate: Phenol-d6	*25.7*		ug/L	*30.5*		*84.3*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*25.3*		ug/L	*29.7*		*85.2*	*21-151*			
LCS (1HC1357-BS1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:24							
2-Methylphenol (o-Cresol)	15.0	10.0	ug/L	25.0		59.8	50-138			
(3 & 4)-Methylphenol	14.6	10.0	ug/L	25.0		58.6	56-130			
Surrogate: 2-Fluorophenol	*24.0*		ug/L	*29.6*		*81.2*	*19-139*			
Surrogate: Phenol-d6	*24.5*		ug/L	*30.5*		*80.4*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*26.4*		ug/L	*29.7*		*88.6*	*21-151*			
LCS Dup (1HC1357-BSD1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:48							
2-Methylphenol (o-Cresol)	16.0	10.0	ug/L	25.0		64.1	50-138	6.97	24	
(3 & 4)-Methylphenol	16.1	10.0	ug/L	25.0		64.3	56-130	9.31	26	
Surrogate: 2-Fluorophenol	*21.9*		ug/L	*29.6*		*73.9*	*19-139*			
Surrogate: Phenol-d6	*23.0*		ug/L	*30.5*		*75.3*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*26.6*		ug/L	*29.7*		*89.6*	*21-151*			

Determination of Carbonyl Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1339 - EPA 8315 Aldehydes - EPA 8315										
Blank (1HC1339-BLK1)			Prepared: 03/25/24 11:42 Analyzed: 03/26/24 15:21							
Formaldehyde	<10.0	10.0	ug/L							
LCS (1HC1339-BS1)			Prepared: 03/25/24 11:42 Analyzed: 03/26/24 15:02							
Formaldehyde	472.5	10.0	ug/L	500		94.5	61-142			
Matrix Spike (1HC1339-MS1)		**Source: 1HC1526-01**	Prepared: 03/25/24 11:42 Analyzed: 03/26/24 16:57							
Formaldehyde	463.5	10.0	ug/L	500	ND	92.7	48-148			
Matrix Spike Dup (1HC1339-MSD1)		**Source: 1HC1526-01**	Prepared: 03/25/24 11:42 Analyzed: 03/26/24 17:16							
Formaldehyde	431.7	10.0	ug/L	500	ND	86.3	48-148	7.10	30	

Determination of Conventional Chemistry Parameters	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1310 - Wet Chem Preparation - USGS I-1750-85										
Blank (1HC1310-BLK1)			Prepared: 03/25/24 08:24 Analyzed: 03/25/24 11:55							
Total Dissolved Solids (TDS)	<5	5	mg/L							
LCS (1HC1310-BS1)			Prepared: 03/25/24 08:24 Analyzed: 03/25/24 11:55							
Total Dissolved Solids (TDS)	97	5	mg/L	100		97.4	71-114			
Duplicate (1HC1310-DUP1)		**Source: 1HC1466-01**	Prepared: 03/25/24 08:24 Analyzed: 03/25/24 11:55							
Total Dissolved Solids (TDS)	1780	5	mg/L		1820			2.11	30	
Batch 1HC1323 - Wet Chem Preparation - USGS I-3765-85										
Blank (1HC1323-BLK1)			Prepared: 03/25/24 09:05 Analyzed: 03/25/24 14:15							
Total Suspended Solids (TSS)	<1	1	mg/L							
LCS (1HC1323-BS1)			Prepared: 03/25/24 09:05 Analyzed: 03/25/24 14:15							
Total Suspended Solids (TSS)	14.1	1	mg/L	15.0		94.0	74-114			
Duplicate (1HC1323-DUP1)		**Source: 1HC1247-01**	Prepared: 03/25/24 09:05 Analyzed: 03/25/24 14:15							
Total Suspended Solids (TSS)	130	1	mg/L		117			10.8	30	
Batch 1HC1337 - Wet Chem Preparation - EPA 410.4										
Blank (1HC1337-BLK1)			Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	<54	54	mg/L							
LCS (1HC1337-BS1)			Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	159	54	mg/L	150		106	90-110			
Matrix Spike (1HC1337-MS1)		**Source: 1HC1395-01**	Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	372	108	mg/L	300	ND	124	90-110			QM-14
Matrix Spike Dup (1HC1337-MSD1)		**Source: 1HC1395-01**	Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	345	108	mg/L	300	ND	115	90-110	7.54	10	QM-14
Batch 1HD0020 - General Prep HPLC/IC - TIMBERLINE										

Determination of Conventional Chemistry Parameters	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (1HD0020-BLK1)			Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:48							
Nitrogen, Ammonia	<0.10	0.10	mg/L							
LCS (1HD0020-BS1)			Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:50							
Nitrogen, Ammonia	5.13	0.10	mg/L	5.00		103	90-114			
Matrix Spike (1HD0020-MS1)	**Source: 1HC1356-02**		Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:51							
Nitrogen, Ammonia	5.82	0.10	mg/L	5.00	0.719	102	84-115			
Matrix Spike Dup (1HD0020-MSD1)	**Source: 1HC1356-02**		Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:53							
Nitrogen, Ammonia	5.82	0.10	mg/L	5.00	0.719	102	84-115	0.0128	20	
Batch 1HD0125 - Wet Chem Preparation - EPA 420.1										
Blank (1HD0125-BLK1)			Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	<0.035	0.035	mg/L							
LCS (1HD0125-BS1)			Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	0.419	0.035	mg/L	0.400		105	62-110			
Matrix Spike (1HD0125-MS1)	**Source: 1HC1416-01**		Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	0.268	0.035	mg/L	0.400	0.0738	48.7	57-124			QM-07
Matrix Spike Dup (1HD0125-MSD1)	**Source: 1HC1416-01**		Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	0.398	0.035	mg/L	0.400	0.0738	81.1	57-124	38.9	21	QM-07
Batch 1HD0192 - TOX/TX/EOX - EPA 9020										
Blank (1HD0192-BLK1)			Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	<0.010	0.010	mg/L							
LCS (1HD0192-BS1)			Prepared & Analyzed: 04/01/24 00:00							
Total Organic Halogens (TOX)	0.1020	0.010	mg/L	0.121		84.6	76-114			
LCS (1HD0192-BS2)			Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1476	0.010	mg/L	0.121		122	76-114			QM-21
Reference (1HD0192-SRM1)			Prepared & Analyzed: 04/01/24 00:00							
Total Organic Halogens (TOX)	0.1031	0.010	mg/L	0.111		92.8	90-110			
Reference (1HD0192-SRM2)			Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1150	0.010	mg/L	0.111		104	90-110			
Reference (1HD0192-SRM3)			Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1130	0.010	mg/L	0.111		102	90-110			
Reference (1HD0192-SRM4)			Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1140	0.010	mg/L	0.111		103	90-110			
Batch 1HD0249 - Wet Chem Preparation - EPA 9050										
Blank (1HD0249-BLK1)			Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							
Conductivity	<2.0	2.0	uS/cm							
Duplicate (1HD0249-DUP1)	**Source: 1HC1416-01**		Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							

Determination of Conventional Chemistry Parameters	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0249 - Wet Chem Preparation - EPA 9050											
Duplicate (1HD0249-DUP1)		**Source: 1HC1416-01**		Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							
Conductivity	620		2.0	uS/cm		621			0.0161	10	
Reference (1HD0249-SRM1)				Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							
Conductivity	248		2.0	uS/cm	250		99.4	90-110			

Determination of Inorganic Anions	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0226 - General Prep HPLC/IC - EPA 9056											
Blank (1HD0226-BLK1)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 09:59							
Fluoride	<0.1		0.1	mg/L							
Blank (1HD0226-BLK2)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 14:14							
Fluoride	<0.1		0.1	mg/L							
Blank (1HD0226-BLK3)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 19:22							
Fluoride	<0.1		0.1	mg/L							
LCS (1HD0226-BS1)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 10:36							
Fluoride	1.08		0.1	mg/L	1.17		92.4	80-120			
LCS (1HD0226-BS2)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 20:17							
Fluoride	1.08		0.1	mg/L	1.17		91.7	80-120			
LCS Dup (1HD0226-BSD1)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 10:54							
Fluoride	1.08		0.1	mg/L	1.17		91.8	80-120	0.648	10	
LCS Dup (1HD0226-BSD2)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 20:35							
Fluoride	1.08		0.1	mg/L	1.17		92.0	80-120	0.278	10	
Matrix Spike (1HD0226-MS1)		**Source: 1HC1878-02**		Prepared: 04/02/24 00:00 Analyzed: 04/02/24 17:15							
Fluoride	12.89		1.0	mg/L	11.7	0.63	105	77-121			
Matrix Spike (1HD0226-MS2)		**Source: 1HC1394-02**		Prepared: 04/02/24 00:00 Analyzed: 04/02/24 23:55							
Fluoride	13.07		1.0	mg/L	11.7	1.04	103	77-121			
Matrix Spike Dup (1HD0226-MSD1)		**Source: 1HC1878-02**		Prepared: 04/02/24 00:00 Analyzed: 04/02/24 17:33							
Fluoride	13.16		1.0	mg/L	11.7	0.63	107	77-121	2.07	10	
Matrix Spike Dup (1HD0226-MSD2)		**Source: 1HC1394-02**		Prepared: 04/02/24 00:00 Analyzed: 04/03/24 00:13							
Fluoride	13.18		1.0	mg/L	11.7	1.04	103	77-121	0.838	10	
Batch 1HD0332 - General Prep HPLC/IC - EPA 9056											
Blank (1HD0332-BLK1)				Prepared & Analyzed: 04/03/24 10:00							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1HD0332-BLK2)				Prepared & Analyzed: 04/03/24 15:27							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1HD0332-BLK3)				Prepared & Analyzed: 04/03/24 19:23							

Determination of Inorganic Anions	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0332 - General Prep HPLC/IC - EPA 9056											
Blank (1HD0332-BLK3)				Prepared & Analyzed: 04/03/24 19:23							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1HD0332-BLK4)				Prepared & Analyzed: 04/03/24 23:55							
Sulfate	<0.4	0.4	1.0	mg/L							
LCS (1HD0332-BS1)				Prepared & Analyzed: 04/03/24 10:36							
Sulfate	33.53	0.4	1.0	mg/L	33.8		99.1	80-120			
LCS (1HD0332-BS2)				Prepared & Analyzed: 04/04/24 00:49							
Sulfate	33.50	0.4	1.0	mg/L	33.8		99.0	80-120			
LCS Dup (1HD0332-BSD1)				Prepared & Analyzed: 04/03/24 10:54							
Sulfate	33.39	0.4	1.0	mg/L	33.8		98.7	80-120	0.415	10	
LCS Dup (1HD0332-BSD2)				Prepared & Analyzed: 04/04/24 01:08							
Sulfate	33.53	0.4	1.0	mg/L	33.8		99.1	80-120	0.101	10	
Matrix Spike (1HD0332-MS1)		**Source: 1HC1595-01**		Prepared & Analyzed: 04/04/24 01:44							
Sulfate	403.3	3.6	10.0	mg/L	338	74.18	97.3	87-113			
Matrix Spike (1HD0332-MS2)		**Source: 1HC1434-01**		Prepared & Analyzed: 04/04/24 03:15							
Sulfate	179.4	1.8	5.0	mg/L	169	4.67	103	87-113			
Matrix Spike Dup (1HD0332-MSD1)		**Source: 1HC1595-01**		Prepared & Analyzed: 04/04/24 02:02							
Sulfate	408.1	3.6	10.0	mg/L	338	74.18	98.7	87-113	1.18	10	
Matrix Spike Dup (1HD0332-MSD2)		**Source: 1HC1434-01**		Prepared & Analyzed: 04/04/24 03:33							
Sulfate	180.0	1.8	5.0	mg/L	169	4.67	104	87-113	0.359	10	

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1319 - EPA 200.2 Total ICP-MS - EPA 200.8											
Blank (1HC1319-BLK1)				Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:13							
Antimony, total	<0.0008	0.0008	0.0020	mg/L							
Arsenic, total	<0.0006	0.0006	0.0020	mg/L							
Barium, total	<0.0002	0.0002	0.0020	mg/L							
Beryllium, total	<0.0001	0.0001	0.0020	mg/L							
Cadmium, total	<0.00008	0.00008	0.0002	mg/L							
Chromium, total	<0.0007	0.0007	0.0008	mg/L							
Cobalt, total	<0.0005	0.0005	0.0020	mg/L							
Copper, total	0.0008	0.0008	0.0020	mg/L							
Lead, total	<0.0005	0.0005	0.0008	mg/L							
Manganese, total	<0.0017	0.0017	0.0040	mg/L							
Molybdenum, total	<0.0006	0.0006	0.0020	mg/L							
Nickel, total	<0.0007	0.0007	0.0040	mg/L							
Selenium, total	<0.0011	0.0011	0.0040	mg/L							
Silver, total	<0.0015	0.0015	0.0020	mg/L							
Thallium, total	<0.0004	0.0004	0.0008	mg/L							
Vanadium, total	<0.0043	0.0043	0.0080	mg/L							

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1319 - EPA 200.2 Total ICP-MS - EPA 200.8											
Blank (1HC1319-BLK1)				Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:13							
Zinc, total	<0.0174	0.0174	0.0200	mg/L							
LCS (1HC1319-BS1)				Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:20							
Antimony, total	0.0928	0.0008	0.0020	mg/L	0.100		92.8	85-115			
Arsenic, total	0.0943	0.0006	0.0020	mg/L	0.100		94.3	85-115			
Barium, total	0.103	0.0002	0.0020	mg/L	0.100		103	85-115			
Beryllium, total	0.0906	0.0001	0.0020	mg/L	0.100		90.6	85-115			
Cadmium, total	0.0931	0.00008	0.0002	mg/L	0.100		93.1	85-115			
Chromium, total	0.0915	0.0007	0.0008	mg/L	0.100		91.5	85-115			
Cobalt, total	0.101	0.0005	0.0020	mg/L	0.100		101	85-115			
Copper, total	0.0989	0.0008	0.0020	mg/L	0.100		98.9	85-115			
Lead, total	0.0975	0.0005	0.0008	mg/L	0.100		97.5	85-115			
Manganese, total	0.0877	0.0017	0.0040	mg/L	0.100		87.7	85-115			
Molybdenum, total	0.0958	0.0006	0.0020	mg/L	0.100		95.8	85-115			
Nickel, total	0.0938	0.0007	0.0040	mg/L	0.100		93.8	85-115			
Selenium, total	0.0935	0.0011	0.0040	mg/L	0.100		93.5	85-115			
Silver, total	0.0976	0.0015	0.0020	mg/L	0.100		97.6	85-115			
Thallium, total	0.0982	0.0004	0.0008	mg/L	0.100		98.2	85-115			
Vanadium, total	0.0955	0.0043	0.0080	mg/L	0.100		95.5	85-115			
Zinc, total	0.0956	0.0174	0.0200	mg/L	0.100		95.6	85-115			
Matrix Spike (1HC1319-MS1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:32							
Antimony, total	0.0959	0.0008	0.0020	mg/L	0.100	ND	95.9	70-130			
Arsenic, total	0.0967	0.0006	0.0020	mg/L	0.100	0.0015	95.2	70-130			
Barium, total	0.185	0.0002	0.0020	mg/L	0.100	0.0817	104	70-130			
Beryllium, total	0.0900	0.0001	0.0020	mg/L	0.100	ND	90.0	70-130			
Cadmium, total	0.0916	0.00008	0.0002	mg/L	0.100	ND	91.6	70-130			
Chromium, total	0.0910	0.0007	0.0008	mg/L	0.100	0.0009	90.1	70-130			
Cobalt, total	0.100	0.0005	0.0020	mg/L	0.100	ND	100	70-130			
Copper, total	0.104	0.0008	0.0020	mg/L	0.100	0.0109	93.2	70-130			
Lead, total	0.0911	0.0005	0.0008	mg/L	0.100	ND	91.1	70-130			
Manganese, total	0.0995	0.0017	0.0040	mg/L	0.100	0.0154	84.2	70-130			
Molybdenum, total	0.105	0.0006	0.0020	mg/L	0.100	0.0032	102	70-130			
Nickel, total	0.0930	0.0007	0.0040	mg/L	0.100	0.0022	90.9	70-130			
Selenium, total	0.0908	0.0011	0.0040	mg/L	0.100	0.0012	89.6	70-130			
Silver, total	0.0953	0.0015	0.0020	mg/L	0.100	ND	95.3	70-130			
Thallium, total	0.0928	0.0004	0.0008	mg/L	0.100	ND	92.8	70-130			
Vanadium, total	0.0968	0.0043	0.0080	mg/L	0.100	ND	96.8	70-130			
Zinc, total	0.112	0.0174	0.0200	mg/L	0.100	0.0221	90.4	70-130			
Matrix Spike Dup (1HC1319-MSD1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:38							
Antimony, total	0.0950	0.0008	0.0020	mg/L	0.100	ND	95.0	70-130	0.998	20	
Arsenic, total	0.0953	0.0006	0.0020	mg/L	0.100	0.0015	93.9	70-130	1.42	20	
Barium, total	0.186	0.0002	0.0020	mg/L	0.100	0.0817	104	70-130	0.105	20	
Beryllium, total	0.0893	0.0001	0.0020	mg/L	0.100	ND	89.3	70-130	0.797	20	
Cadmium, total	0.0913	0.00008	0.0002	mg/L	0.100	ND	91.3	70-130	0.343	20	

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1319 - EPA 200.2 Total ICP-MS - EPA 200.8											
Matrix Spike Dup (1HC1319-MSD1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:38							
Chromium, total	0.0904	0.0007	0.0008	mg/L	0.100	0.0009	89.5	70-130	0.693	20	
Cobalt, total	0.0998	0.0005	0.0020	mg/L	0.100	ND	99.8	70-130	0.662	20	
Copper, total	0.105	0.0008	0.0020	mg/L	0.100	0.0109	93.7	70-130	0.434	20	
Lead, total	0.0915	0.0005	0.0008	mg/L	0.100	ND	91.5	70-130	0.401	20	
Manganese, total	0.0991	0.0017	0.0040	mg/L	0.100	0.0154	83.8	70-130	0.398	20	
Molybdenum, total	0.105	0.0006	0.0020	mg/L	0.100	0.0032	102	70-130	0.300	20	
Nickel, total	0.0922	0.0007	0.0040	mg/L	0.100	0.0022	90.0	70-130	0.877	20	
Selenium, total	0.0938	0.0011	0.0040	mg/L	0.100	0.0012	92.6	70-130	3.25	20	
Silver, total	0.0956	0.0015	0.0020	mg/L	0.100	ND	95.6	70-130	0.350	20	
Thallium, total	0.0936	0.0004	0.0008	mg/L	0.100	ND	93.6	70-130	0.795	20	
Vanadium, total	0.0960	0.0043	0.0080	mg/L	0.100	ND	96.0	70-130	0.869	20	
Zinc, total	0.112	0.0174	0.0200	mg/L	0.100	0.0221	89.8	70-130	0.525	20	
Post Spike (1HC1319-PS1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:44							
Antimony, total	0.0812			mg/L	0.0800	0.0006	101	70-130			
Arsenic, total	0.0809			mg/L	0.0800	0.0014	99.4	70-130			
Barium, total	0.167			mg/L	0.0800	0.0801	109	70-130			
Beryllium, total	0.0751			mg/L	0.0800	0.000006	93.9	70-130			
Cadmium, total	0.0768			mg/L	0.0800	0.00001	96.0	70-130			
Chromium, total	0.0763			mg/L	0.0800	0.0008	94.4	70-130			
Cobalt, total	0.0856			mg/L	0.0800	0.0004	106	70-130			
Copper, total	0.0885			mg/L	0.0800	0.0107	97.3	70-130			
Lead, total	0.0790			mg/L	0.0800	0.0004	98.3	70-130			
Manganese, total	0.0857			mg/L	0.0800	0.0150	88.3	70-130			
Molybdenum, total	0.0891			mg/L	0.0800	0.0031	107	70-130			
Nickel, total	0.0792			mg/L	0.0800	0.0021	96.4	70-130			
Selenium, total	0.0755			mg/L	0.0800	0.0011	92.9	70-130			
Silver, total	0.0809			mg/L	0.0800	0.0001	101	70-130			
Thallium, total	0.0806			mg/L	0.0800	0.0001	101	70-130			
Vanadium, total	0.0843			mg/L	0.0800	0.0033	101	70-130			
Zinc, total	0.0965			mg/L	0.0800	0.0217	93.6	70-130			
Batch 1HC1442 - EPA 200.2 Total ICP-OES (200.7) - EPA 200.7											
Blank (1HC1442-BLK1)				Prepared: 03/26/24 15:40 Analyzed: 03/28/24 17:10							
Aluminum, total	<0.050		0.050	mg/L							
Boron, total	<0.056	0.056	0.100	mg/L							
Iron, total	<0.047	0.047	0.100	mg/L							
Magnesium, total	<0.06	0.06	0.10	mg/L							
LCS (1HC1442-BS1)				Prepared: 03/26/24 15:40 Analyzed: 03/28/24 17:30							
Aluminum, total	2.27		0.050	mg/L	2.20		103	85-115			
Boron, total	0.210	0.056	0.100	mg/L	0.200		105	85-115			
Iron, total	2.40	0.047	0.100	mg/L	2.20		109	85-115			
Magnesium, total	2.26	0.06	0.10	mg/L	2.20		103	85-115			

Determination of Total Metals	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1442 - EPA 200.2 Total ICP-OES (200.7) - EPA 200.7											
Matrix Spike (1HC1442-MS1)		**Source: 1HC1502-01**		Prepared: 03/26/24 15:40 Analyzed: 03/28/24 17:41							
Aluminum, total	2.90		0.050	mg/L	2.20	0.575	106	70-130			
Boron, total	0.445	0.056	0.100	mg/L	0.200	0.228	108	70-130			
Iron, total	3.79	0.047	0.100	mg/L	2.20	1.47	106	70-130			
Magnesium, total	33.0	0.06	0.10	mg/L	2.20	30.4	117	70-130			
Matrix Spike Dup (1HC1442-MSD1)		**Source: 1HC1502-01**		Prepared: 03/26/24 15:40 Analyzed: 03/28/24 17:47							
Aluminum, total	3.12		0.050	mg/L	2.20	0.575	115	70-130	7.06	20	
Boron, total	0.483	0.056	0.100	mg/L	0.200	0.228	127	70-130	8.20	20	
Iron, total	4.00	0.047	0.100	mg/L	2.20	1.47	115	70-130	5.24	20	
Magnesium, total	35.3	0.06	0.10	mg/L	2.20	30.4	225	70-130	6.92	20	QM-4X
Post Spike (1HC1442-PS1)		**Source: 1HC1502-01**		Prepared: 03/26/24 15:40 Analyzed: 03/28/24 17:53							
Aluminum, total	9.24			mg/L	8.80	0.575	98.5	85-115			
Boron, total	1.02			mg/L	0.800	0.228	99.6	85-115			
Iron, total	10.4			mg/L	8.80	1.47	101	85-115			
Magnesium, total	38.4			mg/L	8.80	30.4	91.6	85-115			
Batch 1HD0077 - EPA 7470A Hg Water - SM 3112B											
Blank (1HD0077-BLK1)				Prepared: 04/01/24 15:39 Analyzed: 04/02/24 16:17							
Mercury, total	<0.00013	0.00013	0.00020	mg/L							
LCS (1HD0077-BS1)				Prepared: 04/01/24 15:39 Analyzed: 04/02/24 16:19							
Mercury, total	0.00249	0.00013	0.00020	mg/L	0.00250		99.7	87-118			
Matrix Spike (1HD0077-MS1)		**Source: 1HC1541-01**		Prepared: 04/01/24 15:39 Analyzed: 04/02/24 16:24							
Mercury, total	0.00261	0.00013	0.00020	mg/L	0.00250	ND	105	62-131			
Matrix Spike Dup (1HD0077-MSD1)		**Source: 1HC1541-01**		Prepared: 04/01/24 15:39 Analyzed: 04/02/24 16:26							
Mercury, total	0.00253	0.00013	0.00020	mg/L	0.00250	ND	101	62-131	3.45	17	

Definitions

I-05:	Sample received at laboratory past hold time for this analyte.
MDL:	Minimum Detection Limit
QM-07:	The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-14:	The spike recovery was outside acceptance limits for the MS and/or MSD. However, all other QC was acceptable.
QM-21:	The recovery for the blank spike was outside the established laboratory control limits. The batch was accepted based upon the acceptable recovery of the CCV.
QM-4X:	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration.
QR-02:	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QS-03:	The blank spike recovery was below established acceptance limits.
RL:	Reporting Limit
RPD:	Relative Percent Difference
S-GC:	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
TOX-3:	The RPD value for the sample duplicates are outside of acceptance limits due to matrix interference. The reported value is an average of all test measurements.

Cooler Receipt Log

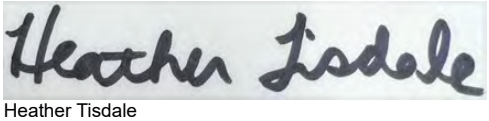
Cooler ID:	N13098	Temp: 0.7ºC	**Cooler ID:**	N5-13133	Temp: 1.1ºC

Cooler Inspection Checklist

Custody Seals	No	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Confirmed	No
Received On Ice	Yes		

Report Comments

Reviewed and Approved By:



Heather Tisdale
Customer Relationship Specialist
heather.tisdale@microbac.com
05/15/24 14:10

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES
A Microbac Company
600 East 17th Street South
Newton, IA 50208
641-792-8451

1HC1543

BMC Aggregates L.C.
PM: Heather Tisdale

SITE INFORMATION

Sampler: Sherman Lundy
Project: CW Monitoring
Miller Creek Area

REPORT TO

Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO

Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order 1HC1543
Temperature 0.7
Turn-Cooler: No

- ☐ Custody Seal
- ☒ Containers Intact
- ☒ COC/Labels Agree
- ☐ Preservation Confirmed
- ☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
-001	Well #3	Water	GRAB	3/18/24	9AM	12	624@benzene; 624@chloroform; 624@mek; 624-base-analysis; 625@pyridine; 625-126; 8315@Formaldehyde; 9020-100; ag-t-200.8; al-t-200.7; as-t-200.8; ba-t-200.8; be-t-200.8; b-t-200.7; cd-t-200.8; cl-9056-w; cod-t-410.4; co-t-200.8; cr-t-200.8; cu-t-200.8; f-9056; fe-t-200.7; hg-t-3112-low; mg-t-200.7; mn-t-200.8; mo-t-200.8; nh3-timberline; ni-t-200.8; pb-t-200.8; phenol-t-420.1; sb-t-200.8; se-t-200.8; so4-9056-w; tds-i-1750-85; tl-t-200.8; tss-i-3765-85; Electrical Conductivity	01

Sherman Lundy 3/19/24 3:09 PM
Relinquished By Date/Time

Relinquished By Date/Time

Received By Date/Time

Received for Lab By Date/Time 3-19-24 1509

Remarks:

Original - Lab Copy Yellow - Sampler Copy

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HC1550

Project Description

Miller Creek Area

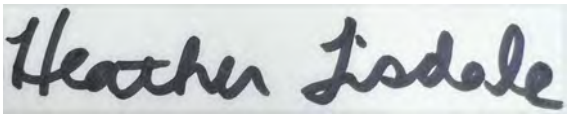
For:

Sherman Lundy

BMC Aggregates L.C.

101 BMC Drive

Elk Run Heights, IA 50707



Heather Tisdale

Customer Relationship Specialist

Wednesday, May 15, 2024

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc., Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

MICROBAC®

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HC1550

BMC Aggregates L.C.

Sherman Lundy
101 BMC Drive
Elk Run Heights, IA 50707

Project Name: Miller Creek Area

Project / PO Number: Sherman Lundy
Received: 03/21/2024
Reported: 05/15/2024

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
Well #4	1HC1550-01	Aqueous	GRAB		03/18/24 09:00	03/21/24 10:50

Analytical Testing Parameters

Client Sample ID:	Well #4		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HC1550-01	**Collection Date:**	03/18/2024 9:00

Determination of Volatile Organic Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030B/EPA 624									
2-Butanone (MEK)	<10.0	1.4	10.0	ug/L	1		03/27/24 0000	03/27/24 1557	CSM
Chloroform	<1.0	0.4	1.0	ug/L	1		03/27/24 0000	03/27/24 1557	CSM
Benzene	<1.0	0.3	1.0	ug/L	1		03/27/24 0000	03/27/24 1557	CSM
Surrogate: Dibromofluoromethane	91.2	Limit: 79-129		% Rec	1		03/27/24 0000	03/27/24 1557	CSM
Surrogate: 1,2-Dichloroethane-d4	96.9	Limit: 66-134		% Rec	1		03/27/24 0000	03/27/24 1557	CSM
Surrogate: Toluene-d8	97.7	Limit: 91-113		% Rec	1		03/27/24 0000	03/27/24 1557	CSM
Surrogate: 4-Bromofluorobenzene	98.0	Limit: 83-112		% Rec	1		03/27/24 0000	03/27/24 1557	CSM

Determination of Base/Neutral Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
Pyridine	<10	10	10	ug/L	1		03/25/24 1408	04/08/24 1351	EPP

Determination of Acid Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625									
2-Methylphenol (o-Cresol)	<10.0	2.6	10.0	ug/L	1		03/25/24 1408	04/08/24 1351	EPP
(3 & 4)-Methylphenol	<10.0	2.6	10.0	ug/L	1		03/25/24 1408	04/08/24 1351	EPP
Surrogate: 2-Fluorophenol	70.1	Limit: 19-139		% Rec	1		03/25/24 1408	04/08/24 1351	EPP
Surrogate: Phenol-d6	64.7	Limit: 14-154		% Rec	1		03/25/24 1408	04/08/24 1351	EPP
Surrogate: 2,4,6-Tribromophenol	80.0	Limit: 21-151		% Rec	1		03/25/24 1408	04/08/24 1351	EPP

Determination of Carbonyl Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 8315									
Formaldehyde	<10.0	10.0	10.0	ug/L	1	**I-05**	03/25/24 1142	03/26/24 1638	PDS

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 410.4									
COD, total	<54	24	54	mg/L	1		03/25/24 1138	03/26/24 1648	CHP
Method: EPA 420.1									
Phenols, total	**0.118**	0.024	0.035	mg/L	1		04/02/24 0947	04/03/24 1448	AKK
Method: EPA 9020									
Total Organic Halogens (TOX)	**0.054**	0.006	0.010	mg/L	1	**TOX-3**	04/01/24 0000	04/02/24 0000	LNH
Method: EPA 9050									

CERTIFICATE OF ANALYSIS

1HC1550

Client Sample ID:	Well #4		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HC1550-01	**Collection Date:**	03/18/2024 9:00

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Conductivity	**737**	1.8	2.0	uS/cm	1		04/03/24 1441	04/03/24 1513	BSS
Method: TIMBERLINE									
Nitrogen, Ammonia	<0.10	0.08	0.10	mg/L	1		04/01/24 0908	04/01/24 1414	LJS
Method: USGS I-1750-85									
Total Dissolved Solids (TDS)	**439**	4	5	mg/L	1		03/25/24 0824	03/25/24 1155	MEAH
Method: USGS I-3765-85									
Total Suspended Solids (TSS)	**2**	0.9	1	mg/L	1		03/25/24 0905	03/25/24 1415	MEAH

Determination of Inorganic Anions	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 9056									
Fluoride	**0.2**	0.02	0.1	mg/L	1		04/02/24 0000	04/02/24 2129	MID
Sulfate	**108**	1.8	5.0	mg/L	5			04/03/24 2112	MID

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 200.7									
Iron, total	**0.150**	0.047	0.100	mg/L	1		03/26/24 1540	03/28/24 1921	JAR
Magnesium, total	**21.9**	0.06	0.10	mg/L	1		03/26/24 1540	03/28/24 1921	JAR
Method: EPA 200.7									
Aluminum, total	**0.164**	0.038	0.050	mg/L	1		03/26/24 1540	03/28/24 1921	JAR
Boron, total	<0.056	0.056	0.100	mg/L	1		03/26/24 1540	03/28/24 1921	JAR
Method: EPA 200.8									
Antimony, total	<0.0008	0.0008	0.0020	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Arsenic, total	**0.0009**	0.0006	0.0020	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Barium, total	**0.0725**	0.0002	0.0020	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Beryllium, total	<0.0001	0.0001	0.0020	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Cadmium, total	<0.00008	0.00008	0.0002	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Chromium, total	**0.0008**	0.0007	0.0020	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Cobalt, total	<0.0005	0.0005	0.0020	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Copper, total	**0.0016**	0.0008	0.0020	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Lead, total	<0.0005	0.0005	0.0008	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Manganese, total	**0.0041**	0.0017	0.0040	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Molybdenum, total	**0.0031**	0.0006	0.0020	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Nickel, total	**0.0013**	0.0007	0.0040	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Selenium, total	**0.0032**	0.0011	0.0040	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Silver, total	<0.0015	0.0015	0.0020	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Thallium, total	<0.0004	0.0004	0.0008	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Vanadium, total	<0.0043	0.0043	0.0080	mg/L	4		03/25/24 0850	03/26/24 0435	RVV

CERTIFICATE OF ANALYSIS

1HC1550

Client Sample ID:	Well #4		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HC1550-01	**Collection Date:**	03/18/2024 9:00

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Zinc, total	<0.0174	0.0174	0.0200	mg/L	4		03/25/24 0850	03/26/24 0435	RVV
Method: SM 3112B									
Mercury, total	<0.00013	0.00013	0.00020	mg/L	1		04/01/24 1539	04/02/24 1635	JAR

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
USGS I-1750-85	1HC1310	1HC1310-BLK1	
		1HC1310-DUP1	1HC1466-01
		1HC1550-01	Well #4
		1HC1310-BS1	

Method	Batch	Laboratory ID	Client / Source ID
EPA 200.8	1HC1319	1HC1319-BLK1	
		1HC1319-BS1	
		1HC1319-MS1	1HC1302-02
		1HC1319-MSD1	1HC1302-02
		1HC1319-PS1	1HC1302-02
		1HC1550-01	Well #4

Method	Batch	Laboratory ID	Client / Source ID
USGS I-3765-85	1HC1323	1HC1323-DUP1	1HC1247-01
		1HC1323-BLK1	
		1HC1323-BS1	
		1HC1550-01	Well #4

Method	Batch	Laboratory ID	Client / Source ID
EPA 410.4	1HC1337	1HC1337-MSD1	1HC1395-01
		1HC1337-BLK1	
		1HC1337-MS1	1HC1395-01
		1HC1550-01	Well #4
		1HC1337-BS1	

Method	Batch	Laboratory ID	Client / Source ID
EPA 8315	1HC1339	1HC1339-BS1	
		1HC1339-BLK1	
		1HC1550-01	Well #4
		1HC1339-MS1	1HC1526-01
		1HC1339-MSD1	1HC1526-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 625	1HC1357	1HC1357-BLK1	
		1HC1357-BLK1	
		1HC1357-BS1	
		1HC1357-BS1	
		1HC1357-BSD1	
		1HC1357-BSD1	
		1HC1550-01	Well #4

EPA 625	1HC1357	1HC1550-01	Well #4

Method	Batch	Laboratory ID	Client / Source ID
200.7	1HC1442	1HC1442-BLK1	
EPA 200.7		1HC1442-BLK1	
200.7		1HC1442-BS1	
EPA 200.7		1HC1442-BS1	
		1HC1442-MS1	1HC1502-01
200.7		1HC1442-MS1	1HC1502-01
		1HC1442-MSD1	1HC1502-01
EPA 200.7		1HC1442-MSD1	1HC1502-01
		1HC1442-PS1	1HC1502-01
200.7		1HC1442-PS1	1HC1502-01
		1HC1550-01	Well #4
EPA 200.7		1HC1550-01	Well #4

Method	Batch	Laboratory ID	Client / Source ID
EPA 624	1HC1543	1HC1543-BS1	
		1HC1543-BSD1	
		1HC1543-BLK1	
		1HC1550-01	Well #4
		1HC1543-MS1	1HC1329-01
		1HC1543-MSD1	1HC1329-01

Method	Batch	Laboratory ID	Client / Source ID
TIMBERLINE	1HD0020	1HD0020-BLK1	
		1HD0020-BS1	
		1HD0020-MS1	1HC1356-02
		1HD0020-MSD1	1HC1356-02
		1HC1550-01	Well #4

Method	Batch	Laboratory ID	Client / Source ID
SM 3112B	1HD0077	1HD0077-BLK1	
		1HD0077-BS1	
		1HD0077-MS1	1HC1541-01
		1HD0077-MSD1	1HC1541-01
		1HC1550-01	Well #4

Method	Batch	Laboratory ID	Client / Source ID
EPA 420.1	1HD0125	1HD0125-MS1	1HC1416-01
		1HD0125-BLK1	
		1HC1550-01	Well #4
		1HD0125-BS1	
		1HD0125-MSD1	1HC1416-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 9020	1HD0192	1HD0192-SRM1	
		1HD0192-BS1	
		1HC1550-01	Well #4
		1HD0192-SRM4	
		1HD0192-SRM3	
		1HD0192-BS2	
		1HD0192-BLK1	
		1HD0192-SRM2	

Method	Batch	Laboratory ID	Client / Source ID
EPA 9056	1HD0226	1HD0226-BLK1	
		1HD0226-MRL1	
		1HD0226-BS1	
		1HD0226-BSD1	
		1HD0226-BLK2	
		1HD0226-MS1	1HC1878-02
		1HD0226-MSD1	1HC1878-02
		1HD0226-BLK3	
		1HD0226-BS2	
		1HD0226-BSD2	
		1HC1550-01	Well #4
		1HD0226-MS2	1HC1394-02
		1HD0226-MSD2	1HC1394-02

Method	Batch	Laboratory ID	Client / Source ID
EPA 9050	1HD0249	1HC1550-01	Well #4
		1HD0249-SRM1	
		1HD0249-DUP1	1HC1416-01
		1HD0249-BLK1	

Method	Batch	Laboratory ID	Client / Source ID
EPA 9056	1HD0332	1HD0332-BLK1	
		1HD0332-MRL1	
		1HD0332-BS1	
		1HD0332-BSD1	
		1HD0332-BLK2	
		1HD0332-BLK3	
		1HC1550-01	Well #4
		1HD0332-BLK4	
		1HD0332-BS2	
		1HD0332-BSD2	
		1HD0332-MS1	1HC1595-01

EPA 9056	1HD0332	1HD0332-MSD1	1HC1595-01
		1HD0332-MS2	1HC1434-01
		1HD0332-MSD2	1HC1434-01

Batch Quality Control Summary: Microbac Laboratories, Inc., Newton

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1543 - EPA 5030B - EPA 624										
Blank (1HC1543-BLK1)			Prepared: 03/27/24 00:00 Analyzed: 03/27/24 11:10							
2-Butanone (MEK)	<10.0	10.0	ug/L							
Chloroform	<1.0	1.0	ug/L							
Benzene	<1.0	1.0	ug/L							
Surrogate: Dibromofluoromethane	*56.7*		ug/L	*50.2*		*113*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*60.6*		ug/L	*50.1*		*121*	*66-134*			
Surrogate: Toluene-d8	*42.4*		ug/L	*50.4*		*84.2*	*91-113*			*S-GC*
Surrogate: 4-Bromofluorobenzene	*53.0*		ug/L	*50.1*		*106*	*83-112*			
LCS (1HC1543-BS1)			Prepared: 03/27/24 00:00 Analyzed: 03/27/24 10:02							
2-Butanone (MEK)	88.52	10.0	ug/L	103		85.7	44-158			
Chloroform	47.60	1.0	ug/L	50.0		95.2	76-132			
Benzene	48.42	1.0	ug/L	50.0		96.8	77-130			
Surrogate: Dibromofluoromethane	*47.6*		ug/L	*50.2*		*94.9*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*47.7*		ug/L	*50.1*		*95.2*	*66-134*			
Surrogate: Toluene-d8	*49.9*		ug/L	*50.4*		*99.0*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*49.9*		ug/L	*50.1*		*99.5*	*83-112*			
LCS Dup (1HC1543-BSD1)			Prepared: 03/27/24 00:00 Analyzed: 03/27/24 10:24							
2-Butanone (MEK)	61.42	10.0	ug/L	103		59.5	44-158	36.1	25	QR-02
Chloroform	46.67	1.0	ug/L	50.0		93.3	76-132	1.97	26	
Benzene	47.26	1.0	ug/L	50.0		94.5	77-130	2.42	27	
Surrogate: Dibromofluoromethane	*47.9*		ug/L	*50.2*		*95.4*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*47.3*		ug/L	*50.1*		*94.4*	*66-134*			
Surrogate: Toluene-d8	*49.9*		ug/L	*50.4*		*99.0*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*50.0*		ug/L	*50.1*		*99.6*	*83-112*			
Matrix Spike (1HC1543-MS1)	**Source: 1HC1329-01**		Prepared: 03/27/24 00:00 Analyzed: 03/27/24 18:14							
2-Butanone (MEK)	1092	100	ug/L	1030	ND	106	48-169			
Chloroform	456.3	10.0	ug/L	500	ND	91.3	75-133			
Benzene	480.8	10.0	ug/L	500	ND	96.2	79-128			
Surrogate: Dibromofluoromethane	*462*		ug/L	*502*		*92.0*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*468*		ug/L	*501*		*93.6*	*66-134*			
Surrogate: Toluene-d8	*498*		ug/L	*504*		*98.8*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*502*		ug/L	*501*		*100*	*83-112*			
Matrix Spike Dup (1HC1543-MSD1)	**Source: 1HC1329-01**		Prepared: 03/27/24 00:00 Analyzed: 03/27/24 18:37							
2-Butanone (MEK)	723.4	100	ug/L	1030	ND	70.0	48-169	40.6	17	QR-02
Chloroform	443.9	10.0	ug/L	500	ND	88.8	75-133	2.75	16	
Benzene	465.9	10.0	ug/L	500	ND	93.2	79-128	3.15	12	

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1543 - EPA 5030B - EPA 624										
Matrix Spike Dup (1HC1543-MSD1)	**Source: 1HC1329-01**		Prepared: 03/27/24 00:00 Analyzed: 03/27/24 18:37							
Surrogate: Dibromofluoromethane	*463*		ug/L	*502*		*92.3*	*79-129*			
Surrogate: 1,2-Dichloroethane-d4	*463*		ug/L	*501*		*92.4*	*66-134*			
Surrogate: Toluene-d8	*498*		ug/L	*504*		*98.8*	*91-113*			
Surrogate: 4-Bromofluorobenzene	*498*		ug/L	*501*		*99.2*	*83-112*			

Determination of Base/Neutral Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1357 - EPA 625 Base Neutral - EPA 625										
Blank (1HC1357-BLK1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 10:59							
Pyridine	<10	10	ug/L							
LCS (1HC1357-BS1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:24							
Pyridine	<10	10	ug/L	25.0		19.2	13-127			
LCS Dup (1HC1357-BSD1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:48							
Pyridine	<10	10	ug/L	25.0			13-127		30	QS-03

Determination of Acid Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1357 - EPA 625 Base Neutral - EPA 625										
Blank (1HC1357-BLK1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 10:59							
2-Methylphenol (o-Cresol)	<10.0	10.0	ug/L							
(3 & 4)-Methylphenol	<10.0	10.0	ug/L							
Surrogate: 2-Fluorophenol	*24.9*		ug/L	*29.6*		*84.0*	*19-139*			
Surrogate: Phenol-d6	*25.7*		ug/L	*30.5*		*84.3*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*25.3*		ug/L	*29.7*		*85.2*	*21-151*			
LCS (1HC1357-BS1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:24							
2-Methylphenol (o-Cresol)	15.0	10.0	ug/L	25.0		59.8	50-138			
(3 & 4)-Methylphenol	14.6	10.0	ug/L	25.0		58.6	56-130			
Surrogate: 2-Fluorophenol	*24.0*		ug/L	*29.6*		*81.2*	*19-139*			
Surrogate: Phenol-d6	*24.5*		ug/L	*30.5*		*80.4*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*26.4*		ug/L	*29.7*		*88.6*	*21-151*			
LCS Dup (1HC1357-BSD1)			Prepared: 03/25/24 14:08 Analyzed: 04/08/24 11:48							
2-Methylphenol (o-Cresol)	16.0	10.0	ug/L	25.0		64.1	50-138	6.97	24	
(3 & 4)-Methylphenol	16.1	10.0	ug/L	25.0		64.3	56-130	9.31	26	
Surrogate: 2-Fluorophenol	*21.9*		ug/L	*29.6*		*73.9*	*19-139*			
Surrogate: Phenol-d6	*23.0*		ug/L	*30.5*		*75.3*	*14-154*			
Surrogate: 2,4,6-Tribromophenol	*26.6*		ug/L	*29.7*		*89.6*	*21-151*			

Determination of Carbonyl Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1339 - EPA 8315 Aldehydes - EPA 8315										
Blank (1HC1339-BLK1)			Prepared: 03/25/24 11:42 Analyzed: 03/26/24 15:21							
Formaldehyde	<10.0	10.0	ug/L							
LCS (1HC1339-BS1)			Prepared: 03/25/24 11:42 Analyzed: 03/26/24 15:02							
Formaldehyde	472.5	10.0	ug/L	500		94.5	61-142			
Matrix Spike (1HC1339-MS1)		**Source: 1HC1526-01**	Prepared: 03/25/24 11:42 Analyzed: 03/26/24 16:57							
Formaldehyde	463.5	10.0	ug/L	500	ND	92.7	48-148			
Matrix Spike Dup (1HC1339-MSD1)		**Source: 1HC1526-01**	Prepared: 03/25/24 11:42 Analyzed: 03/26/24 17:16							
Formaldehyde	431.7	10.0	ug/L	500	ND	86.3	48-148	7.10	30	

Determination of Conventional Chemistry Parameters	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1310 - Wet Chem Preparation - USGS I-1750-85										
Blank (1HC1310-BLK1)			Prepared: 03/25/24 08:24 Analyzed: 03/25/24 11:55							
Total Dissolved Solids (TDS)	<5	5	mg/L							
LCS (1HC1310-BS1)			Prepared: 03/25/24 08:24 Analyzed: 03/25/24 11:55							
Total Dissolved Solids (TDS)	97	5	mg/L	100		97.4	71-114			
Duplicate (1HC1310-DUP1)		**Source: 1HC1466-01**	Prepared: 03/25/24 08:24 Analyzed: 03/25/24 11:55							
Total Dissolved Solids (TDS)	1780	5	mg/L		1820			2.11	30	
Batch 1HC1323 - Wet Chem Preparation - USGS I-3765-85										
Blank (1HC1323-BLK1)			Prepared: 03/25/24 09:05 Analyzed: 03/25/24 14:15							
Total Suspended Solids (TSS)	<1	1	mg/L							
LCS (1HC1323-BS1)			Prepared: 03/25/24 09:05 Analyzed: 03/25/24 14:15							
Total Suspended Solids (TSS)	14.1	1	mg/L	15.0		94.0	74-114			
Duplicate (1HC1323-DUP1)		**Source: 1HC1247-01**	Prepared: 03/25/24 09:05 Analyzed: 03/25/24 14:15							
Total Suspended Solids (TSS)	130	1	mg/L		117			10.8	30	
Batch 1HC1337 - Wet Chem Preparation - EPA 410.4										
Blank (1HC1337-BLK1)			Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	<54	54	mg/L							
LCS (1HC1337-BS1)			Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	159	54	mg/L	150		106	90-110			
Matrix Spike (1HC1337-MS1)		**Source: 1HC1395-01**	Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	372	108	mg/L	300	ND	124	90-110			QM-14
Matrix Spike Dup (1HC1337-MSD1)		**Source: 1HC1395-01**	Prepared: 03/25/24 11:38 Analyzed: 03/26/24 16:48							
COD, total	345	108	mg/L	300	ND	115	90-110	7.54	10	QM-14
Batch 1HD0020 - General Prep HPLC/IC - TIMBERLINE										

Determination of Conventional Chemistry Parameters	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Blank (1HD0020-BLK1)				Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:48							
Nitrogen, Ammonia	<0.10		0.10	mg/L							
LCS (1HD0020-BS1)				Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:50							
Nitrogen, Ammonia	5.13		0.10	mg/L	5.00		103	90-114			
Matrix Spike (1HD0020-MS1)		**Source: 1HC1356-02**		Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:51							
Nitrogen, Ammonia	5.82		0.10	mg/L	5.00	0.719	102	84-115			
Matrix Spike Dup (1HD0020-MSD1)		**Source: 1HC1356-02**		Prepared: 04/01/24 09:08 Analyzed: 04/01/24 13:53							
Nitrogen, Ammonia	5.82		0.10	mg/L	5.00	0.719	102	84-115	0.0128	20	
Batch 1HD0125 - Wet Chem Preparation - EPA 420.1											
Blank (1HD0125-BLK1)				Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	<0.035		0.035	mg/L							
LCS (1HD0125-BS1)				Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	0.419		0.035	mg/L	0.400		105	62-110			
Matrix Spike (1HD0125-MS1)		**Source: 1HC1416-01**		Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	0.268		0.035	mg/L	0.400	0.0738	48.7	57-124			QM-07
Matrix Spike Dup (1HD0125-MSD1)		**Source: 1HC1416-01**		Prepared: 04/02/24 09:47 Analyzed: 04/03/24 14:48							
Phenols, total	0.398		0.035	mg/L	0.400	0.0738	81.1	57-124	38.9	21	QM-07
Batch 1HD0192 - TOX/TX/EOX - EPA 9020											
Blank (1HD0192-BLK1)				Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	<0.010		0.010	mg/L							
LCS (1HD0192-BS1)				Prepared & Analyzed: 04/01/24 00:00							
Total Organic Halogens (TOX)	0.1020		0.010	mg/L	0.121		84.6	76-114			
LCS (1HD0192-BS2)				Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1476		0.010	mg/L	0.121		122	76-114			QM-21
Reference (1HD0192-SRM1)				Prepared & Analyzed: 04/01/24 00:00							
Total Organic Halogens (TOX)	0.1031		0.010	mg/L	0.111		92.8	90-110			
Reference (1HD0192-SRM2)				Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1150		0.010	mg/L	0.111		104	90-110			
Reference (1HD0192-SRM3)				Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1130		0.010	mg/L	0.111		102	90-110			
Reference (1HD0192-SRM4)				Prepared: 04/01/24 00:00 Analyzed: 04/02/24 00:00							
Total Organic Halogens (TOX)	0.1140		0.010	mg/L	0.111		103	90-110			
Batch 1HD0249 - Wet Chem Preparation - EPA 9050											
Blank (1HD0249-BLK1)				Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							
Conductivity	<2.0		2.0	uS/cm							
Duplicate (1HD0249-DUP1)		**Source: 1HC1416-01**		Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							

Determination of Conventional Chemistry Parameters	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0249 - Wet Chem Preparation - EPA 9050											
Duplicate (1HD0249-DUP1)		**Source: 1HC1416-01**		Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							
Conductivity	620		2.0	uS/cm		621			0.0161	10	
Reference (1HD0249-SRM1)				Prepared: 04/03/24 14:41 Analyzed: 04/03/24 15:13							
Conductivity	248		2.0	uS/cm	250		99.4	90-110			

Determination of Inorganic Anions	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0226 - General Prep HPLC/IC - EPA 9056											
Blank (1HD0226-BLK1)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 09:59							
Fluoride	<0.1		0.1	mg/L							
Blank (1HD0226-BLK2)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 14:14							
Fluoride	<0.1		0.1	mg/L							
Blank (1HD0226-BLK3)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 19:22							
Fluoride	<0.1		0.1	mg/L							
LCS (1HD0226-BS1)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 10:36							
Fluoride	1.08		0.1	mg/L	1.17		92.4	80-120			
LCS (1HD0226-BS2)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 20:17							
Fluoride	1.08		0.1	mg/L	1.17		91.7	80-120			
LCS Dup (1HD0226-BSD1)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 10:54							
Fluoride	1.08		0.1	mg/L	1.17		91.8	80-120	0.648	10	
LCS Dup (1HD0226-BSD2)				Prepared: 04/02/24 00:00 Analyzed: 04/02/24 20:35							
Fluoride	1.08		0.1	mg/L	1.17		92.0	80-120	0.278	10	
Matrix Spike (1HD0226-MS1)		**Source: 1HC1878-02**		Prepared: 04/02/24 00:00 Analyzed: 04/02/24 17:15							
Fluoride	12.89		1.0	mg/L	11.7	0.63	105	77-121			
Matrix Spike (1HD0226-MS2)		**Source: 1HC1394-02**		Prepared: 04/02/24 00:00 Analyzed: 04/02/24 23:55							
Fluoride	13.07		1.0	mg/L	11.7	1.04	103	77-121			
Matrix Spike Dup (1HD0226-MSD1)		**Source: 1HC1878-02**		Prepared: 04/02/24 00:00 Analyzed: 04/02/24 17:33							
Fluoride	13.16		1.0	mg/L	11.7	0.63	107	77-121	2.07	10	
Matrix Spike Dup (1HD0226-MSD2)		**Source: 1HC1394-02**		Prepared: 04/02/24 00:00 Analyzed: 04/03/24 00:13							
Fluoride	13.18		1.0	mg/L	11.7	1.04	103	77-121	0.838	10	
Batch 1HD0332 - General Prep HPLC/IC - EPA 9056											
Blank (1HD0332-BLK1)				Prepared & Analyzed: 04/03/24 10:00							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1HD0332-BLK2)				Prepared & Analyzed: 04/03/24 15:27							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1HD0332-BLK3)				Prepared & Analyzed: 04/03/24 19:23							

Determination of Inorganic Anions	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HD0332 - General Prep HPLC/IC - EPA 9056											
Blank (1HD0332-BLK3)				Prepared & Analyzed: 04/03/24 19:23							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1HD0332-BLK4)				Prepared & Analyzed: 04/03/24 23:55							
Sulfate	<0.4	0.4	1.0	mg/L							
LCS (1HD0332-BS1)				Prepared & Analyzed: 04/03/24 10:36							
Sulfate	33.53	0.4	1.0	mg/L	33.8		99.1	80-120			
LCS (1HD0332-BS2)				Prepared & Analyzed: 04/04/24 00:49							
Sulfate	33.50	0.4	1.0	mg/L	33.8		99.0	80-120			
LCS Dup (1HD0332-BSD1)				Prepared & Analyzed: 04/03/24 10:54							
Sulfate	33.39	0.4	1.0	mg/L	33.8		98.7	80-120	0.415	10	
LCS Dup (1HD0332-BSD2)				Prepared & Analyzed: 04/04/24 01:08							
Sulfate	33.53	0.4	1.0	mg/L	33.8		99.1	80-120	0.101	10	
Matrix Spike (1HD0332-MS1)		**Source: 1HC1595-01**		Prepared & Analyzed: 04/04/24 01:44							
Sulfate	403.3	3.6	10.0	mg/L	338	74.18	97.3	87-113			
Matrix Spike (1HD0332-MS2)		**Source: 1HC1434-01**		Prepared & Analyzed: 04/04/24 03:15							
Sulfate	179.4	1.8	5.0	mg/L	169	4.67	103	87-113			
Matrix Spike Dup (1HD0332-MSD1)		**Source: 1HC1595-01**		Prepared & Analyzed: 04/04/24 02:02							
Sulfate	408.1	3.6	10.0	mg/L	338	74.18	98.7	87-113	1.18	10	
Matrix Spike Dup (1HD0332-MSD2)		**Source: 1HC1434-01**		Prepared & Analyzed: 04/04/24 03:33							
Sulfate	180.0	1.8	5.0	mg/L	169	4.67	104	87-113	0.359	10	

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1319 - EPA 200.2 Total ICP-MS - EPA 200.8											
Blank (1HC1319-BLK1)				Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:13							
Antimony, total	<0.0008	0.0008	0.0020	mg/L							
Arsenic, total	<0.0006	0.0006	0.0020	mg/L							
Barium, total	<0.0002	0.0002	0.0020	mg/L							
Beryllium, total	<0.0001	0.0001	0.0020	mg/L							
Cadmium, total	<0.00008	0.00008	0.0002	mg/L							
Chromium, total	<0.0007	0.0007	0.0008	mg/L							
Cobalt, total	<0.0005	0.0005	0.0020	mg/L							
Copper, total	0.0008	0.0008	0.0020	mg/L							
Lead, total	<0.0005	0.0005	0.0008	mg/L							
Manganese, total	<0.0017	0.0017	0.0040	mg/L							
Molybdenum, total	<0.0006	0.0006	0.0020	mg/L							
Nickel, total	<0.0007	0.0007	0.0040	mg/L							
Selenium, total	<0.0011	0.0011	0.0040	mg/L							
Silver, total	<0.0015	0.0015	0.0020	mg/L							
Thallium, total	<0.0004	0.0004	0.0008	mg/L							
Vanadium, total	<0.0043	0.0043	0.0080	mg/L							

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1319 - EPA 200.2 Total ICP-MS - EPA 200.8											
Blank (1HC1319-BLK1)				Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:13							
Zinc, total	<0.0174	0.0174	0.0200	mg/L							
LCS (1HC1319-BS1)				Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:20							
Antimony, total	0.0928	0.0008	0.0020	mg/L	0.100		92.8	85-115			
Arsenic, total	0.0943	0.0006	0.0020	mg/L	0.100		94.3	85-115			
Barium, total	0.103	0.0002	0.0020	mg/L	0.100		103	85-115			
Beryllium, total	0.0906	0.0001	0.0020	mg/L	0.100		90.6	85-115			
Cadmium, total	0.0931	0.00008	0.0002	mg/L	0.100		93.1	85-115			
Chromium, total	0.0915	0.0007	0.0008	mg/L	0.100		91.5	85-115			
Cobalt, total	0.101	0.0005	0.0020	mg/L	0.100		101	85-115			
Copper, total	0.0989	0.0008	0.0020	mg/L	0.100		98.9	85-115			
Lead, total	0.0975	0.0005	0.0008	mg/L	0.100		97.5	85-115			
Manganese, total	0.0877	0.0017	0.0040	mg/L	0.100		87.7	85-115			
Molybdenum, total	0.0958	0.0006	0.0020	mg/L	0.100		95.8	85-115			
Nickel, total	0.0938	0.0007	0.0040	mg/L	0.100		93.8	85-115			
Selenium, total	0.0935	0.0011	0.0040	mg/L	0.100		93.5	85-115			
Silver, total	0.0976	0.0015	0.0020	mg/L	0.100		97.6	85-115			
Thallium, total	0.0982	0.0004	0.0008	mg/L	0.100		98.2	85-115			
Vanadium, total	0.0955	0.0043	0.0080	mg/L	0.100		95.5	85-115			
Zinc, total	0.0956	0.0174	0.0200	mg/L	0.100		95.6	85-115			
Matrix Spike (1HC1319-MS1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:32							
Antimony, total	0.0959	0.0008	0.0020	mg/L	0.100	ND	95.9	70-130			
Arsenic, total	0.0967	0.0006	0.0020	mg/L	0.100	0.0015	95.2	70-130			
Barium, total	0.185	0.0002	0.0020	mg/L	0.100	0.0817	104	70-130			
Beryllium, total	0.0900	0.0001	0.0020	mg/L	0.100	ND	90.0	70-130			
Cadmium, total	0.0916	0.00008	0.0002	mg/L	0.100	ND	91.6	70-130			
Chromium, total	0.0910	0.0007	0.0008	mg/L	0.100	0.0009	90.1	70-130			
Cobalt, total	0.100	0.0005	0.0020	mg/L	0.100	ND	100	70-130			
Copper, total	0.104	0.0008	0.0020	mg/L	0.100	0.0109	93.2	70-130			
Lead, total	0.0911	0.0005	0.0008	mg/L	0.100	ND	91.1	70-130			
Manganese, total	0.0995	0.0017	0.0040	mg/L	0.100	0.0154	84.2	70-130			
Molybdenum, total	0.105	0.0006	0.0020	mg/L	0.100	0.0032	102	70-130			
Nickel, total	0.0930	0.0007	0.0040	mg/L	0.100	0.0022	90.9	70-130			
Selenium, total	0.0908	0.0011	0.0040	mg/L	0.100	0.0012	89.6	70-130			
Silver, total	0.0953	0.0015	0.0020	mg/L	0.100	ND	95.3	70-130			
Thallium, total	0.0928	0.0004	0.0008	mg/L	0.100	ND	92.8	70-130			
Vanadium, total	0.0968	0.0043	0.0080	mg/L	0.100	ND	96.8	70-130			
Zinc, total	0.112	0.0174	0.0200	mg/L	0.100	0.0221	90.4	70-130			
Matrix Spike Dup (1HC1319-MSD1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:38							
Antimony, total	0.0950	0.0008	0.0020	mg/L	0.100	ND	95.0	70-130	0.998	20	
Arsenic, total	0.0953	0.0006	0.0020	mg/L	0.100	0.0015	93.9	70-130	1.42	20	
Barium, total	0.186	0.0002	0.0020	mg/L	0.100	0.0817	104	70-130	0.105	20	
Beryllium, total	0.0893	0.0001	0.0020	mg/L	0.100	ND	89.3	70-130	0.797	20	
Cadmium, total	0.0913	0.00008	0.0002	mg/L	0.100	ND	91.3	70-130	0.343	20	

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1319 - EPA 200.2 Total ICP-MS - EPA 200.8											
Matrix Spike Dup (1HC1319-MSD1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:38							
Chromium, total	0.0904	0.0007	0.0008	mg/L	0.100	0.0009	89.5	70-130	0.693	20	
Cobalt, total	0.0998	0.0005	0.0020	mg/L	0.100	ND	99.8	70-130	0.662	20	
Copper, total	0.105	0.0008	0.0020	mg/L	0.100	0.0109	93.7	70-130	0.434	20	
Lead, total	0.0915	0.0005	0.0008	mg/L	0.100	ND	91.5	70-130	0.401	20	
Manganese, total	0.0991	0.0017	0.0040	mg/L	0.100	0.0154	83.8	70-130	0.398	20	
Molybdenum, total	0.105	0.0006	0.0020	mg/L	0.100	0.0032	102	70-130	0.300	20	
Nickel, total	0.0922	0.0007	0.0040	mg/L	0.100	0.0022	90.0	70-130	0.877	20	
Selenium, total	0.0938	0.0011	0.0040	mg/L	0.100	0.0012	92.6	70-130	3.25	20	
Silver, total	0.0956	0.0015	0.0020	mg/L	0.100	ND	95.6	70-130	0.350	20	
Thallium, total	0.0936	0.0004	0.0008	mg/L	0.100	ND	93.6	70-130	0.795	20	
Vanadium, total	0.0960	0.0043	0.0080	mg/L	0.100	ND	96.0	70-130	0.869	20	
Zinc, total	0.112	0.0174	0.0200	mg/L	0.100	0.0221	89.8	70-130	0.525	20	
Post Spike (1HC1319-PS1)		**Source: 1HC1302-02**		Prepared: 03/25/24 08:50 Analyzed: 03/26/24 02:44							
Antimony, total	0.0812			mg/L	0.0800	0.0006	101	70-130			
Arsenic, total	0.0809			mg/L	0.0800	0.0014	99.4	70-130			
Barium, total	0.167			mg/L	0.0800	0.0801	109	70-130			
Beryllium, total	0.0751			mg/L	0.0800	0.000006	93.9	70-130			
Cadmium, total	0.0768			mg/L	0.0800	0.00001	96.0	70-130			
Chromium, total	0.0763			mg/L	0.0800	0.0008	94.4	70-130			
Cobalt, total	0.0856			mg/L	0.0800	0.0004	106	70-130			
Copper, total	0.0885			mg/L	0.0800	0.0107	97.3	70-130			
Lead, total	0.0790			mg/L	0.0800	0.0004	98.3	70-130			
Manganese, total	0.0857			mg/L	0.0800	0.0150	88.3	70-130			
Molybdenum, total	0.0891			mg/L	0.0800	0.0031	107	70-130			
Nickel, total	0.0792			mg/L	0.0800	0.0021	96.4	70-130			
Selenium, total	0.0755			mg/L	0.0800	0.0011	92.9	70-130			
Silver, total	0.0809			mg/L	0.0800	0.0001	101	70-130			
Thallium, total	0.0806			mg/L	0.0800	0.0001	101	70-130			
Vanadium, total	0.0843			mg/L	0.0800	0.0033	101	70-130			
Zinc, total	0.0965			mg/L	0.0800	0.0217	93.6	70-130			
Batch 1HC1442 - EPA 200.2 Total ICP-OES (200.7) - EPA 200.7											
Blank (1HC1442-BLK1)				Prepared: 03/26/24 15:40 Analyzed: 03/28/24 17:10							
Aluminum, total	<0.050		0.050	mg/L							
Boron, total	<0.056	0.056	0.100	mg/L							
Iron, total	<0.047	0.047	0.100	mg/L							
Magnesium, total	<0.06	0.06	0.10	mg/L							
LCS (1HC1442-BS1)				Prepared: 03/26/24 15:40 Analyzed: 03/28/24 17:30							
Aluminum, total	2.27		0.050	mg/L	2.20		103	85-115			
Boron, total	0.210	0.056	0.100	mg/L	0.200		105	85-115			
Iron, total	2.40	0.047	0.100	mg/L	2.20		109	85-115			
Magnesium, total	2.26	0.06	0.10	mg/L	2.20		103	85-115			

Determination of Total Metals	Result		RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HC1442 - EPA 200.2 Total ICP-OES (200.7) - EPA 200.7											
Matrix Spike (1HC1442-MS1)		**Source: 1HC1502-01**		Prepared: 03/26/24 15:40 Analyzed: 03/28/24 17:41							
Aluminum, total	2.90		0.050	mg/L	2.20	0.575	106	70-130			
Boron, total	0.445	0.056	0.100	mg/L	0.200	0.228	108	70-130			
Iron, total	3.79	0.047	0.100	mg/L	2.20	1.47	106	70-130			
Magnesium, total	33.0	0.06	0.10	mg/L	2.20	30.4	117	70-130			
Matrix Spike Dup (1HC1442-MSD1)		**Source: 1HC1502-01**		Prepared: 03/26/24 15:40 Analyzed: 03/28/24 17:47							
Aluminum, total	3.12		0.050	mg/L	2.20	0.575	115	70-130	7.06	20	
Boron, total	0.483	0.056	0.100	mg/L	0.200	0.228	127	70-130	8.20	20	
Iron, total	4.00	0.047	0.100	mg/L	2.20	1.47	115	70-130	5.24	20	
Magnesium, total	35.3	0.06	0.10	mg/L	2.20	30.4	225	70-130	6.92	20	QM-4X
Post Spike (1HC1442-PS1)		**Source: 1HC1502-01**		Prepared: 03/26/24 15:40 Analyzed: 03/28/24 17:53							
Aluminum, total	9.24			mg/L	8.80	0.575	98.5	85-115			
Boron, total	1.02			mg/L	0.800	0.228	99.6	85-115			
Iron, total	10.4			mg/L	8.80	1.47	101	85-115			
Magnesium, total	38.4			mg/L	8.80	30.4	91.6	85-115			
Batch 1HD0077 - EPA 7470A Hg Water - SM 3112B											
Blank (1HD0077-BLK1)				Prepared: 04/01/24 15:39 Analyzed: 04/02/24 16:17							
Mercury, total	<0.00013	0.00013	0.00020	mg/L							
LCS (1HD0077-BS1)				Prepared: 04/01/24 15:39 Analyzed: 04/02/24 16:19							
Mercury, total	0.00249	0.00013	0.00020	mg/L	0.00250		99.7	87-118			
Matrix Spike (1HD0077-MS1)		**Source: 1HC1541-01**		Prepared: 04/01/24 15:39 Analyzed: 04/02/24 16:24							
Mercury, total	0.00261	0.00013	0.00020	mg/L	0.00250	ND	105	62-131			
Matrix Spike Dup (1HD0077-MSD1)		**Source: 1HC1541-01**		Prepared: 04/01/24 15:39 Analyzed: 04/02/24 16:26							
Mercury, total	0.00253	0.00013	0.00020	mg/L	0.00250	ND	101	62-131	3.45	17	

Definitions

I-05:	Sample received at laboratory past hold time for this analyte.
MDL:	Minimum Detection Limit
QM-07:	The spike recovery and/or RPD was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.
QM-14:	The spike recovery was outside acceptance limits for the MS and/or MSD. However, all other QC was acceptable.
QM-21:	The recovery for the blank spike was outside the established laboratory control limits. The batch was accepted based upon the acceptable recovery of the CCV.
QM-4X:	The spike recovery was outside of QC acceptance limits for the MS and/or MSD due to analyte concentration at 4 times or greater the spike concentration.
QR-02:	The RPD result exceeded the QC control limits; however, both percent recoveries were acceptable. Sample results for the QC batch were accepted based on percent recoveries and completeness of QC data.
QS-03:	The blank spike recovery was below established acceptance limits.
RL:	Reporting Limit
RPD:	Relative Percent Difference
S-GC:	Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate.
TOX-3:	The RPD value for the sample duplicates are outside of acceptance limits due to matrix interference. The reported value is an average of all test measurements.

Cooler Receipt Log

Cooler ID:	N1-13098	Temp:	0.7ºC	**Cooler ID:**	N1-13111	Temp:	1.4ºC
Cooler ID:	N5-13133	Temp:	1.1ºC				

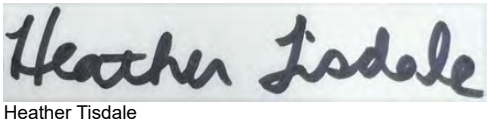
Cooler Inspection Checklist

Custody Seals	No	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Confirmed	No
Received On Ice	Yes		

Report Comments

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. ***The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.***

Reviewed and Approved By:



Heather Tisdale
Customer Relationship Specialist
heather.tisdale@microbac.com
05/15/24 14:10

CHAIN OF CUSTODY RECORD

Keystone LABORATORIES
A Microbac Company
600 East 17th Street So
Newton, IA 50208
641-792-9451

1HC1550

BMC Aggregates L.C.
PM: Heather Tisdale

SITE INFORMATION

Sampler: Sherman Lundy

Project: GW Monitoring
Miller Creek Area

REPORT T

Sherman Lundy
RMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

able

RMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

SPECIAL INSTRUCTIONS

None

Turn Around Time

☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY

Work Order 1HC1550
Temperature 1.1
Turn-Cooler: No

- ☐ Custody Seal
- ☒ Containers Intact
- ☒ COC/Labels Agree
- ☐ Preservation Confirmed
- ☑ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
-001	Well #4	Water	GRAB	3/18/24	9AM	12	624@benzene, 624@chloroform, 624@mek, 624-base-analysis, 625@pyridine, 625-126, 8315@Formaldehyde, 9020-100, ag-t-200.8, al-t-200.7, as-t-200.8, ba-t-200.8, be-t-200.8, b-t-200.7, cd-t-200.8, cl-9056-w, cod-t-410.4, co-t-200.8, cr-t-200.8, cu-t-200.8, f-9056, fe-t-200.7, hg-t-3112-low, mg-t-200.7, mn-t-200.8, mo-t-200.8, nh3-timberline, ni-t-200.8, pb-t-200.8, phenol-t-420.1, sb-t-200.8, se-t-200.8, so4-9056-w, tds-i-1750-85, tl-t-200.8, tss-i-3765-85, + Electrical Conductivity	01

Sherman Lundy 3/19/24 3:09PM
Relinquished By Date/Time

Relinquished By Date/Time

Received By 3/21/24 10:50
Date/Time

Received for Lab By 3-19-24 1509
Date/Time

Remarks:

Original - Lab Copy Yellow - Sampler Copy

Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HJ1376

Project Description

Miller Creek Area

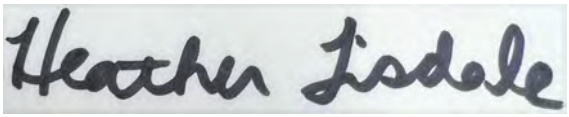
For:

Sherman Lundy

BMC Aggregates L.C.

101 BMC Drive

Elk Run Heights, IA 50707



Heather Tisdale

Customer Relationship Specialist

Wednesday, November 13, 2024

Please find enclosed the analytical results for the samples you submitted to Microbac Laboratories. Review and compilation of your report was completed by Microbac Laboratories, Inc., Newton. If you have any questions, comments, or require further assistance regarding this report, please contact your service representative listed above.

I certify that all test results meet all of the requirements of the accrediting authority listed within this report. Analytical results are reported on a 'as received' basis unless specified otherwise. Analytical results for solids with units ending in (dry) are reported on a dry weight basis. A statement of uncertainty for each analysis is available upon request. This laboratory report shall not be reproduced, except in full, without the written approval of Microbac Laboratories. The reported results are related only to the samples analyzed as received.

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Microbac Laboratories, Inc., Newton

CERTIFICATE OF ANALYSIS

1HJ1376

BMC Aggregates L.C.

Sherman Lundy
101 BMC Drive
Elk Run Heights, IA 50707

Project Name: Miller Creek Area

Project / PO Number: Sherman Lundy
Received: 10/17/2024
Reported: 11/13/2024

Sample Summary Report

Sample Name	Laboratory ID	Client Matrix	Sample Type	Sample Begin	Sample Taken	Lab Received
Well #1	1HJ1376-01	Aqueous	GRAB		10/16/24 08:30	10/17/24 11:15
Well #2	1HJ1376-02	Aqueous	GRAB		10/16/24 09:00	10/17/24 11:15
Well #3	1HJ1376-03	Aqueous	GRAB		10/16/24 09:30	10/17/24 11:15
Well #4	1HJ1376-04	Aqueous	GRAB		10/16/24 10:00	10/17/24 11:15
Upgradient Well	1HJ1376-05	Aqueous	GRAB		10/16/24 10:30	10/17/24 11:15

Analytical Testing Parameters

Client Sample ID:	Well #1		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HJ1376-01	**Collection Date:**	10/16/2024 8:30

Determination of Volatile Organic Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030B/EPA 624.1									
2-Butanone (MEK)	<10.0	1.4	10.0	ug/L	1		10/28/24 0000	10/28/24 1713	CSM
Chloroform	<1.0	0.4	1.0	ug/L	1		10/28/24 0000	10/28/24 1713	CSM
Benzene	<1.0	0.3	1.0	ug/L	1		10/28/24 0000	10/28/24 1713	CSM
Surrogate: Dibromofluoromethane	99.6	Limit: 59-123		% Rec	1		10/28/24 0000	10/28/24 1713	CSM
Surrogate: 1,2-Dichloroethane-d4	95.9	Limit: 56-130		% Rec	1		10/28/24 0000	10/28/24 1713	CSM
Surrogate: Toluene-d8	96.9	Limit: 85-113		% Rec	1		10/28/24 0000	10/28/24 1713	CSM
Surrogate: 4-Bromofluorobenzene	94.9	Limit: 82-112		% Rec	1		10/28/24 0000	10/28/24 1713	CSM

Determination of Base/Neutral Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1									
Pyridine	<10	10	10	ug/L	1		10/18/24 1308	10/22/24 1637	EPP

Determination of Acid Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1									
2-Methylphenol (o-Cresol)	<10.0	2.6	10.0	ug/L	1		10/18/24 1308	10/22/24 1637	EPP
(3 & 4)-Methylphenol	<10.0	2.6	10.0	ug/L	1		10/18/24 1308	10/22/24 1637	EPP
Surrogate: 2-Fluorophenol	98.0	Limit: 16-140		% Rec	1		10/18/24 1308	10/22/24 1637	EPP
Surrogate: Phenol-d6	113	Limit: 13-147		% Rec	1		10/18/24 1308	10/22/24 1637	EPP
Surrogate: 2,4,6-Tribromophenol	93.9	Limit: 20-158		% Rec	1		10/18/24 1308	10/22/24 1637	EPP

Determination of Carbonyl Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 8315									
Formaldehyde	<10.0	10.0	10.0	ug/L	1		10/18/24 1115	10/21/24 1034	PDS

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 410.4, Rv. 2 (1993)									
COD, total	**72**	24	54	mg/L	1			10/25/24 0740	CES
Method: EPA 420.1									
Phenols, total	<0.035	0.024	0.035	mg/L	1		10/30/24 1119	10/31/24 1107	KKJ
Method: EPA 9020B									
Total Organic Halogens (TOX)	**0.035**	0.006	0.010	mg/L	1	**TX1**	10/23/24 0000	10/24/24 1118	BDF
Method: SM 2510 B-2011									

CERTIFICATE OF ANALYSIS

1HJ1376

Client Sample ID:	Well #1		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HJ1376-01	**Collection Date:**	10/16/2024 8:30

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Conductivity	**635**	1.8	2.0	uS/cm	1	**H1**	11/13/24 0859	11/13/24 1037	BSS
Method: TIMBERLINE									
Nitrogen, Ammonia	**0.38**	0.08	0.10	mg/L	1		10/22/24 0831	10/23/24 0952	RAF
Method: USGS I-1750-85									
Total Dissolved Solids (TDS)	**393**	4	5	mg/L	1		10/23/24 0909	10/23/24 1140	MEAH
Method: USGS I-3765-85									
Total Suspended Solids (TSS)	**1**	0.9	1	mg/L	1		10/22/24 1154	10/23/24 1110	MEAH

Determination of Inorganic Anions	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 9056A									
Sulfate	**62.7**	1.8	5.0	mg/L	5		10/31/24 0000	10/31/24 1731	EPP

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 200.7									
Iron, total	**0.736**	0.047	0.100	mg/L	1		10/21/24 0817	10/23/24 0953	JAR
Magnesium, total	**31.5**	0.06	0.10	mg/L	1		10/21/24 0817	10/23/24 0953	JAR
Method: EPA 200.7, Rv. 4.4 (1994)									
Aluminum, total	<0.050	0.038	0.050	mg/L	1		10/21/24 0817	10/23/24 0953	JAR
Boron, total	<0.056	0.056	0.100	mg/L	1		10/21/24 0817	10/23/24 0953	JAR
Method: EPA 200.8, Rv. 5.4 (1994)									
Antimony, total	<0.0008	0.0008	0.0020	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Arsenic, total	**0.0020**	0.0006	0.0020	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Barium, total	**0.364**	0.0002	0.0020	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Beryllium, total	<0.0001	0.0001	0.0020	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Cadmium, total	<0.00008	0.00008	0.0002	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Chromium, total	<0.0007	0.0007	0.0020	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Cobalt, total	<0.0005	0.0005	0.0020	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Copper, total	**0.0022**	0.0008	0.0020	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Lead, total	<0.0005	0.0005	0.0008	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Manganese, total	**0.0141**	0.0017	0.0040	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Molybdenum, total	**0.0006**	0.0006	0.0020	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Nickel, total	**0.0008**	0.0007	0.0040	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Selenium, total	<0.0011	0.0011	0.0040	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Silver, total	<0.0015	0.0015	0.0020	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Thallium, total	<0.0004	0.0004	0.0008	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Vanadium, total	<0.0043	0.0043	0.0080	mg/L	4		10/17/24 1544	10/19/24 0330	RVV
Zinc, total	<0.0174	0.0174	0.0200	mg/L	4		10/17/24 1544	10/19/24 0330	RVV

CERTIFICATE OF ANALYSIS

1HJ1376

Client Sample ID:	Well #1		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HJ1376-01	**Collection Date:**	10/16/2024 8:30

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: SM 3112B									
Mercury, total	<0.00013	0.00013	0.00020	mg/L	1		10/22/24 1512	10/24/24 1130	JAR

Client Sample ID:	Well #2		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HJ1376-02	**Collection Date:**	10/16/2024 9:00

Determination of Volatile Organic Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030B/EPA 624.1									
2-Butanone (MEK)	<10.0	1.4	10.0	ug/L	1		10/28/24 0000	10/28/24 1736	CSM
Chloroform	<1.0	0.4	1.0	ug/L	1		10/28/24 0000	10/28/24 1736	CSM
Benzene	<1.0	0.3	1.0	ug/L	1		10/28/24 0000	10/28/24 1736	CSM
Surrogate: Dibromofluoromethane	99.8	Limit: 59-123		% Rec	1		10/28/24 0000	10/28/24 1736	CSM
Surrogate: 1,2-Dichloroethane-d4	94.1	Limit: 56-130		% Rec	1		10/28/24 0000	10/28/24 1736	CSM
Surrogate: Toluene-d8	96.7	Limit: 85-113		% Rec	1		10/28/24 0000	10/28/24 1736	CSM
Surrogate: 4-Bromofluorobenzene	94.7	Limit: 82-112		% Rec	1		10/28/24 0000	10/28/24 1736	CSM

Determination of Base/Neutral Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1									
Pyridine	<10	10	10	ug/L	1		10/18/24 1308	10/22/24 1702	EPP

Determination of Acid Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1									
2-Methylphenol (o-Cresol)	<10.0	2.6	10.0	ug/L	1		10/18/24 1308	10/22/24 1702	EPP
(3 & 4)-Methylphenol	<10.0	2.6	10.0	ug/L	1		10/18/24 1308	10/22/24 1702	EPP
Surrogate: 2-Fluorophenol	7.37	Limit: 16-140		% Rec	1	**S2**	10/18/24 1308	10/22/24 1702	EPP
Surrogate: Phenol-d6	30.1	Limit: 13-147		% Rec	1		10/18/24 1308	10/22/24 1702	EPP
Surrogate: 2,4,6-Tribromophenol	96.2	Limit: 20-158		% Rec	1		10/18/24 1308	10/22/24 1702	EPP

Determination of Carbonyl Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 8315									
Formaldehyde	<10.0	10.0	10.0	ug/L	1		10/18/24 1115	10/21/24 1053	PDS

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 410.4, Rv. 2 (1993)									
COD, total	<54	24	54	mg/L	1		10/28/24 1032	10/28/24 1527	CES
Method: EPA 420.1									
Phenols, total	<0.035	0.024	0.035	mg/L	1		10/30/24 1119	10/31/24 1107	KKJ
Method: EPA 9020B									
Total Organic Halogens (TOX)	**0.026**	0.006	0.010	mg/L	1		10/23/24 0000	10/24/24 1118	BDF
Method: SM 2510 B-2011									
Conductivity	**640**	1.8	2.0	uS/cm	1	**H1**	11/13/24 0859	11/13/24 1037	BSS

CERTIFICATE OF ANALYSIS

1HJ1376

Client Sample ID:	Well #2		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HJ1376-02	**Collection Date:**	10/16/2024 9:00

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: TIMBERLINE									
Nitrogen, Ammonia	<0.10	0.08	0.10	mg/L	1	**M1**	10/22/24 1009	10/23/24 1132	RAF
Method: USGS I-1750-85									
Total Dissolved Solids (TDS)	**487**	4	5	mg/L	1		10/23/24 0909	10/23/24 1140	MEAH
Method: USGS I-3765-85									
Total Suspended Solids (TSS)	**2**	0.9	1	mg/L	1		10/22/24 1154	10/23/24 1110	MEAH

Determination of Inorganic Anions	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 9056A									
Sulfate	**119**	1.8	5.0	mg/L	5		10/31/24 0000	10/31/24 1749	EPP

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 200.7									
Iron, total	**1.02**	0.047	0.100	mg/L	1		10/21/24 0817	10/23/24 0958	JAR
Magnesium, total	**36.9**	0.06	0.10	mg/L	1		10/21/24 0817	10/23/24 0958	JAR
Method: EPA 200.7, Rv. 4.4 (1994)									
Aluminum, total	**0.064**	0.038	0.050	mg/L	1		10/21/24 0817	10/23/24 0958	JAR
Boron, total	<0.056	0.056	0.100	mg/L	1		10/21/24 0817	10/23/24 0958	JAR
Method: EPA 200.8, Rv. 5.4 (1994)									
Antimony, total	<0.0008	0.0008	0.0020	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Arsenic, total	**0.0012**	0.0006	0.0020	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Barium, total	**0.0827**	0.0002	0.0020	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Beryllium, total	<0.0001	0.0001	0.0020	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Cadmium, total	<0.00008	0.00008	0.0002	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Chromium, total	<0.0007	0.0007	0.0020	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Cobalt, total	<0.0005	0.0005	0.0020	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Copper, total	**0.0023**	0.0008	0.0020	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Lead, total	<0.0005	0.0005	0.0008	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Manganese, total	**0.0392**	0.0017	0.0040	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Molybdenum, total	<0.0006	0.0006	0.0020	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Nickel, total	**0.0009**	0.0007	0.0040	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Selenium, total	<0.0011	0.0011	0.0040	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Silver, total	<0.0015	0.0015	0.0020	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Thallium, total	<0.0004	0.0004	0.0008	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Vanadium, total	<0.0043	0.0043	0.0080	mg/L	4		10/17/24 1544	10/19/24 0336	RVV
Zinc, total	<0.0174	0.0174	0.0200	mg/L	4		10/17/24 1544	10/19/24 0336	RVV

CERTIFICATE OF ANALYSIS

1HJ1376

Client Sample ID:	Well #2		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HJ1376-02	**Collection Date:**	10/16/2024 9:00

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: SM 3112B									
Mercury, total	<0.00013	0.00013	0.00020	mg/L	1		10/22/24 1512	10/24/24 1132	JAR

Client Sample ID:	Well #3		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HJ1376-03	**Collection Date:**	10/16/2024 9:30

Determination of Volatile Organic Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030B/EPA 624.1									
2-Butanone (MEK)	<10.0	1.4	10.0	ug/L	1		10/28/24 0000	10/28/24 1759	CSM
Chloroform	<1.0	0.4	1.0	ug/L	1		10/28/24 0000	10/28/24 1759	CSM
Benzene	<1.0	0.3	1.0	ug/L	1		10/28/24 0000	10/28/24 1759	CSM
Surrogate: Dibromofluoromethane	100	Limit: 59-123		% Rec	1		10/28/24 0000	10/28/24 1759	CSM
Surrogate: 1,2-Dichloroethane-d4	95.1	Limit: 56-130		% Rec	1		10/28/24 0000	10/28/24 1759	CSM
Surrogate: Toluene-d8	96.7	Limit: 85-113		% Rec	1		10/28/24 0000	10/28/24 1759	CSM
Surrogate: 4-Bromofluorobenzene	93.3	Limit: 82-112		% Rec	1		10/28/24 0000	10/28/24 1759	CSM

Determination of Base/Neutral Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1									
Pyridine	<10	10	10	ug/L	1		10/18/24 1308	10/22/24 1726	EPP

Determination of Acid Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1									
2-Methylphenol (o-Cresol)	<10.0	2.6	10.0	ug/L	1		10/18/24 1308	10/22/24 1726	EPP
(3 & 4)-Methylphenol	<10.0	2.6	10.0	ug/L	1		10/18/24 1308	10/22/24 1726	EPP
Surrogate: 2-Fluorophenol	95.9	Limit: 16-140		% Rec	1		10/18/24 1308	10/22/24 1726	EPP
Surrogate: Phenol-d6	112	Limit: 13-147		% Rec	1		10/18/24 1308	10/22/24 1726	EPP
Surrogate: 2,4,6-Tribromophenol	97.1	Limit: 20-158		% Rec	1		10/18/24 1308	10/22/24 1726	EPP

Determination of Carbonyl Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 8315									
Formaldehyde	<10.0	10.0	10.0	ug/L	1		10/18/24 1115	10/21/24 1112	PDS

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 410.4, Rv. 2 (1993)									
COD, total	<54	24	54	mg/L	1		10/24/24 0748	10/24/24 1105	CES
Method: EPA 420.1									
Phenols, total	<0.035	0.024	0.035	mg/L	1		10/30/24 1119	10/31/24 1107	KKJ
Method: EPA 9020B									
Total Organic Halogens (TOX)	**0.059**	0.006	0.010	mg/L	1	**TX1**	10/23/24 0000	10/24/24 1118	BDF
Method: SM 2510 B-2011									
Conductivity	**625**	1.8	2.0	uS/cm	1	**H1**	11/13/24 0859	11/13/24 1037	BSS

Client Sample ID:	Well #3		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HJ1376-03	**Collection Date:**	10/16/2024 9:30

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: TIMBERLINE									
Nitrogen, Ammonia	<0.10	0.08	0.10	mg/L	1		10/22/24 1009	10/23/24 1134	RAF
Method: USGS I-1750-85									
Total Dissolved Solids (TDS)	**383**	4	5	mg/L	1		10/23/24 0909	10/23/24 1140	MEAH
Method: USGS I-3765-85									
Total Suspended Solids (TSS)	**8**	0.9	1	mg/L	1		10/22/24 1154	10/23/24 1110	MEAH

Determination of Inorganic Anions	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 9056A									
Sulfate	**97.7**	1.8	5.0	mg/L	5		10/31/24 0000	10/31/24 1808	EPP

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 200.7									
Iron, total	**0.154**	0.047	0.100	mg/L	1		10/21/24 0817	10/23/24 1004	JAR
Magnesium, total	**28.3**	0.06	0.10	mg/L	1		10/21/24 0817	10/23/24 1004	JAR
Method: EPA 200.7, Rv. 4.4 (1994)									
Aluminum, total	**0.050**	0.038	0.050	mg/L	1		10/21/24 0817	10/23/24 1004	JAR
Boron, total	<0.056	0.056	0.100	mg/L	1		10/21/24 0817	10/23/24 1004	JAR
Method: EPA 200.8, Rv. 5.4 (1994)									
Antimony, total	<0.0008	0.0008	0.0020	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Arsenic, total	**0.0012**	0.0006	0.0020	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Barium, total	**0.0807**	0.0002	0.0020	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Beryllium, total	<0.0001	0.0001	0.0020	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Cadmium, total	<0.00008	0.00008	0.0002	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Chromium, total	<0.0007	0.0007	0.0020	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Cobalt, total	<0.0005	0.0005	0.0020	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Copper, total	**0.0039**	0.0008	0.0020	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Lead, total	<0.0005	0.0005	0.0008	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Manganese, total	**0.0103**	0.0017	0.0040	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Molybdenum, total	**0.0038**	0.0006	0.0020	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Nickel, total	**0.0030**	0.0007	0.0040	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Selenium, total	<0.0011	0.0011	0.0040	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Silver, total	<0.0015	0.0015	0.0020	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Thallium, total	<0.0004	0.0004	0.0008	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Vanadium, total	<0.0043	0.0043	0.0080	mg/L	4		10/17/24 1544	10/19/24 0342	RVV
Zinc, total	<0.0174	0.0174	0.0200	mg/L	4		10/17/24 1544	10/19/24 0342	RVV

CERTIFICATE OF ANALYSIS

1HJ1376

Client Sample ID:	Well #3		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HJ1376-03	**Collection Date:**	10/16/2024 9:30

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: SM 3112B									
Mercury, total	<0.00013	0.00013	0.00020	mg/L	1		10/22/24 1512	10/24/24 1134	JAR

Client Sample ID:	Well #4		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HJ1376-04	**Collection Date:**	10/16/2024 10:00

Determination of Volatile Organic Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030B/EPA 624.1									
2-Butanone (MEK)	<10.0	1.4	10.0	ug/L	1		10/28/24 0000	10/28/24 1822	CSM
Chloroform	<1.0	0.4	1.0	ug/L	1		10/28/24 0000	10/28/24 1822	CSM
Benzene	<1.0	0.3	1.0	ug/L	1		10/28/24 0000	10/28/24 1822	CSM
Surrogate: Dibromofluoromethane	99.5	Limit: 59-123		% Rec	1		10/28/24 0000	10/28/24 1822	CSM
Surrogate: 1,2-Dichloroethane-d4	95.4	Limit: 56-130		% Rec	1		10/28/24 0000	10/28/24 1822	CSM
Surrogate: Toluene-d8	96.9	Limit: 85-113		% Rec	1		10/28/24 0000	10/28/24 1822	CSM
Surrogate: 4-Bromofluorobenzene	94.4	Limit: 82-112		% Rec	1		10/28/24 0000	10/28/24 1822	CSM

Determination of Base/Neutral Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1									
Pyridine	<10	10	10	ug/L	1		10/18/24 1308	10/22/24 1751	EPP

Determination of Acid Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1									
2-Methylphenol (o-Cresol)	<10.0	2.6	10.0	ug/L	1		10/18/24 1308	10/22/24 1751	EPP
(3 & 4)-Methylphenol	<10.0	2.6	10.0	ug/L	1		10/18/24 1308	10/22/24 1751	EPP
Surrogate: 2-Fluorophenol	95.9	Limit: 16-140		% Rec	1		10/18/24 1308	10/22/24 1751	EPP
Surrogate: Phenol-d6	109	Limit: 13-147		% Rec	1		10/18/24 1308	10/22/24 1751	EPP
Surrogate: 2,4,6-Tribromophenol	95.9	Limit: 20-158		% Rec	1		10/18/24 1308	10/22/24 1751	EPP

Determination of Carbonyl Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 8315									
Formaldehyde	<10.0	10.0	10.0	ug/L	1		10/18/24 1115	10/21/24 1131	PDS

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 410.4, Rv. 2 (1993)									
COD, total	<54	24	54	mg/L	1		10/24/24 0748	10/24/24 1105	CES
Method: EPA 420.1									
Phenols, total	<0.035	0.024	0.035	mg/L	1		10/30/24 1119	10/31/24 1107	KKJ
Method: EPA 9020B									
Total Organic Halogens (TOX)	**0.071**	0.006	0.010	mg/L	1	**TX1, TX2**	10/23/24 0000	10/24/24 1118	BDF
Method: SM 2510 B-2011									
Conductivity	**673**	1.8	2.0	uS/cm	1	**H1**	11/13/24 0859	11/13/24 1037	BSS

Client Sample ID:	Well #4		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HJ1376-04	**Collection Date:**	10/16/2024 10:00

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: TIMBERLINE									
Nitrogen, Ammonia	**0.80**	0.08	0.10	mg/L	1		10/22/24 1009	10/23/24 1136	RAF
Method: USGS I-1750-85									
Total Dissolved Solids (TDS)	**409**	4	5	mg/L	1		10/23/24 0909	10/23/24 1140	MEAH
Method: USGS I-3765-85									
Total Suspended Solids (TSS)	**2**	0.9	1	mg/L	1		10/22/24 1154	10/23/24 1110	MEAH

Determination of Inorganic Anions	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 9056A									
Sulfate	**87.5**	1.8	5.0	mg/L	5		10/31/24 0000	10/31/24 1826	EPP

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 200.7									
Iron, total	**0.275**	0.047	0.100	mg/L	1		10/21/24 0817	10/23/24 1010	JAR
Magnesium, total	**19.8**	0.06	0.10	mg/L	1		10/21/24 0817	10/23/24 1010	JAR
Method: EPA 200.7, Rv. 4.4 (1994)									
Aluminum, total	**0.466**	0.038	0.050	mg/L	1		10/21/24 0817	10/23/24 1010	JAR
Boron, total	<0.056	0.056	0.100	mg/L	1		10/21/24 0817	10/23/24 1010	JAR
Method: EPA 200.8, Rv. 5.4 (1994)									
Antimony, total	<0.0008	0.0008	0.0020	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Arsenic, total	**0.0012**	0.0006	0.0020	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Barium, total	**0.0938**	0.0002	0.0020	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Beryllium, total	<0.0001	0.0001	0.0020	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Cadmium, total	<0.00008	0.00008	0.0002	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Chromium, total	**0.0009**	0.0007	0.0020	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Cobalt, total	<0.0005	0.0005	0.0020	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Copper, total	**0.0063**	0.0008	0.0020	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Lead, total	**0.0008**	0.0005	0.0008	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Manganese, total	**0.0172**	0.0017	0.0040	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Molybdenum, total	**0.0031**	0.0006	0.0020	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Nickel, total	**0.0024**	0.0007	0.0040	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Selenium, total	**0.0026**	0.0011	0.0040	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Silver, total	<0.0015	0.0015	0.0020	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Thallium, total	<0.0004	0.0004	0.0008	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Vanadium, total	<0.0043	0.0043	0.0080	mg/L	4		10/17/24 1544	10/19/24 0348	RVV
Zinc, total	**0.0175**	0.0174	0.0200	mg/L	4		10/17/24 1544	10/19/24 0348	RVV

CERTIFICATE OF ANALYSIS

1HJ1376

Client Sample ID:	Well #4		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HJ1376-04	**Collection Date:**	10/16/2024 10:00

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: SM 3112B									
Mercury, total	<0.00013	0.00013	0.00020	mg/L	1		10/22/24 1512	10/24/24 1136	JAR

Client Sample ID:	Upgradient Well		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HJ1376-05	**Collection Date:**	10/16/2024 10:30

Determination of Volatile Organic Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 5030B/EPA 624.1									
2-Butanone (MEK)	<10.0	1.4	10.0	ug/L	1		10/28/24 0000	10/28/24 1844	CSM
Chloroform	<1.0	0.4	1.0	ug/L	1		10/28/24 0000	10/28/24 1844	CSM
Benzene	<1.0	0.3	1.0	ug/L	1		10/28/24 0000	10/28/24 1844	CSM
Surrogate: Dibromofluoromethane	101	Limit: 59-123		% Rec	1		10/28/24 0000	10/28/24 1844	CSM
Surrogate: 1,2-Dichloroethane-d4	96.3	Limit: 56-130		% Rec	1		10/28/24 0000	10/28/24 1844	CSM
Surrogate: Toluene-d8	96.5	Limit: 85-113		% Rec	1		10/28/24 0000	10/28/24 1844	CSM
Surrogate: 4-Bromofluorobenzene	93.6	Limit: 82-112		% Rec	1		10/28/24 0000	10/28/24 1844	CSM

Determination of Base/Neutral Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1									
Pyridine	<10	10	10	ug/L	1		10/18/24 1308	10/22/24 1815	EPP

Determination of Acid Extractable Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 625.1									
2-Methylphenol (o-Cresol)	<10.0	2.6	10.0	ug/L	1		10/18/24 1308	10/22/24 1815	EPP
(3 & 4)-Methylphenol	<10.0	2.6	10.0	ug/L	1		10/18/24 1308	10/22/24 1815	EPP
Surrogate: 2-Fluorophenol	93.6	Limit: 16-140		% Rec	1		10/18/24 1308	10/22/24 1815	EPP
Surrogate: Phenol-d6	104	Limit: 13-147		% Rec	1		10/18/24 1308	10/22/24 1815	EPP
Surrogate: 2,4,6-Tribromophenol	82.9	Limit: 20-158		% Rec	1		10/18/24 1308	10/22/24 1815	EPP

Determination of Carbonyl Compounds	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 8315									
Formaldehyde	<10.0	10.0	10.0	ug/L	1		10/18/24 1115	10/21/24 1150	PDS

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 410.4, Rv. 2 (1993)									
COD, total	<54	24	54	mg/L	1		10/24/24 0748	10/24/24 1105	CES
Method: EPA 420.1									
Phenols, total	<0.035	0.024	0.035	mg/L	1		10/30/24 1119	10/31/24 1107	KKJ
Method: EPA 9020B									
Total Organic Halogens (TOX)	**0.079**	0.006	0.010	mg/L	1	**TX1**	10/23/24 0000	10/24/24 1118	BDF
Method: SM 2510 B-2011									
Conductivity	**615**	1.8	2.0	uS/cm	1	**H1**	11/13/24 0859	11/13/24 1037	BSS

CERTIFICATE OF ANALYSIS

1HJ1376

Client Sample ID:	Upgradient Well		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HJ1376-05	**Collection Date:**	10/16/2024 10:30

Determination of Conventional Chemistry Parameters	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: TIMBERLINE									
Nitrogen, Ammonia	<0.10	0.08	0.10	mg/L	1		10/22/24 1009	10/23/24 1139	RAF
Method: USGS I-1750-85									
Total Dissolved Solids (TDS)	**409**	4	5	mg/L	1		10/23/24 0909	10/23/24 1140	MEAH
Method: USGS I-3765-85									
Total Suspended Solids (TSS)	<1	0.9	1	mg/L	1		10/22/24 1154	10/23/24 1110	MEAH

Determination of Inorganic Anions	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: EPA 9056A									
Sulfate	**81.4**	1.8	5.0	mg/L	5		10/31/24 0000	10/31/24 1844	EPP

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: 200.7									
Iron, total	<0.047	0.047	0.100	mg/L	1		10/21/24 0817	10/23/24 1016	JAR
Magnesium, total	**20.6**	0.06	0.10	mg/L	1		10/21/24 0817	10/23/24 1016	JAR
Method: EPA 200.7, Rv. 4.4 (1994)									
Aluminum, total	<0.050	0.038	0.050	mg/L	1		10/21/24 0817	10/23/24 1016	JAR
Boron, total	<0.056	0.056	0.100	mg/L	1		10/21/24 0817	10/23/24 1016	JAR
Method: EPA 200.8, Rv. 5.4 (1994)									
Antimony, total	<0.0008	0.0008	0.0020	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Arsenic, total	**0.0008**	0.0006	0.0020	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Barium, total	**0.132**	0.0002	0.0020	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Beryllium, total	<0.0001	0.0001	0.0020	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Cadmium, total	<0.00008	0.00008	0.0002	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Chromium, total	<0.0007	0.0007	0.0020	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Cobalt, total	<0.0005	0.0005	0.0020	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Copper, total	**0.0408**	0.0008	0.0020	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Lead, total	**0.0051**	0.0005	0.0008	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Manganese, total	**0.0027**	0.0017	0.0040	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Molybdenum, total	**0.0189**	0.0006	0.0020	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Nickel, total	**0.0012**	0.0007	0.0040	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Selenium, total	**0.0023**	0.0011	0.0040	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Silver, total	<0.0015	0.0015	0.0020	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Thallium, total	<0.0004	0.0004	0.0008	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Vanadium, total	<0.0043	0.0043	0.0080	mg/L	4		10/17/24 1544	10/19/24 0354	RVV
Zinc, total	**0.0935**	0.0174	0.0200	mg/L	4		10/17/24 1544	10/19/24 0354	RVV

CERTIFICATE OF ANALYSIS

1HJ1376

Client Sample ID:	Upgradient Well		
Sample Matrix:	Aqueous	**Collected By:**	Sherman Lundy
Lab Sample ID:	1HJ1376-05	**Collection Date:**	10/16/2024 10:30

Determination of Total Metals	Result	MDL	RL	Units	DF	Note	Prepared	Analyzed	Analyst
Method: SM 3112B									
Mercury, total	<0.00013	0.00013	0.00020	mg/L	1		10/22/24 1512	10/24/24 1139	JAR

Batch Log Summary

Method	Batch	Laboratory ID	Client / Source ID
EPA 200.8, Rv. 5.4 (1994)	1HJ1083	1HJ1083-BLK1	
		1HJ1083-BS1	
		1HJ1083-MS1	1HJ1234-01
		1HJ1083-MSD1	1HJ1234-01
		1HJ1083-PS1	1HJ1234-01
		1HJ1376-01	Well #1
		1HJ1376-02	Well #2
		1HJ1376-03	Well #3
		1HJ1376-04	Well #4
		1HJ1376-05	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
EPA 8315	1HJ1128	1HJ1128-BS1	
		1HJ1128-BLK1	
		1HJ1376-01	Well #1
		1HJ1376-02	Well #2
		1HJ1376-03	Well #3
		1HJ1376-04	Well #4
		1HJ1376-05	Upgradient Well
		1HJ1128-MS1	1HJ1376-01
		1HJ1128-MSD1	1HJ1376-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 625.1	1HJ1135	1HJ1135-BLK1	
		1HJ1135-BLK1	
		1HJ1135-BS1	
		1HJ1135-BS1	
		1HJ1135-BSD1	
		1HJ1135-BSD1	
		1HJ1376-01	Well #1
		1HJ1376-01	Well #1
		1HJ1376-02	Well #2
		1HJ1376-02	Well #2
		1HJ1376-03	Well #3
		1HJ1376-03	Well #3
		1HJ1376-04	Well #4
		1HJ1376-04	Well #4
		1HJ1376-05	Upgradient Well
		1HJ1376-05	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
EPA 200.7, Rv. 4.4 (1994)	1HJ1179	1HJ1179-BLK1	
200.7		1HJ1179-BLK1	
EPA 200.7, Rv. 4.4 (1994)		1HJ1179-BS1	
200.7		1HJ1179-BS1	
EPA 200.7, Rv. 4.4 (1994)		1HJ1179-MS1	1HJ1352-01
200.7		1HJ1179-MS1	1HJ1352-01
EPA 200.7, Rv. 4.4 (1994)		1HJ1179-MSD1	1HJ1352-01
200.7		1HJ1179-MSD1	1HJ1352-01
EPA 200.7, Rv. 4.4 (1994)		1HJ1179-PS1	1HJ1352-01
200.7		1HJ1179-PS1	1HJ1352-01
EPA 200.7, Rv. 4.4 (1994)		1HJ1376-01	Well #1
200.7		1HJ1376-01	Well #1
EPA 200.7, Rv. 4.4 (1994)		1HJ1376-02	Well #2
200.7		1HJ1376-02	Well #2
		1HJ1376-03	Well #3
EPA 200.7, Rv. 4.4 (1994)		1HJ1376-03	Well #3
200.7		1HJ1376-04	Well #4
EPA 200.7, Rv. 4.4 (1994)		1HJ1376-04	Well #4
200.7		1HJ1376-05	Upgradient Well
EPA 200.7, Rv. 4.4 (1994)		1HJ1376-05	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
TIMBERLINE	1HJ1263	1HJ1263-BLK1	
		1HJ1263-BS1	
		1HJ1263-MS1	2HJ0589-02
		1HJ1263-MSD1	2HJ0589-02
		1HJ1376-01	Well #1

Method	Batch	Laboratory ID	Client / Source ID
TIMBERLINE	1HJ1271	1HJ1271-BLK1	
		1HJ1271-BS1	
		1HJ1271-MS1	1HJ1376-02
		1HJ1271-MSD1	1HJ1376-02
		1HJ1376-02	Well #2
		1HJ1376-03	Well #3
		1HJ1376-04	Well #4
		1HJ1376-05	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
USGS I-3765-85	1HJ1292	1HJ1376-04	Well #4
		1HJ1292-BLK1	
		1HJ1292-DUP1	1HJ1319-03

USGS I-3765-85	1HJ1292	1HJ1292-BS1	
		1HJ1376-05	Upgradient Well
		1HJ1376-01	Well #1
		1HJ1376-02	Well #2
		1HJ1376-03	Well #3

Method	Batch	Laboratory ID	Client / Source ID
SM 3112B	1HJ1332	1HJ1332-BLK1	
		1HJ1332-BS1	
		1HJ1332-MS1	1HJ0941-11
		1HJ1332-MSD1	1HJ0941-11
		1HJ1376-01	Well #1
		1HJ1376-02	Well #2
		1HJ1376-03	Well #3
		1HJ1376-04	Well #4
		1HJ1376-05	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
USGS I-1750-85	1HJ1364	1HJ1364-DUP1	1HJ1352-01
		1HJ1376-04	Well #4
		1HJ1376-03	Well #3
		1HJ1376-02	Well #2
		1HJ1376-01	Well #1
		1HJ1364-BS1	
		1HJ1364-BLK1	
		1HJ1376-05	Upgradient Well

Method	Batch	Laboratory ID	Client / Source ID
EPA 410.4, Rv. 2 (1993)	1HJ1457	1HJ1457-MSD1	1HJ1376-04
		1HJ1457-BS1	
		1HJ1376-04	Well #4
		1HJ1457-BLK1	
		1HJ1376-05	Upgradient Well
		1HJ1457-MS1	1HJ1376-04
		1HJ1376-03	Well #3

Method	Batch	Laboratory ID	Client / Source ID
EPA 9020B	1HJ1460	1HJ1376-04	Well #4
		1HJ1460-BSD1	
		1HJ1376-03	Well #3
		1HJ1376-01	Well #1
		1HJ1460-BS2	
		1HJ1460-BS1	
		1HJ1460-BLK1	

EPA 9020B	1HJ1460	1HJ1460-BSD2	
		1HJ1460-MS1	1HJ0978-01
		1HJ1460-MSD1	1HJ0978-01
		1HJ1376-05	Upgradient Well
		1HJ1376-02	Well #2

Method	Batch	Laboratory ID	Client / Source ID
EPA 410.4, Rv. 2 (1993)	1HJ1562	1HJ1562-MSD1	1HJ1376-01
		1HJ1562-MS1	1HJ1376-01
		1HJ1562-BS1	
		1HJ1562-BLK1	
		1HJ1376-01	Well #1

Method	Batch	Laboratory ID	Client / Source ID
EPA 410.4, Rv. 2 (1993)	1HJ1644	1HJ1644-BLK1	
		1HJ1644-BS1	
		1HJ1644-MSD1	3HJ0131-01
		1HJ1376-02	Well #2
		1HJ1644-MS1	3HJ0131-01

Method	Batch	Laboratory ID	Client / Source ID
EPA 624.1	1HJ1707	1HJ1707-BS1	
		1HJ1707-BSD1	
		1HJ1707-BLK1	
		1HJ1376-01	Well #1
		1HJ1376-02	Well #2
		1HJ1376-03	Well #3
		1HJ1376-04	Well #4
		1HJ1376-05	Upgradient Well
		1HJ1707-MS1	1HJ1376-03
		1HJ1707-MSD1	1HJ1376-03

Method	Batch	Laboratory ID	Client / Source ID
EPA 420.1	1HJ1785	1HJ1785-BS1	
		1HJ1376-03	Well #3
		1HJ1785-BLK1	
		1HJ1376-02	Well #2
		1HJ1376-01	Well #1
		1HJ1376-05	Upgradient Well
		1HJ1785-MSD1	1HJ1376-01
		1HJ1376-04	Well #4
		1HJ1785-MS1	1HJ1376-01

Method	Batch	Laboratory ID	Client / Source ID

Method	Batch	Laboratory ID	Client / Source ID
EPA 9056A	1HK0019	1HK0019-BLK1	
		1HK0019-BS1	
		1HK0019-BSD1	
		1HK0019-MS1	1HJ1373-01
		1HK0019-MSD1	1HJ1373-01
		1HJ1376-01	Well #1
		1HJ1376-02	Well #2
		1HJ1376-03	Well #3
		1HJ1376-04	Well #4
		1HJ1376-05	Upgradient Well
		1HK0019-BLK2	
SM 2510 B-2011	1HK0672	1HK0672-BLK1	
		1HK0672-DUP1	1HJ1376-01
		1HK0672-SRM1	
		1HJ1376-05	Upgradient Well
		1HJ1376-01	Well #1
		1HJ1376-02	Well #2
		1HJ1376-04	Well #4
		1HJ1376-03	Well #3

Batch Quality Control Summary: Microbac Laboratories, Inc., Newton

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1707 - EPA 5030B - EPA 624.1										
Blank (1HJ1707-BLK1)			Prepared: 10/28/24 00:00 Analyzed: 10/28/24 10:22							
2-Butanone (MEK)	<10.0	10.0	ug/L							
Chloroform	<1.0	1.0	ug/L							
Benzene	<1.0	1.0	ug/L							
Surrogate: Dibromofluoromethane	*46.2*		ug/L	*50.2*		*92.0*	*59-123*			
Surrogate: 1,2-Dichloroethane-d4	*44.2*		ug/L	*50.4*		*87.9*	*56-130*			
Surrogate: Toluene-d8	*48.3*		ug/L	*50.5*		*95.8*	*85-113*			
Surrogate: 4-Bromofluorobenzene	*47.8*		ug/L	*50.2*		*95.2*	*82-112*			
LCS (1HJ1707-BS1)			Prepared: 10/28/24 00:00 Analyzed: 10/28/24 08:51							
2-Butanone (MEK)	67.72	10.0	ug/L	100		67.7	44-134			
Chloroform	39.69	1.0	ug/L	50.1		79.2	70-135			
Benzene	42.81	1.0	ug/L	50.4		84.9	65-135			
Surrogate: Dibromofluoromethane	*44.9*		ug/L	*50.2*		*89.5*	*59-123*			
Surrogate: 1,2-Dichloroethane-d4	*43.3*		ug/L	*50.4*		*86.1*	*56-130*			
Surrogate: Toluene-d8	*48.7*		ug/L	*50.5*		*96.5*	*85-113*			
Surrogate: 4-Bromofluorobenzene	*49.2*		ug/L	*50.2*		*98.0*	*82-112*			
LCS Dup (1HJ1707-BSD1)			Prepared: 10/28/24 00:00 Analyzed: 10/28/24 09:14							

Determination of Volatile Organic Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1707 - EPA 5030B - EPA 624.1										
LCS Dup (1HJ1707-BSD1)				Prepared: 10/28/24 00:00 Analyzed: 10/28/24 09:14						
2-Butanone (MEK)	69.92	10.0	ug/L	100		69.9	44-134	3.20	30	
Chloroform	39.10	1.0	ug/L	50.1		78.1	70-135	1.50	17	
Benzene	41.70	1.0	ug/L	50.4		82.7	65-135	2.63	17	
Surrogate: Dibromofluoromethane	*45.2*		ug/L	*50.2*		*90.1*	*59-123*			
Surrogate: 1,2-Dichloroethane-d4	*43.1*		ug/L	*50.4*		*85.6*	*56-130*			
Surrogate: Toluene-d8	*48.8*		ug/L	*50.5*		*96.8*	*85-113*			
Surrogate: 4-Bromofluorobenzene	*49.6*		ug/L	*50.2*		*98.8*	*82-112*			
Matrix Spike (1HJ1707-MS1)	**Source: 1HJ1376-03**			Prepared: 10/28/24 00:00 Analyzed: 10/28/24 19:07						
2-Butanone (MEK)	757.4	100	ug/L	1000	ND	75.7	57-133			
Chloroform	395.7	10.0	ug/L	501	ND	79.0	51-138			
Benzene	396.2	10.0	ug/L	504	ND	78.6	37-151			
Surrogate: Dibromofluoromethane	*488*		ug/L	*502*		*97.3*	*59-123*			
Surrogate: 1,2-Dichloroethane-d4	*465*		ug/L	*504*		*92.3*	*56-130*			
Surrogate: Toluene-d8	*493*		ug/L	*505*		*97.7*	*85-113*			
Surrogate: 4-Bromofluorobenzene	*486*		ug/L	*502*		*96.9*	*82-112*			
Matrix Spike Dup (1HJ1707-MSD1)	**Source: 1HJ1376-03**			Prepared: 10/28/24 00:00 Analyzed: 10/28/24 19:30						
2-Butanone (MEK)	802.5	100	ug/L	1000	ND	80.2	57-133	5.78	30	
Chloroform	447.7	10.0	ug/L	501	ND	89.4	51-138	12.3	54	
Benzene	449.8	10.0	ug/L	504	ND	89.2	37-151	12.7	61	
Surrogate: Dibromofluoromethane	*495*		ug/L	*502*		*98.6*	*59-123*			
Surrogate: 1,2-Dichloroethane-d4	*463*		ug/L	*504*		*91.9*	*56-130*			
Surrogate: Toluene-d8	*492*		ug/L	*505*		*97.5*	*85-113*			
Surrogate: 4-Bromofluorobenzene	*490*		ug/L	*502*		*97.6*	*82-112*			

Determination of Base/Neutral Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1135 - EPA 625 BNA - EPA 625.1										
Blank (1HJ1135-BLK1)				Prepared: 10/18/24 13:08 Analyzed: 10/22/24 13:37						
Pyridine	<10	10	ug/L							
LCS (1HJ1135-BS1)				Prepared: 10/18/24 13:08 Analyzed: 10/22/24 14:01						
Pyridine	<10	10	ug/L	20.0		35.4	13-127			
LCS Dup (1HJ1135-BSD1)				Prepared: 10/18/24 13:08 Analyzed: 10/22/24 14:26						
Pyridine	<10	10	ug/L	20.0		12.6	13-127	94.6	30	Q3

Determination of Acid Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1135 - EPA 625 BNA - EPA 625.1										

Determination of Acid Extractable Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1135 - EPA 625 BNA - EPA 625.1										
Blank (1HJ1135-BLK1)			Prepared: 10/18/24 13:08 Analyzed: 10/22/24 13:37							
2-Methylphenol (o-Cresol)	<10.0	10.0	ug/L							
(3 & 4)-Methylphenol	<10.0	10.0	ug/L							
Surrogate: 2-Fluorophenol	*20.3*		ug/L	*30.9*		*65.7*	*16-140*			
Surrogate: Phenol-d6	*22.9*		ug/L	*29.4*		*78.0*	*13-147*			
Surrogate: 2,4,6-Tribromophenol	*28.2*		ug/L	*30.1*		*93.8*	*20-158*			
LCS (1HJ1135-BS1)			Prepared: 10/18/24 13:08 Analyzed: 10/22/24 14:01							
2-Methylphenol (o-Cresol)	18.2	10.0	ug/L	20.0		91.2	35-117			
(3 & 4)-Methylphenol	18.4	10.0	ug/L	20.0		91.8	37-114			
Surrogate: 2-Fluorophenol	*27.4*		ug/L	*30.9*		*88.6*	*16-140*			
Surrogate: Phenol-d6	*28.8*		ug/L	*29.4*		*98.0*	*13-147*			
Surrogate: 2,4,6-Tribromophenol	*31.5*		ug/L	*30.1*		*105*	*20-158*			
LCS Dup (1HJ1135-BSD1)			Prepared: 10/18/24 13:08 Analyzed: 10/22/24 14:26							
2-Methylphenol (o-Cresol)	15.3	10.0	ug/L	20.0		76.7	35-117	17.3	30	
(3 & 4)-Methylphenol	16.5	10.0	ug/L	20.0		82.6	37-114	10.5	28	
Surrogate: 2-Fluorophenol	*14.8*		ug/L	*30.9*		*48.0*	*16-140*			
Surrogate: Phenol-d6	*22.2*		ug/L	*29.4*		*75.5*	*13-147*			
Surrogate: 2,4,6-Tribromophenol	*29.8*		ug/L	*30.1*		*99.1*	*20-158*			

Determination of Carbonyl Compounds	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1128 - EPA 8315 Aldehydes - EPA 8315										
Blank (1HJ1128-BLK1)			Prepared: 10/18/24 11:15 Analyzed: 10/21/24 10:15							
Formaldehyde	<10.0	10.0	ug/L							
LCS (1HJ1128-BS1)			Prepared: 10/18/24 11:15 Analyzed: 10/21/24 09:55							
Formaldehyde	414.0	10.0	ug/L	501		82.6	62-125			
Matrix Spike (1HJ1128-MS1)	**Source: 1HJ1376-01**		Prepared: 10/18/24 11:15 Analyzed: 10/21/24 12:29							
Formaldehyde	424.5	10.0	ug/L	501	ND	84.7	59-127			
Matrix Spike Dup (1HJ1128-MSD1)	**Source: 1HJ1376-01**		Prepared: 10/18/24 11:15 Analyzed: 10/21/24 12:48							
Formaldehyde	427.8	10.0	ug/L	501	ND	85.4	59-127	0.774	29	

Determination of Conventional Chemistry Parameters	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1263 - General Prep HPLC/IC - TIMBERLINE										
Blank (1HJ1263-BLK1)			Prepared: 10/22/24 08:31 Analyzed: 10/23/24 09:12							
Nitrogen, Ammonia	<0.10	0.10	mg/L							
LCS (1HJ1263-BS1)			Prepared: 10/22/24 08:31 Analyzed: 10/23/24 09:14							

Determination of Conventional Chemistry Parameters	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1263 - General Prep HPLC/IC - TIMBERLINE										
LCS (1HJ1263-BS1)			Prepared: 10/22/24 08:31 Analyzed: 10/23/24 09:14							
Nitrogen, Ammonia	5.24	0.10	mg/L	5.06		104	90-114			
Matrix Spike (1HJ1263-MS1)		**Source: 2HJ0589-02**	Prepared: 10/22/24 08:31 Analyzed: 10/23/24 09:15							
Nitrogen, Ammonia	5.83	0.10	mg/L	5.06	0.143	112	84-115			
Matrix Spike Dup (1HJ1263-MSD1)		**Source: 2HJ0589-02**	Prepared: 10/22/24 08:31 Analyzed: 10/23/24 09:17							
Nitrogen, Ammonia	5.93	0.10	mg/L	5.06	0.143	114	84-115	1.69	20	
Batch 1HJ1271 - General Prep HPLC/IC - TIMBERLINE										
Blank (1HJ1271-BLK1)			Prepared: 10/22/24 10:09 Analyzed: 10/23/24 11:22							
Nitrogen, Ammonia	<0.10	0.10	mg/L							
LCS (1HJ1271-BS1)			Prepared: 10/22/24 10:09 Analyzed: 10/23/24 11:24							
Nitrogen, Ammonia	5.57	0.10	mg/L	5.06		110	90-114			
Matrix Spike (1HJ1271-MS1)		**Source: 1HJ1376-02**	Prepared: 10/22/24 10:09 Analyzed: 10/23/24 11:27							
Nitrogen, Ammonia	5.93	0.10	mg/L	5.06	ND	117	84-115			M1
Matrix Spike Dup (1HJ1271-MSD1)		**Source: 1HJ1376-02**	Prepared: 10/22/24 10:09 Analyzed: 10/23/24 11:29							
Nitrogen, Ammonia	6.02	0.10	mg/L	5.06	ND	119	84-115	1.62	20	M1
Batch 1HJ1292 - Wet Chem Preparation - USGS I-3765-85										
Blank (1HJ1292-BLK1)			Prepared: 10/22/24 11:54 Analyzed: 10/23/24 11:10							
Total Suspended Solids (TSS)	<1	1	mg/L							
LCS (1HJ1292-BS1)			Prepared: 10/22/24 11:54 Analyzed: 10/23/24 11:10							
Total Suspended Solids (TSS)	13.6	1	mg/L	15.0		90.7	71-110			
Duplicate (1HJ1292-DUP1)		**Source: 1HJ1319-03**	Prepared: 10/22/24 11:54 Analyzed: 10/23/24 11:10							
Total Suspended Solids (TSS)	450	1	mg/L		460			2.20	30	
Batch 1HJ1364 - Wet Chem Preparation - USGS I-1750-85										
Blank (1HJ1364-BLK1)			Prepared: 10/23/24 09:09 Analyzed: 10/23/24 11:40							
Total Dissolved Solids (TDS)	<5	5	mg/L							
LCS (1HJ1364-BS1)			Prepared: 10/23/24 09:09 Analyzed: 10/23/24 11:40							
Total Dissolved Solids (TDS)	97	5	mg/L	100		96.9	79-114			
Duplicate (1HJ1364-DUP1)		**Source: 1HJ1352-01**	Prepared: 10/23/24 09:09 Analyzed: 10/23/24 11:40							
Total Dissolved Solids (TDS)	1780	5	mg/L		1900			6.30	24	
Batch 1HJ1457 - Wet Chem Preparation - EPA 410.4, Rv. 2 (1993)										
Blank (1HJ1457-BLK1)			Prepared: 10/24/24 07:48 Analyzed: 10/24/24 11:05							
COD, total	<54	54	mg/L							
LCS (1HJ1457-BS1)			Prepared: 10/24/24 07:48 Analyzed: 10/24/24 11:05							
COD, total	1050	108	mg/L	1000		105	90-110			

Determination of Conventional Chemistry Parameters	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1457 - Wet Chem Preparation - EPA 410.4, Rv. 2 (1993)										
Matrix Spike (1HJ1457-MS1)		**Source: 1HJ1376-04**	Prepared: 10/24/24 07:48 Analyzed: 10/24/24 11:05							
COD, total	1070	108	mg/L	1000	ND	107	90-110			
Matrix Spike Dup (1HJ1457-MSD1)		**Source: 1HJ1376-04**	Prepared: 10/24/24 07:48 Analyzed: 10/24/24 11:05							
COD, total	1100	108	mg/L	1000	ND	110	90-110	2.10	10	
Batch 1HJ1460 - TOX/TX/EOX - EPA 9020B										
Blank (1HJ1460-BLK1)			Prepared: 10/23/24 00:00 Analyzed: 10/24/24 11:18							
Total Organic Halogens (TOX)	<0.010	0.010	mg/L							
LCS (1HJ1460-BS1)			Prepared: 10/23/24 00:00 Analyzed: 10/24/24 11:18							
Total Organic Halogens (TOX)	0.0910	0.010	mg/L	0.121		75.5	63-128			
LCS (1HJ1460-BS2)			Prepared: 10/23/24 00:00 Analyzed: 10/24/24 11:18							
Total Organic Halogens (TOX)	0.1526	0.010	mg/L	0.121		127	63-128			
LCS Dup (1HJ1460-BSD1)			Prepared: 10/23/24 00:00 Analyzed: 10/24/24 11:18							
Total Organic Halogens (TOX)	0.0786	0.010	mg/L	0.121		65.2	63-128	14.6	30	
LCS Dup (1HJ1460-BSD2)			Prepared: 10/23/24 00:00 Analyzed: 10/24/24 11:18							
Total Organic Halogens (TOX)	0.0844	0.010	mg/L	0.121		70.0	63-128	57.6	30	R1
Matrix Spike (1HJ1460-MS1)		**Source: 1HJ0978-01**	Prepared: 10/23/24 00:00 Analyzed: 10/24/24 11:18							
Total Organic Halogens (TOX)	0.5328	0.040	mg/L	0.482	0.8244	NR	85-123			M6
Matrix Spike Dup (1HJ1460-MSD1)		**Source: 1HJ0978-01**	Prepared: 10/23/24 00:00 Analyzed: 10/24/24 11:18							
Total Organic Halogens (TOX)	0.5088	0.040	mg/L	0.482	0.8244	NR	85-123	4.61	13	M6
Batch 1HJ1562 - Wet Chem Preparation - EPA 410.4, Rv. 2 (1993)										
Blank (1HJ1562-BLK1)			Prepared & Analyzed: 10/25/24 07:40							
COD, total	<54	54	mg/L							
LCS (1HJ1562-BS1)			Prepared & Analyzed: 10/25/24 07:40							
COD, total	537	54	mg/L	500		107	90-110			
Matrix Spike (1HJ1562-MS1)		**Source: 1HJ1376-01**	Prepared & Analyzed: 10/25/24 07:40							
COD, total	534	54	mg/L	500	71.9	92.5	90-110			
Matrix Spike Dup (1HJ1562-MSD1)		**Source: 1HJ1376-01**	Prepared & Analyzed: 10/25/24 07:40							
COD, total	543	54	mg/L	500	71.9	94.2	90-110	1.59	10	
Batch 1HJ1644 - Wet Chem Preparation - EPA 410.4, Rv. 2 (1993)										
Blank (1HJ1644-BLK1)			Prepared: 10/28/24 10:32 Analyzed: 10/28/24 15:27							
COD, total	<54	54	mg/L							
LCS (1HJ1644-BS1)			Prepared: 10/28/24 10:32 Analyzed: 10/28/24 15:27							
COD, total	537	54	mg/L	500		107	90-110			
Matrix Spike (1HJ1644-MS1)		**Source: 3HJ0131-01**	Prepared: 10/28/24 10:32 Analyzed: 10/28/24 15:27							
COD, total	540	54	mg/L	500	57.6	96.5	90-110			

Determination of Conventional Chemistry Parameters	Result	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1644 - Wet Chem Preparation - EPA 410.4, Rv. 2 (1993)										
Matrix Spike Dup (1HJ1644-MSD1)	**Source: 3HJ0131-01**		Prepared: 10/28/24 10:32 Analyzed: 10/28/24 15:27							
COD, total	557	54	mg/L	500	57.6	99.9	90-110	3.12	10	
Batch 1HJ1785 - Wet Chem Preparation - EPA 420.1										
Blank (1HJ1785-BLK1)			Prepared: 10/30/24 11:19 Analyzed: 10/31/24 11:07							
Phenols, total	<0.035	0.035	mg/L							
LCS (1HJ1785-BS1)			Prepared: 10/30/24 11:19 Analyzed: 10/31/24 11:07							
Phenols, total	0.340	0.035	mg/L	0.400		85.1	60-125			
Matrix Spike (1HJ1785-MS1)	**Source: 1HJ1376-01**		Prepared: 10/30/24 11:19 Analyzed: 10/31/24 11:07							
Phenols, total	0.364	0.035	mg/L	0.400	ND	91.0	50-139			
Matrix Spike Dup (1HJ1785-MSD1)	**Source: 1HJ1376-01**		Prepared: 10/30/24 11:19 Analyzed: 10/31/24 11:07							
Phenols, total	0.354	0.035	mg/L	0.400	ND	88.5	50-139	2.85	21	
Batch 1HK0672 - Wet Chem Preparation - SM 2510 B-2011										
Blank (1HK0672-BLK1)			Prepared: 11/13/24 08:59 Analyzed: 11/13/24 10:37							
Conductivity	<2.0	2.0	uS/cm							
Duplicate (1HK0672-DUP1)	**Source: 1HJ1376-01**		Prepared: 11/13/24 08:59 Analyzed: 11/13/24 10:37							
Conductivity	632	2.0	uS/cm		635			0.347	10	
Reference (1HK0672-SRM1)			Prepared: 11/13/24 08:59 Analyzed: 11/13/24 10:37							
Conductivity	467	2.0	uS/cm	500		93.4	90-110			

Determination of Inorganic Anions	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HK0019 - General Prep HPLC/IC - EPA 9056A											
Blank (1HK0019-BLK1)				Prepared: 10/31/24 00:00 Analyzed: 10/31/24 10:18							
Sulfate	<0.4	0.4	1.0	mg/L							
Blank (1HK0019-BLK2)				Prepared: 10/31/24 00:00 Analyzed: 10/31/24 19:20							
Sulfate	<0.4	0.4	1.0	mg/L							
LCS (1HK0019-BS1)				Prepared: 10/31/24 00:00 Analyzed: 10/31/24 15:06							
Sulfate	36.59	0.4	1.0	mg/L	34.2		107	80-120			
LCS Dup (1HK0019-BSD1)				Prepared: 10/31/24 00:00 Analyzed: 10/31/24 15:24							
Sulfate	34.44	0.4	1.0	mg/L	34.2		101	80-120	6.03	10	
Matrix Spike (1HK0019-MS1)	**Source: 1HJ1373-01**			Prepared: 10/31/24 00:00 Analyzed: 10/31/24 16:55							
Sulfate	548.3	1.8	5.0	mg/L	171	373.6	102	87-113			
Matrix Spike Dup (1HK0019-MSD1)	**Source: 1HJ1373-01**			Prepared: 10/31/24 00:00 Analyzed: 10/31/24 17:13							
Sulfate	550.2	1.8	5.0	mg/L	171	373.6	103	87-113	0.343	10	

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1083 - EPA 200.2 Total ICP-MS - EPA 200.8, Rv. 5.4 (1994)											
Blank (1HJ1083-BLK1)				Prepared: 10/17/24 15:44 Analyzed: 10/19/24 01:39							
Antimony, total	<0.0008	0.0008	0.0020	mg/L							
Arsenic, total	0.0008	0.0006	0.0020	mg/L							
Barium, total	<0.0002	0.0002	0.0020	mg/L							
Beryllium, total	<0.0001	0.0001	0.0020	mg/L							
Cadmium, total	<0.00008	0.00008	0.0002	mg/L							
Chromium, total	<0.0007	0.0007	0.0020	mg/L							
Cobalt, total	<0.0005	0.0005	0.0020	mg/L							
Copper, total	<0.0008	0.0008	0.0020	mg/L							
Lead, total	<0.0005	0.0005	0.0008	mg/L							
Manganese, total	<0.0017	0.0017	0.0040	mg/L							
Molybdenum, total	<0.0006	0.0006	0.0020	mg/L							
Nickel, total	<0.0007	0.0007	0.0040	mg/L							
Selenium, total	<0.0011	0.0011	0.0040	mg/L							
Silver, total	<0.0015	0.0015	0.0020	mg/L							
Thallium, total	<0.0004	0.0004	0.0008	mg/L							
Vanadium, total	<0.0043	0.0043	0.0080	mg/L							
Zinc, total	<0.0174	0.0174	0.0200	mg/L							
LCS (1HJ1083-BS1)				Prepared: 10/17/24 15:44 Analyzed: 10/19/24 01:45							
Antimony, total	0.0973	0.0008	0.0020	mg/L	0.100		97.3	85-115			
Arsenic, total	0.0929	0.0006	0.0020	mg/L	0.100		92.9	85-115			
Barium, total	0.108	0.0002	0.0020	mg/L	0.100		108	85-115			
Beryllium, total	0.0982	0.0001	0.0020	mg/L	0.100		98.2	85-115			
Cadmium, total	0.0949	0.00008	0.0002	mg/L	0.100		94.9	85-115			
Chromium, total	0.0961	0.0007	0.0020	mg/L	0.100		96.1	85-115			
Cobalt, total	0.0969	0.0005	0.0020	mg/L	0.100		96.9	85-115			
Copper, total	0.0932	0.0008	0.0020	mg/L	0.100		93.2	85-115			
Lead, total	0.103	0.0005	0.0008	mg/L	0.100		103	85-115			
Manganese, total	0.0997	0.0017	0.0040	mg/L	0.100		99.7	85-115			
Molybdenum, total	0.100	0.0006	0.0020	mg/L	0.100		100	85-115			
Nickel, total	0.0962	0.0007	0.0040	mg/L	0.100		96.2	85-115			
Selenium, total	0.0870	0.0011	0.0040	mg/L	0.100		87.0	85-115			
Silver, total	0.0980	0.0015	0.0020	mg/L	0.100		98.0	85-115			
Thallium, total	0.0991	0.0004	0.0008	mg/L	0.100		99.1	85-115			
Vanadium, total	0.0986	0.0043	0.0080	mg/L	0.100		98.6	85-115			
Zinc, total	0.0914	0.0174	0.0200	mg/L	0.100		91.4	85-115			
Matrix Spike (1HJ1083-MS1)		**Source: 1HJ1234-01**		Prepared: 10/17/24 15:44 Analyzed: 10/19/24 02:22							
Antimony, total	0.0976	0.0008	0.0020	mg/L	0.100	ND	97.6	70-130			
Arsenic, total	0.103	0.0006	0.0020	mg/L	0.100	0.0094	93.6	70-130			
Barium, total	0.214	0.0002	0.0020	mg/L	0.100	0.106	108	70-130			
Beryllium, total	0.0964	0.0001	0.0020	mg/L	0.100	ND	96.4	70-130			
Cadmium, total	0.0936	0.00008	0.0002	mg/L	0.100	0.0007	92.9	70-130			
Chromium, total	0.0937	0.0007	0.0020	mg/L	0.100	ND	93.7	70-130			
Cobalt, total	0.0936	0.0005	0.0020	mg/L	0.100	ND	93.6	70-130			

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1083 - EPA 200.2 Total ICP-MS - EPA 200.8, Rv. 5.4 (1994)											
Matrix Spike (1HJ1083-MS1)		**Source: 1HJ1234-01**		Prepared: 10/17/24 15:44 Analyzed: 10/19/24 02:22							
Copper, total	0.0952	0.0008	0.0020	mg/L	0.100	0.0072	88.0	70-130			
Lead, total	0.0982	0.0005	0.0008	mg/L	0.100	ND	98.2	70-130			
Manganese, total	0.110	0.0017	0.0040	mg/L	0.100	0.0146	95.2	70-130			
Molybdenum, total	1.24	0.0006	0.0020	mg/L	0.100	1.15	84.9	70-130			
Nickel, total	0.0975	0.0007	0.0040	mg/L	0.100	0.0063	91.2	70-130			
Selenium, total	0.0885	0.0011	0.0040	mg/L	0.100	ND	88.5	70-130			
Silver, total	0.0968	0.0015	0.0020	mg/L	0.100	ND	96.8	70-130			
Thallium, total	0.0955	0.0004	0.0008	mg/L	0.100	ND	95.5	70-130			
Vanadium, total	0.0968	0.0043	0.0080	mg/L	0.100	ND	96.8	70-130			
Zinc, total	0.0886	0.0174	0.0200	mg/L	0.100	ND	88.6	70-130			
Matrix Spike Dup (1HJ1083-MSD1)		**Source: 1HJ1234-01**		Prepared: 10/17/24 15:44 Analyzed: 10/19/24 02:28							
Antimony, total	0.0952	0.0008	0.0020	mg/L	0.100	ND	95.2	70-130	2.46	20	
Arsenic, total	0.104	0.0006	0.0020	mg/L	0.100	0.0094	94.6	70-130	1.03	20	
Barium, total	0.211	0.0002	0.0020	mg/L	0.100	0.106	105	70-130	1.18	20	
Beryllium, total	0.0949	0.0001	0.0020	mg/L	0.100	ND	94.9	70-130	1.64	20	
Cadmium, total	0.0922	0.00008	0.0002	mg/L	0.100	0.0007	91.6	70-130	1.43	20	
Chromium, total	0.0916	0.0007	0.0020	mg/L	0.100	ND	91.6	70-130	2.33	20	
Cobalt, total	0.0936	0.0005	0.0020	mg/L	0.100	ND	93.6	70-130	0.0415	20	
Copper, total	0.0950	0.0008	0.0020	mg/L	0.100	0.0072	87.8	70-130	0.219	20	
Lead, total	0.0968	0.0005	0.0008	mg/L	0.100	ND	96.8	70-130	1.40	20	
Manganese, total	0.108	0.0017	0.0040	mg/L	0.100	0.0146	93.4	70-130	1.63	20	
Molybdenum, total	1.23	0.0006	0.0020	mg/L	0.100	1.15	80.7	70-130	0.340	20	
Nickel, total	0.0978	0.0007	0.0040	mg/L	0.100	0.0063	91.5	70-130	0.242	20	
Selenium, total	0.0882	0.0011	0.0040	mg/L	0.100	ND	88.2	70-130	0.295	20	
Silver, total	0.0957	0.0015	0.0020	mg/L	0.100	ND	95.7	70-130	1.06	20	
Thallium, total	0.0961	0.0004	0.0008	mg/L	0.100	ND	96.1	70-130	0.654	20	
Vanadium, total	0.0957	0.0043	0.0080	mg/L	0.100	ND	95.7	70-130	1.07	20	
Zinc, total	0.0892	0.0174	0.0200	mg/L	0.100	ND	89.2	70-130	0.710	20	
Post Spike (1HJ1083-PS1)		**Source: 1HJ1234-01**		Prepared: 10/17/24 15:44 Analyzed: 10/19/24 02:34							
Antimony, total	0.0729			mg/L	0.0800	0.0006	90.3	70-130			
Arsenic, total	0.0814			mg/L	0.0800	0.0092	90.2	70-130			
Barium, total	0.179			mg/L	0.0800	0.104	94.0	70-130			
Beryllium, total	0.0742			mg/L	0.0800	0.000003	92.8	70-130			
Cadmium, total	0.0723			mg/L	0.0800	0.0007	89.5	70-130			
Chromium, total	0.0708			mg/L	0.0800	0.0005	87.9	70-130			
Cobalt, total	0.0721			mg/L	0.0800	0.0002	89.9	70-130			
Copper, total	0.0754			mg/L	0.0800	0.0070	85.5	70-130			
Lead, total	0.0754			mg/L	0.0800	0.000002	94.3	70-130			
Manganese, total	0.0857			mg/L	0.0800	0.0143	89.2	70-130			
Molybdenum, total	1.24			mg/L	0.0800	1.13	134	70-130			M1
Nickel, total	0.0762			mg/L	0.0800	0.0062	87.5	70-130			
Selenium, total	0.0645			mg/L	0.0800	-0.00007	80.6	70-130			
Silver, total	0.0757			mg/L	0.0800	0.0001	94.5	70-130			

Determination of Total Metals	Result	MDL	RL	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 1HJ1083 - EPA 200.2 Total ICP-MS - EPA 200.8, Rv. 5.4 (1994)											
Post Spike (1HJ1083-PS1)		**Source: 1HJ1234-01**		Prepared: 10/17/24 15:44 Analyzed: 10/19/24 02:34							
Thallium, total	0.0732			mg/L	0.0800	0.00002	91.5	70-130			
Vanadium, total	0.0753			mg/L	0.0800	0.0029	90.4	70-130			
Zinc, total	0.0653			mg/L	0.0800	0.0021	79.0	70-130			
Batch 1HJ1179 - EPA 200.2 Total ICP-OES (200.7) - EPA 200.7, Rv. 4.4 (1994)											
Blank (1HJ1179-BLK1)				Prepared: 10/21/24 08:17 Analyzed: 10/23/24 08:55							
Aluminum, total	<0.050		0.050	mg/L							
Boron, total	<0.056	0.056	0.100	mg/L							
Iron, total	<0.047	0.047	0.100	mg/L							
Magnesium, total	<0.06	0.06	0.10	mg/L							
LCS (1HJ1179-BS1)				Prepared: 10/21/24 08:17 Analyzed: 10/23/24 09:00							
Aluminum, total	2.25		0.050	mg/L	2.20		102	85-115			
Boron, total	0.193	0.056	0.100	mg/L	0.200		96.7	85-115			
Iron, total	2.38	0.047	0.100	mg/L	2.20		108	85-115			
Magnesium, total	2.18	0.06	0.10	mg/L	2.20		99.1	85-115			
Matrix Spike (1HJ1179-MS1)		**Source: 1HJ1352-01**		Prepared: 10/21/24 08:17 Analyzed: 10/23/24 09:15							
Aluminum, total	2.40		0.050	mg/L	2.20	0.0778	106	70-130			
Boron, total	0.315	0.056	0.100	mg/L	0.200	0.0845	115	70-130			
Iron, total	2.41	0.047	0.100	mg/L	2.20	0.088	105	70-130			
Magnesium, total	106	0.06	0.10	mg/L	2.20	101	237	70-130			M6
Matrix Spike Dup (1HJ1179-MSD1)		**Source: 1HJ1352-01**		Prepared: 10/21/24 08:17 Analyzed: 10/23/24 09:26							
Aluminum, total	2.35		0.050	mg/L	2.20	0.0778	103	70-130	2.21	20	
Boron, total	0.304	0.056	0.100	mg/L	0.200	0.0845	110	70-130	3.52	20	
Iron, total	2.32	0.047	0.100	mg/L	2.20	0.088	102	70-130	3.50	20	
Magnesium, total	98.7	0.06	0.10	mg/L	2.20	101	NR	70-130	7.21	20	M6
Post Spike (1HJ1179-PS1)		**Source: 1HJ1352-01**		Prepared: 10/21/24 08:17 Analyzed: 10/23/24 09:36							
Aluminum, total	9.24			mg/L	8.80	0.0778	104	85-115			
Boron, total	0.916			mg/L	0.800	0.0845	104	85-115			
Iron, total	9.62			mg/L	8.80	0.088	108	85-115			
Magnesium, total	113			mg/L	8.80	101	136	85-115			M6
Batch 1HJ1332 - EPA 7470A Hg Water - SM 3112B											
Blank (1HJ1332-BLK1)				Prepared: 10/22/24 15:12 Analyzed: 10/24/24 11:04							
Mercury, total	<0.00013	0.00013	0.00020	mg/L							
LCS (1HJ1332-BS1)				Prepared: 10/22/24 15:12 Analyzed: 10/24/24 11:07							
Mercury, total	0.00234	0.00013	0.00020	mg/L	0.00250		93.7	81-119			
Matrix Spike (1HJ1332-MS1)		**Source: 1HJ0941-11**		Prepared: 10/22/24 15:12 Analyzed: 10/24/24 11:11							
Mercury, total	0.0430	0.00133	0.00200	mg/L	0.0250	0.0190	95.9	72-123			
Matrix Spike Dup (1HJ1332-MSD1)		**Source: 1HJ0941-11**		Prepared: 10/22/24 15:12 Analyzed: 10/24/24 11:13							
Mercury, total	0.0452	0.00133	0.00200	mg/L	0.0250	0.0190	105	72-123	4.87	18	

Definitions

H1:	Sample was received past holding time.
M1:	Matrix spike recovery is above acceptance limits.
M6:	Matrix spike recovery is outside of acceptance limits. The analyte concentration is greater than 4X the spiking level.
MDL:	Minimum Detection Limit
Q3:	LCS recovery is below acceptance limits. The reported value is estimated.
R1:	Duplicate RPD is outside acceptance criteria.
RL:	Reporting Limit
RPD:	Relative Percent Difference
S2:	Surrogate recovery is below acceptance limits.
TX1:	Repeated analysis of this sample consistently exceeded greater than 10% breakthrough to the second column.
TX2:	The RPD value for the sample duplicates are outside of acceptance limits due to matrix interference. The reported value is an average of all test measurements.

Cooler Receipt Log

Cooler ID: Default Cooler Temp: 0.6°C

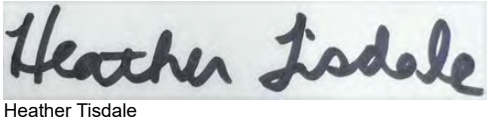
Cooler Inspection Checklist

Custody Seals	No	Containers Intact	Yes
COC/Labels Agree	Yes	Preservation Confirmed	No
Received On Ice	Yes		

Report Comments

The data and information on this, and other accompanying documents, represents only the sample(s) analyzed. This report is incomplete unless all pages indicated in the footnote are present and an authorized signature is included. ***The services were provided under and subject to Microbac's standard terms and conditions which can be located and reviewed at <https://www.microbac.com/standard-terms-conditions>.***

Reviewed and Approved By:



Heather Tisdale
Customer Relationship Specialist
heather.tisdale@microbac.com
11/13/24 14:41

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Keystone LABORATORIES
A Microbac Company
600 East 17th Street
Newton, IA 50208
641-792-8451

1HJ1376

BMC Aggregates L.C.
PM: Heather Tisdale

Printed: 10/7/2024 4:58:08P

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SITE INFORMATION
Sampler: Sherman Lundy
Project: GW Monitoring
Miller Creek Area

REPORT TO
Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO
Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

SPECIAL INSTRUCTIONS
None

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY
Work Order 1HJB376
Temperature 0.6°C
Turn-Cooler: No

- ☐ Custody Seal
- ☒ Containers Intact
- ☒ COC/Labels Agree
- ☐ Preservation Confirmed
- ☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
-001	Well #1	Aqueous	GRAB	10/16/24		12	624@benzene, 624@chloroform, 624@nek, 624-base-analysis, 625@pyridine, 625-126, 8315@Formaldehyde, 9020-100, ag-t-200.8, al-t-200.7, as-t-200.8, ba-t-200.8, be-t-200.8, b-t-200.7, cd-t-200.8, cod-t-410.4, co-t-200.8, cr-t-200.8, cu-t-200.8, fe-t-200.7, hg-t-3112-low, mg-t-200.7, mn-t-200.8, mo-t-200.8, nh3-timberline, ni-t-200.8, pb-t-200.8, phenol-t-420.1, sb-t-200.8, se-t-200.8, so4-9056-w, tds-i-1750-85, tl-t-200.8, tss-i-3765-85, v-t-200.8, zn-t-200.8	4

Relinquished By: Sherman Lundy Date/Time: 10/16/24

Received By: [signature] Date/Time: 10/17/24 11:15

Relinquished By: [signature] Date/Time: 10-16-24 1359

Received for Lab By: [signature] Date/Time:

Remarks:

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Newton, IA 50208
641-792-8451

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1HJ1376

BMC Aggregates L.C.
PM: Heather Tisdale

www.keystonelabs.

SITE INFORMATION
Sampler: Sherman Lundy
Project: GW Monitoring
Miller Creek Area

REPORT TO
Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO
Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

SPECIAL INSTRUCTIONS
None

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY
Work Order 1HJ1376
Temperature 0.6°C
Turn-Cooler: No

- ☐ Custody Seal
- ☒ Containers Intact
- ☒ COC/Labels Agree
- ☐ Preservation Confirmed
- ☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
-001	Well #2	Aqueous	GRAB	10/16/24		12	624@benzene, 624@chloroform, 624@mek, 624-base-analysis, 625@pyridine, 625-126, 8315@Formaldehyde, 9020-100, ag-t-200.8, al-t-200.7, as-t-200.8, ba-t-200.8, be-t-200.8, b-t-200.7, cd-t-200.8, cod-t-410.4, co-t-200.8, cr-t-200.8, cu-t-200.8, fe-t-200.7, hg-t-3112-low, mg-t-200.7, mn-t-200.8, mo-t-200.8, nl3-timberline, ni-t-200.8, pb-t-200.8, phenol-t-420.1, sb-t-200.8, se-t-200.8, so4-9056-w, tds-i-1750-85, tl-t-200.8, tss-i-3765-85, v-t-200.8, zn-t-200.8	02

Sherman Lundy 10/16/24
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Date/Time

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Date/Time

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PM: Heather Tisdale

ed: 10/7/2024 4:58:08P

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SITE INFORMATION
Sampler: Sherman Lundy
Project: GW Monitoring
Miller Creek Area

REPORT TO
Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO
Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

SPECIAL INSTRUCTIONS
None

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY
Work Order 1HJ1376
Temperature 1.0 °C
Turn-Cooler: No

☐ Custody Seal
☐ Containers Intact
☐ COC/Labels Agree
☐ Preservation Confirmed
☐ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
-001	Well #3	Aqueous	GRAB	10/16/24		12	624@benzene, 624@chloroform, 624@mek, 624-base-analysis, 625@pyridine, 625-126, 8315@Formaldehyde, 9020-100, ag-t-200.8, al-t-200.7, as-t-200.8, ba-t-200.8, be-t-200.8, b-t-200.7, cd-t-200.8, cod-t-410.4, co-t-200.8, cr-t-200.8, cu-t-200.8, fe-t-200.7, hg-t-3112-low, mg-t-200.7, mn-t-200.8, mo-t-200.8, nh3-timberline, ni-t-200.8, pb-t-200.8, phenol-t-420.1, sb-t-200.8, se-t-200.8, so4-9056-w, tds-i-1750-85, tl-t-200.8, tss-i-3765-85, v-t-200.8, zn-t-200.8	03

Sherman Lundy 10/16/24
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BMC Aggregates L.C.
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SITE INFORMATION
Sampler: Sherman Lundy
Project: GW Monitoring
Miller Creek Area

REPORT TO
Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO
Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

SPECIAL INSTRUCTIONS
None

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY
Work Order 1HJ13776
Temperature 1.0°C
Turn-Cooler: No

- ☐ Custody Seal
- ☒ Containers Intact
- ☒ COC/Labels Agree
- ☐ Preservation Confirmed
- ☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
-001	Well #4	Aqueous	GRAB	10/16/24		12	624@benzene, 624@chloroform, 624@mek, 624-base-analysis, 625@pyridine, 625-126, 8315@Formaldehyde, 9020-100, ag-t-200.8, al-t-200.7, as-t-200.8, ba-t-200.8, be-t-200.8, b-t-200.7, cd-t-200.8, cod-t-410.4, co-t-200.8, cr-t-200.8, cu-t-200.8, fe-t-200.7, hg-t-3112-low, mg-t-200.7, mn-t-200.8, mo-t-200.8, ni3-tinuberline, ni-t-200.8, pb-t-200.8, phenol-t-420.1, sb-t-200.8, se-t-200.8, so4-9056-w, tds-i-1750-85, tl-t-200.8, tss-i-3765-85, v-t-200.8, zn-t-200.8	04

Sherman Lundy 10/16/24
Relinquished By Date/Time

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Received By 10/17/24
Date/Time

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Date/Time

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CHAIN OF CUSTODY RECORD

Keystone LABORATORIES
A Microbac Company
600 East 17th Street South
Newton, IA 50208
641-792-8451

1HJ13776

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PM: Heather Tisdale

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SITE INFORMATION
Sampler: Sherman Lundy
Project: GW Monitoring
Miller Creek Area

REPORT TO
Sherman Lundy
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

INVOICE TO
Accounts Payable
BMC Aggregates L.C.
101 BMC Drive
Elk Run Heights, IA 50707

SPECIAL INSTRUCTIONS
None

Turn Around Time
☐ Standard ☐ RUSH, need by ___/___/___

LAB USE ONLY
Work Order 11J13776
Temperature 1.1°C
Turn-Cooler: No

- ☐ Custody Seal
- ☑ Containers Intact
- ☒ COC/Labels Agree
- ☐ Preservation Confirmed
- ☒ Received on Ice

Number	Sample Identification / Client ID	Matrix	Sample Type	Date	Time	Number of Containers	Analyses	Lab Sample Number
-001	Upgradient Well	Aqueous	GRAB	10/16/24		12	624@benzene, 624@chloroform, 624@mek, 624-base-analysis, 625@pyridine, 625-126, 8315@Formaldehyde, 9020-100, ag-t-200.8, al-t-200.7, as-t-200.8, ba-t-200.8, be-t-200.8, b-t-200.7, cd-t-200.8, cod-t-410.4, co-t-200.8, cr-t-200.8, cu-t-200.8, fe-t-200.7, hg-t-3112-low, mg-t-200.7, mn-t-200.8, mo-t-200.8, nh3-timberline, ni-t-200.8, pb-t-200.8, phenol-t-420.1, sb-t-200.8, se-t-200.8, so4-9056-w, tds-i-1750-85, tl-t-200.8, tss-i-3765-85, v-t-200.8, zn-t-200.8	05

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Appendix C
Summary of Groundwater Chemistry

SCS ENGINEERS

Summary of Groundwater Chemistry
BMC Aggregates L.C. South Waterloo Quarry

Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Aluminum, mg/L (CAS NO - 7429-90-5)	3/19/2019	< 0.05	0.165	0.247	0.408	12.2
	10/16/2019	< 0.05	< 0.05	< 0.05	< 0.05	0.308
	3/18/2020	< 0.05	0.062	< 0.05	< 0.05	0.233
	10/16/2020	< 0.05	0.077	0.061	0.096	0.971
	3/17/2021	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05
	10/20/2021	< 0.05	< 0.05	0.069	0.259	0.512
	3/17/2022	0.057	< 0.05	0.092	0.093	0.327
	10/18/2022	< 0.05	< 0.05	0.059	< 0.05	< 0.05
	3/14/2023	< 0.05	0.05	< 0.05	0.549	0.074
	10/18/2023	< 0.05	< 0.05	< 0.05	< 0.05	1.83
	3/18/2024	< 0.05	< 0.05	< 0.05	< 0.05	0.164
	10/16/2024	< 0.05	< 0.05	0.064	0.05	0.466
Antimony, mg/L (CAS NO - 7440-36-0)	12/16/2009	0.0011	N/A	N/A	N/A	N/A
	12/16/2009	< 0.0002	N/A	N/A	N/A	N/A
	1/15/2010	< 0.0002	N/A	N/A	N/A	N/A
	2/18/2010	0.0005	0.001	0.0012	0.0007	0.0018
	3/16/2010	< 0.0002	0.0002	0.0011	0.0007	N/A
	3/23/2010	N/A	N/A	N/A	N/A	< 0.0002
	4/15/2010	0.0003	0.0011	0.0017	0.002	0.0006
	5/17/2010	0.0002	0.0029	0.0011	0.0013	0.0023
	6/21/2010	< 0.0002	0.0008	0.0011	0.0018	0.0002
	7/16/2010	0.0005	0.0038	0.0029	0.0047	0.0014
	8/18/2010	0.0006	0.0009	0.0021	0.0008	0.0012
	9/20/2010	< 0.0002	< 0.0002	0.0014	0.0017	0.0018
	10/18/2010	< 0.0002	0.0041	0.0027	< 0.0002	0.0013
	11/16/2010	< 0.0002	< 0.0002	0.0022	0.0018	< 0.0002
	12/16/2010	< 0.0002	< 0.0002	0.0025	0.0013	< 0.0002
	1/13/2011	< 0.0002	< 0.0002	0.0023	< 0.0002	< 0.0002
	2/16/2011	0.0003	0.0005	0.0028	0.001	0.0006
	5/18/2011	< 0.0002	< 0.0002	0.0018	< 0.0002	< 0.0002
	8/17/2011	< 0.0002	0.0005	0.003	0.0013	0.0005
	10/17/2011	< 0.0002	< 0.0002	0.0014	0.0006	0.0009
	1/18/2012	0.0002	0.0003	0.0015	0.0009	0.0003
	4/17/2012	< 0.0002	0.0006	0.0013	0.0012	0.0001
	7/17/2012	0.0002	0.0004	0.0002	0.0013	0.0012
	11/14/2012	< 0.0002	0.0004	0.0012	0.0007	0.0006
	3/19/2013	< 0.0002	0.0006	0.0016	0.0008	0.0003
	6/17/2013	0.001	0.0019	0.004	0.0017	0.0008
	9/17/2013	< 0.0002	0.0007	0.001	0.0005	0.0002
	12/17/2013	0.0002	0.0009	0.0013	0.0007	0.0003
	2/17/2014	0.0005	0.001	0.0014	0.0012	0.0004
	4/15/2014	0.0003	0.0004	0.0007	0.0006	0.0005
	7/15/2014	< 0.0002	0.001	0.0008	0.0005	0.0004
	10/13/2014	0.0006	0.0012	0.0016	0.001	0.0007
	1/16/2015	< 0.0002	0.0004	0.0007	0.0006	< 0.0002
	5/13/2015	0.0002	0.0003	0.0004	0.0019	0.0001
	8/18/2015	0.0001	0.0003	0.0006	0.0003	0.0018
	11/17/2015	< 0.0002	0.0003	0.0004	0.0013	0.0002
	3/16/2016	< 0.0001	0.0002*	0.0011*	0.0011*	0.0002*
	10/12/2016	< 0.0001	0.0009*	0.0008*	0.003	0.0002*
	3/16/2017	0.0001*	0.0006*	0.0007*	0.001*	0.0003*
	10/12/2017	0.0003*	0.0002*	0.0007*	0.0003*	0.0003*
	3/14/2018	0.0002*	< 0.0001	0.0009*	0.0002*	0.0003*
	10/17/2018	< 0.0001	0.0003*	0.0017*	0.0002*	0.0005*
	3/19/2019	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	10/16/2019	0.0003*	< 0.0001	0.0002*	0.0009*	0.0002*
	3/18/2020	< 0.0008	< 0.0008	< 0.0008	0.0008*	< 0.0008
	10/16/2020	< 0.0008	< 0.0008	< 0.0008	0.0008*	< 0.0008
	3/17/2021	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008
	10/20/2021	0.0005*	< 0.0002	0.0002*	0.0004*	0.0007*
	3/17/2022	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008
	10/18/2022	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008
	3/14/2023	< 0.0008	< 0.0008	< 0.0008	< 0.0008	0.001*
	10/18/2023	0.0009*	< 0.0008	< 0.0008	< 0.0008	< 0.0008
	3/18/2024	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008
	10/16/2024	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008
Arsenic, mg/L (CAS NO - 7440-38-2)	12/16/2009	0.0013	N/A	N/A	N/A	N/A
	12/16/2009	< 0.0003	N/A	N/A	N/A	N/A
	1/15/2010	< 0.0003	N/A	N/A	N/A	N/A
	2/18/2010	0.0006	0.0014	0.001	0.001	0.0006
	3/16/2010	0.0022	0.0012	0.0037	0.0037	N/A

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Arsenic, mg/L (CAS NO - 7440-38-2)	3/23/2010	N/A	N/A	N/A	N/A	< 0.0003
	4/15/2010	< 0.0003	< 0.0003	< 0.0003	< 0.0003	< 0.0003
	5/17/2010	0.0009	< 0.0003	0.0015	0.0015	0.003
	6/21/2010	0.0013	0.0007	0.0021	0.0017	0.0025
	7/16/2010	< 0.0003	0.001	0.0016	< 0.0003	0.0009
	8/18/2010	0.0019	0.0049	0.0019	0.0036	0.0017
	9/20/2010	0.0006	0.0007	0.0016	0.0006	< 0.0003
	10/18/2010	< 0.0003	0.0009	0.0015	0.0026	0.0006
	11/16/2010	< 0.0003	0.0012	0.0012	< 0.0003	< 0.0003
	12/16/2010	0.0022	0.0017	0.0024	0.0017	0.0011
	1/13/2011	< 0.0003	0.002	0.0018	< 0.0003	< 0.0003
	2/16/2011	0.0003	0.0013	0.0003	0.0003	0.0003
	5/18/2011	0.0003	0.0039	0.0018	0.0015	0.0003
	8/17/2011	< 0.0003	0.0027	< 0.0003	< 0.0003	< 0.0003
	10/17/2011	< 0.0003	0.0031	< 0.0003	< 0.0003	< 0.0003
	1/18/2012	< 0.0003	0.0099	0.0075	0.0073	< 0.0003
	4/17/2012	0.0008	0.0057	0.002	0.0057	0.0011
	7/17/2012	0.0012	0.0045	0.0009	0.0076	0.0015
	11/14/2012	< 0.0003	0.0009	< 0.0003	0.0068	< 0.0003
	3/19/2013	< 0.0003	0.0025	< 0.0003	0.0061	0.001
	6/17/2013	< 0.0003	0.0022	0.0004	0.0102	< 0.0003
	9/17/2013	0.0004	0.0034	0.001	0.0099	0.001
	12/17/2013	0.0004	0.0023	0.001	0.0124	0.0007
	2/17/2014	0.0005	0.0034	0.0006	0.0118	< 0.0003
	4/15/2014	0.0005	0.0038	0.0005	0.0112	0.0012
	7/15/2014	0.0003	0.0005	0.0015	0.01	0.0036
	10/13/2014	0.0004	0.0019	0.0006	0.009	0.0006
	1/16/2015	0.0004	0.0033	0.0006	0.0107	0.0007
	5/13/2015	0.0003	0.0026	0.0018	0.0097	0.0005
	8/18/2015	0.0003	0.0031	0.0013	0.0009	0.0088
	11/17/2015	0.0004	0.0034	0.0008	0.0089	0.0006
	3/16/2016	0.0003*	0.0027	0.0009*	0.0088	0.0009*
	10/12/2016	0.0004*	0.0027	0.0022	0.0065	0.0013*
	3/16/2017	0.0003*	0.0031	0.0008*	0.0069	0.0011*
	10/12/2017	0.0005*	0.0021	0.0007*	0.0006*	0.0013*
	3/14/2018	0.0002*	0.0028	0.0007*	0.0004*	0.0012*
	10/17/2018	< 0.0001	0.0027	0.0004*	0.0064	0.0023
	3/19/2019	0.0001	0.0029	0.0013	0.0045	0.0057
	10/16/2019	0.0004*	0.0022	0.0003*	0.0028	0.0005*
	3/18/2020	0.0007*	0.0035	0.0007*	0.0015*	0.0011*
	10/16/2020	< 0.0006	0.0026	< 0.0006	0.002	0.0009*
	3/17/2021	< 0.0006	0.0032	0.0008*	< 0.0006	0.0009*
	10/20/2021	< 0.0006	0.0017*	< 0.0006	0.002	< 0.0006
	3/17/2022	< 0.0006	0.0014*	< 0.0006	< 0.0006	< 0.0006
	10/18/2022	0.0009*	0.0022	0.001*	0.0011*	0.0008*
	3/14/2023	0.0025	0.004	0.0024	0.0026	0.0029
	10/18/2023	0.0006*	0.0015*	0.0009*	0.0009*	0.002
	3/18/2024	0.0006*	0.0016*	0.0011*	0.0011*	0.0009*
	10/16/2024	0.0008*	0.002	0.0012*	0.0012*	0.0012*
Barium, mg/L (CAS NO - 7440-39-3)	12/16/2009	0.241	N/A	N/A	N/A	N/A
	12/16/2009	0.241	N/A	N/A	N/A	N/A
	1/15/2010	0.111	N/A	N/A	N/A	N/A
	2/18/2010	0.111	0.0435	0.0492	0.0431	0.128
	3/16/2010	0.085	0.0416	0.0412	0.0343	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0826
	4/15/2010	0.113	0.0531	0.0491	0.0478	0.223
	5/17/2010	0.114	0.0554	0.0507	0.0476	0.116
	6/21/2010	0.115	0.0663	0.0636	0.0486	0.138
	7/16/2010	0.119	0.0749	0.0673	0.0512	0.132
	8/18/2010	0.132	0.116	0.077	0.153	0.136
	9/20/2010	0.0984	0.186	0.0971	0.51	0.112
	10/18/2010	0.118	0.262	0.197	0.208	0.133
	11/16/2010	0.107	0.336	0.11	0.0689	0.0484
	12/16/2010	0.144	0.37	0.126	0.0979	0.0808
	1/13/2011	0.104	0.394	0.121	0.0752	0.0397
	2/16/2011	0.136	0.502	0.143	0.174	0.0909
	5/18/2011	0.119	0.532	0.157	0.217	0.147
	8/17/2011	0.107	0.511	0.198	0.228	0.0638
	10/17/2011	0.0877	0.041	0.0562	0.0675	0.0433
	1/18/2012	0.0954	0.464	0.215	0.356	0.103
	4/17/2012	0.113	0.511	0.258	0.456	0.126

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BMC Aggregates L.C. South Waterloo Quarry

Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Barium, mg/L (CAS NO - 7440-39-3)	7/17/2012	0.0984	0.418	0.0388	0.425	0.247
	11/14/2012	0.107	0.487	0.295	0.549	0.136
	3/19/2013	0.107	0.534	0.317	0.582	0.184
	6/17/2013	0.134	0.431	0.332	0.712	0.0895
	9/17/2013	0.0978	0.466	0.291	0.639	0.109
	12/17/2013	0.104	0.484	0.3	0.694	0.0934
	2/17/2014	0.0832	0.537	0.297	0.715	0.064
	4/15/2014	0.114	0.552	0.284	0.614	0.172
	7/15/2014	0.118	0.285	0.439	0.562	0.411
	10/13/2014	0.115	0.477	0.335	0.569	0.122
	1/16/2015	0.108	0.543	0.335	0.611	0.111
	5/13/2015	0.131	0.505	0.327	0.438	0.109
	8/18/2015	0.113	0.554	0.329	0.171	0.388
	11/17/2015	0.115	0.545	0.331	0.416	0.131
	3/16/2016	0.133	0.582	0.287	0.402	0.0653
	10/12/2016	0.146	0.527	0.364	0.291	0.162
	3/16/2017	0.102	0.591	0.122	0.274	0.214
	10/12/2017	0.241	0.761	0.104	0.117	0.214
	3/14/2018	0.101	0.829	0.105	0.0953	0.279
	10/17/2018	0.118	0.792	0.0979	0.221	0.206
	3/19/2019	0.106	0.84	0.116	0.0992	1.05
	10/16/2019	0.14	0.812	0.0695	0.0973	0.0862
	3/18/2020	0.126	0.779	0.0721	0.098	0.0478
	10/16/2020	0.153	0.734	0.063	0.118	0.0906
	3/17/2021	0.0942	0.934	0.0845	0.118	0.254
	10/20/2021	0.111	0.591	0.0629	0.13	0.0641
	3/17/2022	0.0991	0.602	0.0682	0.133	0.0845
	10/18/2022	0.132	0.551	0.077	0.096	0.0934
	3/14/2023	0.267	1.08	0.162	0.18	0.203
	10/18/2023	0.116	0.371	0.0817	0.0957	0.109
	3/18/2024	0.0974	0.367	0.0995	0.103	0.0725
	10/16/2024	0.132	0.364	0.0827	0.0807	0.0938
Beryllium, mg/L (CAS NO - 7440-41-7)	12/16/2009	0.0003	N/A	N/A	N/A	N/A
	12/16/2009	< 0.00005	N/A	N/A	N/A	N/A
	1/15/2010	< 0.00005	N/A	N/A	N/A	N/A
	2/18/2010	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.0003
	3/16/2010	< 0.00005	< 0.00005	< 0.00005	< 0.00005	N/A
	3/23/2010	N/A	N/A	N/A	N/A	< 0.00005
	4/15/2010	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	5/17/2010	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	6/21/2010	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.0006
	7/16/2010	0.0004	0.0004	0.0004	0.0006	0.0004
	8/18/2010	0.0002	0.0002	0.0002	0.0002	0.0002
	9/20/2010	0.0002	0.0002	0.0002	0.0003	0.0002
	10/18/2010	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	11/16/2010	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	12/16/2010	0.0004	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	1/13/2011	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	2/16/2011	0.00005	0.00005	0.00005	0.00005	0.00005
	5/18/2011	0.00005	0.0001	0.00005	0.00005	0.00009
	8/17/2011	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	10/17/2011	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	1/18/2012	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	4/17/2012	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.0001
	7/17/2012	0.0002	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	11/14/2012	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	3/19/2013	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	6/17/2013	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	9/17/2013	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.0001
	12/17/2013	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	2/17/2014	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	4/15/2014	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.0002
	7/15/2014	< 0.00005	< 0.00005	< 0.00005	< 0.00005	0.0006
	10/13/2014	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	1/16/2015	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	5/13/2015	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	8/18/2015	< 0.00005	0.00003	0.00003	0.0002	0.00004
	11/17/2015	< 0.00005	< 0.00005	< 0.00005	< 0.00005	< 0.00005
	3/16/2016	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003
	10/12/2016	< 0.00003	< 0.00003	< 0.00003	< 0.00003	0.0002*
	3/16/2017	< 0.00003	< 0.00003	< 0.00003	< 0.00003	0.0002*

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Beryllium, mg/L (CAS NO - 7440-41-7)	10/12/2017	0.00004*	< 0.00003	< 0.00003	< 0.00003	0.0003*
	3/14/2018	< 0.00003	< 0.00003	< 0.00003	< 0.00003	0.0003*
	10/17/2018	< 0.00003	< 0.00003	< 0.00003	< 0.00003	0.0002*
	3/19/2019	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	10/16/2019	< 0.00003	< 0.00003	< 0.00003	< 0.00003	< 0.00003
	3/18/2020	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/16/2020	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	3/17/2021	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/20/2021	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	3/17/2022	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/18/2022	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	3/14/2023	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/18/2023	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0001*
	3/18/2024	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	10/16/2024	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Boron, mg/L (CAS NO - 7440-42-8)	12/16/2009	< 0.004	N/A	N/A	N/A	N/A
	12/16/2009	< 0.004	N/A	N/A	N/A	N/A
	1/15/2010	< 0.004	N/A	N/A	N/A	N/A
	2/18/2010	0.019	0.059	0.058	0.036	0.045
	3/16/2010	0.059	0.168	0.048	0.115	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.012
	4/15/2010	0.022	0.047	0.067	0.046	0.014
	5/17/2010	0.043	0.085	0.088	0.066	0.039
	6/21/2010	0.021	0.047	0.064	0.043	0.011
	7/16/2010	0.016	0.048	0.069	0.048	0.013
	8/18/2010	0.028	0.05	0.071	0.065	0.026
	9/20/2010	0.063	0.092	0.134	0.087	0.076
	10/18/2010	0.029	0.035	0.08	0.058	0.046
	11/16/2010	0.032	0.049	0.06	0.067	0.071
	12/16/2010	0.03	0.05	0.069	0.051	0.067
	1/13/2011	0.032	0.062	0.074	0.058	0.073
	2/16/2011	0.04	0.066	0.084	0.064	0.047
	5/18/2011	0.004	0.039	0.052	0.033	0.015
	8/17/2011	0.018	0.047	0.066	0.042	0.396
	10/17/2011	< 0.004	< 0.004	< 0.004	< 0.004	0.53
	1/18/2012	0.08	0.188	0.039	0.115	0.027
	4/17/2012	0.028	0.045	0.063	0.054	0.062
	7/17/2012	0.025	0.062	0.092	0.052	0.053
	11/14/2012	0.027	0.044	0.051	0.05	0.078
	3/19/2013	0.049	0.03	0.041	0.038	0.018
	6/17/2013	0.008	0.051	0.052	0.044	0.047
	9/17/2013	0.03	0.042	0.054	0.052	0.107
	12/17/2013	0.033	0.044	0.056	0.055	0.064
	2/17/2014	0.006	< 0.004	< 0.004	< 0.004	< 0.004
	4/15/2014	0.05	0.038	0.047	0.042	0.034
	7/15/2014	0.023	0.05	0.038	0.047	0.071
	10/13/2014	0.029	0.041	0.048	0.047	0.083
	1/16/2015	0.019	0.033	0.045	0.043	0.053
	5/13/2015	0.009	0.03	0.036	0.058	0.038
	8/18/2015	0.023	0.039	0.043	0.066	0.061
	11/17/2015	0.038	0.054	0.045	0.064	0.049
	3/16/2016	0.027*	0.054*	0.05*	0.063*	0.045*
	10/12/2016	0.028*	0.059*	0.042*	0.055*	0.07*
	3/16/2017	0.027*	0.046*	0.038*	0.059*	0.054*
	10/12/2017	0.052*	0.06*	0.051*	0.081*	0.082*
	3/14/2018	< 0.057	< 0.057	< 0.057	< 0.057	< 0.057
	10/17/2018	< 0.057	0.064*	< 0.057	0.067*	0.092*
	3/19/2019	< 0.057	< 0.057	< 0.057	< 0.057	0.081
	10/16/2019	< 0.057	< 0.057	< 0.057	< 0.057	< 0.057
	3/18/2020	< 0.056	0.064*	< 0.056	< 0.056	0.16
	10/16/2020	< 0.056	< 0.056	< 0.056	< 0.056	< 0.056
	3/17/2021	< 0.056	< 0.056	< 0.056	< 0.056	< 0.056
	10/20/2021	< 0.056	< 0.056	< 0.056	< 0.056	< 0.056
	3/17/2022	< 0.056	< 0.056	0.058*	< 0.056	< 0.056
	10/18/2022	0.089*	0.062*	< 0.056	< 0.056	< 0.056
	3/14/2023	< 0.056	< 0.056	< 0.056	< 0.056	< 0.056
	10/18/2023	0.058*	< 0.056	< 0.056	< 0.056	< 0.056
	3/18/2024	< 0.056	< 0.056	< 0.056	< 0.056	< 0.056
	10/16/2024	< 0.056	< 0.056	< 0.056	< 0.056	< 0.056
Cadmium, mg/L (CAS NO - 7440-43-9)	12/16/2009	0.0007	N/A	N/A	N/A	N/A
	12/16/2009	< 0.0002	N/A	N/A	N/A	N/A

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Summary of Groundwater Chemistry
BMC Aggregates L.C. South Waterloo Quarry

Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Cadmium, mg/L (CAS NO - 7440-43-9)	1/15/2010	< 0.0002	N/A	N/A	N/A	N/A
	2/18/2010	0.0002	0.0004	< 0.0002	< 0.0002	0.0004
	3/16/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	N/A
	3/23/2010	N/A	N/A	N/A	N/A	< 0.0002
	4/15/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	5/17/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	6/21/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	7/16/2010	0.0003	0.0003	0.0004	0.0005	0.0003
	8/18/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	9/20/2010	0.0003	< 0.0002	< 0.0002	< 0.0002	0.0001
	10/18/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	11/16/2010	0.0002	0.0003	0.0003	0.0005	0.0003
	12/16/2010	0.0108	0.0002	0.0003	0.0004	0.0008
	1/13/2011	0.0028	0.0002	0.0002	0.0003	0.0005
	2/16/2011	0.0044	0.0003	0.0003	0.0005	0.0004
	5/18/2011	0.0002	0.0002	0.0003	0.0004	0.0004
	8/17/2011	< 0.0002	0.0003	< 0.0002	< 0.0002	< 0.0002
	10/17/2011	0.0004	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	1/18/2012	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	4/17/2012	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	7/17/2012	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	11/14/2012	0.0001	0.0001	0.0002	0.0008	0.00008
	3/19/2013	0.00009	< 0.0002	< 0.0002	< 0.0002	0.0001
	6/17/2013	0.0002	< 0.0002	0.0001	< 0.0002	< 0.0002
	9/17/2013	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0001
	12/17/2013	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	2/17/2014	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	4/15/2014	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0002
	7/15/2014	0.0001	< 0.0002	< 0.0002	< 0.0002	0.00008
	10/13/2014	0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	1/16/2015	0.0002	0.0001	0.0001	0.0001	0.0001
	5/13/2015	0.0001	< 0.0002	< 0.0002	0.0002	< 0.0002
	8/18/2015	0.0001	< 0.0002	< 0.0002	< 0.0002	0.0002
	11/17/2015	0.0001	0.0001	< 0.0002	0.0002	< 0.0002
	3/16/2016	0.00009*	< 0.00007	< 0.00007	0.0001*	< 0.00007
	10/12/2016	0.00008*	< 0.00007	0.00009*	0.00007*	< 0.00007
	3/16/2017	0.00007*	< 0.00007	< 0.00007	0.0001*	< 0.00007
	10/12/2017	0.0002*	< 0.00007	< 0.00007	< 0.00007	0.00007*
	3/14/2018	0.0001*	< 0.00007	< 0.00007	< 0.00007	0.00007*
	10/17/2018	0.0003*	< 0.00007	< 0.00007	< 0.00007	0.00009*
	3/19/2019	0.0002	< 0.00007	< 0.00007	0.0002	0.0002
	10/16/2019	0.0001*	< 0.00007	< 0.00007	< 0.00007	< 0.00007
	3/18/2020	0.0001*	< 0.00008	< 0.00008	< 0.00008	0.00008*
	10/16/2020	< 0.00008	< 0.00008	< 0.00008	0.00009*	< 0.00008
	3/17/2021	0.00008*	< 0.00008	< 0.00008	< 0.00008	< 0.00008
	10/20/2021	< 0.00008	< 0.00008	< 0.00008	0.00008*	< 0.00008
	3/17/2022	< 0.00008	< 0.00008	0.0001*	< 0.00008	< 0.00008
	10/18/2022	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
	3/14/2023	0.00009*	< 0.00008	< 0.00008	< 0.00008	< 0.00008
	10/18/2023	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
	3/18/2024	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
	10/16/2024	< 0.00008	< 0.00008	< 0.00008	< 0.00008	< 0.00008
Chloride, mg/L (CAS NO - 16887-00-6)	1/15/2010	53.6	N/A	N/A	N/A	N/A
	2/18/2010	20.3	44.6	43.4	25	33.2
	3/16/2010	24.6	23.7	21.2	28.1	N/A
	3/23/2010	N/A	N/A	N/A	N/A	16.5
	4/15/2010	20	19.5	16	25.1	17.2
	5/17/2010	20.4	31.9	16.5	21.4	17.4
	6/21/2010	20.4	19.3	16.4	20.6	17.8
	7/16/2010	25.5	22.7	17.3	23.8	15.7
	8/18/2010	29.9	28	27.3	27.2	24.9
	9/20/2010	27.1	25.9	26.2	29.7	26.6
	10/18/2010	21	17.4	14.9	19.6	18.2
	11/16/2010	15.2	15.4	15.1	20	17.9
	12/16/2010	13.8	15.8	15.2	20.2	23.8
	1/13/2011	14	15.2	15.6	21.1	19.6
	2/16/2011	19.3	18.9	16.8	22.5	15.4
	5/18/2011	28.7	17.5	23.2	20.7	24.8
	8/17/2011	13.4	14.4	13.5	16.7	26.4
	1/18/2012	16.2	14.9	14.8	19.1	17.4
	4/17/2012	17.6	14.7	14.1	18.7	18.7

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Chloride, mg/L (CAS NO - 16887-00-6)	7/17/2012	12.7	11.4	35.2	13.7	9.3
	11/14/2012	21.1	19.1	16.6	22.6	27.6
	3/19/2013	19.4	15.1	11.3	19.7	14.7
	6/17/2013	24.3	11.7	11.1	18.1	18.4
	9/17/2013	19.4	12.1	11	19.4	30
	12/17/2013	18.3	11.8	10.3	16.8	17.1
	2/17/2014	19.6	13.7	13	19.4	18.6
	4/15/2014	20.6	12.9	11	18	21.7
	7/15/2014	26	13.7	11.1	19	23
	10/13/2014	22.2	14.2	10.5	18.9	19.9
	1/16/2015	26.8	14.7	11.5	20	23.2
	5/13/2015	30.1	13.6	10.2	2240	21.6
	8/18/2015	26.6	12.8	9.5	2000	24.6
	11/17/2015	21.6	14.1	9.8	1950	21.8
	3/16/2016	29	11	7.3	1570	22.7
	10/12/2016	27.2	11	9.3	1350	21.2
	3/16/2017	28.1	10.2	10.6	1250	21.7
	10/12/2017	23.6	9.3	11.6	29.1	16.3
	3/14/2018	25.6	9	11.8	28.5	11.8
	10/17/2018	17.9	10.4	11.9	578	16.7
	3/19/2019	20.7	9.4	13.9	112	14.4
	10/16/2019	30.4	17.5	16.4	33.4	21.2
	3/18/2020	23.9	8.9	14.1	23.9	29.7
	10/16/2020	27.4	9.3	12.6	22.1	12.6
	3/17/2021	17.3	9	13.2	22.5	13.3
	10/20/2021	27.2	9.6	12.5	29.9	15.3
	3/17/2022	22.9	9.2	15.2	25.1	18.5
	10/18/2022	38.3	9.2	12.4	22	21
	3/14/2023	26.8	10.1	13.3	20.3	24.1
	10/18/2023	35	9.8	12.4	23.8	20
	3/18/2024	26.4	N/A	13.3	N/A	N/A
Chromium, mg/L (CAS NO - 7440-47-3)	12/16/2009	0.0072	N/A	N/A	N/A	N/A
	12/16/2009	< 0.0009	N/A	N/A	N/A	N/A
	1/15/2010	< 0.0009	N/A	N/A	N/A	N/A
	2/18/2010	< 0.0009	< 0.0009	0.0009	< 0.0009	< 0.0009
	3/16/2010	0.0038	0.0045	0.102	0.0044	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0031
	4/15/2010	< 0.0009	< 0.0009	0.0009	< 0.0009	< 0.0009
	5/17/2010	< 0.0009	0.0027	0.0018	0.0021	0.0023
	6/21/2010	0.002	0.0061	0.0078	0.0361	0.012
	7/16/2010	0.0021	0.006	0.0026	0.0209	0.0027
	8/18/2010	0.001	0.0038	0.0157	0.0009	0.0012
	9/20/2010	< 0.0009	< 0.0009	0.017	0.0142	0.0131
	10/18/2010	< 0.0009	0.0329	0.0168	< 0.0009	< 0.0009
	11/16/2010	0.0001	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	12/16/2010	0.0004	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	1/13/2011	0.0003	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	2/16/2011	0.0003	0.0002	0.00006	0.00006	0.00006
	5/18/2011	0.0001	0.0002	0.0002	0.0002	0.0002
	8/17/2011	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	10/17/2011	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	1/18/2012	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	4/17/2012	< 0.0009	< 0.0009	< 0.0009	0.0022	< 0.0009
	7/17/2012	0.0046	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	11/14/2012	0.0102	0.0014	0.0021	0.0013	0.0019
	3/19/2013	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	6/17/2013	0.0064	0.0002	0.0009	0.0007	< 0.0009
	9/17/2013	0.0005	0.0002	0.0002	0.0003	0.0017
	12/17/2013	0.0008	< 0.0009	0.0002	0.0009	0.0009
	2/17/2014	0.0012	0.0002	0.0002	0.0007	< 0.0009
	4/15/2014	0.0001	0.0001	< 0.0009	0.0007	0.001
	7/15/2014	0.0006	0.0001	< 0.0009	0.0005	0.0011
	10/13/2014	0.0019	0.0024	0.0001	0.0003	0.0007
	1/16/2015	0.0014	0.0002	0.0004	0.0006	0.0296
	5/13/2015	0.001	< 0.0009	< 0.0009	0.028	0.0014
	8/18/2015	0.0006	< 0.0009	< 0.0009	0.0021	0.0218
	11/17/2015	0.0007	0.0004	0.0004	0.012	0.0026
	3/16/2016	0.0017*	0.0006*	0.0005*	0.0081	0.0007*
	10/12/2016	0.0029	< 0.0003	0.0004*	0.0007*	0.0007*
	3/16/2017	0.0007*	0.0004*	0.0028	0.0016*	0.0026
	10/12/2017	0.0048	< 0.0003	0.0004*	0.0006*	0.0009*

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Chromium, mg/L (CAS NO - 7440-47-3)	3/14/2018	0.0003*	0.0012*	0.0003*	0.0003*	0.0011*
	10/17/2018	0.0007*	< 0.0003	0.0014*	0.0007*	0.0018*
	3/19/2019	**0.0009**	**0.0019**	**0.0034**	**0.0149**	**0.0094**
	10/16/2019	0.0011*	0.0005*	0.0003*	0.0005*	0.0018*
	3/18/2020	< 0.0007	< 0.0007	< 0.0007	< 0.0007	0.001*
	10/16/2020	0.001*	0.0008*	< 0.0007	0.0007*	**0.0027**
	3/17/2021	< 0.0007	0.0008*	**0.0021**	0.0007*	< 0.0007
	10/20/2021	0.0012*	< 0.0007	0.0008*	**0.002**	0.001*
	3/17/2022	< 0.0007	< 0.0007	< 0.0007	< 0.0007	0.0015*
	10/18/2022	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	3/14/2023	0.0012*	0.0011*	0.0009*	**0.0031**	**0.0022**
	10/18/2023	< 0.0007	< 0.0007	< 0.0007	< 0.0007	**0.005**
	3/18/2024	< 0.0007	< 0.0007	< 0.0007	< 0.0007	0.0008*
	10/16/2024	< 0.0007	< 0.0007	< 0.0007	< 0.0007	0.0009*
Cobalt, mg/L (CAS NO - 7440-48-4)	12/16/2009	**0.0072**	N/A	N/A	N/A	N/A
	12/16/2009	**0.0072**	N/A	N/A	N/A	N/A
	1/15/2010	**0.0003**	N/A	N/A	N/A	N/A
	2/18/2010	**0.0002**	**0.0003**	**0.0003**	**0.0005**	**0.0007**
	3/16/2010	**0.0002**	**0.0007**	**0.0024**	**0.0005**	N/A
	3/23/2010	N/A	N/A	N/A	N/A	**0.0008**
	4/15/2010	**0.0002**	**0.0003**	**0.0007**	**0.0004**	**0.0003**
	5/17/2010	**0.0001**	**0.0004**	**0.0005**	**0.0004**	**0.0002**
	6/21/2010	**0.0002**	**0.0007**	**0.0006**	**0.0012**	**0.0005**
	7/16/2010	**0.0003**	**0.0009**	**0.0005**	**0.0012**	**0.0004**
	8/18/2010	**0.0003**	**0.0005**	**0.0007**	**0.0025**	**0.0004**
	9/20/2010	**0.0002**	**0.0003**	**0.0007**	**0.0008**	**0.0007**
	10/18/2010	**0.0004**	**0.0005**	**0.0007**	**0.0003**	**0.0002**
	11/16/2010	< 0.0009	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	12/16/2010	**0.004**	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	1/13/2011	**0.0019**	< 0.0009	< 0.0009	< 0.0009	< 0.0009
	2/16/2011	**0.0164**	**0.0009**	**0.0009**	**0.0009**	**0.0009**
	5/18/2011	**0.0009**	**0.0009**	**0.0009**	**0.0009**	**0.0009**
	8/17/2011	**0.0003**	**0.0004**	**0.0006**	**0.0008**	**0.0004**
	10/17/2011	< 0.0001	< 0.0001	< 0.0001	< 0.0001	< 0.0001
	1/18/2012	**0.0002**	**0.0002**	**0.0003**	**0.0008**	**0.0003**
	4/17/2012	**0.0003**	**0.0003**	**0.0003**	**0.0009**	**0.0004**
	7/17/2012	**0.0033**	**0.0002**	**0.0006**	**0.0007**	**0.0003**
	11/14/2012	**0.0006**	**0.0002**	**0.0003**	**0.0008**	**0.0006**
	3/19/2013	**0.0004**	**0.0002**	**0.0002**	**0.0004**	**0.0006**
	6/17/2013	**0.0015**	< 0.0001	**0.0001**	**0.0004**	**0.0002**
	9/17/2013	< 0.0001	< 0.0001	< 0.0001	**0.0003**	**0.0004**
	12/17/2013	**0.0001**	< 0.0001	< 0.0001	**0.0003**	**0.0004**
	2/17/2014	**0.0008**	**0.00007**	**0.00008**	**0.0003**	**0.0002**
	4/15/2014	< 0.0001	< 0.0001	< 0.0001	**0.0003**	**0.0003**
	7/15/2014	< 0.0001	< 0.0001	< 0.0001	**0.0002**	**0.0003**
	10/13/2014	**0.0005**	< 0.0001	< 0.0001	**0.0002**	**0.0003**
	1/16/2015	< 0.0001	< 0.0001	< 0.0001	**0.0002**	**0.002**
	5/13/2015	**0.0001**	**0.00004**	**0.00007**	**0.0081**	**0.0002**
	8/18/2015	**0.00007**	**0.00004**	**0.00006**	**0.0002**	**0.0064**
	11/17/2015	**0.00009**	**0.00006**	< 0.0001	**0.0045**	**0.0001**
	3/16/2016	0.00008*	< 0.00004	0.00007*	**0.0035**	0.00007*
	10/12/2016	0.0001*	< 0.00004	0.0001*	**0.0071**	0.0002*
	3/16/2017	0.00008*	< 0.00004	0.00005*	**0.0073**	0.0002*
	10/12/2017	0.0002*	< 0.00004	0.00007*	0.0001*	0.0006*
	3/14/2018	0.0001*	0.00009*	0.00005*	0.0002*	0.0002*
	10/17/2018	0.0002*	0.0002*	0.0002*	0.0003*	0.0003*
	3/19/2019	**0.0001**	**0.00005**	**0.0002**	**0.0092**	**0.0018**
	10/16/2019	0.00005*	0.00005*	0.00004*	0.0006*	0.0002*
	3/18/2020	< 0.0005	< 0.0005	< 0.0005	0.0009*	< 0.0005
	10/16/2020	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0005*
	3/17/2021	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
	10/20/2021	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
	3/17/2022	0.0006*	< 0.0005	< 0.0005	< 0.0005	0.0005*
	10/18/2022	0.0013*	0.0017*	0.0014*	0.0013*	0.0016*
	3/14/2023	< 0.0005	< 0.0005	< 0.0005	0.0007*	0.0005*
	10/18/2023	< 0.0005	< 0.0005	< 0.0005	< 0.0005	0.0015*
	3/18/2024	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
	10/16/2024	< 0.0005	< 0.0005	< 0.0005	< 0.0005	< 0.0005
Copper, mg/L (CAS NO - 7440-50-8)	12/16/2009	**0.0214**	N/A	N/A	N/A	N/A
	12/16/2009	**0.0214**	N/A	N/A	N/A	N/A
	1/15/2010	**0.0054**	N/A	N/A	N/A	N/A

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Copper, mg/L (CAS NO - 7440-50-8)	2/18/2010	0.003	0.0672	0.0941	0.0041	0.0081
	3/16/2010	0.0029	0.0147	0.0111	0.0069	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0041
	4/15/2010	0.0018	0.0117	0.0031	0.0092	0.0083
	5/17/2010	0.0019	0.0164	0.0006	0.0077	0.0033
	6/21/2010	0.0062	0.0099	0.0032	2.56	0.764
	7/16/2010	0.0074	0.0106	0.0019	0.631	0.0248
	8/18/2010	0.0034	0.0036	0.0025	0.0033	0.016
	9/20/2010	0.0025	0.0014	0.0017	0.033	0.0047
	10/18/2010	0.0048	0.001	0.0029	0.0043	0.0054
	11/16/2010	0.0088	0.0018	0.0014	0.0162	0.0017
	12/16/2010	0.0584	0.0012	0.0018	0.0113	0.0015
	1/13/2011	0.0274	0.0005	0.0016	0.0032	0.0012
	2/16/2011	0.0194	0.0013	0.0013	0.0075	0.0011
	5/18/2011	0.0027	0.0004	0.0015	0.0017	0.0012
	8/17/2011	0.004	0.0011	0.0021	0.0077	< 0.0004
	10/17/2011	0.0133	< 0.0004	< 0.0004	< 0.0004	0.0025
	1/18/2012	0.0041	< 0.0004	0.0008	0.0133	0.0191
	4/17/2012	0.002	0.0008	< 0.0004	0.016	< 0.0004
	7/17/2012	0.0228	< 0.0004	0.0011	0.0079	0.0019
	11/14/2012	0.0072	0.0029	0.0018	0.0065	0.0031
	3/19/2013	0.118	0.0033	0.0026	0.0074	0.0033
	6/17/2013	0.0183	0.0031	0.0128	0.0101	0.0473
	9/17/2013	0.0043	0.0029	0.0023	0.0041	0.0058
	12/17/2013	0.0062	0.0015	0.0022	0.0068	0.0022
	2/17/2014	0.003	0.002	0.0023	0.0037	0.004
	4/15/2014	0.0238	0.0013	0.0011	0.0024	0.0043
	7/15/2014	0.0191	0.0011	0.0017	0.0032	0.0026
	10/13/2014	0.0261	0.0022	0.0022	0.0035	0.0033
	1/16/2015	0.0158	0.0025	0.0028	0.0042	0.0053
	5/13/2015	0.342	0.0017	0.001	0.0103	0.0017
	8/18/2015	0.0125	0.0013	0.0009	0.0021	0.0095
	11/17/2015	0.0945	0.0014	0.0011	0.0083	0.0035
	3/16/2016	0.0391	0.0015*	0.0016*	0.0116	0.0022
	10/12/2016	0.0241	0.0013*	0.0048	0.0095	0.0056
	3/16/2017	0.0266	0.0036	0.0021	0.0059	0.0039
	10/12/2017	0.0927	0.0046	0.0043	0.0169	0.0045
	3/14/2018	0.688	0.0026	0.002	0.006	0.0064
	10/17/2018	0.0256	0.0056	0.005	< 0.004	< 0.004
	3/19/2019	0.0119	0.0043	0.0086	0.0149	0.0103
	10/16/2019	0.0538	0.0034	0.0015*	0.0017*	0.0024
	3/18/2020	0.0615	0.0028	0.002	0.0039	0.0055
	10/16/2020	0.014	0.0032	0.0015*	0.0032	0.0087
	3/17/2021	0.0907	0.0027	0.0057	0.0041	0.003
	10/20/2021	0.0718	0.002	0.0026	0.0055	0.002
	3/17/2022	0.0293	0.002	0.0101	0.0023	0.0045
	10/18/2022	0.0235	0.0032	0.0032	0.0031	0.0034
	3/14/2023	0.082	0.0084	0.0041	0.0089	0.0068
	10/18/2023	0.0067	0.0032	0.003	0.0051	0.0073
	3/18/2024	0.0031	0.0056	0.0053	0.0027	0.0016*
	10/16/2024	0.0408	0.0022	0.0023	0.0039	0.0063
Fluoride, mg/L (CAS NO - 16984-48-8)	3/19/2019	0.3	1	0.8	< 0.2	0.2
	10/16/2019	0.2	1.7	1	0.6	0.3
	3/18/2020	0.4	0.9	0.7	0.6	0.3
	10/16/2020	0.2	0.8	0.6	0.5	0.2
	3/17/2021	0.8	0.9	0.7	0.6	0.7
	10/20/2021	0.2	0.7	0.6	0.5	0.2
	3/17/2022	0.2	0.9	0.7	0.5	0.3
	10/18/2022	0.3	1	0.8	0.7	0.5
	3/14/2023	0.5	0.9	0.7	0.2	0.5
	10/18/2023	0.3	0.9	0.7	0.6	0.3
	3/18/2024	0.3	0.9	0.8	0.5	0.2
Iron, mg/L (CAS NO - 7439-89-6)	1/15/2010	0.109	N/A	N/A	N/A	N/A
	2/18/2010	0.121	0.164	0.208	0.1	1.57
	3/16/2010	0.073	0.103	0.787	0.147	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.086
	4/15/2010	0.098	0.583	0.142	0.062	0.207
	5/17/2010	0.067	0.362	0.595	0.103	0.173
	6/21/2010	< 0.038	1.29	0.819	0.668	< 0.038
	7/16/2010	< 0.038	1.65	0.373	1.02	0.252
	8/18/2010	< 0.038	0.702	0.522	25.6	0.132

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Iron, mg/L (CAS NO - 7439-89-6)	9/20/2010	< 0.038	0.741	1.49	1.29	0.552
	10/18/2010	0.343	0.496	3.34	18.5	0.13
	11/16/2010	0.187	0.638	0.492	2.05	0.256
	12/16/2010	6.02	0.28	0.445	3.38	1.35
	1/13/2011	1.33	0.146	0.271	1.21	0.118
	2/16/2011	2.9	0.226	0.333	8.42	0.066
	5/18/2011	0.038	0.415	0.193	14.2	0.385
	8/17/2011	< 0.038	0.722	0.747	9.76	< 0.038
	10/17/2011	< 0.038	0.611	0.562	12.1	< 0.038
	1/18/2012	0.22	0.673	0.184	14.1	0.181
	4/17/2012	< 0.038	1.64	0.215	22.8	0.122
	7/17/2012	1.9	1.15	0.067	23.4	0.027
	11/14/2012	1.11	2.21	0.684	28.7	1.19
	3/19/2013	0.179	2.38	1.05	27.3	1.16
	6/17/2013	1.52	1.24	0.777	25.6	0.128
	9/17/2013	< 0.038	2.03	0.521	23.7	0.707
	12/17/2013	0.136	0.543	0.447	18.4	0.268
	2/17/2014	0.267	1.71	0.249	22.4	0.257
	4/15/2014	< 0.038	2.19	0.091	18.2	0.431
	7/15/2014	0.053	0.099	0.24	19.3	1.96
	10/13/2014	0.107	0.49	0.158	8.57	0.343
	1/16/2015	0.031	1.8	0.31	11.8	0.823
	5/13/2015	0.037	1.23	3.32	1.25	0.093
	8/18/2015	0.041	1.58	2.54	0.842	1.04
	11/17/2015	0.133	1.45	0.379	0.373	0.098
	3/16/2016	0.028*	0.941	1.43	0.372	0.026*
	10/12/2016	0.079*	1.18	1.57	0.517	0.793
	3/16/2017	0.049*	1.54	2.56	1.29	1.14
	10/12/2017	0.035*	0.805	2.68	0.313	0.439
	3/14/2018	< 0.057	1.53	2.28	0.387	1.77
	10/17/2018	< 0.057	1.09	1.18	4.02	0.799
	3/19/2019	0.13	1.7	3.65	0.973	6.96
	10/16/2019	< 0.057	0.807	0.658	0.226	0.254
	3/18/2020	< 0.047	1.41	1.71	0.671	0.112
	10/16/2020	< 0.047	1.09	1.49	3	0.851
	3/17/2021	< 0.047	0.813	0.697	0.073*	0.056*
	10/20/2021	< 0.047	0.533	0.815	0.803	0.349
	3/17/2022	< 0.047	0.624	0.177	0.083*	0.385
	10/18/2022	< 0.047	0.249	0.188	< 0.047	< 0.047
	3/14/2023	< 0.047	0.463	0.439	0.441	0.243
	10/18/2023	< 0.047	0.265	0.573	0.055*	2.43
	3/18/2024	< 0.047	0.437	0.156	0.143	0.15
	10/16/2024	< 0.047	0.736	1.02	0.154	0.275
Lead, mg/L (CAS NO - 7439-92-1)	12/16/2009	0.0143	N/A	N/A	N/A	N/A
	12/16/2009	0.0143	N/A	N/A	N/A	N/A
	1/15/2010	0.0008	N/A	N/A	N/A	N/A
	2/18/2010	0.0005	< 0.0002	0.0004	< 0.0002	0.0032
	3/16/2010	0.0005	0.0003	0.0007	0.0008	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0002
	4/15/2010	0.0003	0.0015	0.0004	0.0005	0.0003
	5/17/2010	0.0008	0.0015	0.0013	0.001	< 0.0002
	6/21/2010	0.0002	0.0008	0.0003	0.0008	< 0.0002
	7/16/2010	0.0008	0.0013	0.0006	0.0014	0.0006
	8/18/2010	< 0.0002	< 0.0002	0.0002	0.0004	0.0002
	9/20/2010	< 0.0002	< 0.0002	0.0004	0.0003	< 0.0002
	10/18/2010	0.0004	< 0.0002	0.0005	< 0.0002	< 0.0002
	11/16/2010	0.0006	0.0003	< 0.0002	< 0.0002	< 0.0002
	12/16/2010	0.0243	0.0003	0.0003	0.0004	0.0033
	1/13/2011	0.0179	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	2/16/2011	0.0131	0.0003	0.0003	0.0003	0.0002
	5/18/2011	0.0003	0.0002	0.0003	0.0002	0.0042
	8/17/2011	0.0002	< 0.0002	0.0003	0.0002	< 0.0002
	10/17/2011	0.0011	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	1/18/2012	0.0002	< 0.0002	< 0.0002	0.0004	0.0011
	4/17/2012	0.0005	0.0005	0.0002	0.0007	0.0004
	7/17/2012	0.0029	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	11/14/2012	0.0075	0.0007	0.0005	0.0006	0.0083
	3/19/2013	0.002	0.0025	0.0011	0.0011	0.008
	6/17/2013	0.0161	0.0001	0.0038	0.0068	0.0087
	9/17/2013	0.0008	0.0007	0.0007	0.0005	0.0042
	12/17/2013	0.0006	0.0003	0.0003	0.0004	0.0015

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Lead, mg/L (CAS NO - 7439-92-1)	2/17/2014	0.0013	0.0003	0.0003	0.0003	0.0011
	4/15/2014	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.002
	7/15/2014	0.0013	< 0.0002	< 0.0002	< 0.0002	0.0103
	10/13/2014	0.0015	0.0004	0.0008	0.0003	0.0021
	1/16/2015	0.00012	0.0003	< 0.0002	0.0004	0.0019
	5/13/2015	0.0173	< 0.0002	< 0.0002	0.00007	0.0005
	8/18/2015	0.0014	0.0002	0.0002	0.0028	0.0003
	11/17/2015	0.002	0.0002	0.00007	0.0002	0.0012
	3/16/2016	0.0013	0.0002*	0.0001*	0.0003*	0.0004*
	10/12/2016	0.0019	0.0001*	0.0003*	0.0002*	0.0061
	3/16/2017	0.0011	0.0003*	0.0003*	0.0005*	0.0041
	10/12/2017	0.0029	0.0001*	0.0005*	0.0006*	0.0058
	3/14/2018	0.0151	0.0002*	0.0002*	0.0002*	0.0078
	10/17/2018	0.0025	< 0.0008	< 0.0008	< 0.0008	0.0028
	3/19/2019	0.0014	0.0072	0.0206	0.0111	0.0274
	10/16/2019	0.0038	0.0003*	0.0001*	0.0001*	0.0005*
	3/18/2020	0.002	< 0.0005	< 0.0005	< 0.0005	< 0.0005
	10/16/2020	0.0019	< 0.0005	< 0.0005	< 0.0005	0.0007*
	3/17/2021	0.0074	0.0005*	0.0008	< 0.0005	< 0.0005
	10/20/2021	0.0072	0.0009	0.0007*	0.0021	0.0005*
	3/17/2022	0.0015	< 0.0005	0.0007*	< 0.0005	0.0006*
	10/18/2022	0.002	< 0.0005	< 0.0005	< 0.0005	< 0.0005
	3/14/2023	0.004	0.0008	< 0.0005	0.0011	0.0009
	10/18/2023	0.0007*	< 0.0005	< 0.0005	< 0.0005	0.0023
	3/18/2024	< 0.0005	< 0.0005	0.0008	< 0.0005	< 0.0005
	10/16/2024	0.0051	< 0.0005	< 0.0005	< 0.0005	0.0008
Magnesium, mg/L (CAS NO - 7439-95-4)	1/15/2010	21.9	N/A	N/A	N/A	N/A
	2/18/2010	21.3	60.2	58.5	32.6	39
	3/16/2010	20.5	54.7	38.6	36.5	N/A
	3/23/2010	N/A	N/A	N/A	N/A	20.7
	4/15/2010	22.4	53.6	41.3	35.4	22.1
	5/17/2010	21.5	56.6	40.1	33.3	20.3
	6/21/2010	22.2	52.9	42.1	35.7	3.87
	7/16/2010	24.8	56.7	42.5	37.2	21.5
	8/18/2010	22.4	53.4	38.1	51.4	20.2
	9/20/2010	22.8	49.9	40.4	34.6	25.3
	10/18/2010	23.1	30.2	38.5	39.4	26.7
	11/16/2010	23.9	49.8	41.7	38.2	43.2
	12/16/2010	33	47.2	41.7	39.1	48
	1/13/2011	22.3	46.9	41.3	38.3	46.9
	2/16/2011	25.4	48.1	42.1	39	28.1
	5/18/2011	19.1	46.8	39.8	41.2	24.6
	8/17/2011	19.5	42	40.9	35.4	10.9
	10/17/2011	20.8	41.5	41	40.6	8.31
	1/18/2012	21.2	40.3	43.2	43.3	25
	4/17/2012	23	40.9	44	51.7	26.3
	7/17/2012	22.5	38.3	52.2	50.1	41.6
	11/14/2012	21.1	38.2	41	52.4	49.7
	3/19/2013	26.4	37.7	45.1	54.8	23.8
	6/17/2013	20.1	26.8	39.2	51.8	27.3
	9/17/2013	21.1	32.2	42.3	51.1	53.2
	12/17/2013	19.8	30.1	40.1	48.1	34.7
	2/17/2014	40.3	36.3	45.8	53.6	24.7
	4/15/2014	26.8	36	41.9	45.4	32.9
	7/15/2014	20.2	44	33.5	47.5	23.8
	10/13/2014	21	33.5	42.3	45	35.9
	1/16/2015	22.5	34.6	45.6	48.3	33.2
	5/13/2015	23.1	36.3	44.3	55.4	37
	8/18/2015	19.7	35.9	44.3	34.7	49.4
	11/17/2015	22.1	36.1	41.2	53.7	34.7
	3/16/2016	22.1	33.5	36.1	51.8	29.6
	10/12/2016	21.3	31.8	38.8	45.7	23
	3/16/2017	23.3	34.3	39.1	48.9	34.6
	10/12/2017	21.9	32.2	38.3	26.5	30.5
	3/14/2018	24	37.1	43	25.1	37.6
	10/17/2018	19.9	31.3	35.5	36.8	22.3
	3/19/2019	22.5	32	38.1	30.3	24.9
	10/16/2019	23.1	33.5	37.6	27.8	26.5
	3/18/2020	23.3	33	34.7	27.1	32
	10/16/2020	23.6	31.2	36.5	28.7	24.6
	3/17/2021	25.8	32.8	35	28.5	29.5

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Magnesium, mg/L (CAS NO - 7439-95-4)	10/20/2021	19.3	30.7	34.3	28.2	22
	3/17/2022	20.5	31.2	35.5	28.3	26.4
	10/18/2022	22.3	32.7	37.6	27.8	28.1
	3/14/2023	23.6	31.5	37	25.3	29.2
	10/18/2023	20.8	30.9	40.1	30.8	26.1
	3/18/2024	18.4	33.1	31.5	27.4	21.9
	10/16/2024	20.6	31.5	36.9	28.3	19.8
Manganese, mg/L (CAS NO - 7439-96-5)	12/16/2009	1.59	N/A	N/A	N/A	N/A
	12/16/2009	1.59	N/A	N/A	N/A	N/A
	1/15/2010	0.0146	N/A	N/A	N/A	N/A
	2/18/2010	0.0043	0.0065	0.0111	0.0254	0.0273
	3/16/2010	0.0059	0.0212	0.039	0.0198	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0093
	4/15/2010	0.0046	0.0174	0.0307	0.0186	0.0088
	5/17/2010	0.0043	0.0164	0.0733	0.0229	0.0092
	6/21/2010	0.0032	0.0578	0.0787	0.0548	0.003
	7/16/2010	0.0035	0.0795	0.0839	0.0588	0.0135
	8/18/2010	< 0.0019	0.0633	0.0871	0.414	0.0076
	9/20/2010	0.0022	0.0513	0.0849	0.0965	0.0157
	10/18/2010	0.004	0.0531	0.0961	0.19	0.0079
	11/16/2010	0.0035	0.0456	0.0769	0.113	0.0033
	12/16/2010	0.159	0.0434	0.0844	0.139	0.0257
	1/13/2011	0.0823	0.0425	0.0833	0.126	0.0092
	2/16/2011	0.0684	0.0425	0.071	0.142	0.0046
	5/18/2011	0.0008	0.0402	0.0865	0.166	0.0051
	8/17/2011	0.0022	0.0407	0.0913	0.167	0.002
	10/17/2011	0.0021	0.0331	0.0726	0.139	< 0.0019
	1/18/2012	< 0.0019	0.0338	0.0547	0.173	0.0048
	4/17/2012	0.0051	0.0313	0.0734	0.148	0.0072
	7/17/2012	0.0548	0.0236	0.004	0.121	0.0416
	11/14/2012	0.017	< 0.0019	0.033	0.0972	0.0157
	3/19/2013	0.0079	0.0232	0.0612	0.103	0.0203
	6/17/2013	0.049	0.0234	0.072	0.125	0.0057
	9/17/2013	0.0021	0.0226	0.0542	0.103	0.0261
	12/17/2013	0.0028	0.0065	0.0192	0.102	0.0268
	2/17/2014	0.0258	0.0159	0.0122	0.102	0.0755
	4/15/2014	0.0142	0.0187	0.0123	0.0828	0.0263
	7/15/2014	0.0078	0.0537	0.0266	0.0738	0.0205
	10/13/2014	0.0043	0.0257	0.0469	0.0732	0.0105
	1/16/2015	0.0028	0.0195	0.0214	0.0837	0.0224
	5/13/2015	0.0019	0.0169	0.0759	0.009	0.0036
	8/18/2015	0.0028	0.0221	0.0623	0.0063	0.009
	11/17/2015	0.0026	0.0198	0.0359	0.0053	0.0054
	3/16/2016	0.002*	0.0192	0.0547	0.0173	0.0039*
	10/12/2016	0.003*	0.0153	0.0867	0.196	0.0076
	3/16/2017	0.0022*	0.0167	0.0452	0.21	0.0096
	10/12/2017	0.008	0.0142	0.0421	0.0066	0.0133
	3/14/2018	< 0.004	0.0131	0.0411	0.0053	0.0268
	10/17/2018	0.0037*	0.0131	0.0397	0.0973	0.0082
	3/19/2019	0.0075	0.0198	0.0504	0.204	0.0719
	10/16/2019	0.0026*	0.0129	0.0248	0.0241	0.0091
	3/18/2020	0.0028*	0.0172	0.0284	0.0311	0.0039*
	10/16/2020	0.0018*	0.0164	0.0235	0.0307	0.0209
	3/17/2021	0.0211	0.0216	0.04	0.0034*	0.02
	10/20/2021	0.0026*	0.0114	0.0232	0.0352	0.0071
	3/17/2022	0.0025*	0.0137	0.0148	0.0214	0.0131
	10/18/2022	< 0.0017	0.0019*	0.022	0.0027*	0.004
	3/14/2023	0.0034*	0.0142	0.0648	0.0299	0.0468
	10/18/2023	< 0.0017	0.0055	0.0107	0.0072	0.0678
	3/18/2024	< 0.0017	0.0087	0.0138	0.0108	0.0041
	10/16/2024	0.0027*	0.0141	0.0392	0.0103	0.0172
Mercury, mg/L (CAS NO - 7439-97-6)	12/16/2009	0.00003	N/A	N/A	N/A	N/A
	12/16/2009	< 0.00002	N/A	N/A	N/A	N/A
	1/15/2010	0.00004	N/A	N/A	N/A	N/A
	2/18/2010	0.00008	0.00003	0.00005	0.00011	0.00016
	3/16/2010	< 0.00002	< 0.00002	< 0.00002	< 0.00002	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.00005
	4/15/2010	0.00003	0.00002	< 0.00002	0.00004	< 0.00002
	5/17/2010	< 0.00002	0.00006	< 0.00002	< 0.00002	< 0.00002
	6/21/2010	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	7/16/2010	0.00008	0.00006	0.00007	0.00007	0.00013

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Mercury, mg/L (CAS NO - 7439-97-6)	8/18/2010	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	9/20/2010	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	10/18/2010	0.00007	0.00002	0.00006	< 0.00002	< 0.00002
	11/16/2010	0.00003	0.00006	0.00003	0.00007	0.00008
	12/16/2010	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	1/13/2011	0.00003	< 0.00002	0.00003	0.00005	0.00005
	2/16/2011	0.00007	0.00009	0.00008	0.00002	0.00007
	5/18/2011	0.00014	0.00002	0.00002	0.00002	0.00002
	8/17/2011	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	10/17/2011	< 0.00002	< 0.00002	< 0.00002	0.00033	< 0.00002
	1/18/2012	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00013
	4/17/2012	< 0.00002	0.004	< 0.00002	< 0.00002	< 0.00002
	7/17/2012	< 0.00002	0.00015	< 0.00002	< 0.00002	< 0.00002
	11/14/2012	0.00025	0.00032	0.00037	0.00027	0.00018
	3/19/2013	0.00013	< 0.00002	< 0.00002	0.00017	0.00023
	6/17/2013	0.00018	0.00019	0.00021	0.00022	0.00018
	9/17/2013	< 0.00002	0.00024	0.00014	< 0.00002	0.00008
	12/17/2013	0.00012	0.0001	0.00014	0.00015	0.00009
	2/17/2014	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	4/15/2014	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	7/15/2014	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	10/13/2014	< 0.00002	< 0.00002	< 0.00002	< 0.00002	0.00014
	1/16/2015	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	5/13/2015	< 0.00002	< 0.00002	< 0.00002	0.00014	< 0.00002
	8/18/2015	0.00009	0.00011	0.00011	0.00011	0.0002
	11/17/2015	< 0.00002	< 0.00002	< 0.00002	< 0.00002	< 0.00002
	3/16/2016	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009
	10/12/2016	< 0.00009	< 0.00009	< 0.00009	< 0.00009	< 0.00009
	3/16/2017	< 0.00009	< 0.00009	< 0.00009	0.00015*	< 0.00009
	10/12/2017	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	3/14/2018	< 0.00012	< 0.00012	< 0.00012	< 0.00012	< 0.00012
	10/17/2018	< 0.00012	< 0.00012	< 0.00012	< 0.00012	< 0.00012
	3/19/2019	< 0.00012	< 0.00012	< 0.00012	< 0.00012	< 0.00012
	10/16/2019	< 0.00012	< 0.00012	< 0.00012	< 0.00012	< 0.00012
	3/18/2020	< 0.00012	< 0.00012	< 0.00012	< 0.00012	< 0.00012
	10/16/2020	0.00014*	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	3/17/2021	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	10/20/2021	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	3/17/2022	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	10/18/2022	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	3/14/2023	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	10/18/2023	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	3/18/2024	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
	10/16/2024	< 0.00013	< 0.00013	< 0.00013	< 0.00013	< 0.00013
Molybdenum, mg/L (CAS NO - 7439-98-7)	12/16/2009	0.002	N/A	N/A	N/A	N/A
	12/16/2009	< 0.0001	N/A	N/A	N/A	N/A
	1/15/2010	0.0008	N/A	N/A	N/A	N/A
	2/18/2010	0.0006	0.017	0.0173	0.007	0.0081
	3/16/2010	0.0002	0.0063	0.0143	0.0076	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0024
	4/15/2010	0.0004	0.0075	0.0133	0.0104	0.0021
	5/17/2010	0.0003	0.0145	0.0119	0.0104	0.0016
	6/21/2010	0.0007	0.0073	0.0067	0.0937	0.023
	7/16/2010	0.0007	0.0067	0.0057	0.0319	0.0022
	8/18/2010	0.0004	0.0022	0.0036	0.0006	0.0029
	9/20/2010	0.0008	0.0021	0.0024	0.0039	0.0053
	10/18/2010	0.0005	0.0009	0.0036	0.0005	0.0048
	11/16/2010	0.0006	0.0005	0.0015	0.0031	0.0073
	12/16/2010	0.0004	0.0002	0.0016	0.0019	0.0082
	1/13/2011	0.0005	0.0001	0.0013	0.001	0.0076
	2/16/2011	0.0009	0.0004	0.0014	0.001	0.0023
	5/18/2011	0.0003	0.0001	0.0006	0.0002	0.0024
	8/17/2011	0.0007	0.0003	0.0015	0.001	0.0399
	10/17/2011	< 0.0001	< 0.0001	< 0.0001	< 0.0001	0.0644
	1/18/2012	0.0009	0.0018	0.0012	0.0014	0.0057
	4/17/2012	0.0009	0.0002	0.0002	0.0009	0.0077
	7/17/2012	0.0007	< 0.0001	0.0121	0.001	0.0005
	11/14/2012	0.0012	0.0005	< 0.0001	0.0006	0.0119
	3/19/2013	0.0047	0.0005	< 0.0001	0.0006	0.0035
	6/17/2013	0.0007	0.0003	0.0006	0.0009	0.0046
	9/17/2013	0.0006	< 0.0001	0.0004	0.0005	0.0156

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Molybdenum, mg/L (CAS NO - 7439-98-7)	12/17/2013	0.001	< 0.0001	0.0004	0.0006	0.0053
	2/17/2014	0.0078	0.0004	0.0006	0.0006	0.0035
	4/15/2014	0.0057	0.0003	0.0006	0.0005	0.0075
	7/15/2014	0.0003	0.0004	< 0.0001	0.0003	0.0117
	10/13/2014	0.0009	0.0008	0.0007	0.0004	0.0094
	1/16/2015	0.0009	< 0.0001	0.0007	0.0003	0.006
	5/13/2015	0.0008	0.0001	0.0004	0.0208	0.0013
	8/18/2015	0.0006	0.0003	0.0004	0.0034	0.0152
	11/17/2015	0.0016	0.008	0.0009	0.0125	0.002
	3/16/2016	0.0004*	0.0001*	0.0012*	0.0114	0.0155
	10/12/2016	0.0006*	< 0.00006	0.021	0.0074	0.0285
	3/16/2017	0.0005*	< 0.00006	0.0003*	0.0076	0.0086
	10/12/2017	0.0055	< 0.00006	0.0002*	0.0039	0.0036
	3/14/2018	< 0.0019	< 0.0019	< 0.0019	0.0031	< 0.0019
	10/17/2018	0.0006*	0.0001*	0.0003*	0.0009*	0.0586
	3/19/2019	< 0.002	< 0.002	< 0.002	0.0081	0.0083
	10/16/2019	0.003	0.0001*	0.0005*	0.0089	0.0154
	3/18/2020	0.0011*	< 0.0006	< 0.0006	0.009	0.0755
	10/16/2020	0.0014*	< 0.0006	< 0.0006	0.0051	0.0023
	3/17/2021	0.0015*	0.0009*	0.0008*	0.0051	0.0008*
	10/20/2021	0.0035	< 0.0006	< 0.0006	0.0023	0.0024
	3/17/2022	0.0011*	< 0.0006	< 0.0006	0.0063	0.0021
	10/18/2022	0.0066	< 0.0006	< 0.0006	0.0047	0.0043
	3/14/2023	0.0044	< 0.0006	< 0.0006	0.006	0.0091
	10/18/2023	0.0063	0.001*	< 0.0006	0.0028	0.004
	3/18/2024	0.0031	< 0.0006	0.0043	0.0043	0.0031
	10/16/2024	0.0189	0.0006*	< 0.0006	0.0038	0.0031
Nickel, mg/L (CAS NO - 7440-02-0)	12/16/2009	0.0417	N/A	N/A	N/A	N/A
	12/16/2009	0.0417	N/A	N/A	N/A	N/A
	1/15/2010	0.0052	N/A	N/A	N/A	N/A
	2/18/2010	0.0039	0.0045	0.0049	0.0072	0.0077
	3/16/2010	0.0034	0.0062	0.0632	0.0066	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0085
	4/15/2010	0.0028	0.0041	0.005	0.0089	0.0041
	5/17/2010	0.0033	0.0067	0.0048	0.0079	0.0051
	6/21/2010	0.0042	0.0069	0.0074	0.0254	0.0091
	7/16/2010	0.0048	0.0078	0.0072	0.0246	0.0058
	8/18/2010	0.0253	0.0055	0.0112	0.0088	0.0054
	9/20/2010	0.004	0.0045	0.0128	0.0135	0.0124
	10/18/2010	0.0032	0.0156	0.0119	0.0034	0.005
	11/16/2010	0.0033	0.003	0.0032	0.0073	0.0068
	12/16/2010	0.0238	0.0039	0.0045	0.0075	0.0121
	1/13/2011	0.0092	0.0027	0.0033	0.0055	0.0119
	2/16/2011	0.0188	0.0031	0.0034	0.0061	0.0047
	5/18/2011	0.005	0.0041	0.0044	0.007	0.0061
	8/17/2011	0.0048	0.005	0.0059	0.0079	0.0052
	10/17/2011	0.0037	0.0035	0.0037	0.0078	0.0046
	1/18/2012	0.0025	0.0025	0.0027	0.007	0.0035
	4/17/2012	0.0057	0.005	0.0054	0.0131	0.0087
	7/17/2012	0.0232	0.0027	0.0149	0.0095	0.0086
	11/14/2012	0.0089	0.0049	0.0052	0.0099	0.0147
	3/19/2013	0.0041	0.0036	0.0043	0.0064	0.0046
	6/17/2013	0.007	0.0008	0.0023	0.0027	0.0015
	9/17/2013	0.0006	0.0008	0.0009	0.0022	0.012
	12/17/2013	0.0008	0.0006	0.0009	0.0029	0.0069
	2/17/2014	0.0104	0.0006	0.001	0.003	0.0008
	4/15/2014	0.0016	0.0005	0.0006	0.003	0.0064
	7/15/2014	0.0009	0.0009	0.0011	0.0028	0.004
	10/13/2014	0.0026	0.0024	0.0011	0.0047	0.0051
	1/16/2015	0.0015	0.0009	0.001	0.0029	0.0787
	5/13/2015	0.0051	< 0.0001	< 0.0001	0.0431	0.0018
	8/18/2015	0.0021	0.0015	0.0016	0.0034	0.0446
	11/17/2015	0.0014	0.0012	0.0006	0.0484	0.0032
	3/16/2016	0.0018*	0.0009*	0.0014*	0.0477	0.0013*
	10/12/2016	0.0019*	0.0012*	0.0017*	0.0391	0.002*
	3/16/2017	0.001*	0.0019*	0.0009*	0.0424	0.0024*
	10/12/2017	0.0039*	0.001*	0.0019*	0.0015*	0.0044
	3/14/2018	0.0094	0.0007*	0.0063	0.0026*	0.0021*
	10/17/2018	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004
	3/19/2019	0.0015	0.0021	0.0032	0.0675	0.0109
	10/16/2019	0.0011*	0.0011*	0.0008*	0.0102	0.0027*

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Nickel, mg/L (CAS NO - 7440-02-0)	3/18/2020	0.003*	0.0011*	0.001*	**0.0167**	0.0033*
	10/16/2020	< 0.0007	0.0007*	< 0.0007	**0.0069**	0.0024*
	3/17/2021	0.0026*	0.0015*	0.0012*	**0.0064**	0.0021*
	10/20/2021	0.0015*	< 0.0007	< 0.0007	0.0034*	0.0012*
	3/17/2022	0.0011*	0.0007*	0.0014*	0.0021*	0.0036*
	10/18/2022	< 0.0007	< 0.0007	< 0.0007	**0.006**	**0.0067**
	3/14/2023	0.0034*	**0.0044**	0.0017*	**0.0046**	**0.0146**
	10/18/2023	0.0018*	0.0013*	0.0012*	0.0026*	**0.0061**
	3/18/2024	< 0.0007	0.0011*	0.0021*	0.002*	0.0013*
	10/16/2024	0.0012*	0.0008*	0.0009*	0.003*	0.0024*
Selenium, mg/L (CAS NO - 7782-49-2)	12/16/2009	**0.0012**	N/A	N/A	N/A	N/A
	12/16/2009	< 0.0002	N/A	N/A	N/A	N/A
	1/15/2010	**0.0011**	N/A	N/A	N/A	N/A
	2/18/2010	**0.001**	< 0.0002	< 0.0002	**0.0014**	< 0.0002
	3/16/2010	**0.0012**	< 0.0002	**0.0002**	**0.0017**	N/A
	3/23/2010	N/A	N/A	N/A	N/A	**0.0003**
	4/15/2010	**0.0018**	< 0.0002	< 0.0002	**0.0019**	**0.0013**
	5/17/2010	**0.0015**	**0.0002**	< 0.0002	**0.0017**	**0.0011**
	6/21/2010	**0.0012**	**0.0002**	< 0.0002	**0.0007**	**0.0009**
	7/16/2010	**0.0016**	**0.0002**	**0.0004**	**0.0012**	**0.0013**
	8/18/2010	**0.0012**	< 0.0002	**0.0006**	< 0.0002	**0.001**
	9/20/2010	**0.0013**	< 0.0002	**0.0002**	< 0.0002	**0.0006**
	10/18/2010	**0.0012**	< 0.0002	< 0.0002	< 0.0002	**0.0011**
	11/16/2010	**0.0007**	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	12/16/2010	**0.0021**	**0.0004**	**0.0004**	**0.0003**	< 0.0002
	1/13/2011	**0.002**	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	2/16/2011	**0.0022**	**0.0002**	**0.0002**	**0.0002**	**0.0012**
	5/18/2011	**0.0034**	**0.0011**	**0.0009**	**0.0008**	**0.0019**
	8/17/2011	**0.0016**	< 0.0002	< 0.0002	< 0.0002	**0.0084**
	10/17/2011	**0.0037**	**0.0089**	**0.0028**	**0.0209**	**0.0109**
	1/18/2012	**0.0036**	< 0.0002	< 0.0002	< 0.0002	**0.0049**
	4/17/2012	**0.0037**	**0.0006**	< 0.0002	**0.0007**	**0.0042**
	7/17/2012	**0.0032**	**0.0005**	**0.0018**	**0.0008**	**0.0006**
	11/14/2012	**0.0028**	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	3/19/2013	**0.0034**	< 0.0002	< 0.0002	< 0.0002	**0.0015**
	6/17/2013	**0.0021**	< 0.0002	< 0.0002	< 0.0002	**0.0029**
	9/17/2013	**0.0022**	< 0.0002	< 0.0002	< 0.0002	**0.0015**
	12/17/2013	**0.0032**	< 0.0002	< 0.0002	< 0.0002	**0.0014**
	2/17/2014	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	4/15/2014	**0.0032**	< 0.0002	< 0.0002	< 0.0002	**0.0013**
	7/15/2014	**0.0007**	< 0.0002	< 0.0002	< 0.0002	**0.0017**
	10/13/2014	**0.0018**	< 0.0002	< 0.0002	**0.0006**	**0.0011**
	1/16/2015	**0.0021**	**0.0005**	**0.0004**	< 0.0002	**0.0014**
	5/13/2015	**0.0019**	< 0.0002	< 0.0002	**0.0034**	**0.0012**
	8/18/2015	**0.0017**	< 0.0002	< 0.0002	**0.0017**	**0.003**
	11/17/2015	**0.0031**	< 0.0002	< 0.0002	**0.0023**	< 0.0002
	3/16/2016	0.0027*	< 0.0011	< 0.0011	0.0021*	0.0018*
	10/12/2016	0.003*	< 0.0011	0.0039*	0.0027*	0.0033*
	3/16/2017	0.0025*	< 0.0011	< 0.0011	0.0015*	0.0018*
	10/12/2017	**0.007**	< 0.0011	< 0.0011	**0.004**	0.0028*
	3/14/2018	0.0022*	< 0.0011	< 0.0011	0.0018*	< 0.0011
	10/17/2018	0.0037*	0.0023*	0.0019*	0.0012*	**0.0047**
	3/19/2019	< 0.0011	< 0.0011	< 0.0011	**0.0019**	**0.0044**
	10/16/2019	0.0029*	< 0.0011	< 0.0011	0.0011*	0.0012*
	3/18/2020	0.0013*	< 0.0011	< 0.0011	0.0012*	**0.0065**
	10/16/2020	0.0017*	0.0013*	< 0.0011	0.0018*	0.0016*
	3/17/2021	< 0.0011	< 0.0011	< 0.0011	< 0.0011	< 0.0011
	10/20/2021	0.0015*	< 0.0011	< 0.0011	< 0.0011	0.0016*
	3/17/2022	0.0015*	< 0.0011	< 0.0011	< 0.0011	0.0011*
	10/18/2022	0.002*	< 0.0011	0.0024*	< 0.0011	< 0.0011
	3/14/2023	0.0037*	< 0.0011	< 0.0011	**0.0056**	0.0029*
	10/18/2023	0.0035*	< 0.0011	< 0.0011	0.0014*	0.0036*
	3/18/2024	0.0039*	< 0.0011	0.0011*	< 0.0011	0.0032*
	10/16/2024	0.0023*	< 0.0011	< 0.0011	< 0.0011	0.0026*
Silver, mg/L (CAS NO - 7440-22-4)	12/16/2009	< 0.0012	N/A	N/A	N/A	N/A
	12/16/2009	< 0.0012	N/A	N/A	N/A	N/A
	1/15/2010	< 0.0012	N/A	N/A	N/A	N/A
	2/18/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	3/16/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	N/A
	3/23/2010	N/A	N/A	N/A	N/A	< 0.0012
	4/15/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Silver, mg/L (CAS NO - 7440-22-4)	5/17/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	6/21/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	7/16/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	8/18/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	9/20/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	10/18/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	11/16/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	12/16/2010	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	1/13/2011	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	2/16/2011	0.00008	0.0012	0.0012	0.0012	0.0012
	5/18/2011	0.0012	0.0012	0.0012	0.0012	0.0012
	8/17/2011	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	10/17/2011	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	1/18/2012	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	4/17/2012	< 0.0012	0.00009	< 0.0012	< 0.0012	< 0.0012
	7/17/2012	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	11/14/2012	< 0.0012	0.0003	0.0003	0.0004	< 0.0012
	3/19/2013	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	6/17/2013	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	9/17/2013	< 0.0012	< 0.0012	< 0.0012	0.0001	< 0.0012
	12/17/2013	< 0.0012	0.0001	< 0.0012	0.0003	< 0.0012
	2/17/2014	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	4/15/2014	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	7/15/2014	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	10/13/2014	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	1/16/2015	< 0.0012	< 0.0012	< 0.0012	< 0.0012	< 0.0012
	5/13/2015	< 0.0012	< 0.0012	< 0.0012	0.0001	< 0.0012
	8/18/2015	< 0.0012	< 0.0012	< 0.0012	0.00005	0.0001
	11/17/2015	< 0.0012	0.00004	< 0.0012	0.00009	< 0.0012
	3/16/2016	< 0.00004	< 0.00004	< 0.00004	< 0.00004	< 0.00004
	10/12/2016	0.0013*	0.0014*	0.0014*	0.0014*	0.0013*
	3/16/2017	0.0004*	0.0005*	0.0004*	0.0004*	0.0004*
	10/12/2017	0.0009*	0.0009*	0.0014*	0.001*	0.0009*
	3/14/2018	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	10/17/2018	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	3/19/2019	< 0.002	< 0.002	< 0.002	< 0.002	< 0.002
	10/16/2019	< 0.0019	< 0.0019	< 0.0019	< 0.0019	< 0.0019
	3/18/2020	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
	10/16/2020	< 0.0025	< 0.0025	< 0.0025	< 0.0025	< 0.0025
	3/17/2021	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	10/20/2021	< 0.0025	< 0.0002	< 0.0002	< 0.0025	< 0.0025
	3/17/2022	< 0.0008	< 0.0008	< 0.0008	< 0.0008	< 0.0008
	10/18/2022	< 0.0015	< 0.0015	0.0023	< 0.0015	< 0.0015
	3/14/2023	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015
	10/18/2023	< 0.0015	< 0.0015	0.0019*	< 0.0015	< 0.0015
	3/18/2024	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015
	10/16/2024	< 0.0015	< 0.0015	< 0.0015	< 0.0015	< 0.0015
Sulfate, mg/L (CAS NO - 14808-79-8)	1/15/2010	509	N/A	N/A	N/A	N/A
	2/18/2010	40.5	141	134	101	228
	3/16/2010	17.5	139	62.6	86.7	N/A
	3/23/2010	N/A	N/A	N/A	N/A	41.8
	4/15/2010	25.4	141	68	88.2	28.7
	5/17/2010	24.1	138	57.8	90.8	19.3
	6/21/2010	29.8	126	39.5	92.3	18
	7/16/2010	27.8	103	37.3	82.6	17.1
	8/18/2010	54.4	100	69	0.7	53.4
	9/20/2010	40.9	56.9	34.1	69.3	118
	10/18/2010	34	32.2	10.5	0.3	147
	11/16/2010	35.3	21.6	25.8	49.4	275
	12/16/2010	35.1	14.3	26.6	22.5	385
	1/13/2011	36.5	10.5	28.5	40	422
	2/16/2011	26.2	14.1	28.4	11.6	128
	5/18/2011	23.2	7.8	28.1	0.7	123
	8/17/2011	33.9	3	17.7	0.7	197
	1/18/2012	39.3	1.3	13.6	1	101
	4/17/2012	40.9	2.1	11.6	2.1	122
	7/17/2012	36.4	2.9	529	6.6	12.9
	11/14/2012	40.4	13.9	28.2	16.1	443
	3/19/2013	120	1.5	26.2	2.1	104
	6/17/2013	22.3	1.7	25.9	6.4	124
	9/17/2013	34.5	2.3	27.4	4.1	545

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Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Sulfate, mg/L (CAS NO - 14808-79-8)	12/17/2013	38.4	2.8	26.8	2	257
	2/17/2014	315	2.4	37.2	2.2	115
	4/15/2014	137	0.9	33.8	9.7	334
	7/15/2014	23.2	2.5	36.4	14.2	257
	10/13/2014	40	2.2	38.4	10.6	288
	1/16/2015	50.7	< 8	39.9	7.6	259
	5/13/2015	27.3	1.9	43.5	100	300
	8/18/2015	32.2	1.8	56.5	134	320
	11/17/2015	285	2.2	58	174	285
	3/16/2016	24.3	2.9	53.6	196	268
	10/12/2016	32.6	5.4	104	224	280
	3/16/2017	31.1	6.3	127	216	252
	10/12/2017	34.6	7.2	134	85.3	163
	3/14/2018	31.9	7.3	136	84.7	135
	10/17/2018	15.4	11	144	14	294
	3/19/2019	27.9	11	150	214	144
	10/16/2019	51.8	15.8	152	103	105
	3/18/2020	38.2	12.9	137	100	267
	10/16/2020	46.7	14	127	82.9	70.5
	3/17/2021	46.7	17.2	135	86.8	73.4
	10/20/2021	56.5	33.3	128	73.7	97.7
	3/17/2022	28.7	37.2	123	105	102
	10/18/2022	111	36.8	120	90.8	96.4
	3/14/2023	56	38	116	120	109
	10/18/2023	109	58.1	120	100	111
	3/18/2024	55.6	74.6	118	114	108
	10/16/2024	81.4	62.7	119	97.7	87.5
Thallium, mg/L (CAS NO - 7440-28-0)	12/16/2009	0.0012	N/A	N/A	N/A	N/A
	12/16/2009	0.0118	N/A	N/A	N/A	N/A
	1/15/2010	< 0.0002	N/A	N/A	N/A	N/A
	2/18/2010	< 0.0002	0.0012	< 0.0002	< 0.0002	< 0.0002
	3/16/2010	< 0.0002	< 0.0002	0.0019	< 0.0002	N/A
	3/23/2010	N/A	N/A	N/A	N/A	< 0.0002
	4/15/2010	< 0.0002	0.0014	0.0035	0.0017	0.0012
	5/17/2010	< 0.0002	0.0053	0.0116	0.0042	0.0019
	6/21/2010	< 0.0002	< 0.0002	0.0012	< 0.0002	< 0.0002
	7/16/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	< 0.0002
	8/18/2010	0.0003	0.0002	0.0007	< 0.0002	0.0005
	9/20/2010	< 0.0002	0.0007	0.0005	0.0002	0.0004
	10/18/2010	0.0003	0.0018	0.0005	0.0003	0.0006
	11/16/2010	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0008
	12/16/2010	0.0004	< 0.0002	< 0.0002	< 0.0002	0.0014
	1/13/2011	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0011
	2/16/2011	0.0002	0.0002	0.0002	0.0002	0.0008
	5/18/2011	0.0002	0.0002	0.0005	0.0002	0.0002
	8/17/2011	< 0.0002	< 0.0002	< 0.0002	0.001	0.0007
	10/17/2011	0.0008	< 0.0002	< 0.0002	0.0008	0.0007
	1/18/2012	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0005
	4/17/2012	< 0.0002	0.001	< 0.0002	< 0.0002	< 0.0002
	7/17/2012	< 0.0002	0.0007	0.0011	0.0006	< 0.0002
	11/14/2012	0.0004	< 0.0002	< 0.0002	< 0.0002	0.0011
	3/19/2013	< 0.0002	0.0002	< 0.0002	< 0.0002	0.0003
	6/17/2013	0.0002	0.0002	0.0002	0.0001	0.0002
	9/17/2013	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.001
	12/17/2013	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0005
	2/17/2014	0.0006	0.001	0.0003	0.0002	0.0002
	4/15/2014	0.0002	0.0008	0.0008	0.0001	0.0001
	7/15/2014	0.0001	0.0002	0.0002	0.0001	0.0002
	10/13/2014	0.0001	0.001	0.0002	0.0001	0.0006
	1/16/2015	< 0.0002	0.0004	0.0002	< 0.0002	0.0003
	5/13/2015	< 0.0002	< 0.0002	< 0.0002	< 0.0002	0.0001
	8/18/2015	0.0001	0.0001	0.0001	0.0002	0.0001
	11/17/2015	< 0.0002	0.0001	0.0001	0.0001	0.0002
	3/16/2016	< 0.0001	< 0.0001	< 0.0001	0.0002*	< 0.0001
	10/12/2016	< 0.0001	< 0.0001	< 0.0001	0.0006*	< 0.0001
	3/16/2017	0.0002*	0.0005*	0.0004*	0.0013	0.0004*
	10/12/2017	0.0002*	< 0.0001	0.0003*	0.0003*	0.0005*
	3/14/2018	< 0.0001	< 0.0001	0.0001*	0.0001*	0.0001*
	10/17/2018	0.0001*	0.0001*	0.0001*	0.0001*	0.0002*
	3/19/2019	< 0.0001	< 0.0001	< 0.0001	0.001	0.0002
	10/16/2019	< 0.0001	< 0.0001	< 0.0001	0.0002*	< 0.0001

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BMC Aggregates L.C. South Waterloo Quarry

Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Thallium, mg/L (CAS NO - 7440-28-0)	3/18/2020	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
	10/16/2020	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
	3/17/2021	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
	10/20/2021	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
	3/17/2022	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
	10/18/2022	0.0004*	< 0.0004	0.0018	0.0012	0.0004*
	3/14/2023	< 0.0004	0.0009	0.0006*	< 0.0004	< 0.0004
	10/18/2023	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
	3/18/2024	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
	10/16/2024	< 0.0004	< 0.0004	< 0.0004	< 0.0004	< 0.0004
Vanadium, mg/L (CAS NO - 7440-62-2)	12/16/2009	< 0.0007	N/A	N/A	N/A	N/A
	12/16/2009	< 0.0007	N/A	N/A	N/A	N/A
	1/15/2010	< 0.0007	N/A	N/A	N/A	N/A
	2/18/2010	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	3/16/2010	0.0031	0.0049	0.0049	0.0052	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0022
	4/15/2010	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	5/17/2010	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	6/21/2010	< 0.0007	0.0034	< 0.0007	< 0.0007	< 0.0007
	7/16/2010	< 0.0007	0.0007	< 0.0007	0.0027	< 0.0007
	8/18/2010	0.0081	0.0118	0.0109	0.0033	0.0096
	9/20/2010	< 0.0007	0.0007	< 0.0007	< 0.0007	< 0.0007
	10/18/2010	< 0.0007	0.0007	< 0.0007	< 0.0007	< 0.0007
	11/16/2010	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	12/16/2010	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	1/13/2011	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	2/16/2011	0.0034	0.0021	0.0026	0.0007	0.0019
	5/18/2011	0.0007	0.0007	0.0007	0.0007	0.0007
	8/17/2011	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	10/17/2011	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	1/18/2012	< 0.0007	< 0.0007	< 0.0007	< 0.0007	0.0033
	4/17/2012	< 0.0007	< 0.0007	< 0.0007	< 0.0007	0.0026
	7/17/2012	0.0031	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	11/14/2012	< 0.0007	< 0.0007	< 0.0007	< 0.0007	< 0.0007
	3/19/2013	0.0068	0.0056	0.0068	< 0.0007	0.0068
	6/17/2013	0.0024	0.0005	0.0005	0.0005	0.0009
	9/17/2013	0.0005	0.0005	0.0003	0.0003	0.0015
	12/17/2013	0.0008	0.0005	0.0004	0.0013	0.0012
	2/17/2014	0.0012	0.0003	0.0003	0.0006	0.0003
	4/15/2014	0.0006	< 0.0007	< 0.0007	0.0006	0.0069
	7/15/2014	0.0005	< 0.0007	< 0.0007	0.0008	0.0087
	10/13/2014	0.0006	< 0.0007	< 0.0007	< 0.0007	0.0017
	1/16/2015	0.0006	< 0.0007	< 0.0007	0.0012	0.0011
	5/13/2015	0.0005	0.0005	0.0003	0.0013	0.0006
	8/18/2015	0.0003	0.0004	0.0003	0.0032	0.0009
	11/17/2015	0.0008	0.0007	0.0005	0.0006	0.0008
	3/16/2016	0.0007*	0.0005*	0.0011*	0.0007*	0.002*
	10/12/2016	0.0008*	0.0006*	0.0016*	0.0008*	0.0019*
	3/16/2017	0.0002*	0.0004*	0.0004*	0.0004*	0.0013*
	10/12/2017	0.001*	0.0002*	0.0007*	0.0007*	0.0011*
	3/14/2018	0.0004*	0.0002*	0.0004*	0.0004*	0.0018*
	10/17/2018	0.0002*	0.0003*	0.0003*	0.0033*	0.0129
	3/19/2019	< 0.004	0.0042	0.0052	0.063	0.0164
	10/16/2019	< 0.002	< 0.002	< 0.002	< 0.002	0.0026*
	3/18/2020	< 0.0043	< 0.0043	< 0.0043	< 0.0043	0.0175
	10/16/2020	< 0.0043	< 0.0043	< 0.0043	< 0.0043	< 0.0043
	3/17/2021	< 0.0043	< 0.0043	< 0.0043	< 0.0043	< 0.0043
	10/20/2021	< 0.0043	< 0.0043	< 0.0043	< 0.0043	< 0.0043
	3/17/2022	< 0.0043	< 0.0043	< 0.0043	< 0.0043	< 0.0043
	10/18/2022	0.0054*	0.0056*	0.0056*	0.007*	0.0049*
	3/14/2023	0.0067*	0.0051*	0.0058*	0.0088	0.0066*
	10/18/2023	< 0.0043	< 0.0043	< 0.0043	< 0.0043	0.0095
	3/18/2024	< 0.0043	< 0.0043	< 0.0043	< 0.0043	< 0.0043
	10/16/2024	< 0.0043	< 0.0043	< 0.0043	< 0.0043	< 0.0043
Zinc, mg/L (CAS NO - 7440-66-6)	12/16/2009	0.12	N/A	N/A	N/A	N/A
	12/16/2009	0.12	N/A	N/A	N/A	N/A
	1/15/2010	0.0706	N/A	N/A	N/A	N/A
	2/18/2010	0.0537	0.0281	0.0361	0.0276	0.007
	3/16/2010	0.0375	0.0089	0.0076	0.0191	N/A
	3/23/2010	N/A	N/A	N/A	N/A	0.0091
	4/15/2010	0.0363	1.11	0.004	0.0477	0.0113

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Summary of Groundwater Chemistry
BMC Aggregates L.C. South Waterloo Quarry

Total Metals Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Zinc, mg/L (CAS NO - 7440-66-6)	5/17/2010	0.0326	0.0453	0.0106	0.0422	0.0229
	6/21/2010	0.0444	0.245	0.0088	0.134	0.0203
	7/16/2010	0.0561	0.0122	0.005	0.0742	0.0098
	8/18/2010	0.0809	0.0035	0.0043	0.0088	0.009
	9/20/2010	0.0533	0.0036	0.0083	0.0286	0.0686
	10/18/2010	0.0483	0.0029	0.0091	0.0136	0.0166
	11/16/2010	0.0714	0.0053	0.0052	0.0179	0.0065
	12/16/2010	0.139	0.009	0.008	0.0137	0.0104
	1/13/2011	0.522	0.0016	0.0054	0.0061	0.0039
	2/16/2011	0.173	0.0036	0.0037	0.0086	0.0027
	5/18/2011	0.0452	0.0023	0.003	0.0039	0.0029
	8/17/2011	0.0511	0.0023	0.007	0.0131	0.0023
	10/17/2011	0.0767	0.0116	0.0174	0.0207	0.0117
	1/18/2012	0.0377	0.0204	0.0135	0.0253	0.147
	4/17/2012	0.0391	0.0056	0.0051	0.0164	0.0032
	7/17/2012	0.111	0.002	0.0053	0.0158	0.0175
	11/14/2012	0.066	0.0267	0.0179	0.0278	0.0159
	3/19/2013	0.127	0.0119	0.0112	0.0101	0.0171
	6/17/2013	0.0877	0.0137	0.0297	0.0091	0.0598
	9/17/2013	0.0252	0.0098	0.0077	0.0061	0.0134
	12/17/2013	0.0434	0.0099	0.0138	0.0189	0.0109
	2/17/2014	0.0221	0.0156	0.009	0.0236	0.299
	4/15/2014	0.213	0.011	0.0132	0.107	0.0362
	7/15/2014	0.0481	0.008	0.0105	0.0086	0.0152
	10/13/2014	0.0937	0.0109	0.0055	0.007	0.0093
	1/16/2015	0.0589	0.007	0.0077	0.0057	0.0113
	5/13/2015	0.286	0.004	0.008	0.232	0.0042
	8/18/2015	0.0694	0.0058	0.0057	0.0156	0.233
	11/17/2015	0.131	0.0369	0.0343	0.261	0.0345
	3/16/2016	0.0737	0.0027*	0.0069*	0.236	< 0.002
	10/12/2016	0.128	0.003*	0.011	0.158	0.0064*
	3/16/2017	0.11	0.0062*	0.0072*	0.137	0.0081
	10/12/2017	0.342	0.0078*	0.0142	0.0359	0.0126
	3/14/2018	0.515	0.0055*	0.0067*	0.0373	0.0143
	10/17/2018	0.143	0.0103	0.0103	0.019	< 0.008
	3/19/2019	0.0786	0.0133	0.0256	0.1	0.048
	10/16/2019	0.115	0.015*	0.0105*	0.0119*	0.0126*
	3/18/2020	0.184	< 0.0174	< 0.0174	< 0.0174	< 0.0174
	10/16/2020	0.092	< 0.0174	< 0.0174	< 0.0174	< 0.0174
	3/17/2021	0.123	< 0.0174	< 0.0174	< 0.0174	< 0.0174
	10/20/2021	0.132	< 0.0174	< 0.0174	0.0218	< 0.0174
	3/17/2022	0.119	< 0.0174	0.0211	< 0.0174	< 0.0174
	10/18/2022	0.0965	< 0.0174	< 0.0174	< 0.0174	< 0.0174
	3/14/2023	0.118	0.0182*	< 0.0174	< 0.0174	< 0.0174
	10/18/2023	0.0304	< 0.0174	< 0.0174	< 0.0174	< 0.0174
	3/18/2024	0.0251	< 0.0174	< 0.0174	< 0.0174	< 0.0174
	10/16/2024	0.0935	< 0.0174	< 0.0174	< 0.0174	0.0175*
Total Suspended Solids, mg/L (CAS NO - TSS)	3/16/2016	< 2	9	13	4	36
	10/12/2016	20	5	4	4	632
	3/16/2017	< 2	4	< 4	5	440
	10/12/2017	< 4	< 4	4	< 4	60
	3/14/2018	< 4	< 4	139	< 4	69
	10/17/2018	< 2	4	14	10	494
	3/19/2019	9	9	4	3	20
	10/16/2019	< 2	4	< 2	2	66
	3/18/2020	< 2	3	4	< 2	4
	10/16/2020	14	10	5	< 2	5
	3/17/2021	< 2	< 2	5	5	< 2
	10/20/2021	3	3	5	5	30
	3/17/2022	< 2	2	4	< 2	31
	10/18/2022	< 2	5	12	7	< 2
	3/14/2023	2	< 2	4	2	< 2
	10/18/2023	< 1	< 1	8	10	36
	3/18/2024	< 1	< 1	6	17	2
	10/16/2024	< 1	1	2	8	2

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

Denotes Detection.
Denotes Confirmed Outlier. Statistically Excluded.

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

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Summary of Groundwater Chemistry
BMC Aggregates L.C. South Waterloo Quarry

Appendix I VOC Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
2-Butanone, ug/L (CAS NO - 78-93-3)	10/17/2018	< 5	< 5	< 5	47.4	< 5
	11/14/2018	N/A	N/A	N/A	28.3	N/A
	3/19/2019	< 5	< 5	< 5	< 5	< 5
	10/16/2019	< 5	< 5	< 5	< 5	< 5
	3/18/2020	< 5	< 5	< 5	< 5	< 5
	10/16/2020	< 5	< 5	< 5	< 5	< 5
	3/17/2021	< 5	< 5	< 5	< 5	< 5
	10/20/2021	< 5	< 5	< 5	< 5	< 5
	3/17/2022	< 10	< 10	< 10	< 10	< 10
	10/18/2022	< 10	< 10	< 10	< 10	< 10
	3/14/2023	< 10	< 10	< 10	< 10	< 10
	10/18/2023	< 10	< 10	< 10	< 10	< 10
	3/18/2024	< 10	< 10	< 10	< 10	< 10
	10/16/2024	< 10	< 10	< 10	< 10	< 10
2-Methylphenol, ug/L (CAS NO - 95-48-7)	10/17/2018	< 10	< 10	< 10	< 10	< 10
	11/14/2018	N/A	N/A	N/A	< 10	N/A
	3/19/2019	< 10	< 10	< 10	< 10	< 10
	10/16/2019	< 10	< 10	< 10	< 10	< 10
	3/18/2020	< 13.6	< 10	< 10	< 14.4	< 10
	10/16/2020	< 10	< 10	< 10	< 10	< 10
	3/17/2021	< 12.8	< 10	< 10	< 10	< 10
	10/20/2021	< 10	< 10	< 10	< 10	< 10
	3/17/2022	< 12.5	< 10	< 10	< 13	< 10
	10/18/2022	< 10	< 10	< 10	< 10	< 10
	3/14/2023	< 10	N/A	N/A	< 10	< 10
	10/18/2023	< 10	< 10	< 12.8	< 10	< 10
	3/18/2024	< 10	< 10	< 10	< 10	< 10
	10/16/2024	< 10	< 10	< 10	< 10	< 10
3/4-Methylphenol, ug/L (CAS NO - T-34MP)	10/17/2018	< 10	< 10	< 10	22.5	< 10
	11/14/2018	N/A	N/A	N/A	< 10	N/A
	3/19/2019	< 10	< 10	< 10	< 10	< 10
	10/16/2019	< 10	< 10	< 10	< 10	< 10
	3/18/2020	< 13.6	< 10	< 10	< 14.4	< 10
	10/16/2020	< 10	< 10	< 10	< 10	< 10
	3/17/2021	< 12.8	< 10	< 10	< 10	< 10
	10/20/2021	< 10	< 10	< 10	< 10	< 10
	3/17/2022	< 12.5	< 10	< 10	< 13	< 10
	10/18/2022	< 10	< 10	< 10	< 10	< 10
	3/14/2023	< 10	N/A	N/A	< 10	< 10
	10/18/2023	< 10	< 10	< 12.8	< 10	< 10
	3/18/2024	< 10	< 10	< 10	< 10	< 10
	10/16/2024	< 10	< 10	< 10	< 10	< 10
Benzene, ug/L (CAS NO - 71-43-2)	10/17/2018	< 1	< 1	< 1	< 1	< 1
	3/19/2019	< 1	< 1	< 1	< 1	< 1
	10/16/2019	< 1	< 1	< 1	< 1	< 1
	3/18/2020	< 1	< 1	< 1	< 1	< 1
	10/16/2020	< 1	< 1	< 1	< 1	< 1
	3/17/2021	< 1	< 1	< 1	< 1	< 1
	10/20/2021	< 1	< 1	< 1	< 1	< 1
	3/17/2022	< 1	< 1	< 1	< 1	< 1
	10/18/2022	< 1	< 1	< 1	< 1	< 1
	3/14/2023	< 1	< 1	< 1	< 1	< 1
	10/18/2023	< 1	< 1	< 1	< 1	< 1
	3/18/2024	< 1	< 1	< 1	< 1	< 1
	10/16/2024	< 1	< 1	< 1	< 1	< 1
Chloroform, ug/L (CAS NO - 67-66-3)	10/17/2018	< 1	< 1	< 1	410	< 1
	11/14/2018	N/A	N/A	N/A	18.5	N/A
	3/19/2019	< 1	< 1	< 1	80.6	< 1
	5/3/2019	N/A	N/A	N/A	9	N/A
	10/16/2019	< 1	< 1	< 1	< 1	< 1
	3/18/2020	< 1	< 1	< 1	< 1	< 1
	10/16/2020	< 1	< 1	< 1	< 1	< 1
	3/17/2021	< 1	< 1	< 1	6.8	< 1
	10/20/2021	< 1	< 1	< 1	< 1	< 1
	3/17/2022	< 1	< 1	< 1	< 1	< 1
	10/18/2022	< 1	< 1	< 1	< 1	< 1
	3/14/2023	< 1	< 1	< 1	< 1	< 1
	10/18/2023	< 1	< 1	< 1	< 1	< 1
	3/18/2024	< 1	< 1	< 1	< 1	< 1
	10/16/2024	< 1	< 1	< 1	< 1	< 1

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Summary of Groundwater Chemistry
BMC Aggregates L.C. South Waterloo Quarry

Appendix I VOC Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Pyridine, ug/L (CAS NO - 110-86-1)	10/17/2018	< 10	< 10	< 10	< 10	< 10
	3/19/2019	< 10	< 10	< 10	< 10	< 10
	10/16/2019	< 10	< 10	< 10	< 10	< 10
	3/18/2020	< 14	< 10	< 10	< 14	< 10
	10/16/2020	< 10	< 10	< 10	< 10	< 10
	3/17/2021	< 13	< 10	< 10	< 10	< 10
	10/20/2021	< 10	< 10	< 10	< 10	< 10
	3/17/2022	< 10	< 10	< 10	< 10	< 10
	10/18/2022	< 10	< 10	< 10	< 10	< 10
	3/14/2023	< 10	N/A	N/A	< 10	< 10
	10/18/2023	< 10	< 10	< 13	< 10	< 10
	3/18/2024	< 10	< 10	< 10	< 10	< 10
	10/16/2024	< 10	< 10	< 10	< 10	< 10

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

Denotes Detection.
Denotes Confirmed Outlier. Statistically Excluded.

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

SCS ENGINEERS

Summary of Groundwater Chemistry
BMC Aggregates L.C. South Waterloo Quarry

Other Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Ammonia as N, mg/L (CAS NO - 7664-41-7)	3/19/2019	< 0.1	< 0.1	< 0.1	**2.03**	**0.11**
	10/16/2019	< 0.1	< 0.1	< 0.1	**0.11**	< 0.1
	3/18/2020	< 0.1	< 0.1	**0.11**	**0.1**	< 0.1
	10/16/2020	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	3/17/2021	< 0.1	< 0.1	< 0.1	< 0.1	**0.22**
	10/20/2021	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	3/17/2022	< 0.1	< 0.1	**0.19**	< 0.1	< 0.1
	10/18/2022	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	3/14/2023	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	10/18/2023	< 0.1	**1.51**	< 0.1	**0.12**	< 0.1
	3/18/2024	< 0.1	**0.45**	< 0.1	< 0.1	< 0.1
	10/16/2024	< 0.1	**0.38**	< 0.1	< 0.1	**0.8**
Chemical Oxygen Demand, mg/L (CAS NO - COD)	3/19/2019	< 20	< 20	< 20	**687**	**36**
	10/16/2019	< 20	< 20	< 20	< 20	< 20
	3/18/2020	< 20	< 20	< 20	< 20	< 20
	10/16/2020	< 20	< 20	< 20	< 20	< 20
	3/17/2021	< 20	< 20	< 20	< 20	**83**
	10/20/2021	< 20	< 20	**21**	**39**	**22**
	3/17/2022	< 20	< 20	< 20	< 20	< 20
	10/18/2022	< 20	< 20	< 20	< 20	< 20
	3/14/2023	< 20	< 20	< 20	< 20	< 20
	10/18/2023	< 54	< 54	< 54	< 54	< 54
	3/18/2024	< 54	< 54	< 54	< 54	< 54
	10/16/2024	< 54	**72**	< 54	< 54	< 54
Formaldehyde, ug/L (CAS NO - 50-00-0)	3/19/2019	< 10	< 10	< 10	**351**	< 10
	5/3/2019	N/A	N/A	N/A	< 10	N/A
	10/16/2019	< 10	< 10	< 10	< 10	< 10
	3/18/2020	< 10	**29.6**	< 10	< 10	< 10
	10/16/2020	< 10	< 10	< 10	< 10	< 10
	3/17/2021	< 10	**10.9**	**11.7**	**11.7**	< 10
	10/20/2021	< 10	< 10	< 10	< 10	< 10
	3/17/2022	< 10	< 10	< 10	< 10	< 10
	10/18/2022	< 10	< 10	< 10	< 10	< 10
	3/14/2023	< 10	< 10	< 10	< 10	< 10
	10/18/2023	< 10	< 10	< 10	< 10	< 10
	3/18/2024	< 10	< 10	< 10	< 10	< 10
	10/16/2024	< 10	< 10	< 10	< 10	< 10
Phenols, total, mg/L (CAS NO - 108-95-2)	3/19/2019	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035
	10/16/2019	< 0.035	< 0.035	< 0.035	< 0.035	**0.039**
	3/18/2020	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035
	10/16/2020	**0.043**	< 0.035	**0.082**	< 0.035	< 0.035
	3/17/2021	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035
	10/20/2021	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035
	3/17/2022	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035
	10/18/2022	< 0.035	**0.06**	< 0.035	< 0.035	< 0.035
	3/14/2023	**0.057**	**0.06**	**0.06**	< 0.035	< 0.035
	10/18/2023	**0.082**	**0.047**	**0.066**	**0.063**	**0.035**
	3/18/2024	**0.074**	**0.132**	**0.094**	**0.07**	**0.118**
	10/16/2024	< 0.035	< 0.035	< 0.035	< 0.035	< 0.035
Total Dissolved Solids, mg/L (CAS NO - TDS)	10/17/2018	**311**	**305**	**445**	**1370**	**626**
	3/19/2019	**311**	**337**	**469**	**815**	**492**
	10/16/2019	**366**	**308**	**491**	**458**	**466**
	3/18/2020	**343**	**333**	**493**	**415**	**736**
	10/16/2020	**300**	**291**	**444**	**409**	**348**
	3/17/2021	**365**	**313**	**483**	**443**	**604**
	10/20/2021	**385**	**303**	**564**	**481**	**443**
	3/17/2022	**359**	**351**	**536**	**447**	**429**
	10/18/2022	**391**	**339**	**391**	**392**	**415**
	3/14/2023	**360**	**341**	**456**	**445**	**479**
	10/18/2023	**425**	**369**	**481**	**400**	**459**
	3/18/2024	**336**	**420**	**565**	**428**	**439**
	10/16/2024	**409**	**393**	**487**	**383**	**409**

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Summary of Groundwater Chemistry
BMC Aggregates L.C. South Waterloo Quarry

Other Constituents	Sample Date	ReiterFarm UPG	Well#1 DNG	Well#2 DNG	Well#3 DNG	Well#4 DNG
Total Organic Halogens, mg/L (CAS NO - TOH)	3/19/2019	**0.02**	**0.012**	**0.034**	**0.364**	**0.014**
	10/16/2019	< 0.01	**0.021**	**0.011**	**0.131**	< 0.01
	3/18/2020	**0.012**	< 0.01	**0.01**	**0.024**	< 0.01
	10/16/2020	< 0.01	< 0.01	**0.038**	**0.053**	< 0.01
	3/17/2021	< 0.01	< 0.01	**0.011**	**0.02**	**0.031**
	10/20/2021	< 0.01	< 0.01	**0.015**	**0.103**	**0.014**
	3/17/2022	**0.025**	**0.018**	< 0.01	**0.033**	< 0.01
	10/18/2022	< 0.01	**0.017**	**0.014**	**0.017**	**0.013**
	3/14/2023	< 0.01	< 0.01	< 0.01	**0.021**	< 0.01
	10/18/2023	< 0.01	**0.018**	**0.016**	**0.054**	< 0.01
	3/18/2024	< 0.01	< 0.01	< 0.01	**0.055**	**0.054**
	10/16/2024	**0.079**	**0.035**	**0.026**	**0.059**	**0.071**

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

Denotes Detection.
Denotes Confirmed Outlier. Statistically Excluded.

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

Appendix D
2024 Statistical Report

2024 STATISTICAL REPORT

FOR

BMC WATERLOO SOUTH QUARRY
BENEFICIAL USE SITE

WATERLOO, IOWA

SUBMITTAL DATE: FEBRUARY 2025

PREPARED FOR:
BMC AGGREGATES, L.C.

PREPARED BY:
SCS ENGINEERS

2024 Statistical Report

Purpose

The purpose of this document is to describe the statistical method for the evaluation of groundwater analytical data collected from the BMC Aggregates L.C. Waterloo South Quarry (South Quarry) related to the beneficial use of coal combustion residue from the University of Iowa power plant and waste foundry sand from the John Deere foundry in Waterloo, Iowa.

Monitoring Network

The monitoring network for the South Quarry currently consists of five monitoring points as listed in Table 1. Also summarized in Table 1 is the number of sampling events completed through the end of this reporting period.

Table 1
Groundwater Monitoring Summary

Monitoring Well	Monitoring Program	Number of Samples Collected
Reiter Farm (b)	Not Applicable	52
Well #1	Assessment	50
Well #2	Assessment	50
Well #3	Assessment	50
Well #4	Assessment	50

(b) denotes background monitoring point.

As selected statistical methods are intrawell, the Reiter Farm background monitoring well is not used for statistical evaluation.

Statistical Method

Diagnostic and Exploratory Evaluations and Tests of Assumptions

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

- Time Series Plots
- Shapiro-Wilk test for normality
- Ohio Environmental Protection Agency (EPA) Method for identification of outliers
- Mann-Kendall/Sen's Slope trend test

Management of Non-Detect Data

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

Management of Outliers

Background datasets are evaluated for outliers using the Ohio EPA Method included in the Sanitas™ statistical software program and described below, which includes the use of Dixon's, Rosner's, and

Tukey's outlier tests, as appropriate based on the diagnostic tests, for the datasets that contain less than 75% of the measured concentrations below the PQL. Outliers are not confirmed unless a physical cause or explanation for the outlier is determined.

Management of Data (ND data < 75%)

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

- A parametric dataset with n < 20 is evaluated with the Dixon's outlier test.
- A parametric dataset with n ≥ 20 is evaluated with the Rosner's outlier test.
- A non-parametric dataset is evaluated with the Tukey's outlier test.

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

Management of Data (ND data ≥ 75%)

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

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

The chloride outliers identified in Well #3 from the May, August, and November 2015 sampling events, the March and October 2016 sampling events, the March 2017 sampling event, and the October 2018 sampling event were confirmed due to the fact that the well was treated with chlorine to control iron-fouling bacteria on multiple occasions. The confirmed outliers are shown in Appendix C of the Annual Water Quality Report, Summary of Groundwater Chemistry. Indicated outliers in the background monitoring well were not confirmed at this time as there was no information to link the indicated outliers to a physical cause or explanation.

Assessment Monitoring Statistical Program

Confidence intervals or confidence bands, as appropriate, were selected as the appropriate statistical methods for comparison of the groundwater analytical data against a fixed groundwater protection standard (GWPS). The assessment monitoring statistical evaluations are performed using the most recent eight samples or all samples if less than eight samples are available. The confidence intervals or confidence bands used for the assessment monitoring statistical evaluation are established using the process below. Transformation of the distribution is not considered.

Confidence Intervals or Confidence Bands

- A parametric confidence interval around a normal mean is calculated if the dataset has a normal distribution and no statistically significant trend is present.

- A non-parametric confidence interval around a median is calculated if the dataset does not have a normal distribution and no statistically significant trend is present.
- Non-parametric confidence bands around a Theil-Sen trend line are calculated if the dataset has a statistically significant trend.

If the lower confidence limit or any part of the lower confidence band, as appropriate, exceeds the GWPS, then the monitoring point is considered to have exceeded a GWPS at a statistically significant level (SSL).

Statistical Evaluation

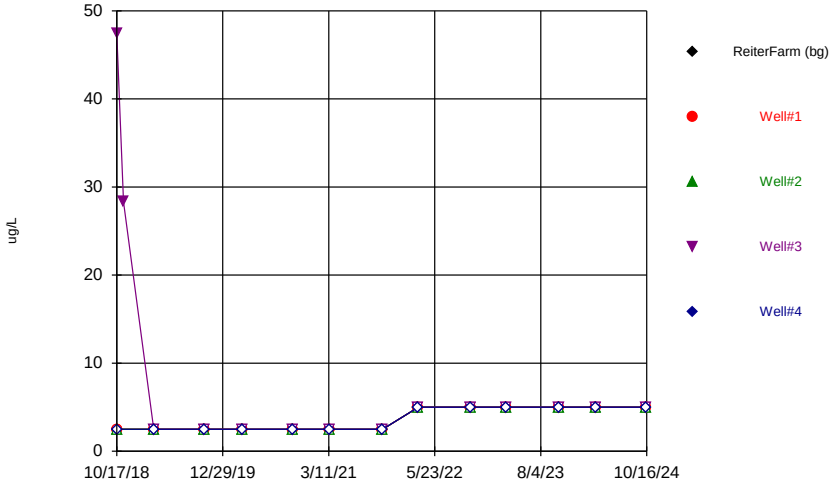
The reporting period for this statistical evaluation is January to December 2024 and includes data from the March 18 and October 16, 2024 sampling events. Listed below are the statistical outputs attached to this report. Sanitas™ statistical software was used to perform the statistical analyses.

- Time Series Plots
- Outlier Test Summary Table and Graphs
- Mann-Kendall/Sen's Slope Trend Test Summary Table and Graphs
- Confidence Interval Summary Table and Graphs
- Theil-Sen Trend Line and Confidence Bands Summary Table and Graphs

Time Series Plots

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

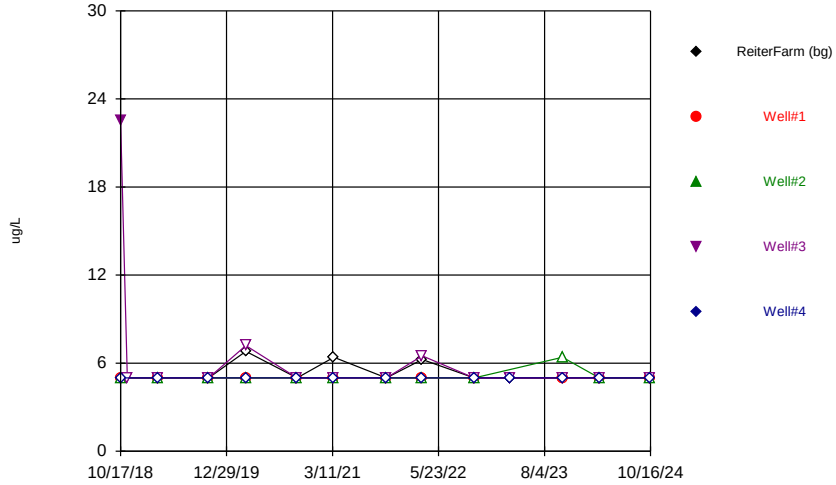
Time Series



Constituent: 2-Butanone Analysis Run 1/31/2025 9:23 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

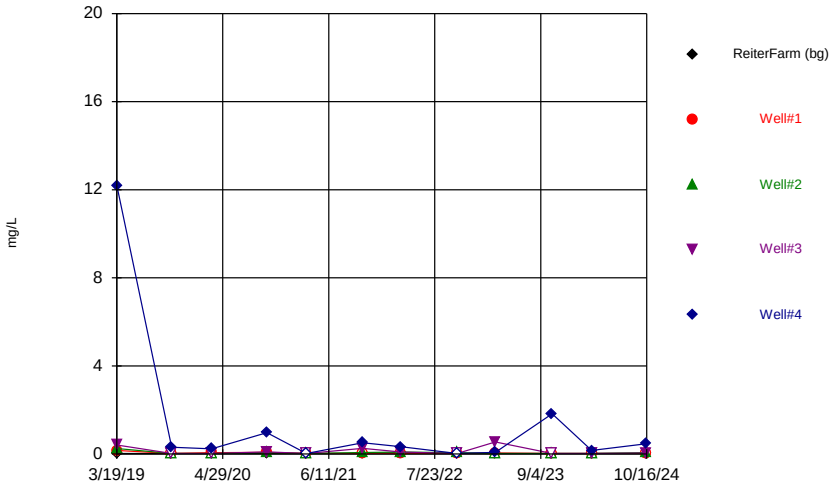
Time Series



Constituent: 3/4-Methylphenol Analysis Run 1/31/2025 9:23 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

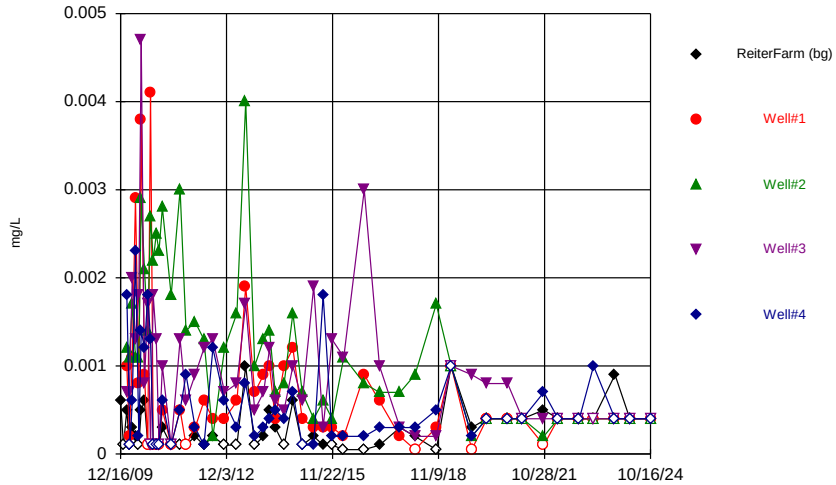
Time Series



Constituent: Aluminum Analysis Run 1/31/2025 9:23 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

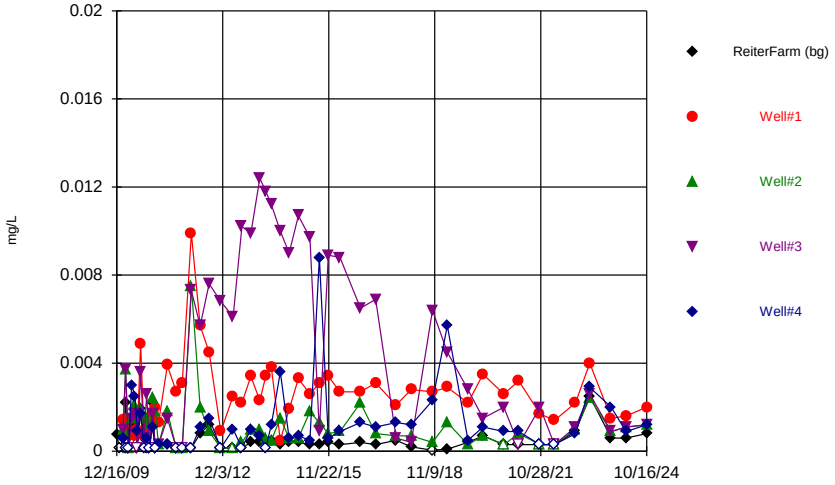
Time Series



Constituent: Antimony Analysis Run 1/31/2025 9:23 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

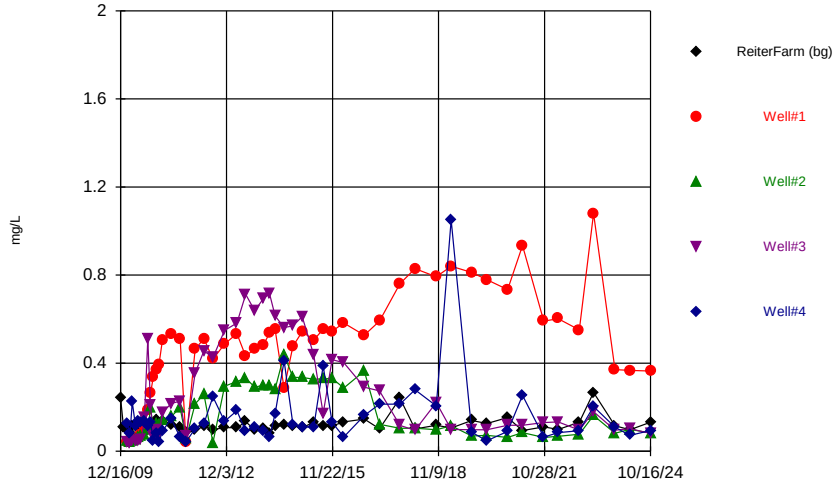
Time Series



Constituent: Arsenic Analysis Run 1/31/2025 9:23 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

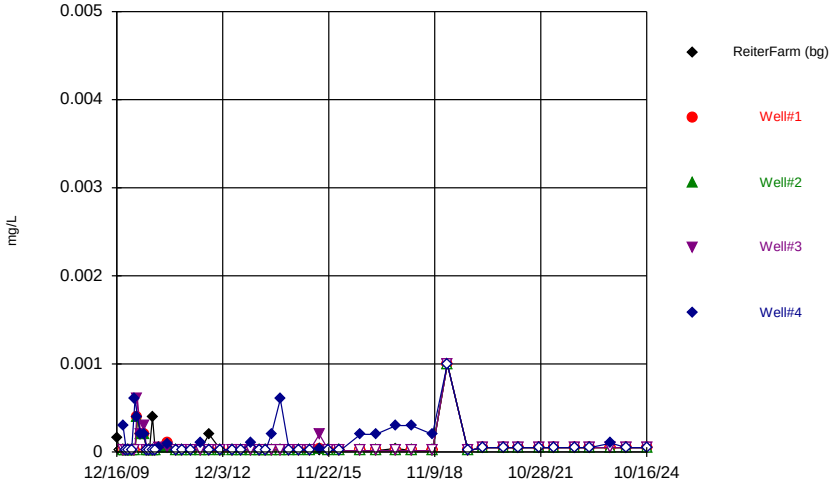
Time Series



Constituent: Barium Analysis Run 1/31/2025 9:23 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

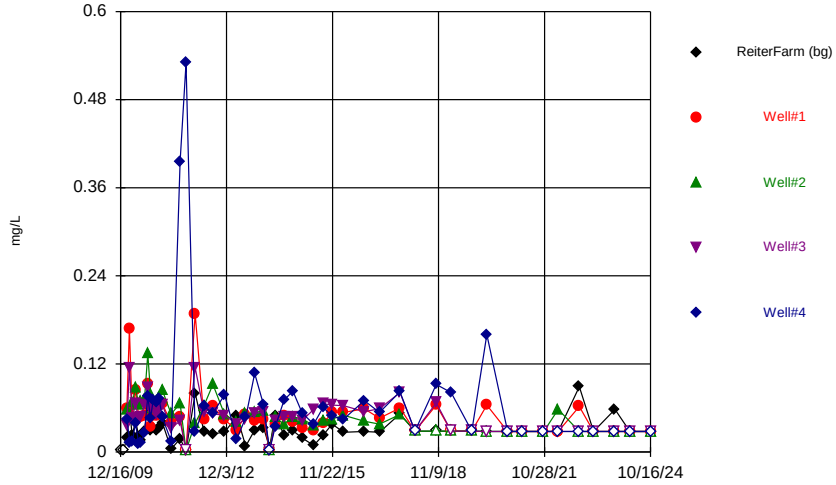
Time Series



Constituent: Beryllium Analysis Run 1/31/2025 9:23 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

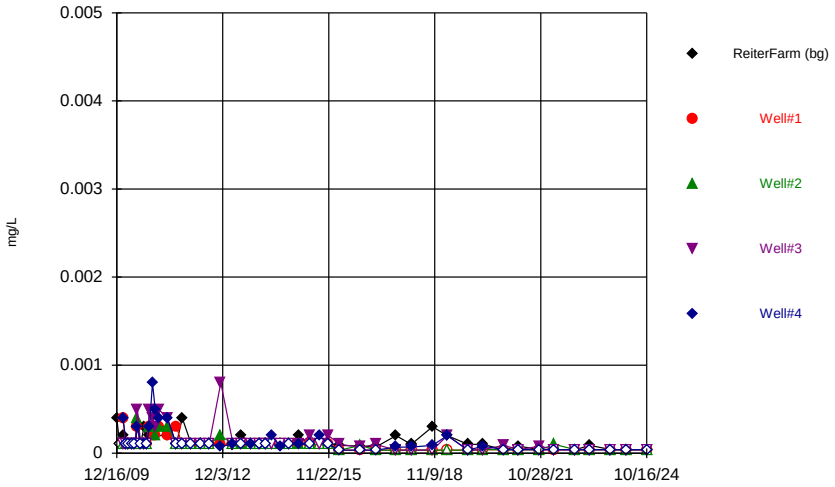
Time Series



Constituent: Boron Analysis Run 1/31/2025 9:23 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

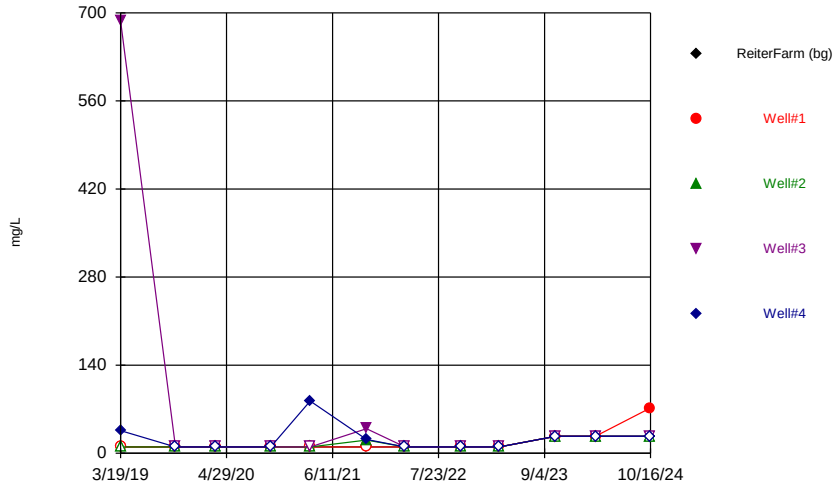
Time Series



Constituent: Cadmium Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

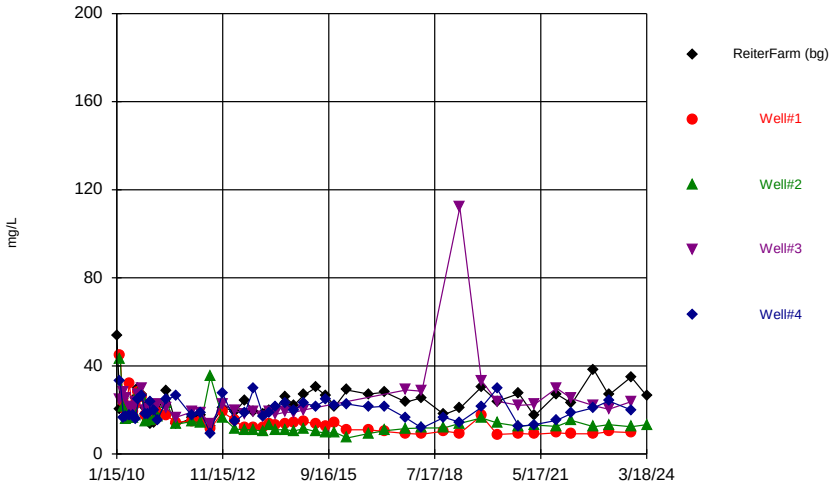
Time Series



Constituent: Chemical Oxygen Demand Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

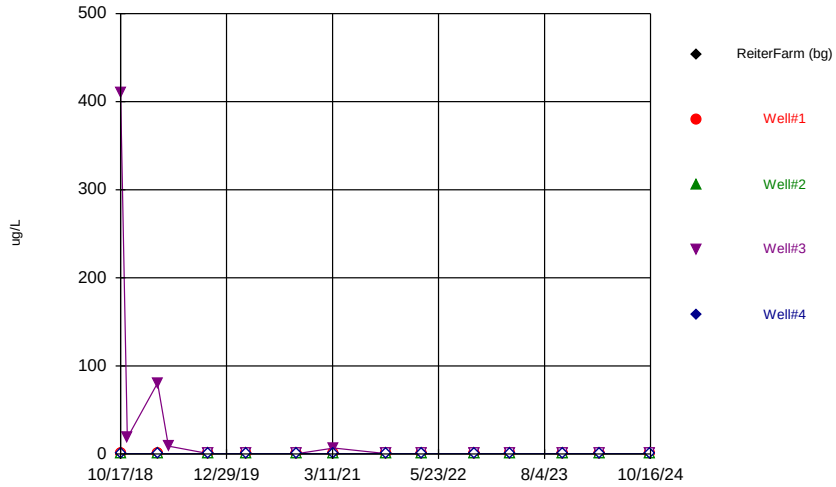
Time Series



Constituent: Chloride Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

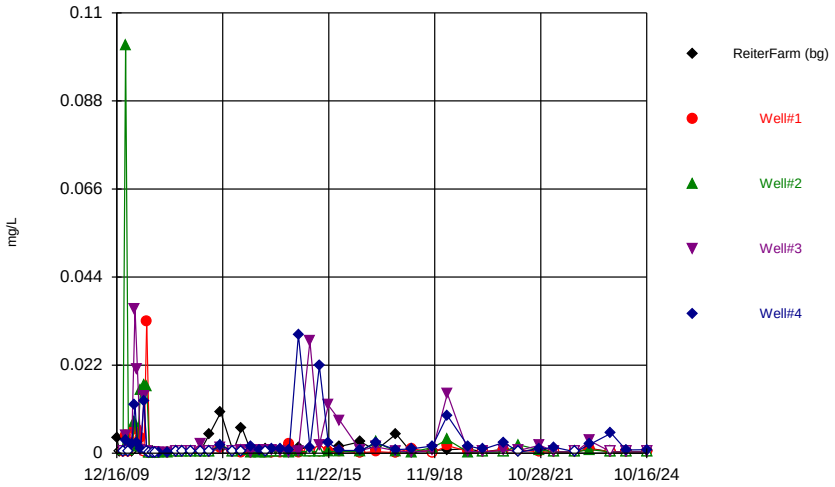
Time Series



Constituent: Chloroform Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

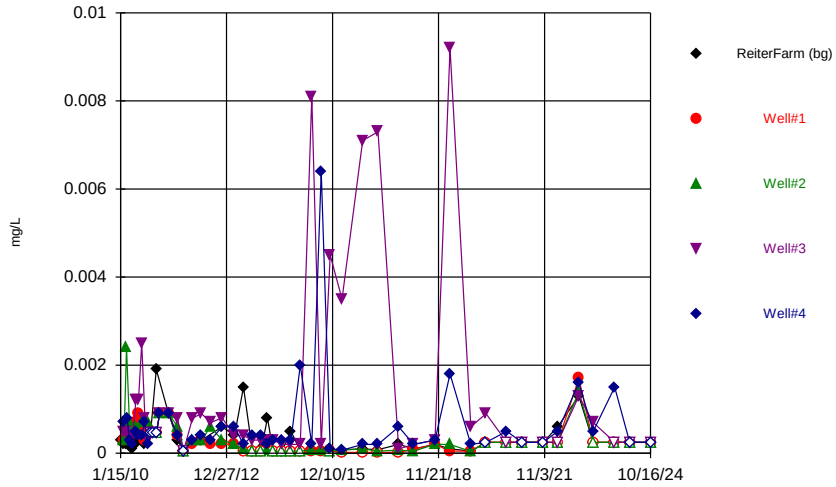
Time Series



Constituent: Chromium Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

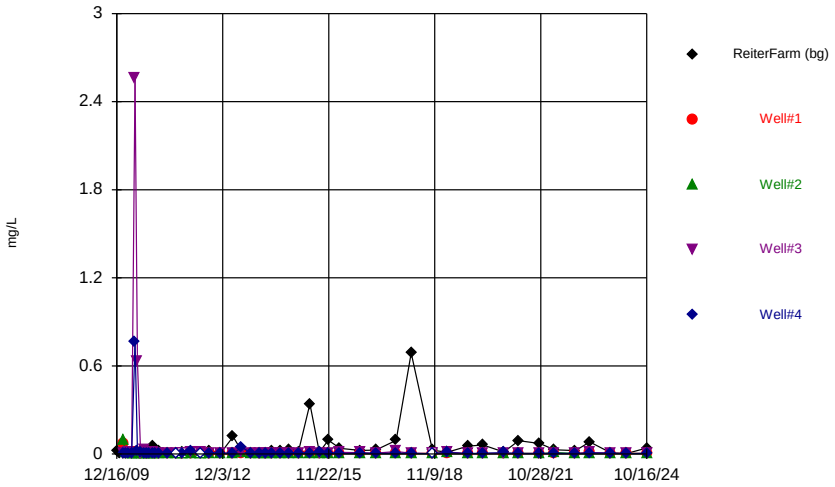
Time Series



Constituent: Cobalt Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

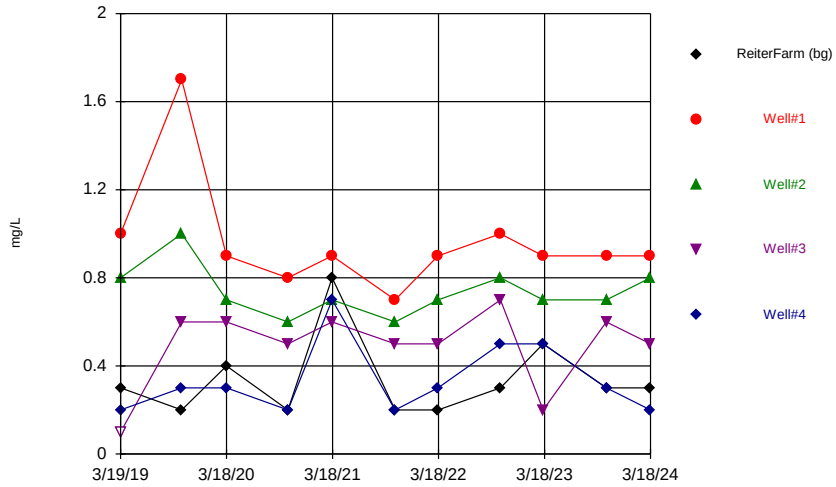
Time Series



Constituent: Copper Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

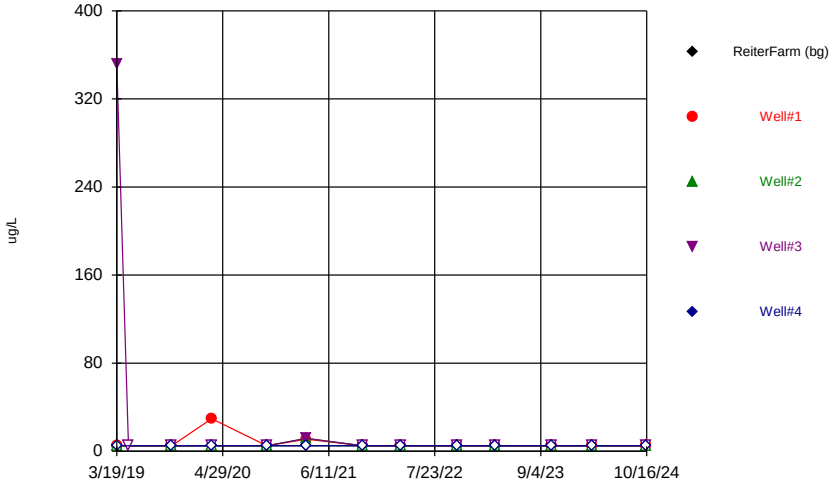
Time Series



Constituent: Fluoride Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

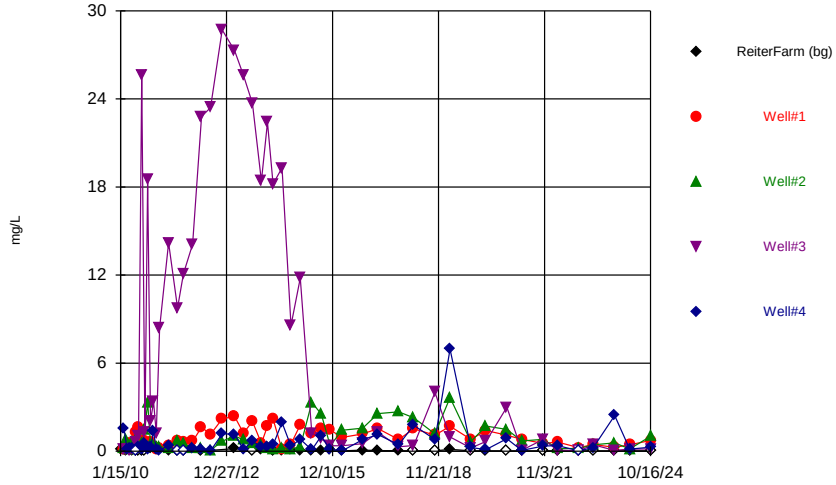
Time Series



Constituent: Formaldehyde Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

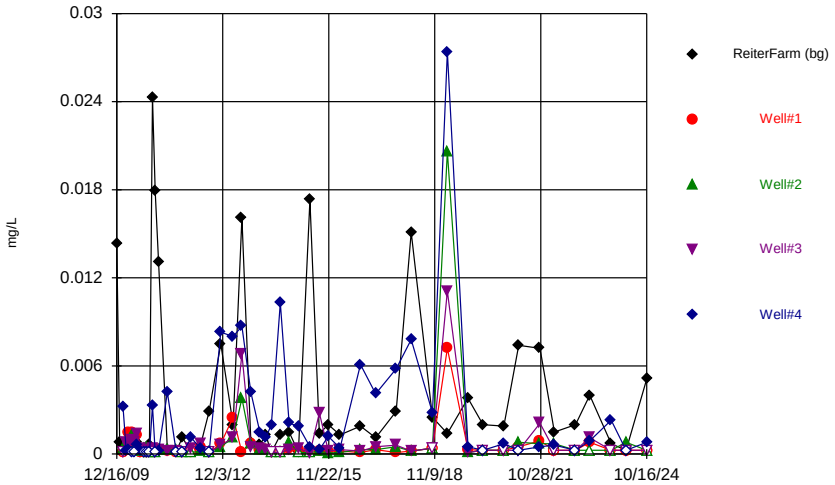
Time Series



Constituent: Iron Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

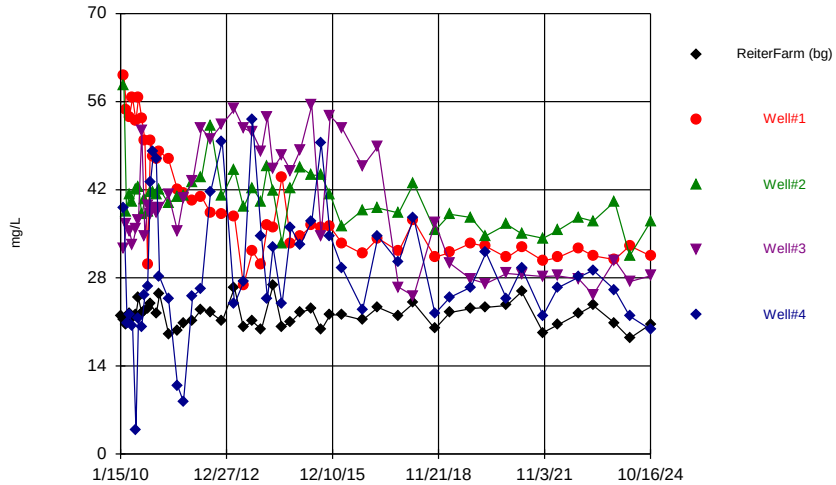
Time Series



Constituent: Lead Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

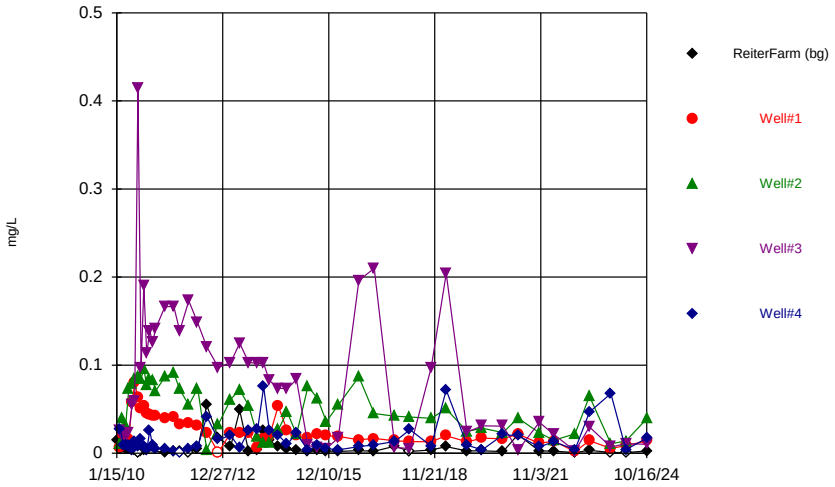
Time Series



Constituent: Magnesium Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

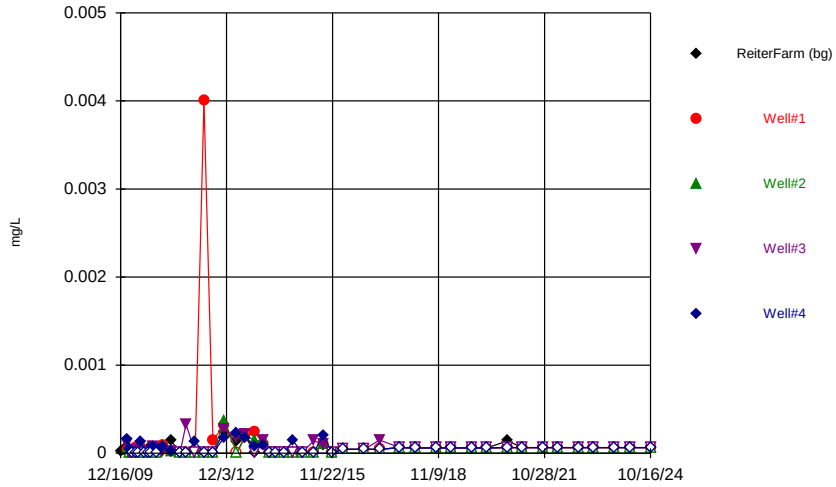
Time Series



Constituent: Manganese Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

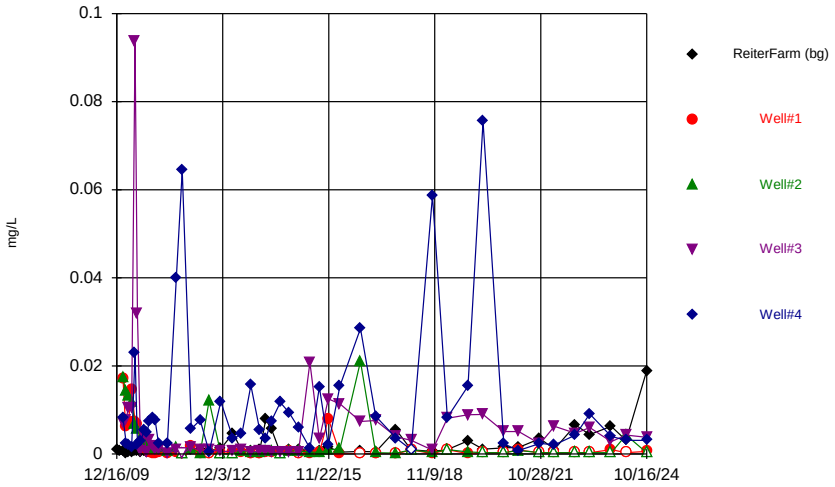
Time Series



Constituent: Mercury Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

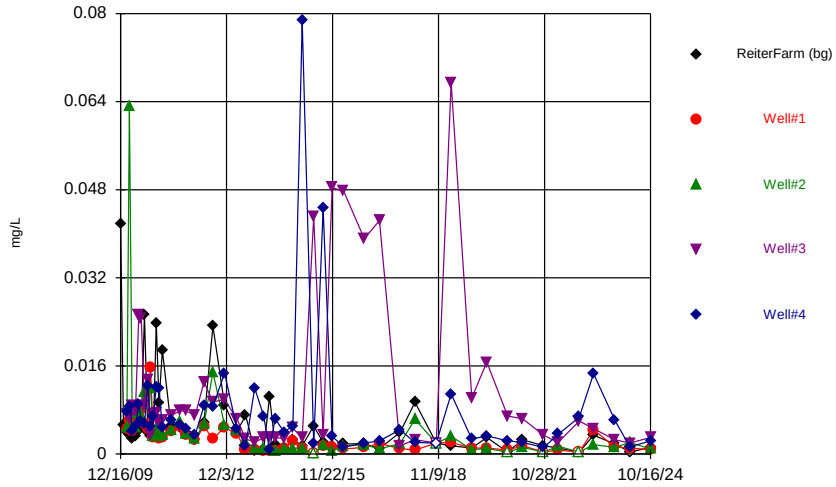
Time Series



Constituent: Molybdenum Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

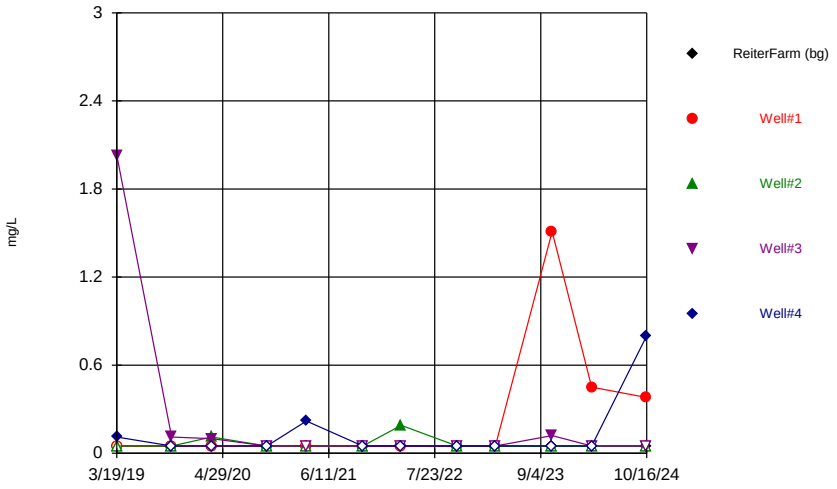
Time Series



Constituent: Nickel Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

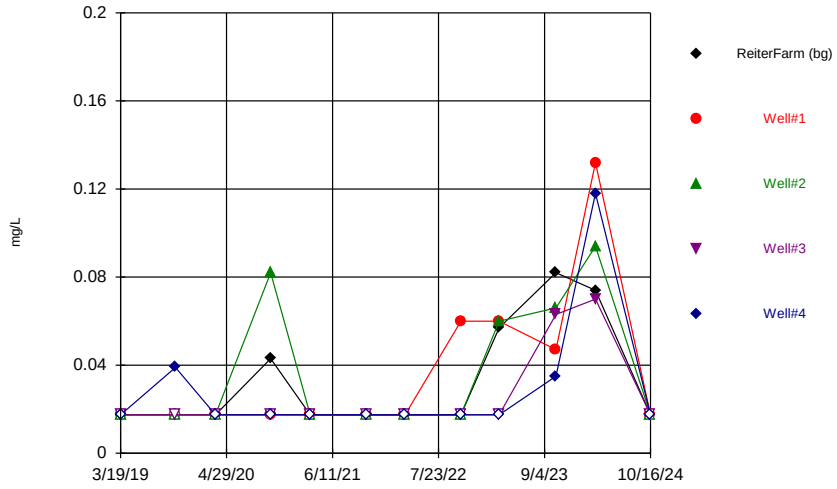
Time Series



Constituent: Nitrogen, Ammonia Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

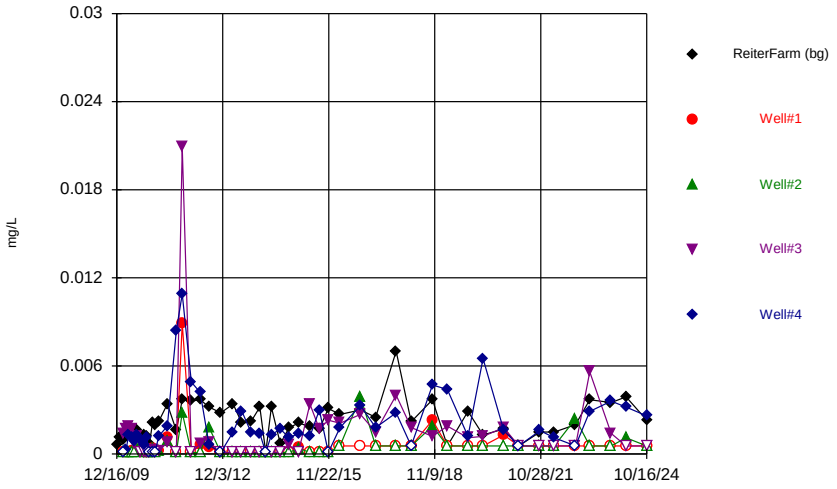
Time Series



Constituent: Phenols, total Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

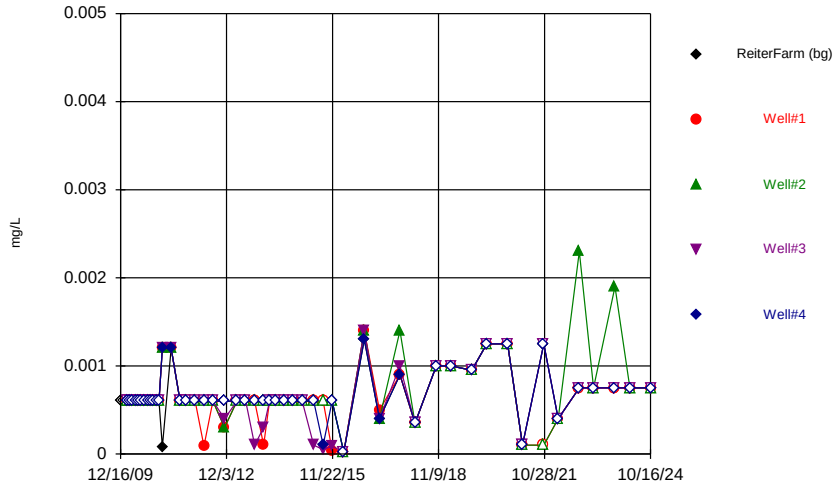
Time Series



Constituent: Selenium Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

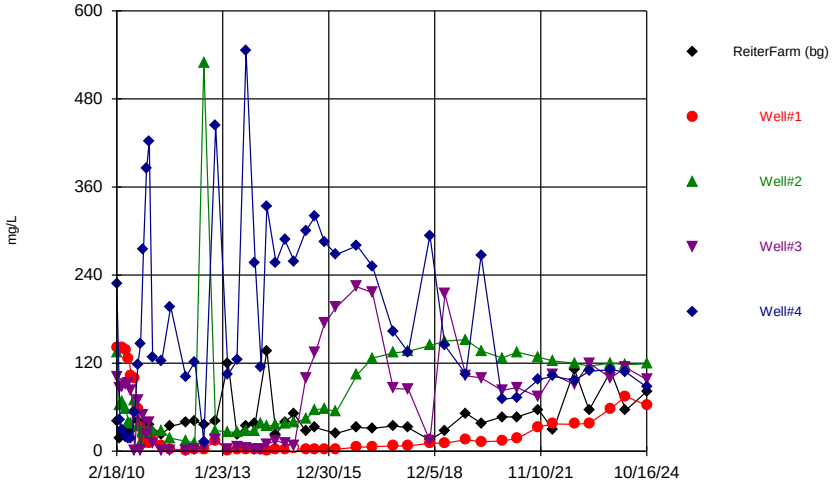
Time Series



Constituent: Silver Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

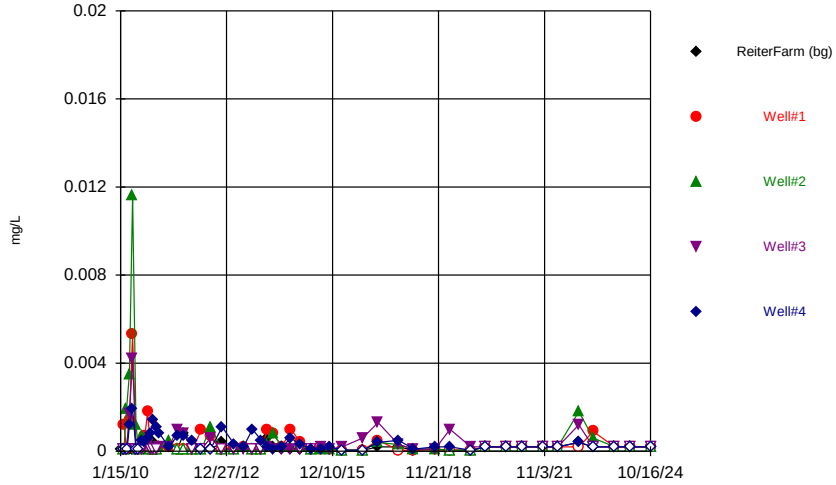
Time Series



Constituent: Sulfate Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

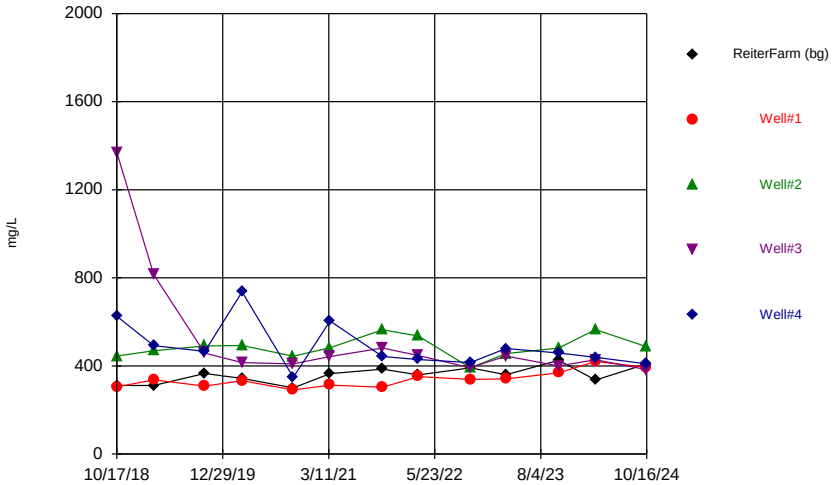
Time Series



Constituent: Thallium Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

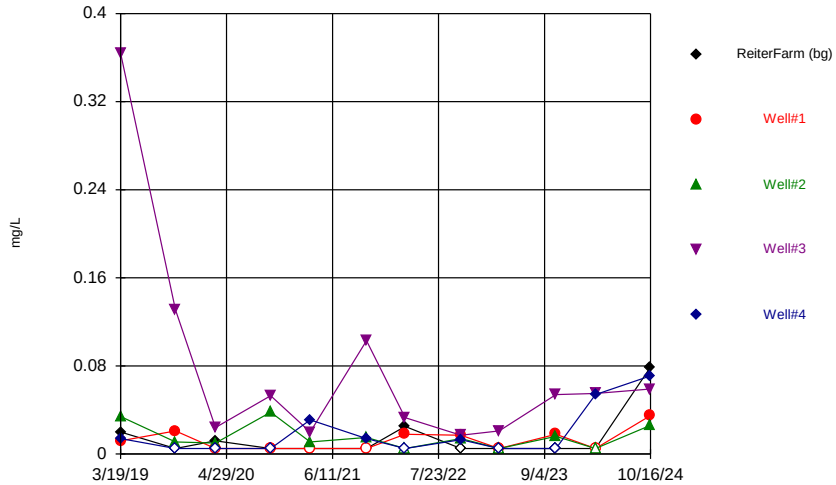
Time Series



Constituent: Total Dissolved Solids Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

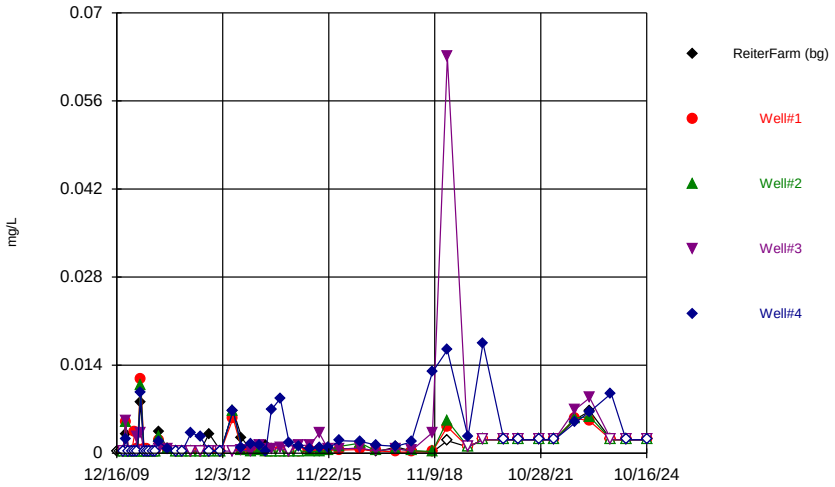
Time Series



Constituent: Total Organic Halogens Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

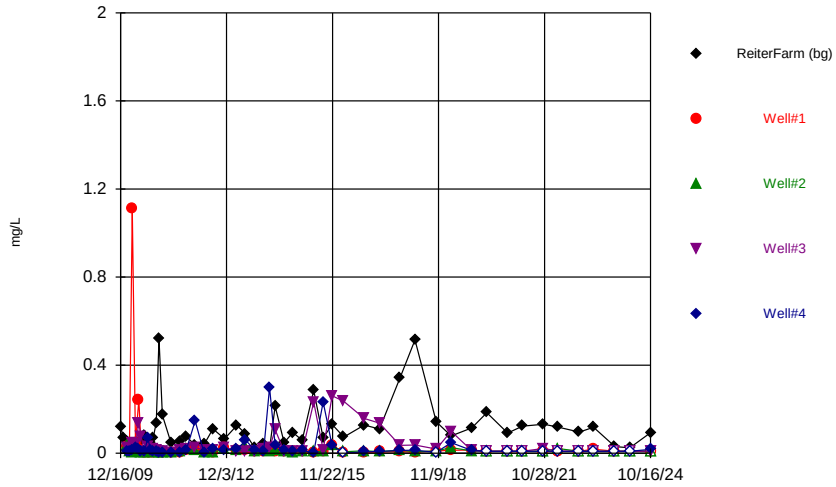
Time Series



Constituent: Vanadium Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Time Series



Constituent: Zinc Analysis Run 1/31/2025 9:24 AM View: 2024AWQR-Time_Series
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Outlier Tests Summary Table and Graphs

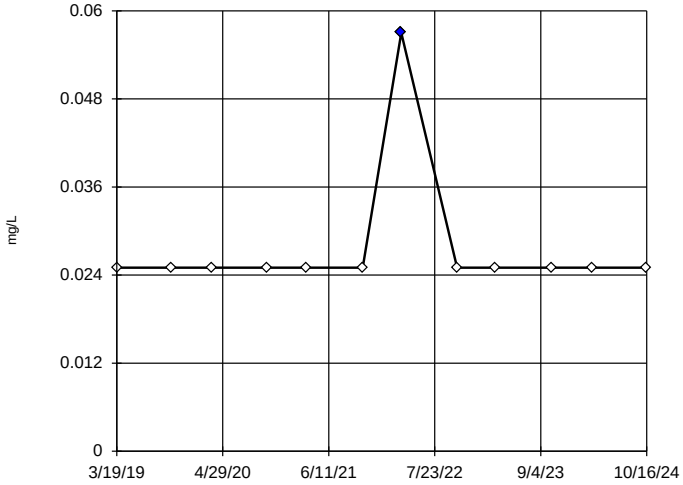
BG Outlier Analysis

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master Printed 1/31/2025, 12:37 AM

Constituent	Well	Outlier	Value(s)	Date(s)	Method	Alpha	N	Mean	Std. Dev.	Distribution	Normality Test
Aluminum (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.057**	**3/17/2022**	**OH**	**NaN**	**12**	**0.02767**	**0.009238**	**n/a**	**n/a**
Antimony (mg/L)	ReiterFarm (bg)	No	n/a	n/a	NP (nrm)/OH	NaN	52	0.0002837	0.0002378	unknown	ShapiroFrancia
Arsenic (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	52	0.0005438	0.0005572	ln(x)	ShapiroFrancia
Barium (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.267,0.241,0.241**	**3/14/2023,12/16/2009,10/12/2017**	**Rosner/OH**	**0.01**	**52**	**0.1217**	**0.03563**	**normal**	**ShapiroWilk**
Beryllium (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.001,0.0004,0.0004,0.0002,0.0002,0.0002,0.000162**	**3/19/2019,7/16/2010,12/16/2010,8/18/2..**	**OH**	**NaN**	**52**	**0.00007582**	**0.0001545**	**n/a**	**n/a**
Boron (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.063,0.08,0.089**	**9/20/2010,1/18/2012,10/18/2022**	**NP (nrm)/OH**	**NaN**	**52**	**0.02996**	**0.01757**	**unknown**	**ShapiroWilk**
Cadmium (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.0004,0.0004**	**12/16/2009,10/17/2011**	**NP (nrm)/OH**	**NaN**	**49**	**0.0001282**	**0.0000864**	**unknown**	**ShapiroWilk**
Chloride (mg/L)	**ReiterFarm (bg)**	**Yes**	**53.6**	**1/15/2010**	**Rosner/OH**	**0.01**	**49**	**23.62**	**7.039**	**normal**	**ShapiroWilk**
Chromium (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	52	0.001304	0.001831	ln(x)	ShapiroFrancia
Cobalt (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	48	0.0003265	0.0003789	ln(x)	ShapiroWilk
Copper (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	52	0.04422	0.105	ln(x)	ShapiroFrancia
Fluoride (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	11	0.3364	0.1804	ln(x)	ShapiroWilk
Iron (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.343**	**10/18/2010**	**NP (nrm)/OH**	**NaN**	**45**	**0.06783**	**0.07353**	**unknown**	**ShapiroWilk**
Lead (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	52	0.00373	0.005665	ln(x)	ShapiroFrancia
Magnesium (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	49	22.06	1.876	normal	ShapiroWilk
Manganese (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.0548,0.017,0.049,0.0258,0.0211**	**7/17/2012,11/14/2012,6/17/2013,2/17/2..**	**NP (nrm)/OH**	**NaN**	**48**	**0.006843**	**0.01086**	**unknown**	**ShapiroWilk**
Mercury (mg/L)	ReiterFarm (bg)	No	n/a	n/a	NP (nrm)/OH	NaN	52	0.000052120	0.00004922	unknown	ShapiroFrancia
Molybdenum (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.0047,0.0078,0.0057,0.0055,0.0066,0.0044,0.0063,**	**3/19/2013,2/17/2014,4/15/2014,10/12/2..**	**NP (nrm)/OH**	**NaN**	**52**	**0.001916**	**0.003043**	**unknown**	**ShapiroFrancia**
Nickel (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	52	0.00552	0.007723	ln(x)	ShapiroFrancia
Selenium (mg/L)	**ReiterFarm (bg)**	**Yes**	**0.007**	**10/12/2017**	**Rosner/OH**	**0.01**	**52**	**0.002207**	**0.001215**	**ln(x)**	**ShapiroFrancia**
Silver (mg/L)	ReiterFarm (bg)	No	n/a	n/a	OH	NaN	52	0.0006615	0.0002644	n/a	n/a
Sulfate (mg/L)	**ReiterFarm (bg)**	**Yes**	**120,137,111,109**	**3/19/2013,4/15/2014,10/18/2022,10/18/..**	**NP (nrm)/OH**	**NaN**	**47**	**43.54**	**26.42**	**unknown**	**ShapiroWilk**
Thallium (mg/L)	ReiterFarm (bg)	No	n/a	n/a	NP (nrm)/OH	NaN	51	0.0001735	0.0001398	unknown	ShapiroFrancia
Vanadium (mg/L)	ReiterFarm (bg)	No	n/a	n/a	NP (nrm)/OH	NaN	52	0.001453	0.001795	unknown	ShapiroFrancia
Zinc (mg/L)	ReiterFarm (bg)	No	n/a	n/a	EPA/OH	0.05	52	0.1094	0.1035	ln(x)	ShapiroFrancia

Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 12

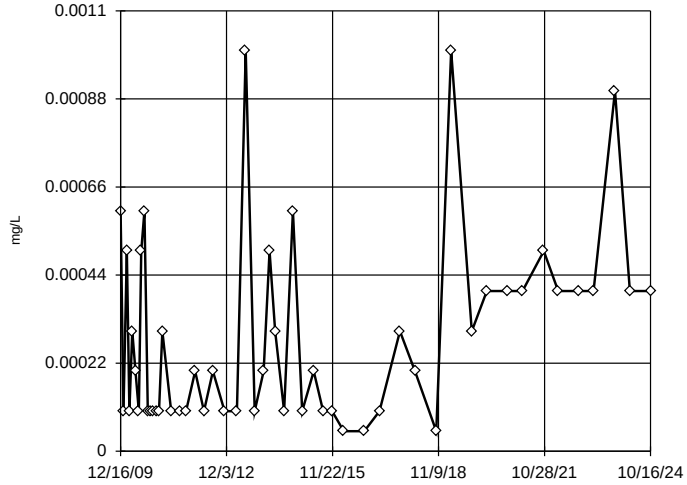
Statistical outlier is drawn as solid.
Outlier per Ohio method.

Constituent: Aluminum Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 52

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Francia normality test failed at the 0.01 alpha level.

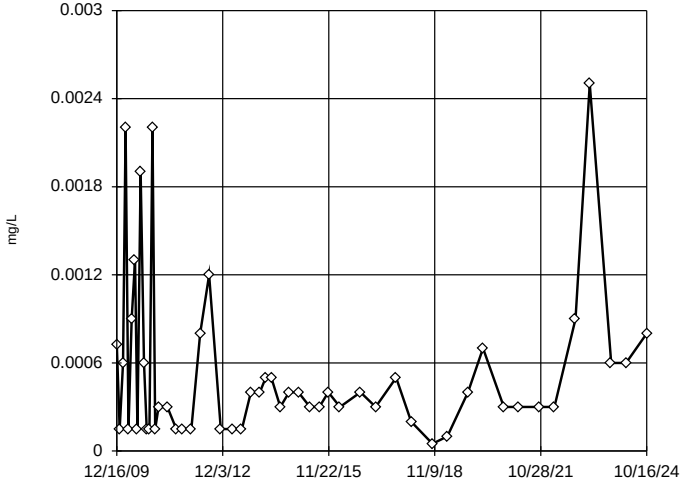
The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Antimony Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Rosner's Test)

ReiterFarm (bg)



n = 52

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.0005438, std. dev. 0.0005572, critical Tn 2.971

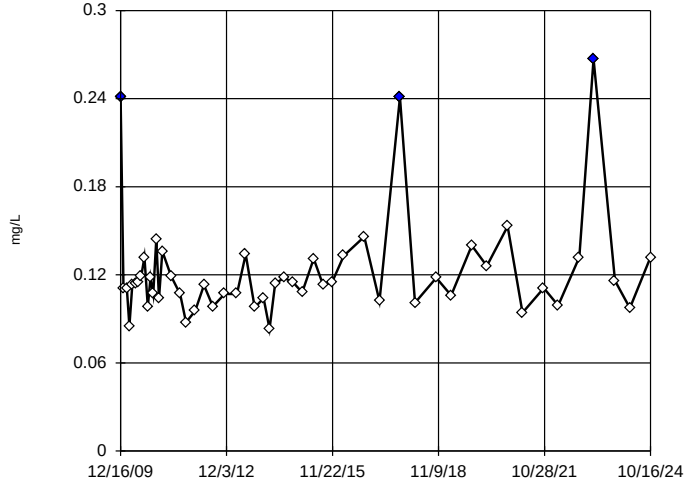
Normality test used:
Shapiro Francia@alpha = 0.01
Calculated = 0.9564
Critical = 0.937 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Arsenic Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

Rosner's Outlier Test / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 52

Statistical outliers are drawn as solid.

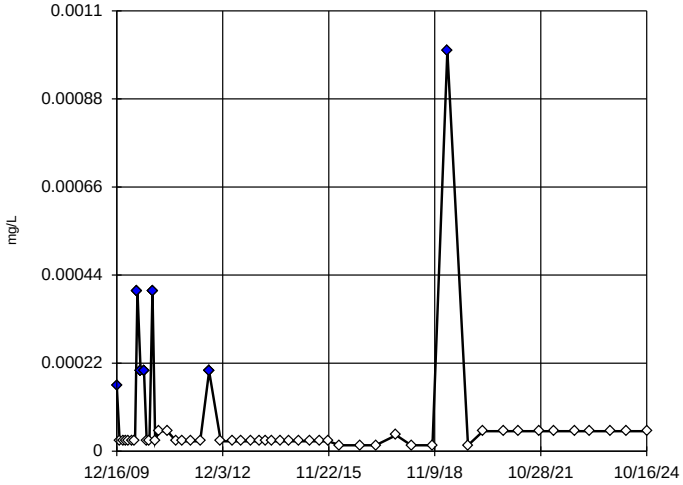
k = 5
r = 5.209
Tabulated value = 2.944
Alpha = 0.01

Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.9664
Critical = 0.929
The distribution, after removal of suspect values, was found to be normally distributed.

Constituent: Barium Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



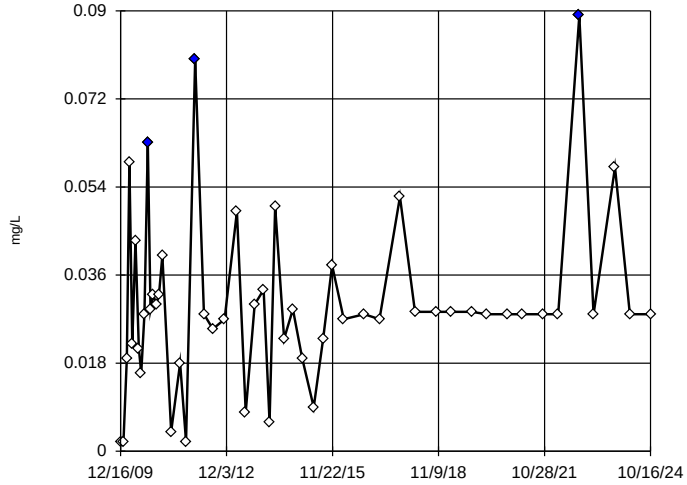
n = 52

Statistical outliers are drawn as solid.
Outliers per Ohio method.

Constituent: Beryllium Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 52

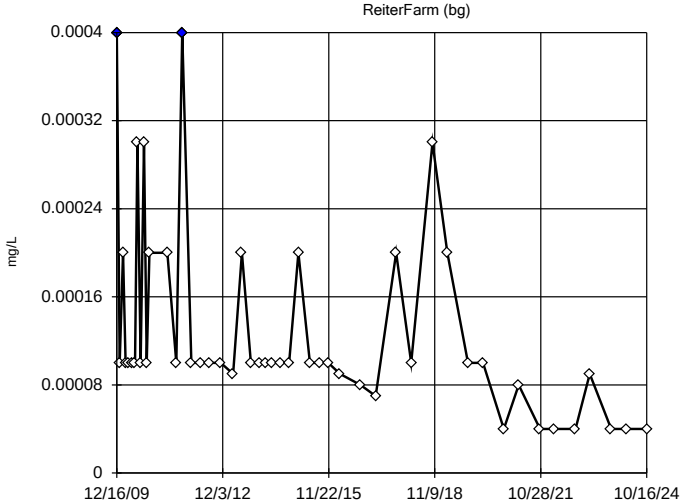
Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

High cutoff = 0.0605, low cutoff = -0.006, based on IQR multiplier of 3.

Constituent: Boron Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 49

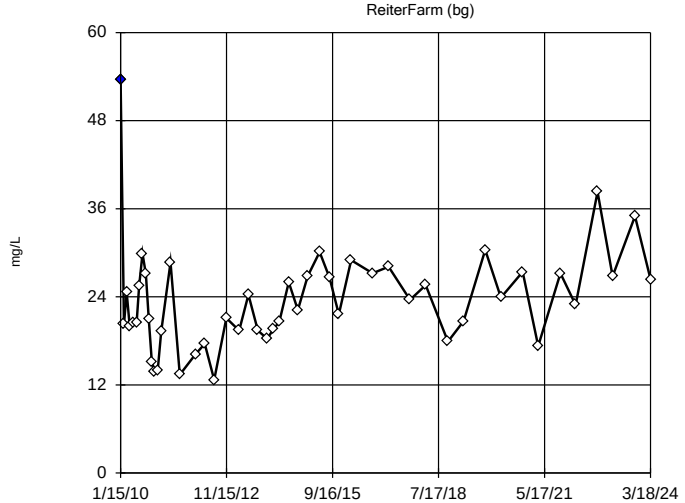
Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

High cutoff = 0.00033, low cutoff = -0.00009, based on IQR multiplier of 3.

Constituent: Cadmium Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Rosner's Outlier Test / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 49

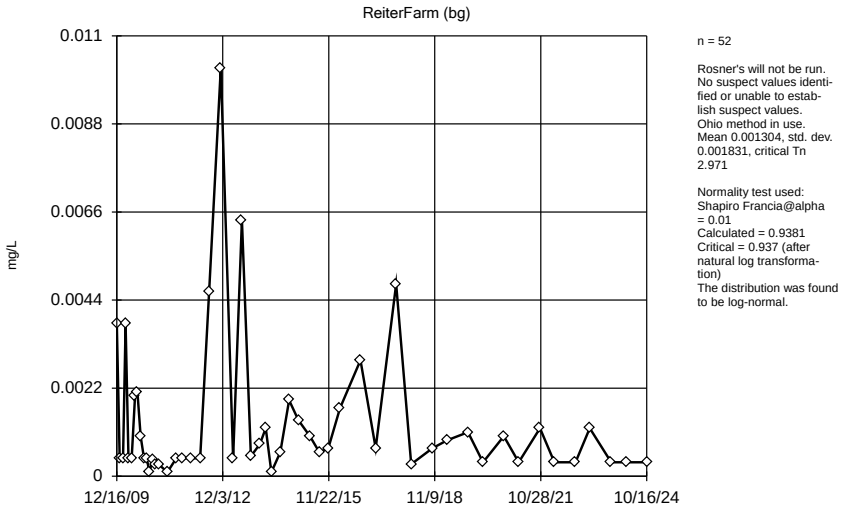
Statistical outlier is drawn as solid.

k = 1
r = 4.259
Tabulated value = 3.07
Alpha = 0.01

Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.9732
Critical = 0.929
The distribution, after removal of suspect value, was found to be normally distributed.

Constituent: Chloride Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

EPA Screening (suspected outliers for Rosner's Test)



n = 52

Rosner's will not be run. No suspect values identified or unable to establish suspect values. Ohio method in use. Mean 0.001304, std. dev. 0.001831, critical Tn 2.971

Normality test used: Shapiro Francia@alpha = 0.01 Calculated = 0.9381 Critical = 0.937 (after natural log transformation) The distribution was found to be log-normal.

Constituent: Chromium Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

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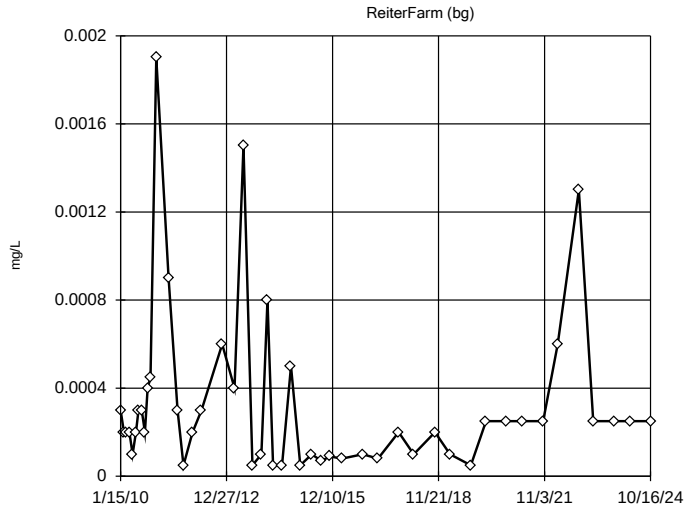
EPA Screening (suspected outliers for Rosner's Test)



n = 48

Rosner's will not be run. No suspect values identified or unable to establish suspect values. Ohio method in use. Mean 0.0003265, std. dev. 0.0003789, critical Tn 2.94

Normality test used: Shapiro Wilk@alpha = 0.01 Calculated = 0.9415 Critical = 0.929 (after natural log transformation) The distribution was found to be log-normal.

Constituent: Cobalt Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

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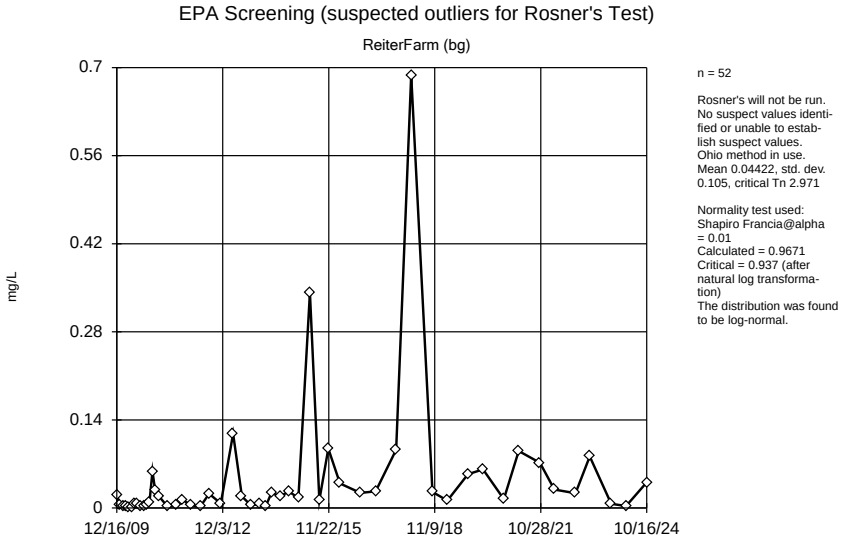
EPA Screening (suspected outliers for Rosner's Test)



n = 52

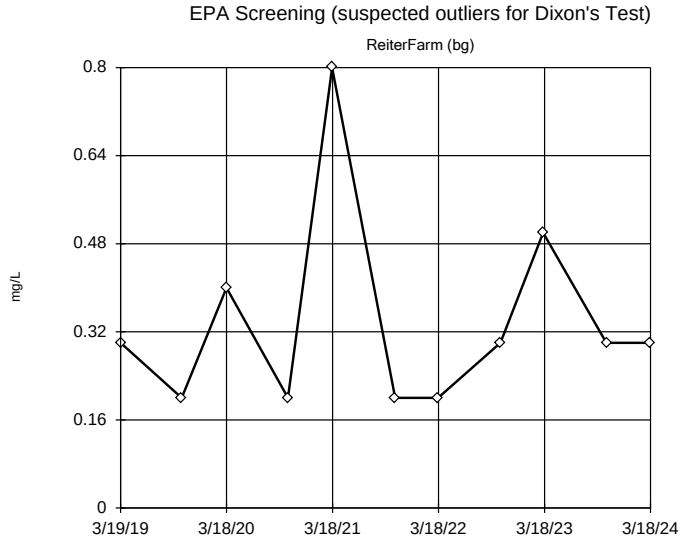
Rosner's will not be run. No suspect values identified or unable to establish suspect values. Ohio method in use. Mean 0.04422, std. dev. 0.105, critical Tn 2.971

Normality test used: Shapiro Francia@alpha = 0.01 Calculated = 0.9671 Critical = 0.937 (after natural log transformation) The distribution was found to be log-normal.

Constituent: Copper Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Dixon's Test)



n = 11

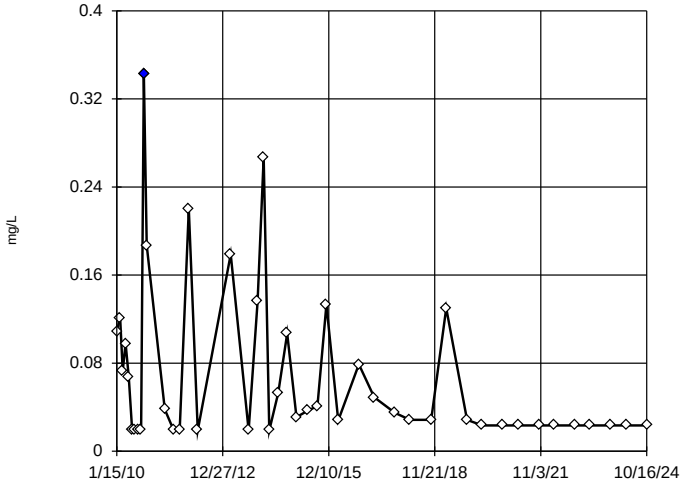
Dixon's will not be run. No suspect values identified or unable to establish suspect values. Ohio method in use. Mean 0.3364, std. dev. 0.1804, critical Tn 2.234

Normality test used: Shapiro Wilk@alpha = 0.01 Calculated = 0.8549 Critical = 0.792 (after natural log transformation) The distribution was found to be log-normal.

Constituent: Fluoride Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 45

Outlier is drawn as solid.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

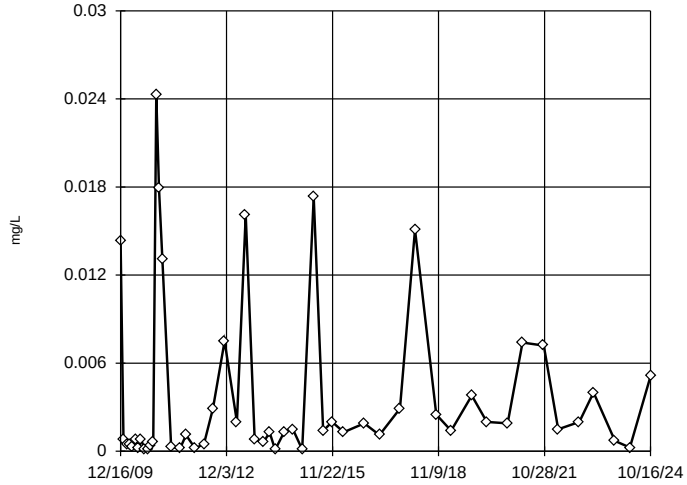
High cutoff = 0.3395, low cutoff = -0.2135, based on IQR multiplier of 3.

Constituent: Iron Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Rosner's Test)

ReiterFarm (bg)



n = 52

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.00373, std. dev. 0.005665, critical Tn 2.971

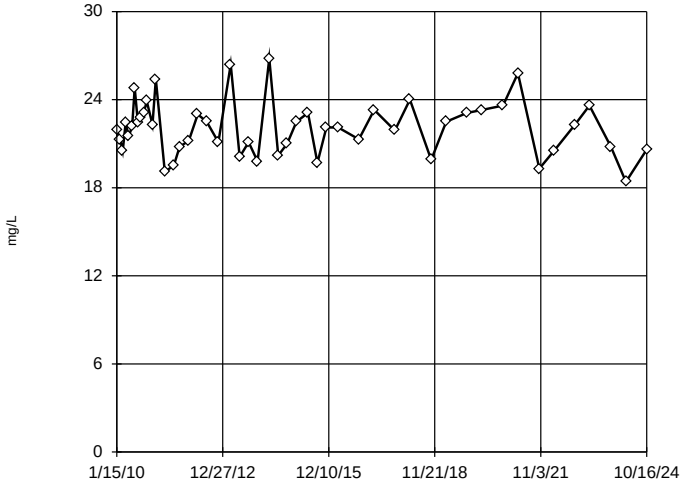
Normality test used:
Shapiro Francia@alpha = 0.01
Calculated = 0.9815
Critical = 0.937 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Lead Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Rosner's Test)

ReiterFarm (bg)



n = 49

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 22.06, std. dev. 1.876, critical Tn 2.948

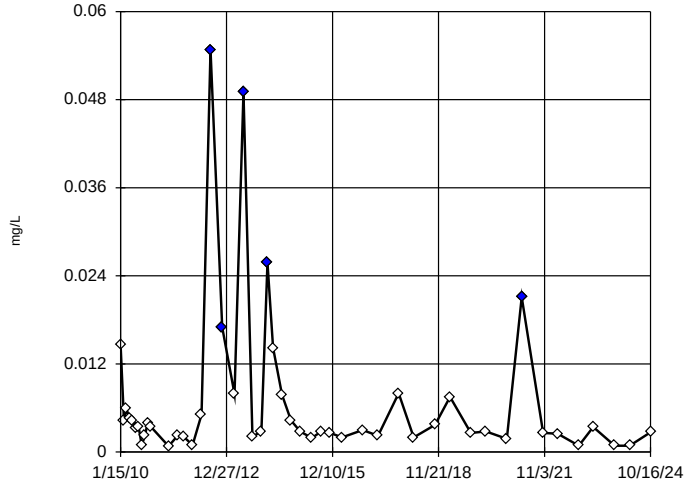
Normality test used:
Shapiro Wilk@alpha = 0.01
Calculated = 0.9705
Critical = 0.929
The distribution was found to be normally distributed.

Constituent: Magnesium Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 48

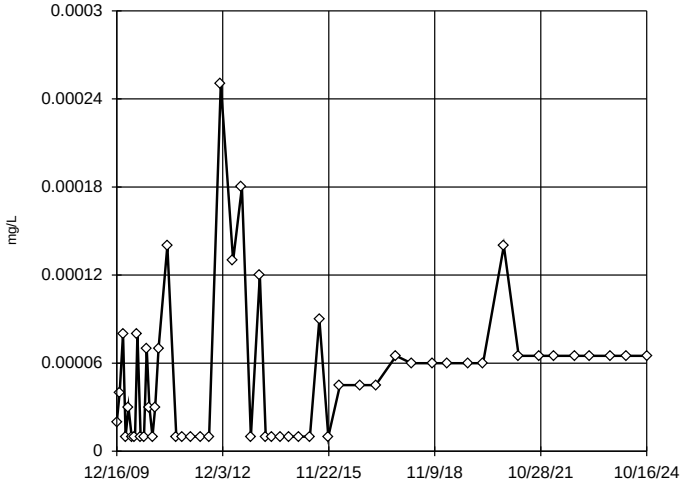
Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

High cutoff = 0.01555, low cutoff = -0.0079, based on IQR multiplier of 3.

Constituent: Manganese Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 52

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Francia normality test failed at the 0.01 alpha level.

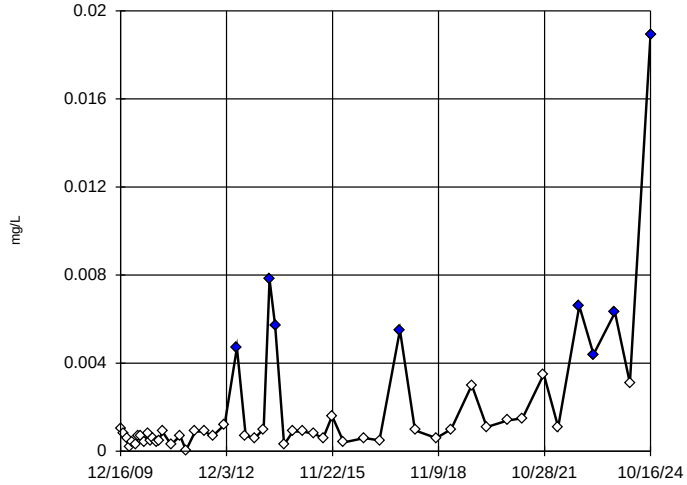
The results were invalidated, because both the lower and upper quartiles represent reporting limits.

Constituent: Mercury Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 52

Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the Shapiro Francia normality test failed at the 0.01 alpha level.

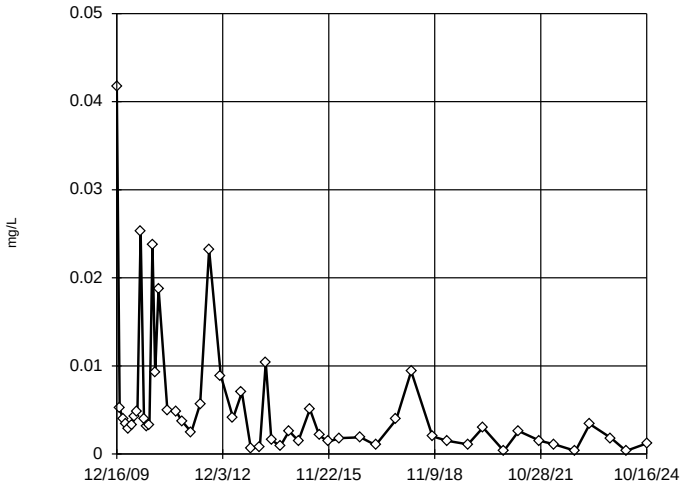
High cutoff = 0.004, low cutoff = -0.00195, based on IQR multiplier of 3.

Constituent: Molybdenum Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

EPA Screening (suspected outliers for Rosner's Test)

ReiterFarm (bg)



n = 52

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.00552, std. dev. 0.007723, critical Tn 2.971

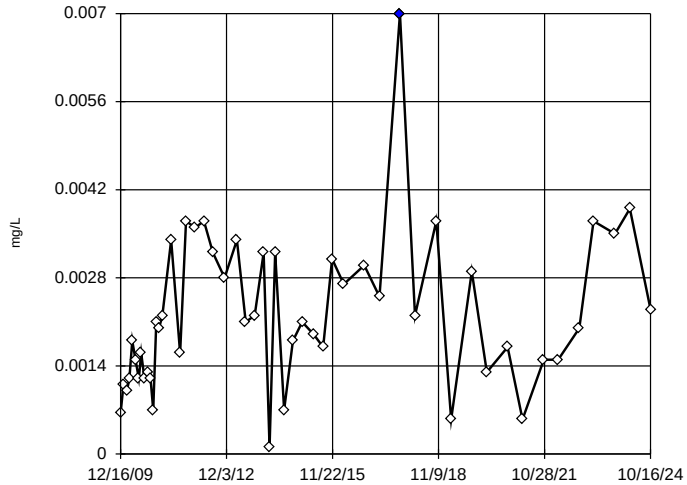
Normality test used:
Shapiro Francia@alpha = 0.01
Calculated = 0.9772
Critical = 0.937 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Nickel Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

Rosner's Outlier Test / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 52

Statistical outlier is drawn as solid.

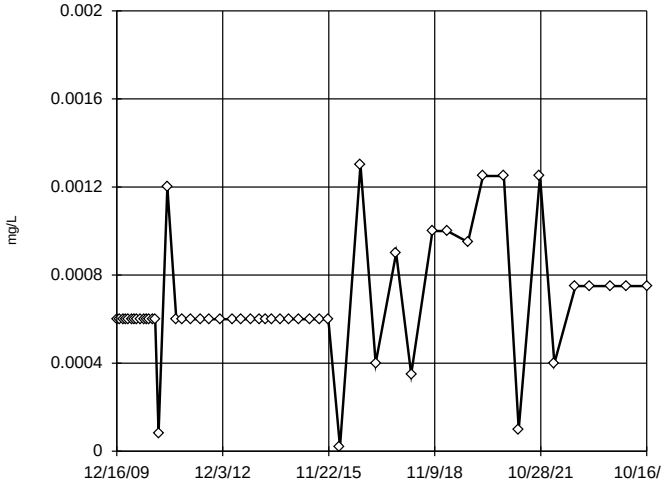
k = 1
r = 3.944
Tabulated value = 3.098
Alpha = 0.01

Normality test used:
Shapiro Francia@alpha = 0.01
Calculated = 0.9716
Critical = 0.935 (after natural log transformation)
The distribution, after removal of suspect value, was found to be log-normal.

Constituent: Selenium Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



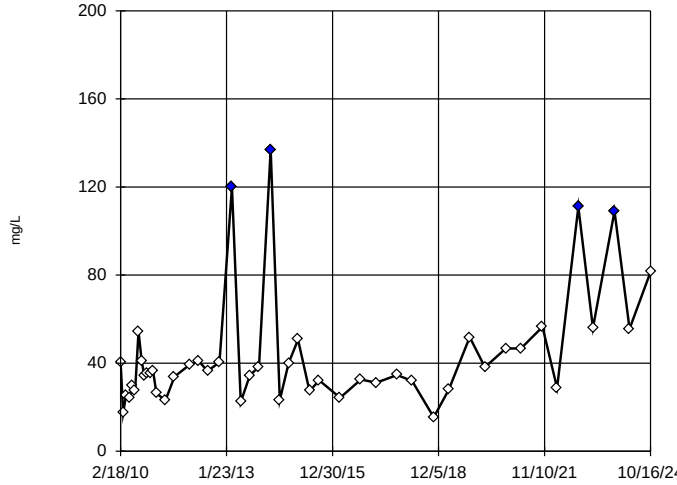
n = 52

No statistical outliers.

Constituent: Silver Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 47

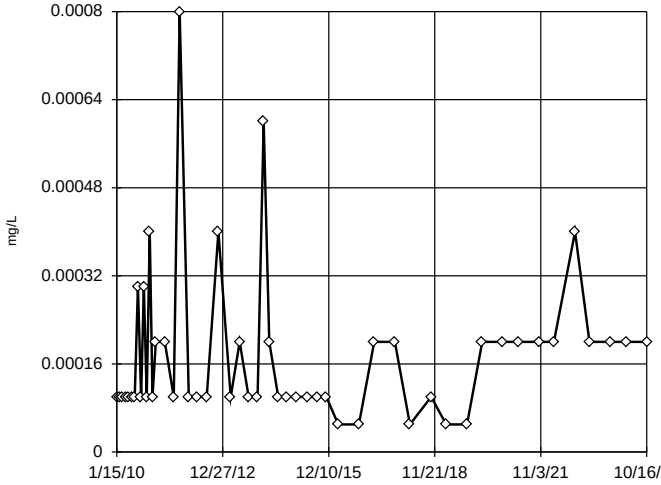
Outliers are drawn as solid.
Tukey's method used in lieu of parametric test because the Shapiro Wilk normality test failed at the 0.01 alpha level.

High cutoff = 103.1, low cutoff = -28.5, based on IQR multiplier of 3.

Constituent: Sulfate Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



n = 51

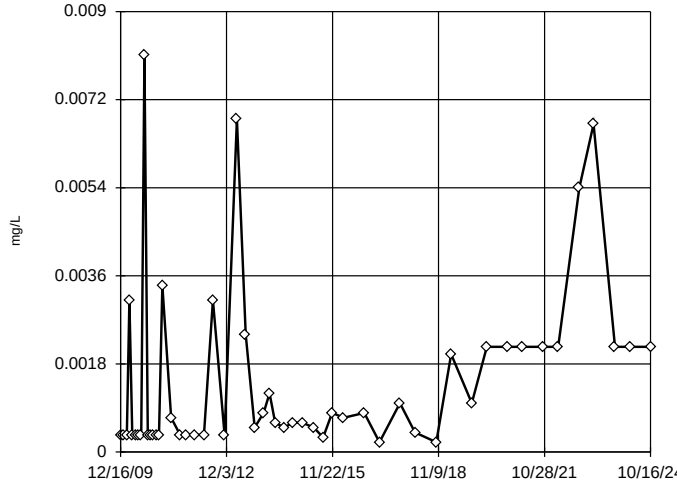
No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Francia normality test failed at the 0.01 alpha level.

The results were invalid-ated, because both the lower and upper quartiles represent reporting limits.

Constituent: Thallium Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Tukey's Outlier Screening / Ohio EPA 0715 Outlier Algorithm

ReiterFarm (bg)



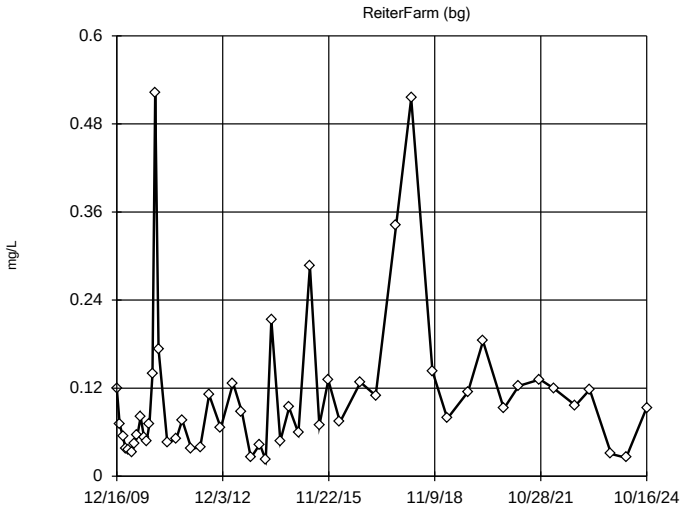
n = 52

No outliers found.
Tukey's method used in lieu of parametric test because the Shapiro Francia normality test failed at the 0.01 alpha level.

The results were invalid-ated, because both the lower and upper quartiles represent reporting limits.

Constituent: Vanadium Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

EPA Screening (suspected outliers for Rosner's Test)



n = 52

Rosner's will not be run.
No suspect values identified or unable to establish suspect values.
Ohio method in use.
Mean 0.1094, std. dev. 0.1035, critical Tn 2.971

Normality test used:
Shapiro Francia@alpha = 0.01
Calculated = 0.9716
Critical = 0.937 (after natural log transformation)
The distribution was found to be log-normal.

Constituent: Zinc Analysis Run 1/31/2025 12:21 AM View: 2024AWQR-BG Outliers
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: Sanitas ISU CCR master

Mann-Kendall/Sen’s Slope Trend Test Summary Table and Graphs

Trend Test

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM Printed 1/31/2025, 10:29 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Alpha	Method
Aluminum (mg/L)	Well#1	0	1	21	No	8	87.5	0.01	NP
Aluminum (mg/L)	Well#2	0	-4	-21	No	8	50	0.01	NP
Aluminum (mg/L)	Well#3	0	-2	-21	No	8	50	0.01	NP
Aluminum (mg/L)	Well#4	0.07126	7	21	No	8	25	0.01	NP
Arsenic (mg/L)	Well#1	-0.00007081	-2	-21	No	8	0	0.01	NP
Arsenic (mg/L)	Well#2	0.0002365	15	21	No	8	25	0.01	NP
Arsenic (mg/L)	Well#3	0.0002414	8	21	No	8	25	0.01	NP
Arsenic (mg/L)	Well#4	0.000274	10	21	No	8	25	0.01	NP
Barium (mg/L)	Well#1	-0.102	-18	-21	No	8	0	0.01	NP
Barium (mg/L)	Well#2	0.006112	10	21	No	8	0	0.01	NP
Barium (mg/L)	Well#3	-0.0108	-10	-21	No	8	0	0.01	NP
Barium (mg/L)	Well#4	-0.002892	0	21	No	8	0	0.01	NP
Chloride (mg/L)	Well#1	0.2255	15	21	No	8	0	0.01	NP
Chloride (mg/L)	Well#2	0	0	21	No	8	0	0.01	NP
Chloride (mg/L)	Well#3	-0.5246	-6	-21	No	8	0	0.01	NP
Chloride (mg/L)	Well#4	2.629	10	21	No	8	0	0.01	NP
Chloroform (ug/L)	Well#3	0	-7	-21	No	8	87.5	0.01	NP
Chromium (mg/L)	Well#2	-0.0001685	-12	-21	No	8	62.5	0.01	NP
Chromium (mg/L)	Well#3	0	-8	-21	No	8	62.5	0.01	NP
Chromium (mg/L)	Well#4	0.0002238	7	21	No	8	25	0.01	NP
Copper (mg/L)	Well#1	0.0002539	8	21	No	8	0	0.01	NP
Copper (mg/L)	Well#2	-0.0005763	-8	-21	No	8	0	0.01	NP
Copper (mg/L)	Well#3	-0.0001282	-2	-21	No	8	0	0.01	NP
Copper (mg/L)	Well#4	0.001164	8	21	No	8	0	0.01	NP
Fluoride (mg/L)	Well#1	0	8	21	No	8	0	0.01	NP
Fluoride (mg/L)	Well#2	0.04569	14	21	No	8	0	0.01	NP
Fluoride (mg/L)	Well#3	0	-1	-21	No	8	0	0.01	NP
Fluoride (mg/L)	Well#4	0	-1	-21	No	8	0	0.01	NP
Iron (mg/L)	Well#1	-0.04496	-6	-21	No	8	0	0.01	NP
Iron (mg/L)	Well#2	0.004102	0	21	No	8	0	0.01	NP
Iron (mg/L)	Well#3	0.01447	2	21	No	8	12.5	0.01	NP
Iron (mg/L)	Well#4	0.04617	4	21	No	8	12.5	0.01	NP
Lead (mg/L)	Well#1	-0.00003485	-10	-21	No	8	62.5	0.01	NP
Lead (mg/L)	Well#2	-0.0001252	-10	-21	No	8	50	0.01	NP
Lead (mg/L)	Well#3	0	-5	-21	No	8	75	0.01	NP
Lead (mg/L)	Well#4	0.0002	9	21	No	8	37.5	0.01	NP
Magnesium (mg/L)	Well#1	0.1	3	21	No	8	0	0.01	NP
Magnesium (mg/L)	Well#2	0.7052	6	21	No	8	0	0.01	NP
Magnesium (mg/L)	Well#3	-0.2412	-5	-21	No	8	0	0.01	NP
Magnesium (mg/L)	Well#4	-2.122	-14	-21	No	8	0	0.01	NP
Manganese (mg/L)	Well#1	-0.001606	-4	-21	No	8	0	0.01	NP
Manganese (mg/L)	Well#2	-0.001893	-6	-21	No	8	0	0.01	NP
Manganese (mg/L)	Well#3	-0.0006507	-2	-21	No	8	0	0.01	NP
Manganese (mg/L)	Well#4	0.0008279	2	21	No	8	0	0.01	NP
Molybdenum (mg/L)	Well#2	0	-1	-21	No	8	75	0.01	NP
Molybdenum (mg/L)	Well#3	-0.0002924	-6	-21	No	8	0	0.01	NP
Molybdenum (mg/L)	Well#4	0.00057	9	21	No	8	0	0.01	NP
Nickel (mg/L)	Well#1	0.00001933	1	21	No	8	25	0.01	NP
Nickel (mg/L)	Well#3	-0.0009259	-12	-21	No	8	0	0.01	NP
Nickel (mg/L)	Well#4	0.0002424	4	21	No	8	0	0.01	NP

Trend Test

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM Printed 1/31/2025, 10:29 AM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Alpha	Method
Selenium (mg/L)	Well#3	0	3	21	No	8	75	0.01	NP
Silver (mg/L)	Well#2	0.0002168	12	21	No	8	75	0.01	NP
Sulfate (mg/L)	**Well#1**	**12.83**	**24**	**21**	**Yes**	**8**	**0**	**0.01**	**NP**
Sulfate (mg/L)	Well#2	-4.305	-19	-21	No	8	0	0.01	NP
Sulfate (mg/L)	Well#3	6.56	10	21	No	8	0	0.01	NP
Sulfate (mg/L)	Well#4	4.968	8	21	No	8	0	0.01	NP
Thallium (mg/L)	Well#1	0	1	21	No	8	87.5	0.01	NP
Thallium (mg/L)	Well#2	0	-1	-21	No	8	75	0.01	NP
Thallium (mg/L)	Well#3	0	-1	-21	No	8	87.5	0.01	NP
Vanadium (mg/L)	Well#3	0	1	21	No	8	75	0.01	NP
Vanadium (mg/L)	Well#4	0	6	21	No	8	62.5	0.01	NP
Zinc (mg/L)	Well#2	0	-3	-21	No	8	87.5	0.01	NP
Zinc (mg/L)	Well#3	0	-5	-21	No	8	87.5	0.01	NP

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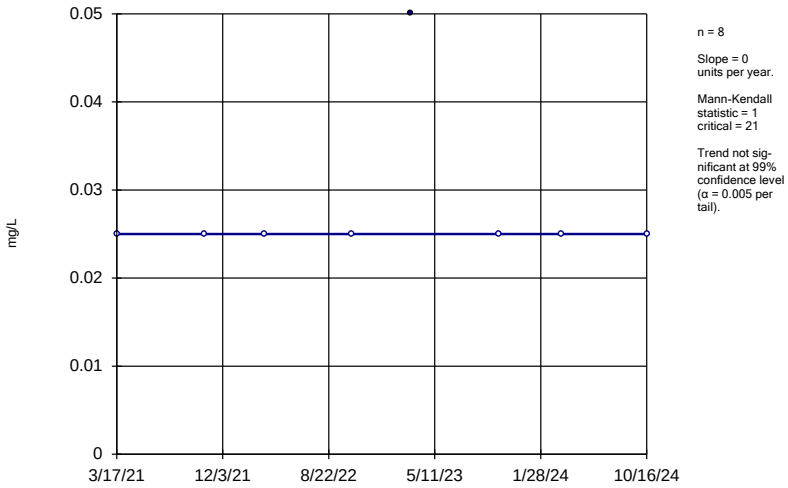
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#1

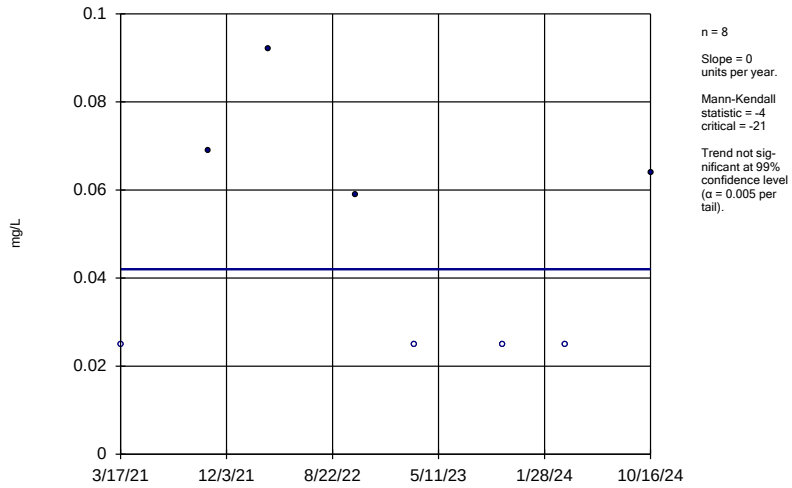


Constituent: Aluminum Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#2

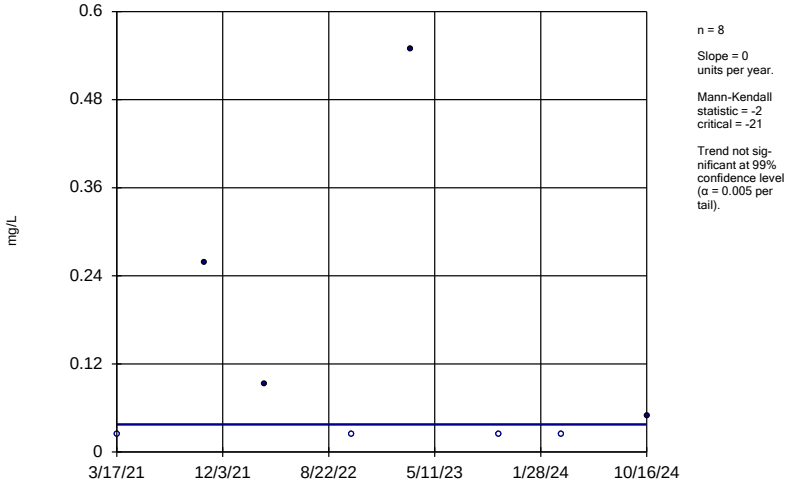


Constituent: Aluminum Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



Constituent: Aluminum Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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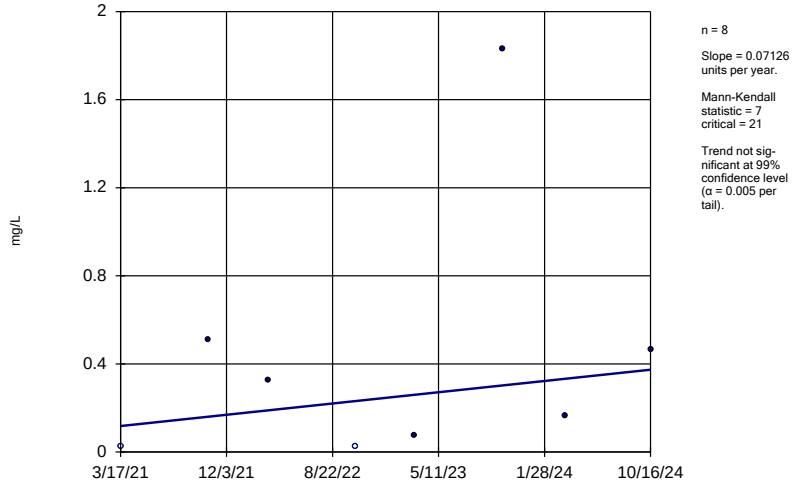
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#4



Constituent: Aluminum Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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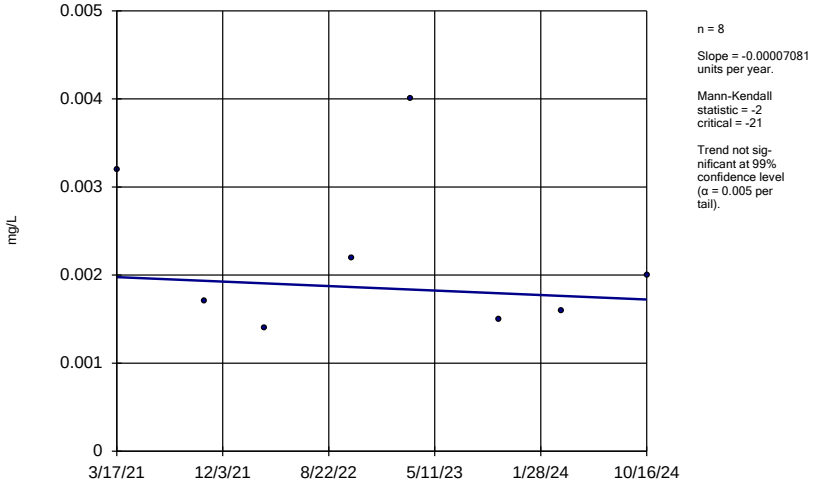
Sen's Slope Estimator

Well#1



Constituent: Arsenic Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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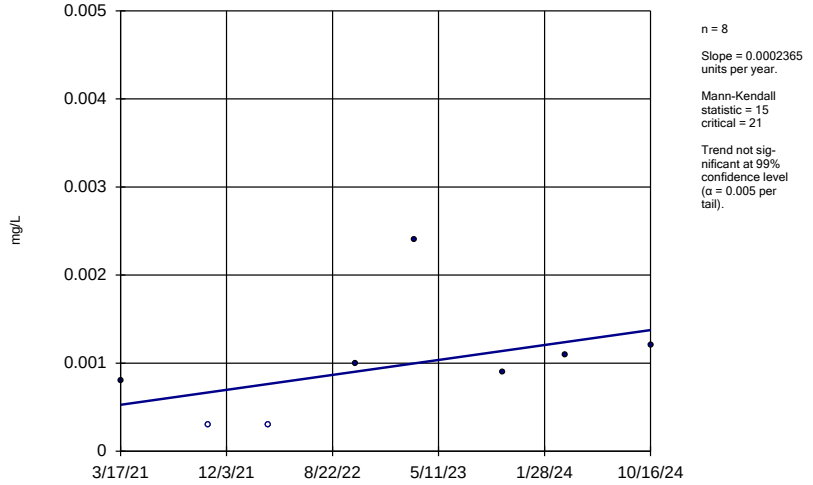
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#2



Constituent: Arsenic Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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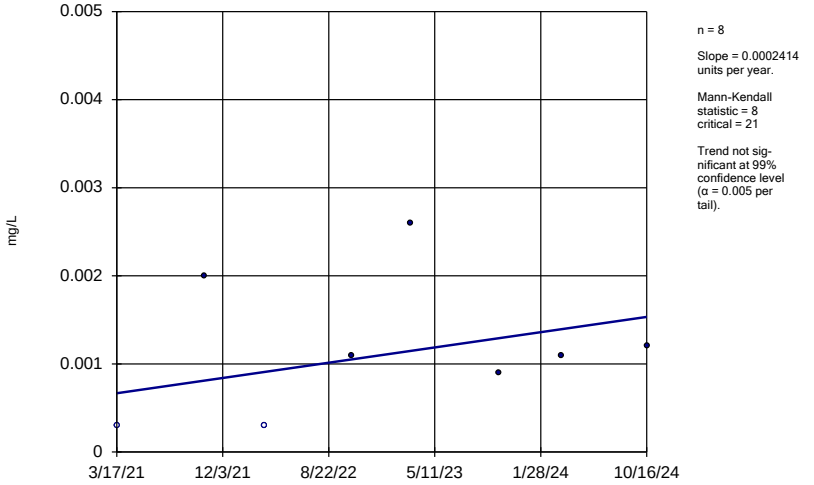
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



Constituent: Arsenic Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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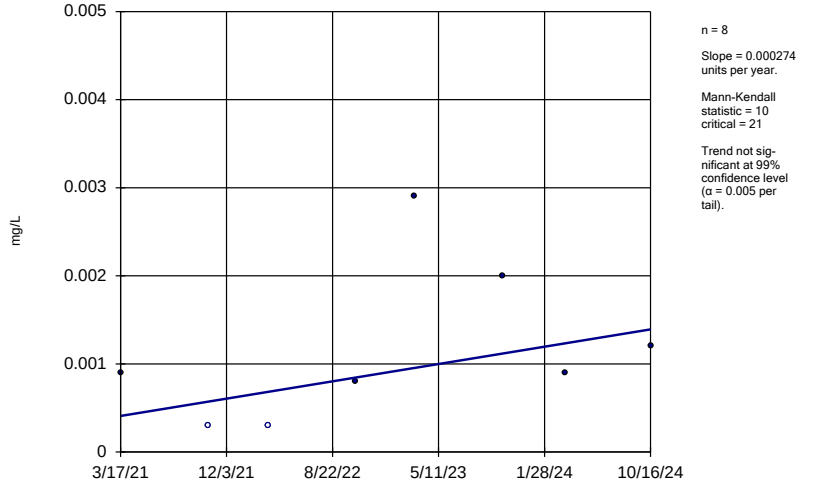
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#4

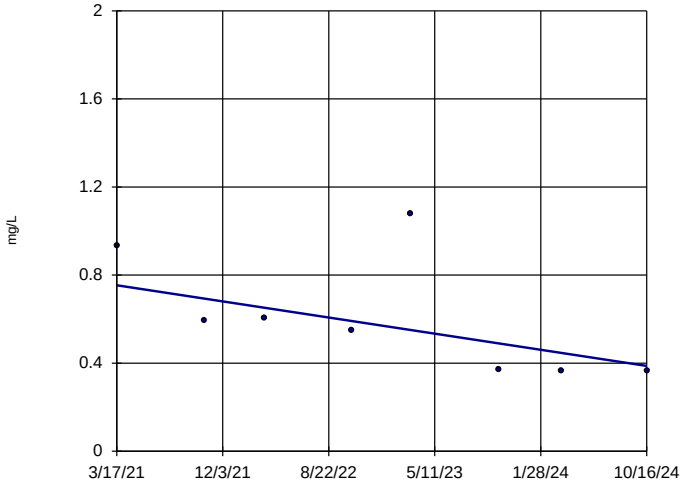


Constituent: Arsenic Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sen's Slope Estimator

Well#1



n = 8

Slope = -0.102 units per year.

Mann-Kendall statistic = -18
critical = -21

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

Constituent: Barium Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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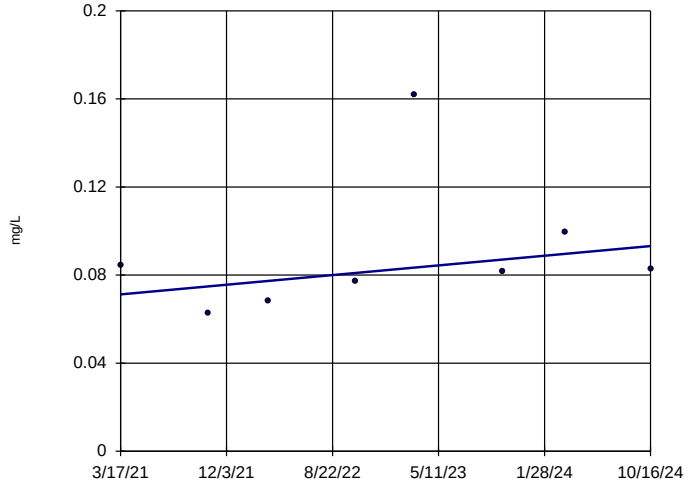
Sen's Slope Estimator

Well#2



n = 8

Slope = 0.006112 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 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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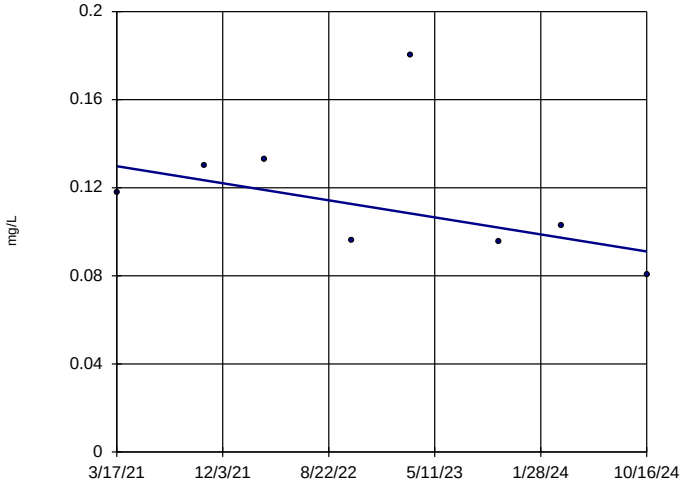
Sen's Slope Estimator

Well#3



n = 8

Slope = -0.0108 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 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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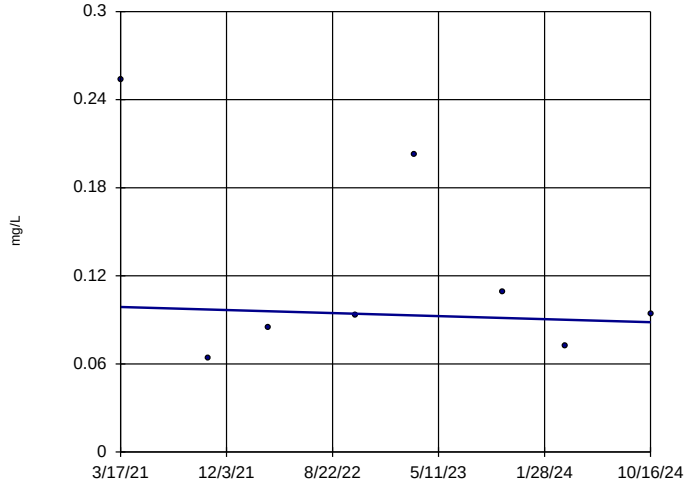
Sen's Slope Estimator

Well#4



n = 8

Slope = -0.002892 units per year.

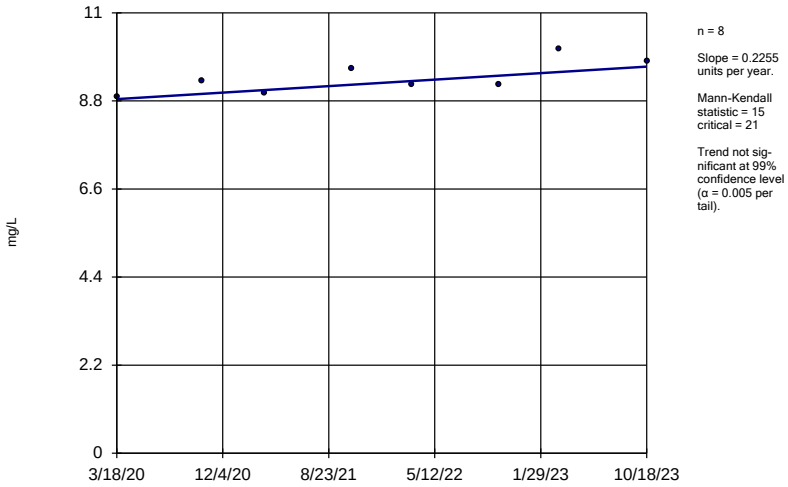
Mann-Kendall statistic = 0
critical = 21

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

Constituent: Barium Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sen's Slope Estimator

Well#1



Constituent: Chloride Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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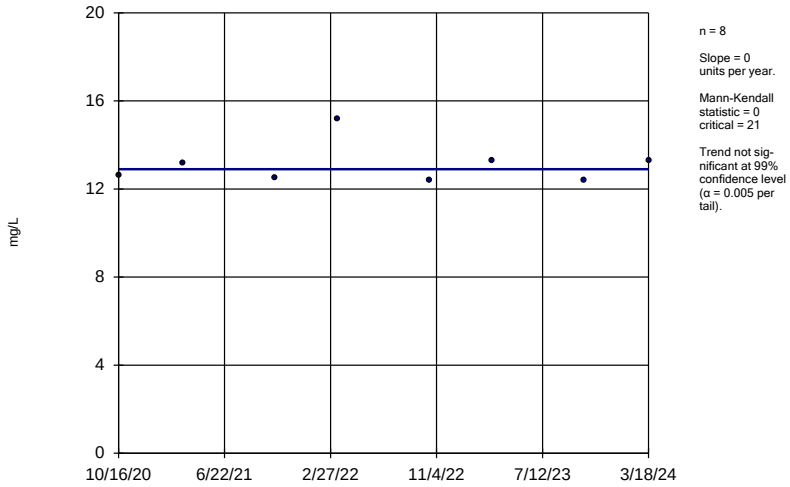
Sen's Slope Estimator

Well#2



Constituent: Chloride Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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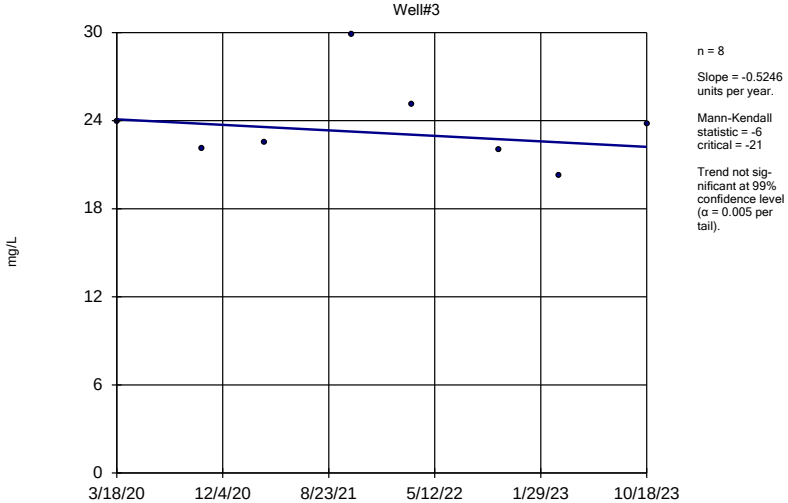
Sen's Slope Estimator

Well#3



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BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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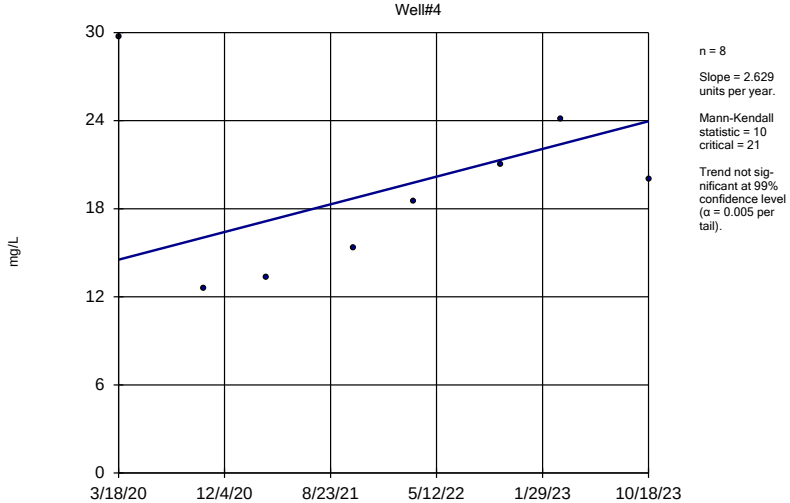
Sen's Slope Estimator

Well#4



Constituent: Chloride Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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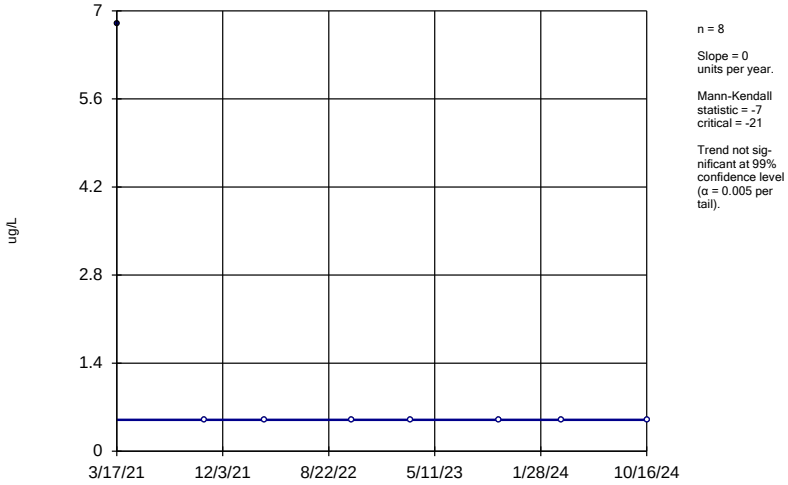
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



n = 8

Slope = 0
units per year.

Mann-Kendall
statistic = -7
critical = -21

Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Chloroform Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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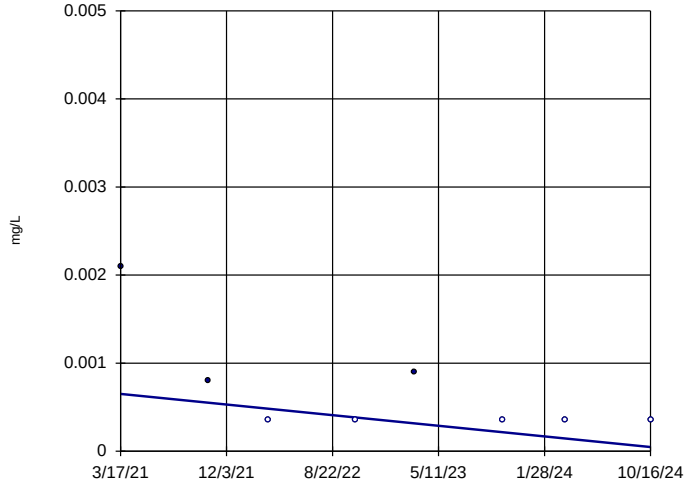
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#2



n = 8

Slope = -0.0001685
units per year.

Mann-Kendall
statistic = -12
critical = -21

Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Chromium Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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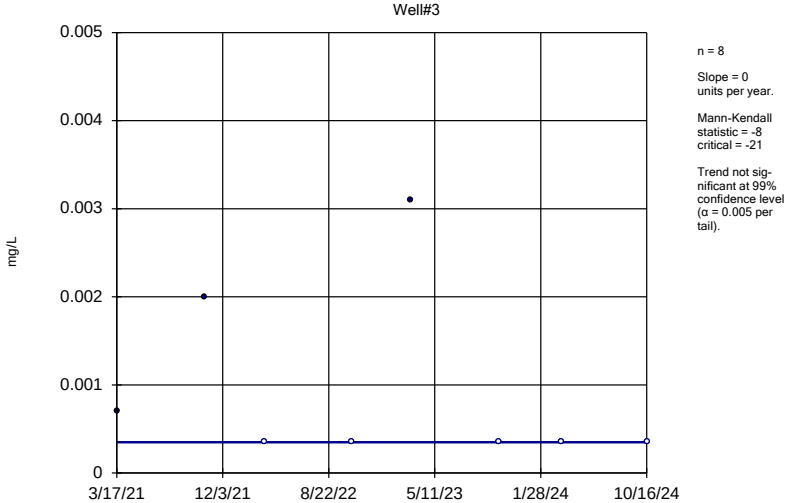
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



n = 8

Slope = 0
units per year.

Mann-Kendall
statistic = -8
critical = -21

Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Chromium Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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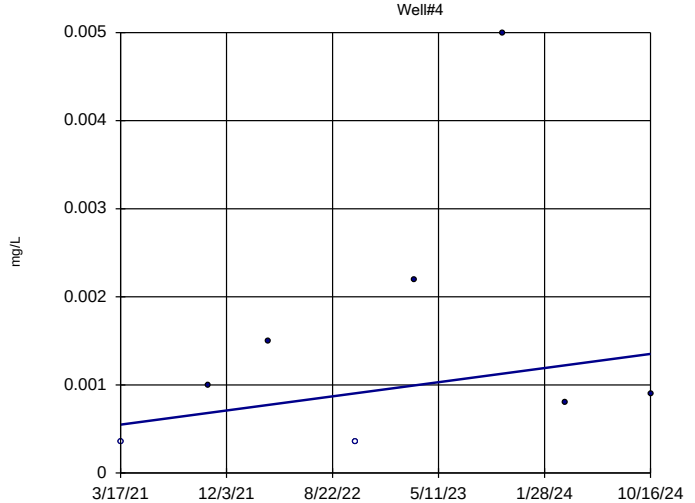
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#4



n = 8

Slope = 0.0002238
units per year.

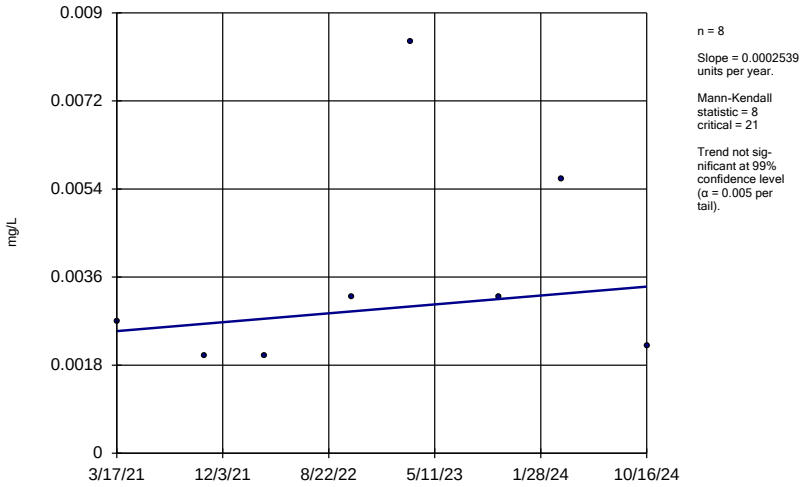
Mann-Kendall
statistic = 7
critical = 21

Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Chromium Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sen's Slope Estimator

Well#1

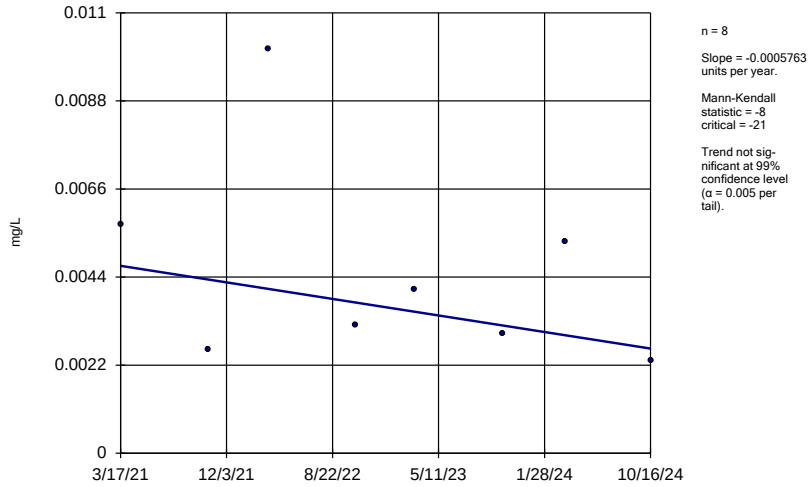


Constituent: Copper Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

Well#2

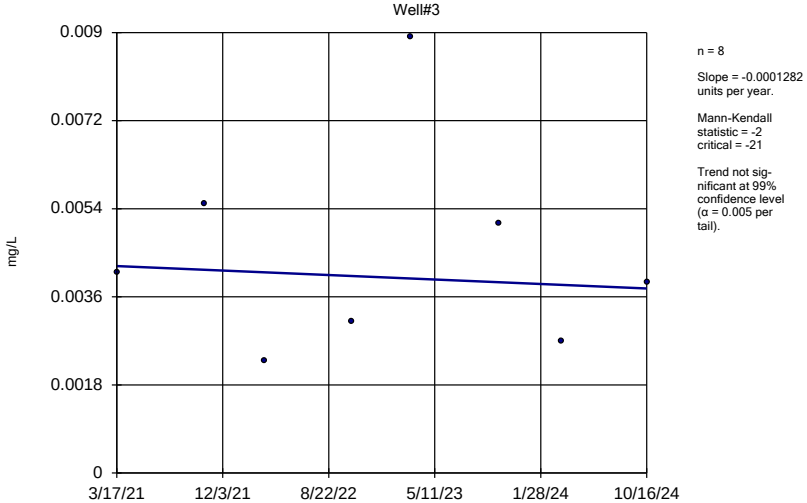


Constituent: Copper Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

Well#3

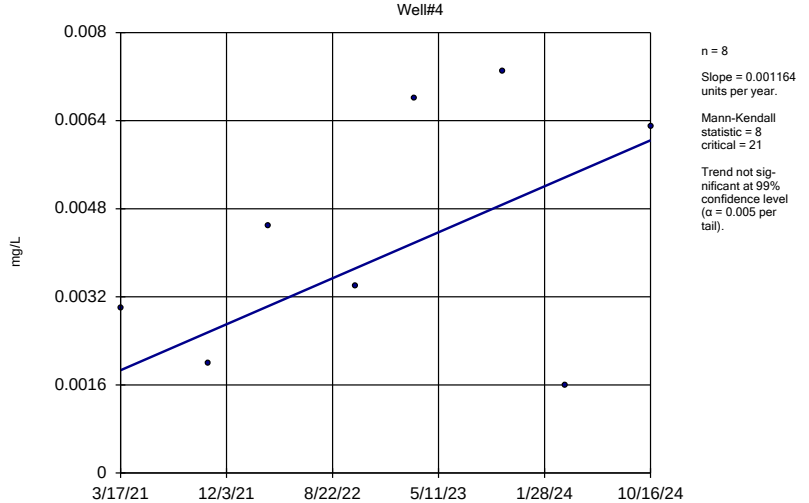


Constituent: Copper Analysis Run 1/31/2025 10:19 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

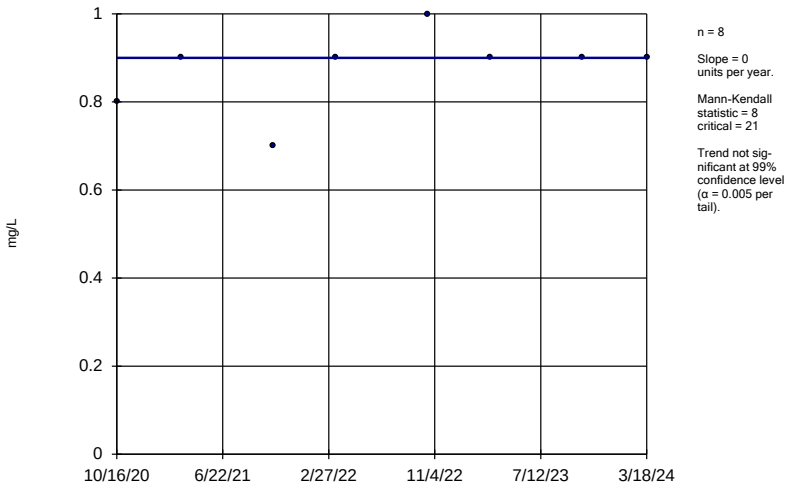
Well#4



Constituent: Copper Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sen's Slope Estimator

Well#1



Constituent: Fluoride Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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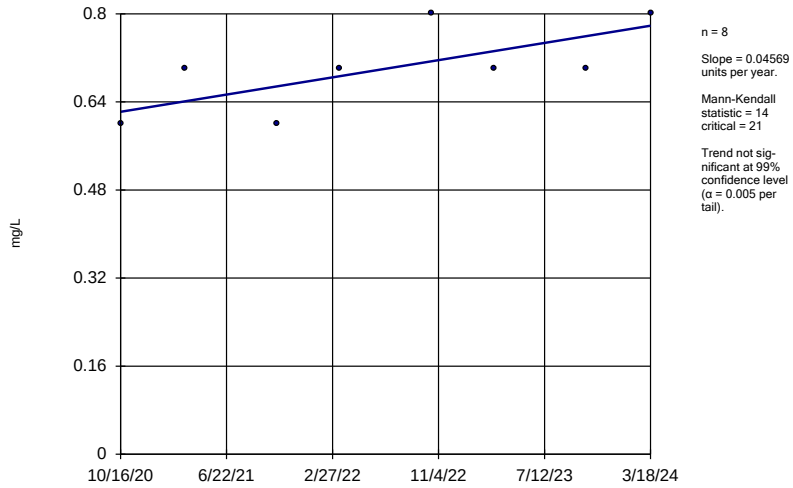
Sen's Slope Estimator

Well#2



Constituent: Fluoride Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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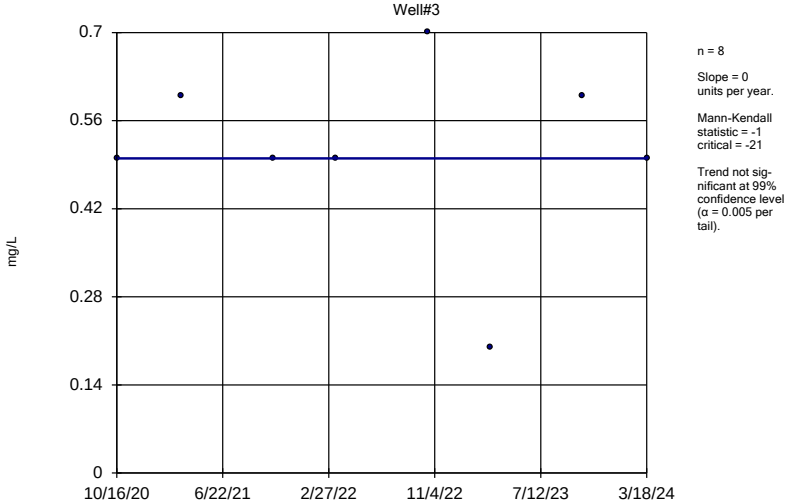
Sen's Slope Estimator

Well#3



Constituent: Fluoride Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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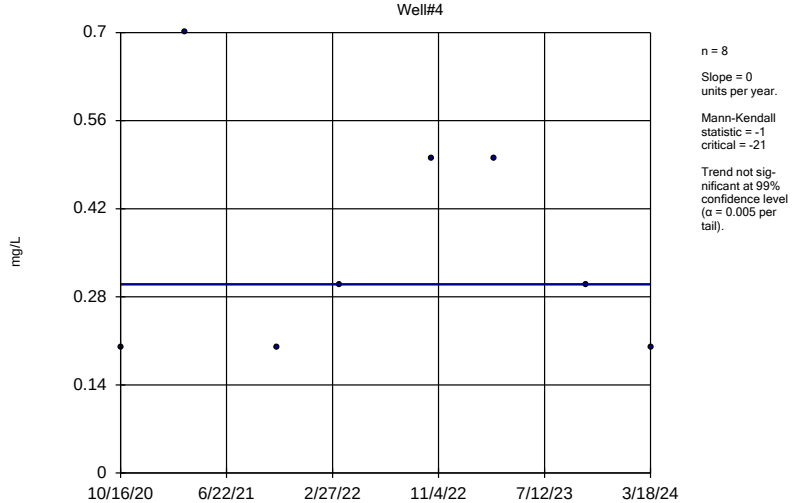
Sen's Slope Estimator

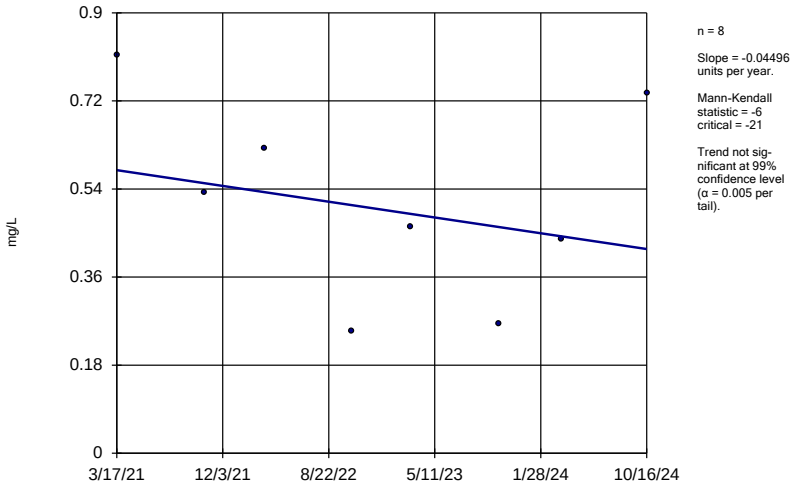
Well#4



Constituent: Fluoride Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sen's Slope Estimator

Well#1



n = 8

Slope = -0.04496 units per year.

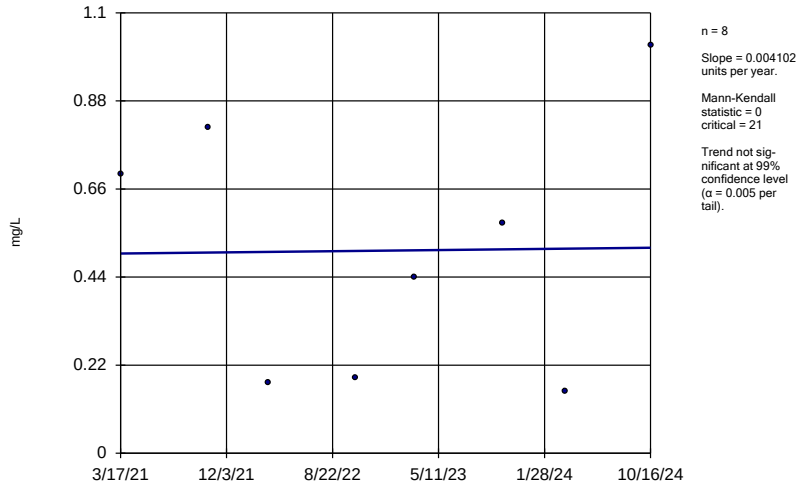
Mann-Kendall statistic = -6
critical = -21

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

Constituent: Iron Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sen's Slope Estimator

Well#2



n = 8

Slope = 0.004102 units per year.

Mann-Kendall statistic = 0
critical = 21

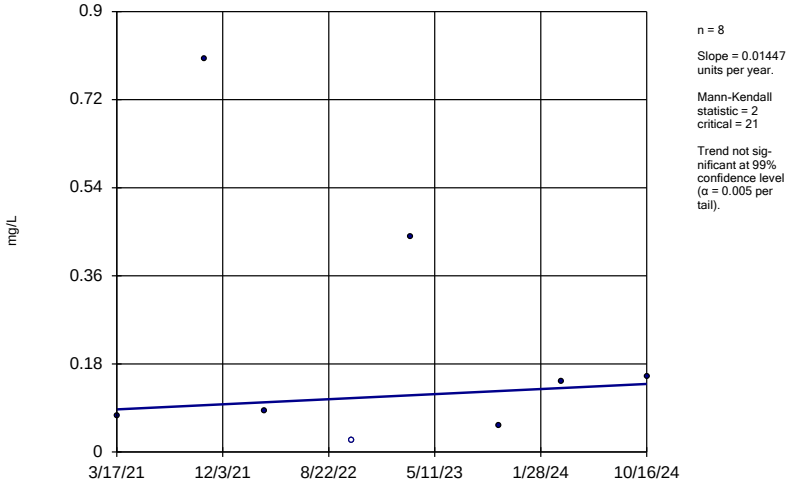
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



n = 8

Slope = 0.01447 units per year.

Mann-Kendall statistic = 2
critical = 21

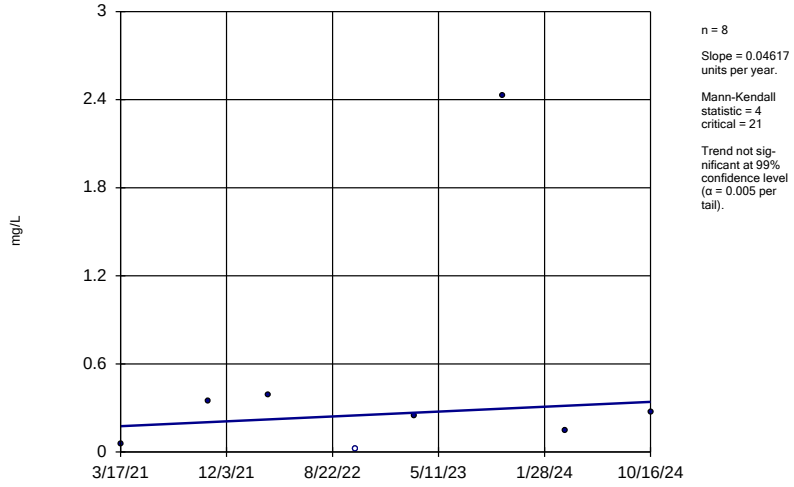
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Iron Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#4



n = 8

Slope = 0.04617 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 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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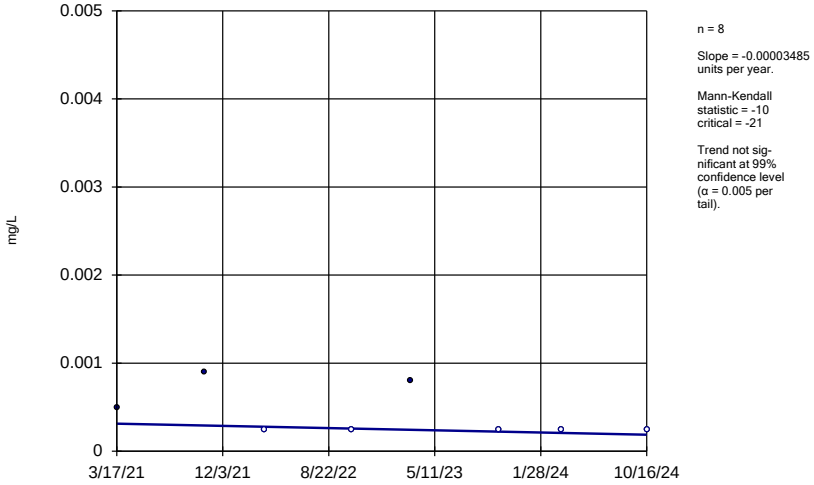
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#1



n = 8

Slope = -0.00003485 units per year.

Mann-Kendall statistic = -10
critical = -21

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

Constituent: Lead Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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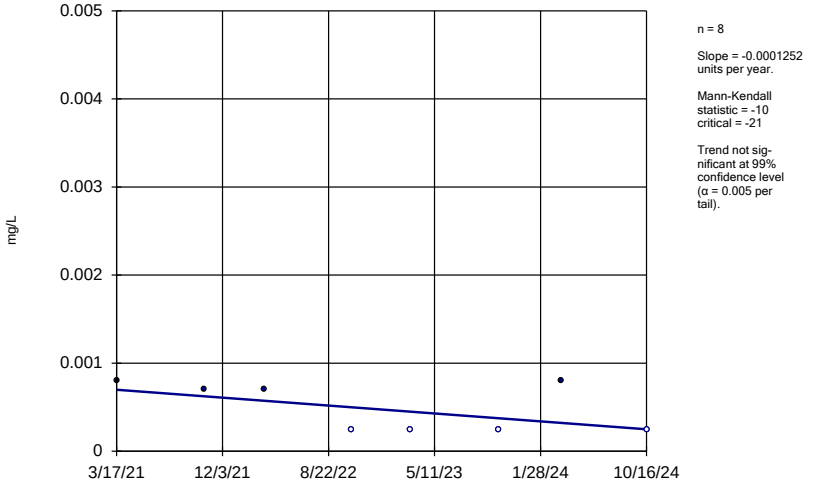
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#2



n = 8

Slope = -0.0001252 units per year.

Mann-Kendall statistic = -10
critical = -21

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

Constituent: Lead Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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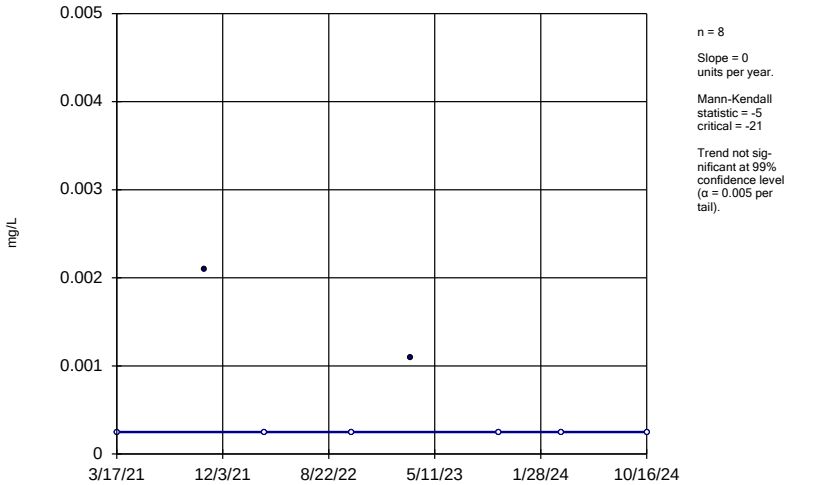
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = -5
critical = -21

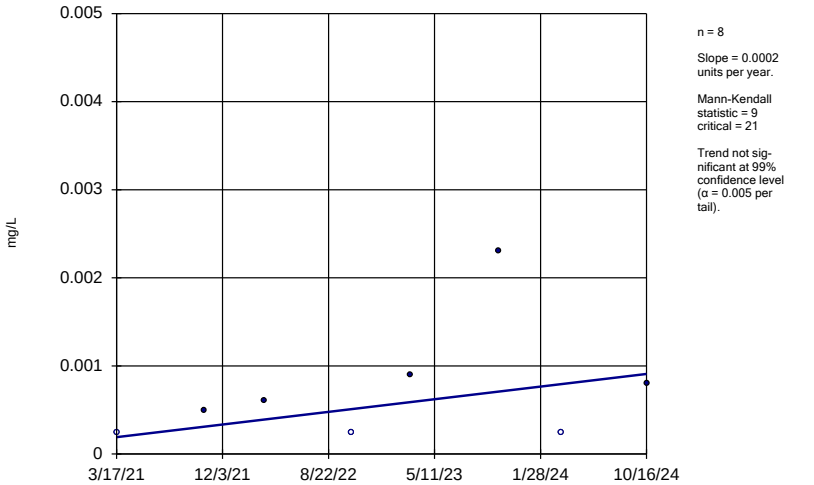
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Lead Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#4



n = 8

Slope = 0.0002 units per year.

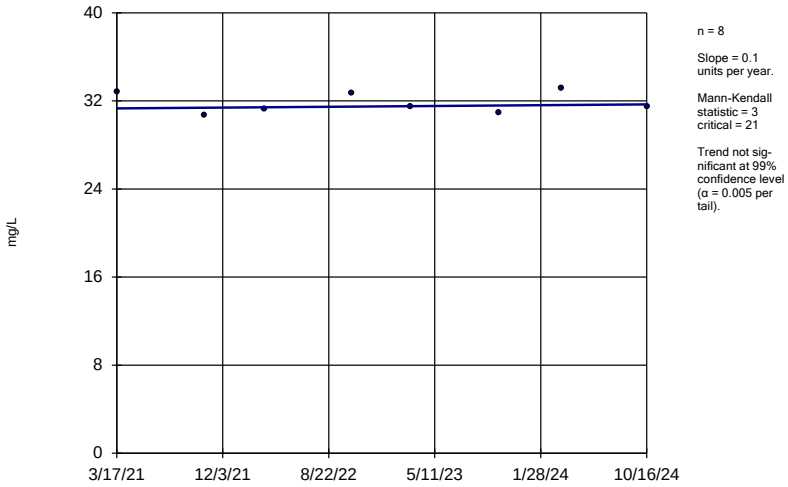
Mann-Kendall statistic = 9
critical = 21

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

Constituent: Lead Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sen's Slope Estimator

Well#1



n = 8

Slope = 0.1 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 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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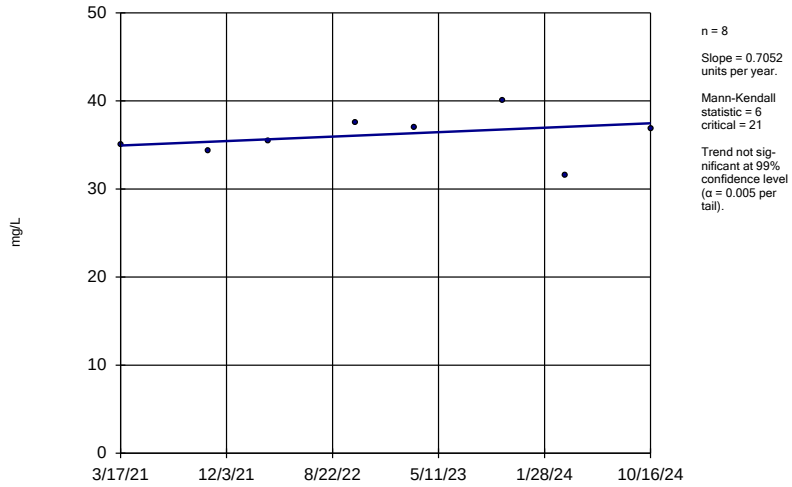
Sen's Slope Estimator

Well#2



n = 8

Slope = 0.7052 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 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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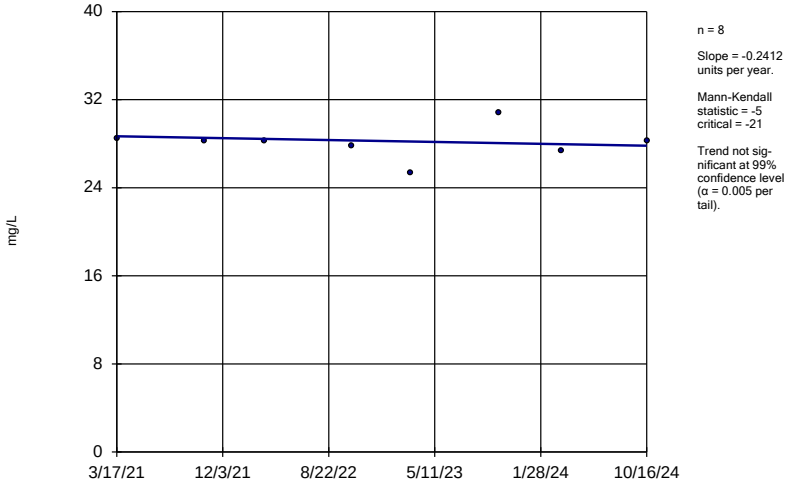
Sen's Slope Estimator

Well#3



n = 8

Slope = -0.2412 units per year.

Mann-Kendall statistic = -5 critical = -21

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

Constituent: Magnesium Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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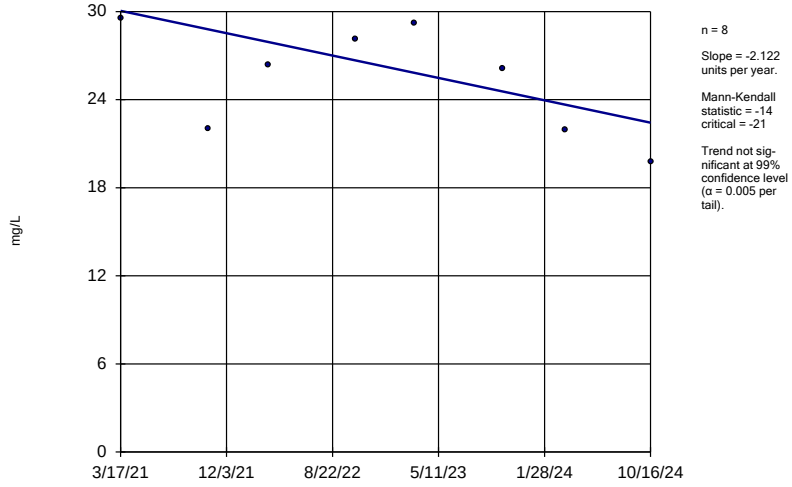
Sen's Slope Estimator

Well#4



n = 8

Slope = -2.122 units per year.

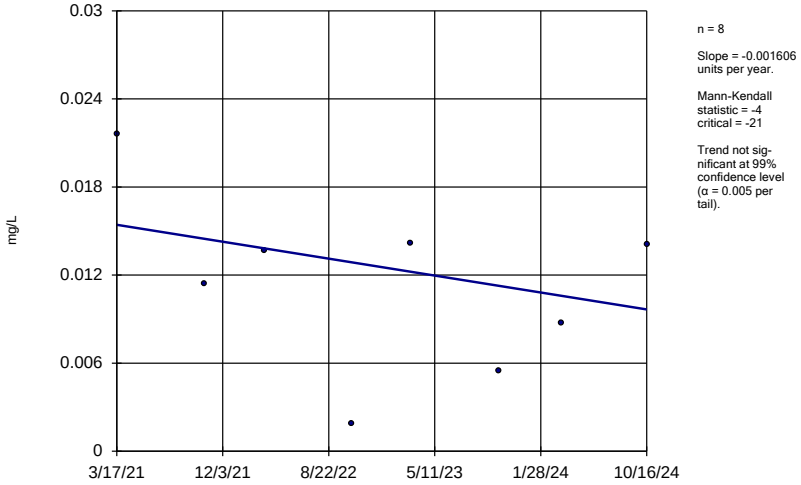
Mann-Kendall statistic = -14 critical = -21

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

Constituent: Magnesium Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sen's Slope Estimator

Well#1



n = 8

Slope = -0.001606 units per year.

Mann-Kendall statistic = -4
critical = -21

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

Constituent: Manganese Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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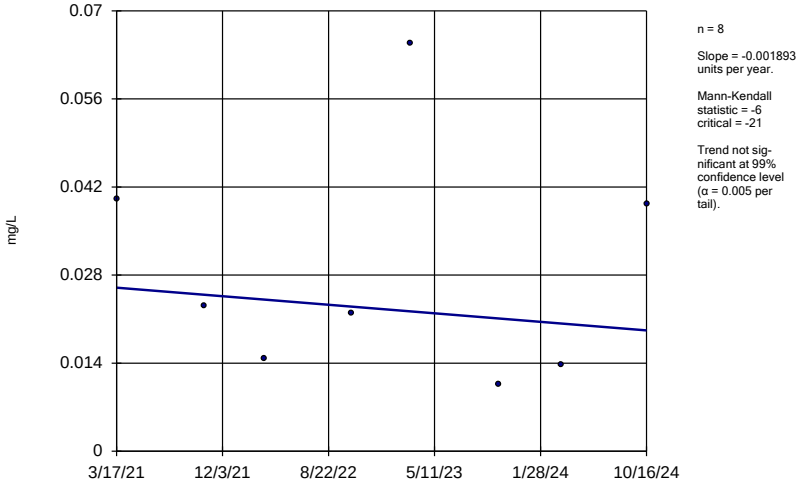
Sen's Slope Estimator

Well#2



n = 8

Slope = -0.001893 units per year.

Mann-Kendall statistic = -6
critical = -21

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

Constituent: Manganese Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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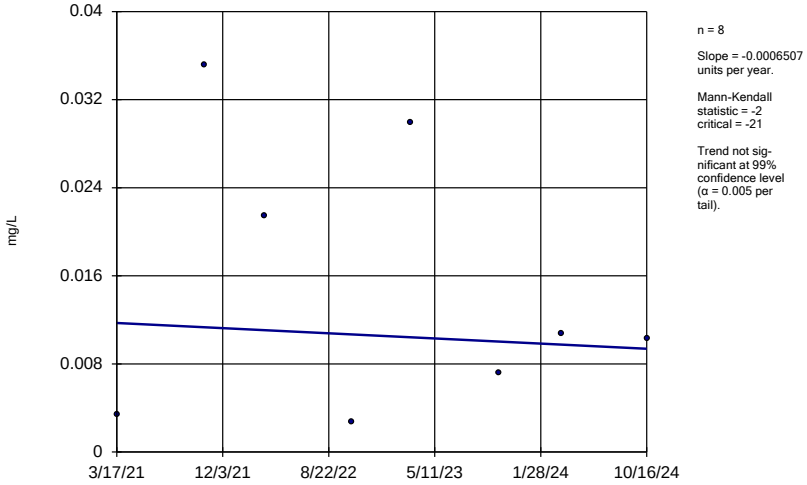
Sen's Slope Estimator

Well#3



n = 8

Slope = -0.0006507 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 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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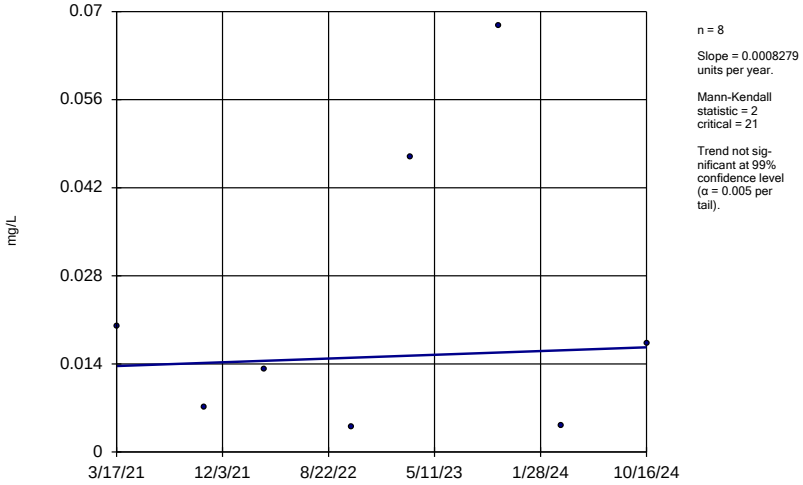
Sen's Slope Estimator

Well#4



n = 8

Slope = 0.0008279 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 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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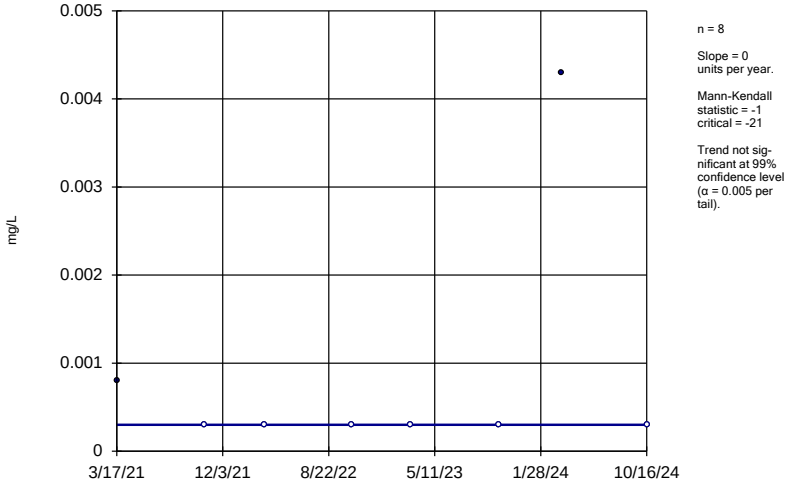
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#2



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: Molybdenum Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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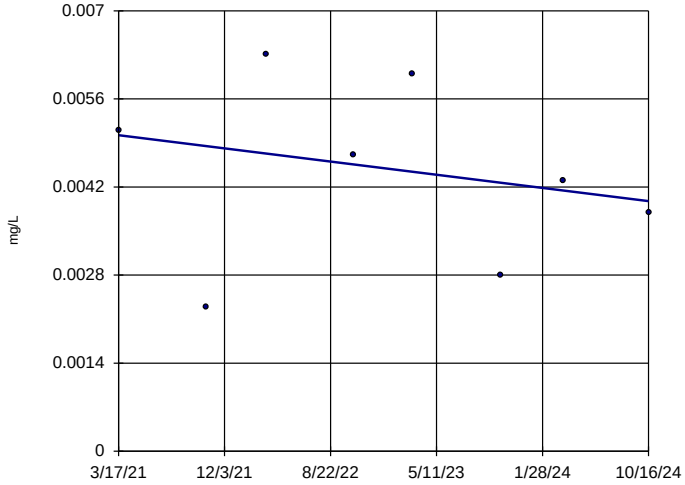
Sen's Slope Estimator

Well#3



n = 8

Slope = -0.0002924
units per year.

Mann-Kendall
statistic = -6
critical = -21

Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Molybdenum Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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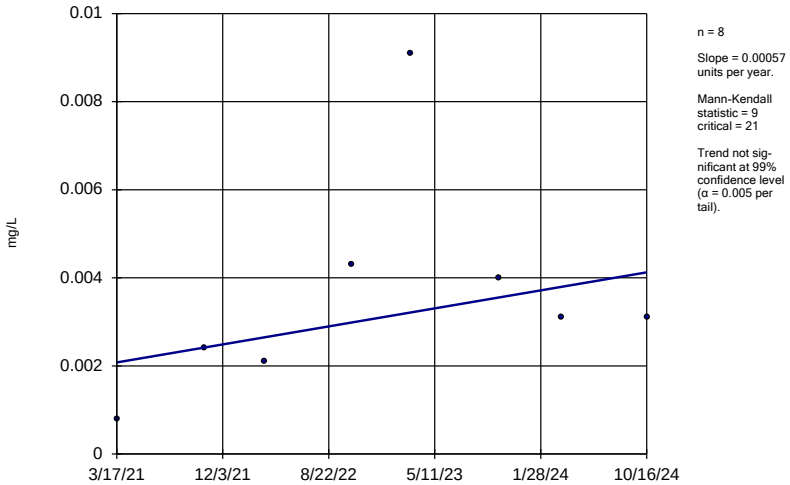
Sen's Slope Estimator

Well#4



n = 8

Slope = 0.00057
units per year.

Mann-Kendall
statistic = 9
critical = 21

Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Molybdenum Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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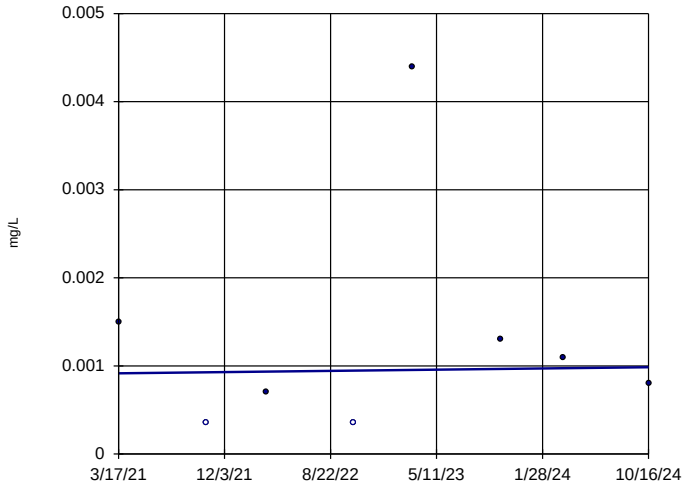
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#1



n = 8

Slope = 0.00001933
units per year.

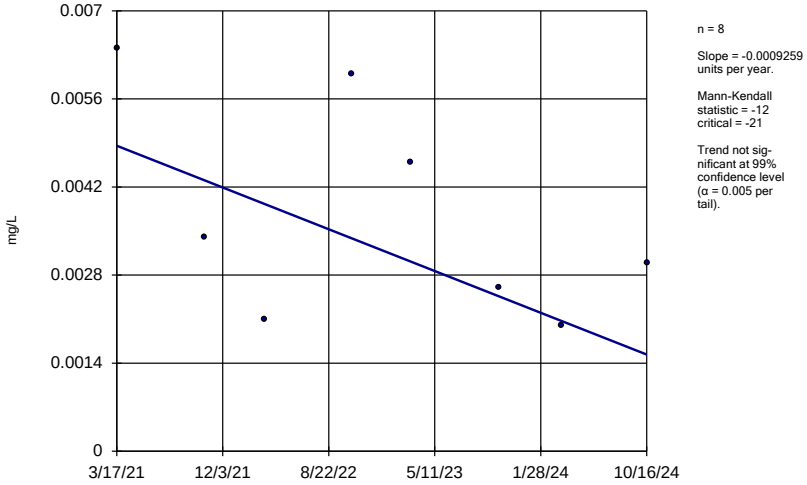
Mann-Kendall
statistic = 1
critical = 21

Trend not sig-
nificant at 99%
confidence level
(α = 0.005 per
tail).

Constituent: Nickel Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sen's Slope Estimator

Well#3



n = 8

Slope = -0.0009259 units per year.

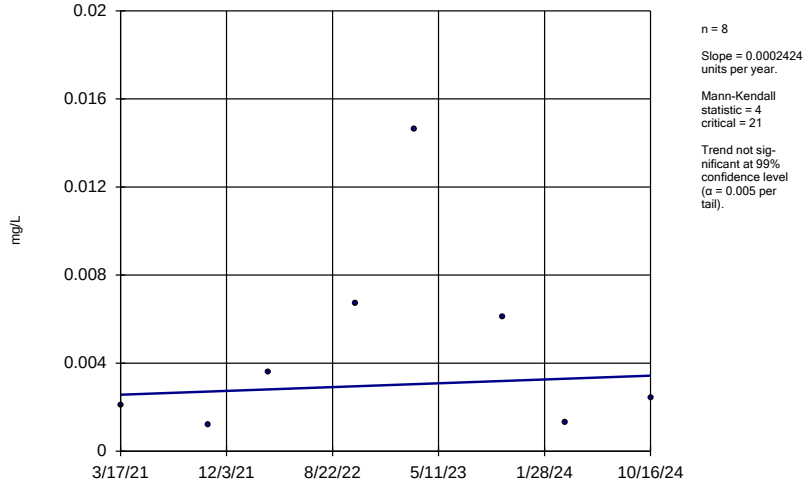
Mann-Kendall statistic = -12
critical = -21

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

Constituent: Nickel Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sen's Slope Estimator

Well#4



n = 8

Slope = 0.0002424 units per year.

Mann-Kendall statistic = 4
critical = 21

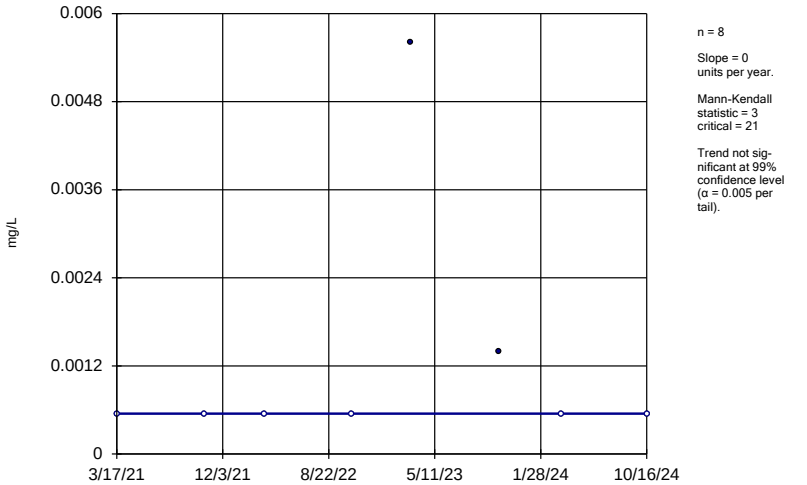
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Nickel Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



n = 8

Slope = 0 units per year.

Mann-Kendall statistic = 3
critical = 21

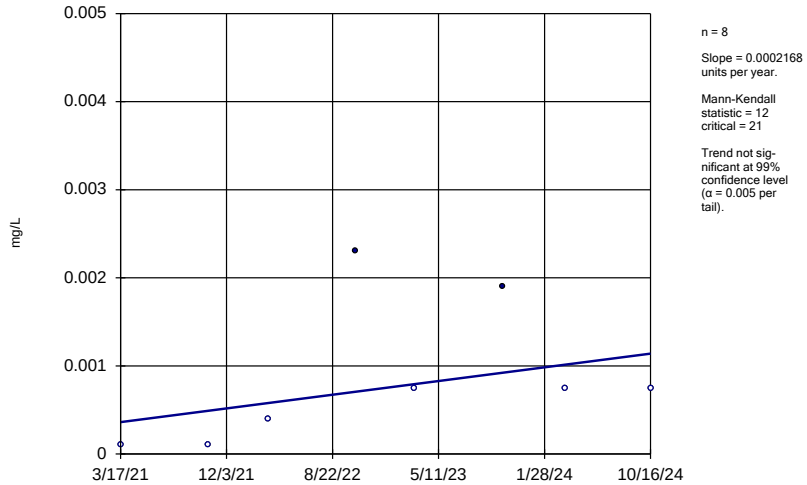
Trend not significant at 99% confidence level (α = 0.005 per tail).

Constituent: Selenium Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#2



n = 8

Slope = 0.0002168 units per year.

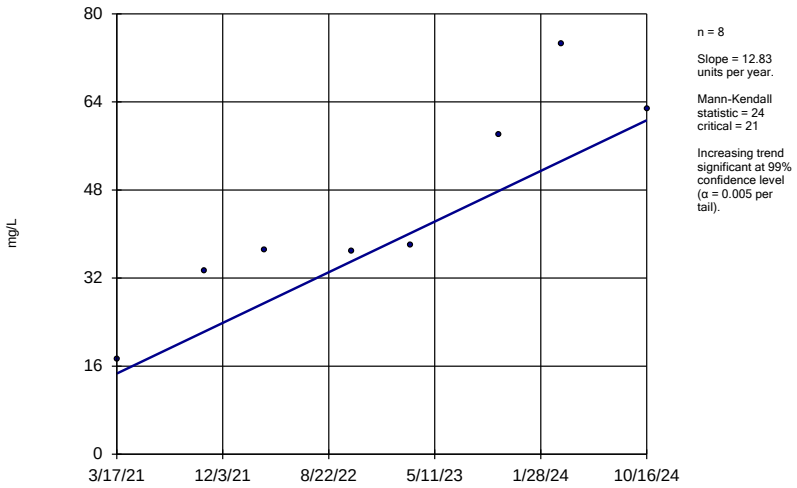
Mann-Kendall statistic = 12
critical = 21

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

Constituent: Silver Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sen's Slope Estimator

Well#1



Constituent: Sulfate Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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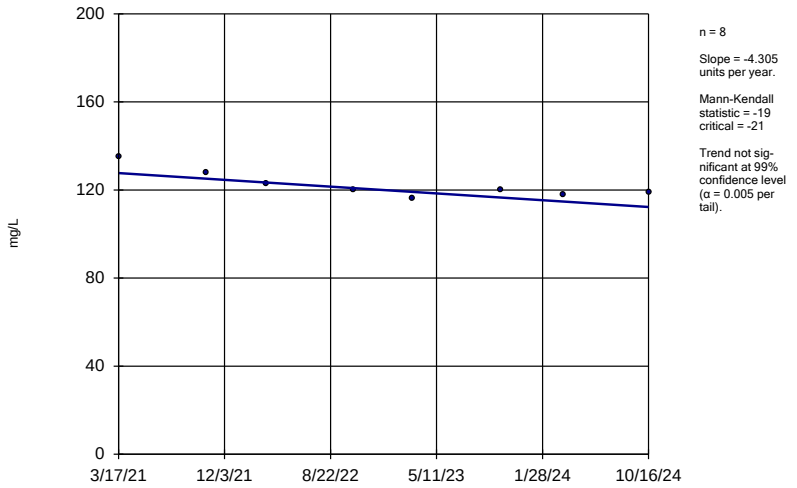
Sen's Slope Estimator

Well#2

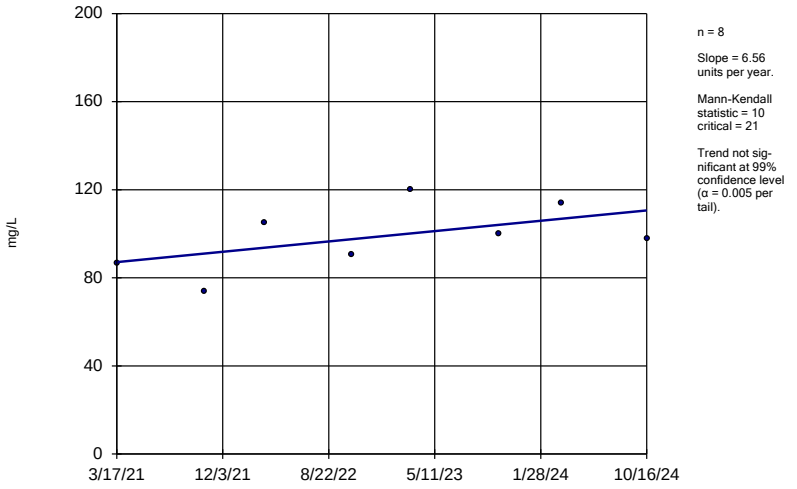


Constituent: Sulfate Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG

Sen's Slope Estimator

Well#3



Constituent: Sulfate Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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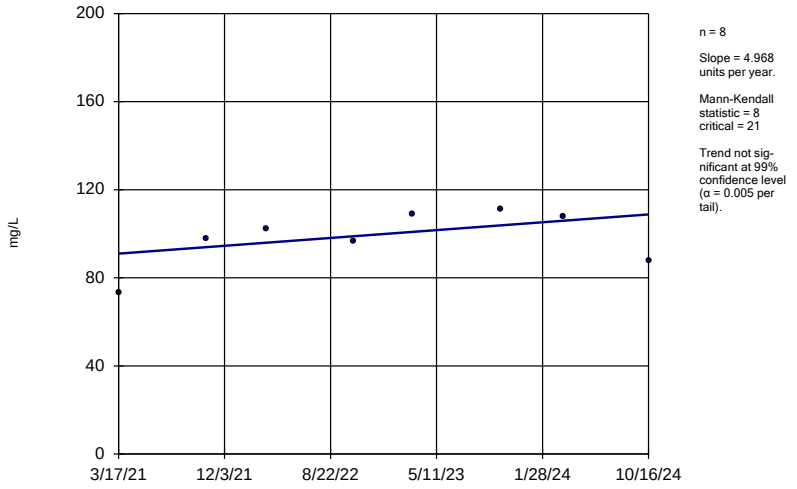
Sen's Slope Estimator

Well#4



Constituent: Sulfate Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

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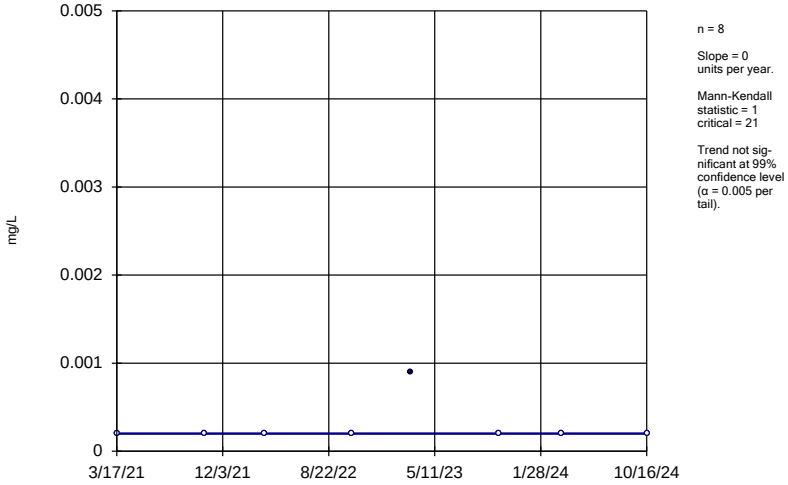
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#1

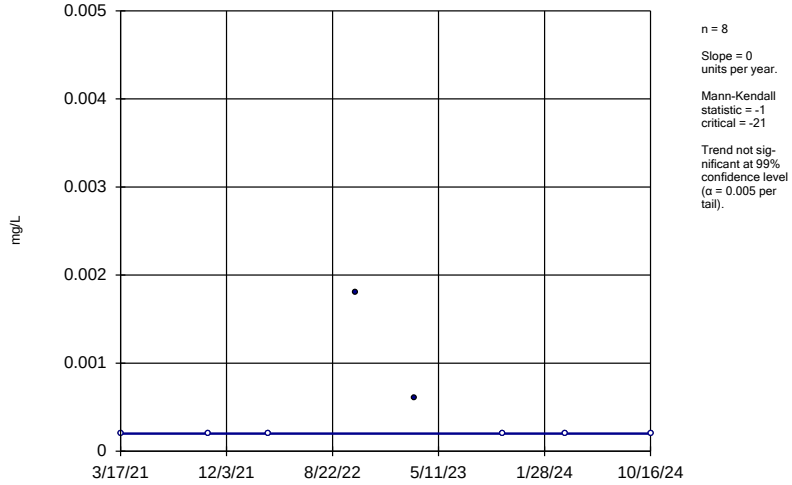


Constituent: Thallium Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#2

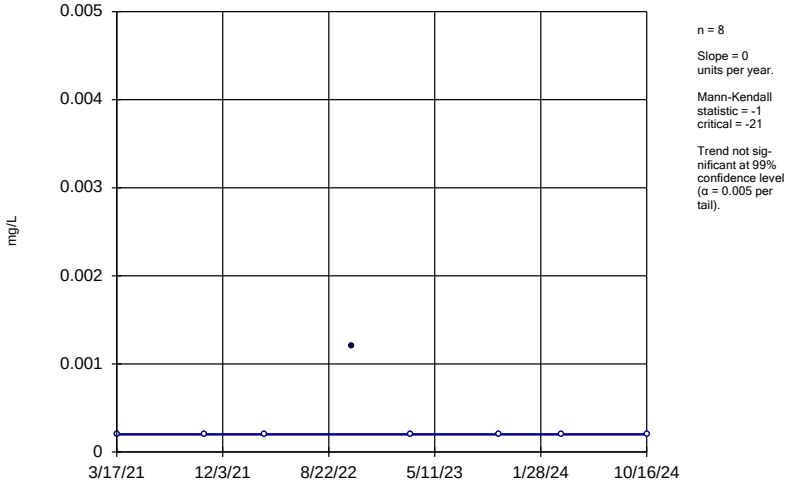


Constituent: Thallium Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3

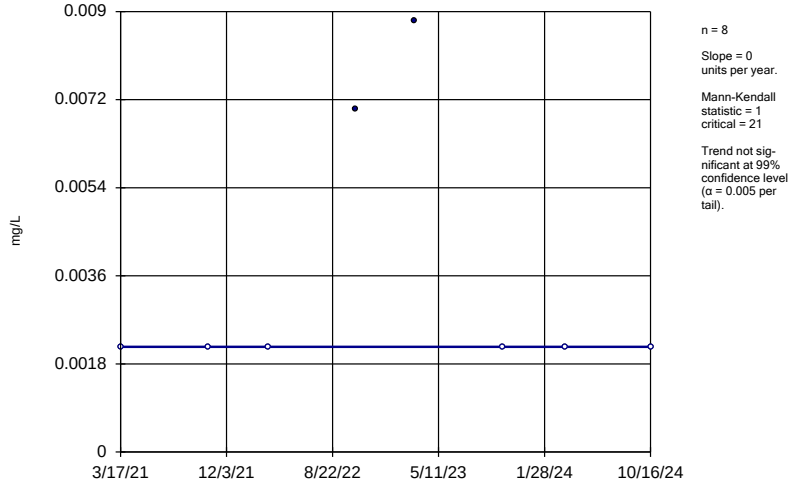


Constituent: Thallium Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3

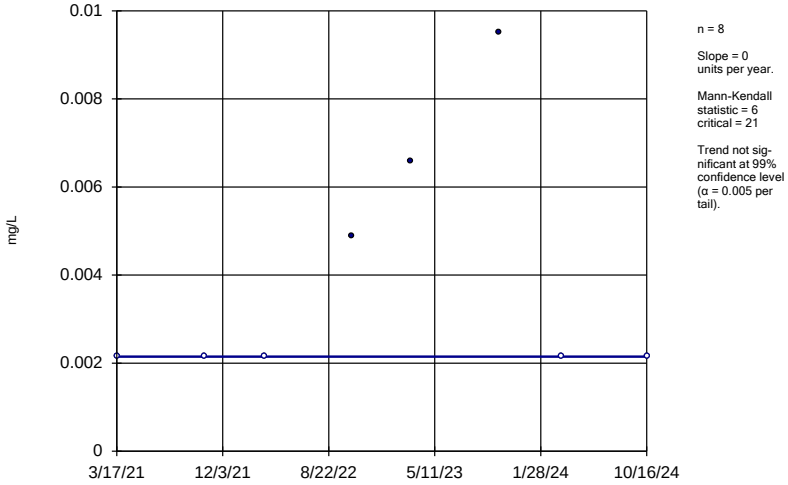


Constituent: Vanadium Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#4

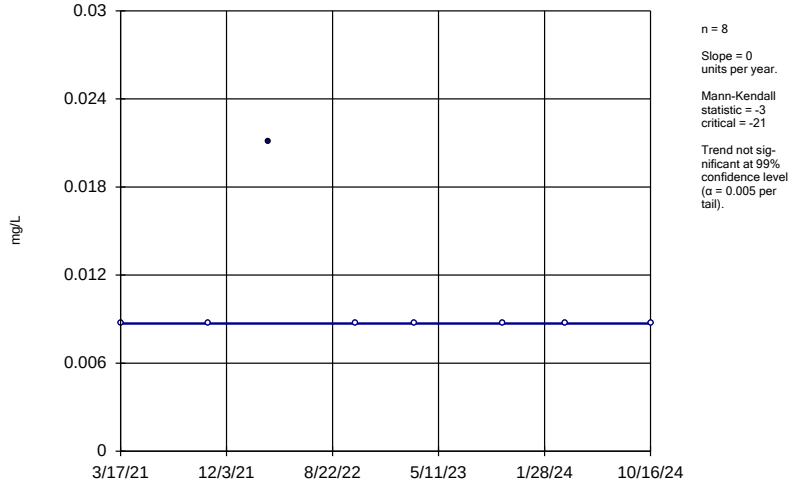


Constituent: Vanadium Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#2

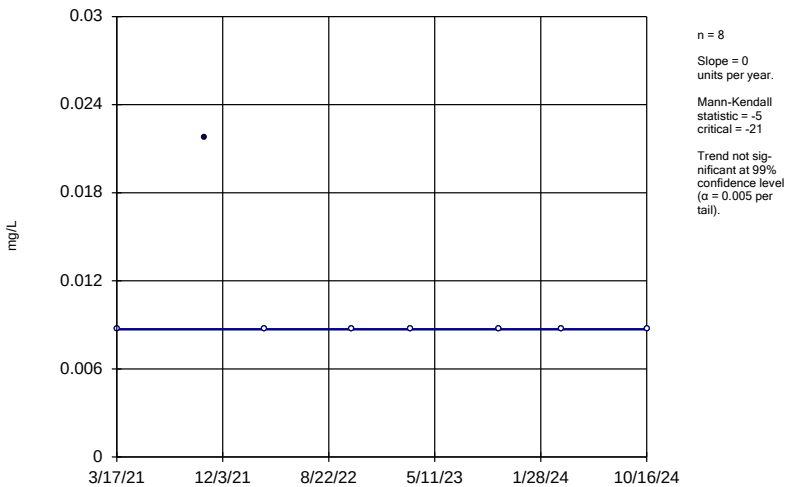


Constituent: Zinc Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Sanitas™ v.10.0.24 Software licensed to SCS Engineers. UG
Hollow symbols indicate censored values.

Sen's Slope Estimator

Well#3



Constituent: Zinc Analysis Run 1/31/2025 10:20 AM View: 2024AWQR-Mann_Kendall
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Confidence Interval Summary Table and Graphs

Confidence Interval

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM Printed 1/31/2025, 12:18 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Aluminum (mg/L)	Well#1	0.05	0.025	0.2	No	8	87.5	No	0.004	NP (NDs)
Aluminum (mg/L)	Well#2	0.07511	0.04589	0.2	No	8	50	No	0.01	Param.
Aluminum (mg/L)	Well#3	0.549	0.025	0.2	No	8	50	No	0.004	NP (normality)
Aluminum (mg/L)	Well#4	1.83	0.025	0.2	No	8	25	No	0.004	NP (normality)
Arsenic (mg/L)	Well#1	0.003183	0.001217	0.01	No	8	0	No	0.01	Param.
Arsenic (mg/L)	Well#2	0.001648	0.0005024	0.01	No	8	25	No	0.01	Param.
Arsenic (mg/L)	Well#3	0.001932	0.0004928	0.01	No	8	25	No	0.01	Param.
Arsenic (mg/L)	Well#4	0.002029	0.0003879	0.01	No	8	25	No	0.01	Param.
Barium (mg/L)	Well#1	0.8926	0.3224	2	No	8	0	No	0.01	Param.
Barium (mg/L)	Well#2	0.162	0.0629	2	No	8	0	No	0.004	NP (normality)
Barium (mg/L)	Well#3	0.1501	0.08401	2	No	8	0	No	0.01	Param.
Barium (mg/L)	Well#4	0.1945	0.04904	2	No	8	0	No	0.01	Param.
Chloride (mg/L)	Well#1	9.824	8.951	250	No	8	0	No	0.01	Param.
Chloride (mg/L)	Well#2	14.1	12.12	250	No	8	0	No	0.01	Param.
Chloride (mg/L)	Well#3	26.77	20.63	250	No	8	0	No	0.01	Param.
Chloride (mg/L)	Well#4	25.42	13.21	250	No	8	0	No	0.01	Param.
Chloroform (ug/L)	Well#3	6.8	0.5	80	No	8	87.5	No	0.004	NP (NDs)
Chromium (mg/L)	Well#2	0.0021	0.00035	0.1	No	8	62.5	No	0.004	NP (NDs)
Chromium (mg/L)	Well#3	0.0031	0.00035	0.1	No	8	62.5	No	0.004	NP (NDs)
Chromium (mg/L)	Well#4	0.003053	0.0001467	0.1	No	8	25	No	0.01	Param.
Copper (mg/L)	Well#1	0.00604	0.001285	1.3	No	8	0	No	0.01	Param.
Copper (mg/L)	Well#2	0.007254	0.001821	1.3	No	8	0	No	0.01	Param.
Copper (mg/L)	Well#3	0.00669	0.00221	1.3	No	8	0	No	0.01	Param.
Copper (mg/L)	Well#4	0.00671	0.002015	1.3	No	8	0	No	0.01	Param.
Fluoride (mg/L)	Well#1	0.969	0.781	2	No	8	0	No	0.01	Param.
Fluoride (mg/L)	Well#2	0.7801	0.6199	2	No	8	0	No	0.01	Param.
Fluoride (mg/L)	Well#3	0.667	0.358	2	No	8	0	No	0.01	Param.
Fluoride (mg/L)	Well#4	0.5583	0.1667	2	No	8	0	No	0.01	Param.
Iron (mg/L)	Well#1	0.7314	0.2986	0.3	No	8	0	No	0.01	Param.
Iron (mg/L)	Well#2	0.852	0.1642	0.3	No	8	0	No	0.01	Param.
Iron (mg/L)	Well#3	0.803	0.0235	0.3	No	8	12.5	No	0.004	NP (normality)
Iron (mg/L)	Well#4	2.43	0.0235	0.3	No	8	12.5	No	0.004	NP (normality)
Lead (mg/L)	Well#1	0.0009	0.00025	0.015	No	8	62.5	No	0.004	NP (NDs)
Lead (mg/L)	Well#2	0.0008	0.00025	0.015	No	8	50	No	0.004	NP (normality)
Lead (mg/L)	Well#3	0.0021	0.00025	0.015	No	8	75	No	0.004	NP (NDs)
Lead (mg/L)	Well#4	0.0023	0.00025	0.015	No	8	37.5	No	0.004	NP (normality)
Magnesium (mg/L)	**Well#1**	**32.79**	**30.81**	**26.07**	**Yes**	**8**	**0**	**No**	**0.01**	**Param.**
Magnesium (mg/L)	**Well#2**	**38.69**	**33.28**	**26.07**	**Yes**	**8**	**0**	**No**	**0.01**	**Param.**
Magnesium (mg/L)	**Well#3**	**29.68**	**26.47**	**26.07**	**Yes**	**8**	**0**	**No**	**0.01**	**Param.**
Magnesium (mg/L)	Well#4	29.28	21.47	26.07	No	8	0	No	0.01	Param.
Manganese (mg/L)	Well#1	0.01781	0.004967	0.05	No	8	0	No	0.01	Param.
Manganese (mg/L)	Well#2	0.04801	0.00912	0.05	No	8	0	No	0.01	Param.
Manganese (mg/L)	Well#3	0.02814	0.002086	0.05	No	8	0	No	0.01	Param.
Manganese (mg/L)	Well#4	0.04683	0	0.05	No	8	0	No	0.01	Param.
Molybdenum (mg/L)	Well#2	0.0043	0.0003	0.04	No	8	75	No	0.004	NP (NDs)
Molybdenum (mg/L)	Well#3	0.005916	0.002909	0.04	No	8	0	No	0.01	Param.
Molybdenum (mg/L)	Well#4	0.006237	0.0009876	0.04	No	8	0	No	0.01	Param.
Nickel (mg/L)	Well#1	0.0044	0.00035	0.1	No	8	25	No	0.004	NP (normality)
Nickel (mg/L)	Well#3	0.005581	0.001944	0.1	No	8	0	No	0.01	Param.
Nickel (mg/L)	Well#4	0.009507	0	0.1	No	8	0	No	0.01	Param.

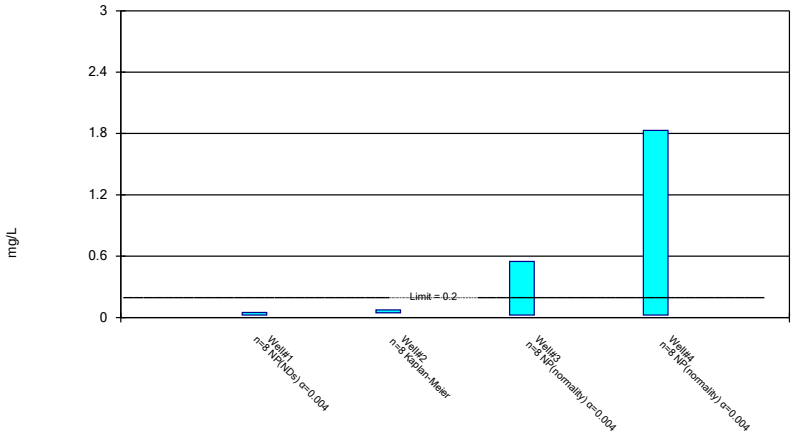
Confidence Interval

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM Printed 1/31/2025, 12:18 PM

Constituent	Well	Upper Lim.	Lower Lim.	Compliance	Sig.	N	%NDs	Transform	Alpha	Method
Selenium (mg/L)	Well#3	0.0056	0.00055	0.05	No	8	75	No	0.004	NP (NDs)
Silver (mg/L)	Well#2	0.0023	0.0001	0.1	No	8	75	No	0.004	NP (NDs)
Sulfate (mg/L)	Well#2	129	115.7	250	No	8	0	No	0.01	Param.
Sulfate (mg/L)	Well#3	114.3	82.68	250	No	8	0	No	0.01	Param.
Sulfate (mg/L)	Well#4	111.6	84.69	250	No	8	0	No	0.01	Param.
Thallium (mg/L)	Well#1	0.0009	0.0002	0.002	No	8	87.5	No	0.004	NP (NDs)
Thallium (mg/L)	Well#2	0.0018	0.0002	0.002	No	8	75	No	0.004	NP (NDs)
Thallium (mg/L)	Well#3	0.0012	0.0002	0.002	No	8	87.5	No	0.004	NP (NDs)
Vanadium (mg/L)	Well#3	0.0088	0.00215	0.035	No	8	75	No	0.004	NP (NDs)
Vanadium (mg/L)	Well#4	0.0095	0.00215	0.035	No	8	62.5	No	0.004	NP (NDs)
Zinc (mg/L)	Well#2	0.0211	0.0087	2	No	8	87.5	No	0.004	NP (NDs)
Zinc (mg/L)	Well#3	0.0218	0.0087	2	No	8	87.5	No	0.004	NP (NDs)

Parametric and Non-Parametric (NP) Confidence Interval

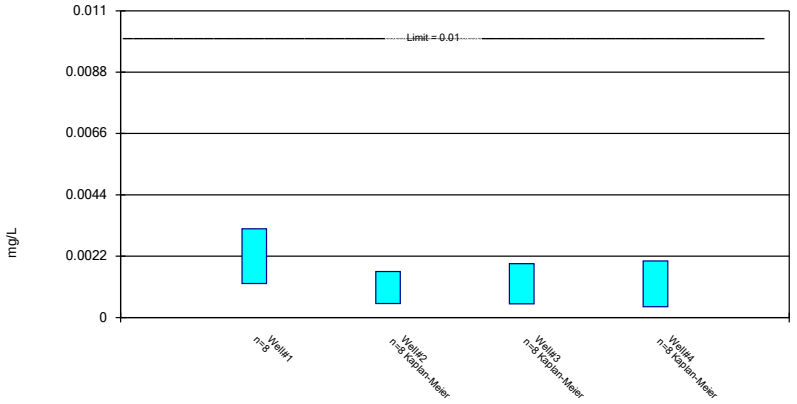
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Aluminum Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Parametric Confidence Interval

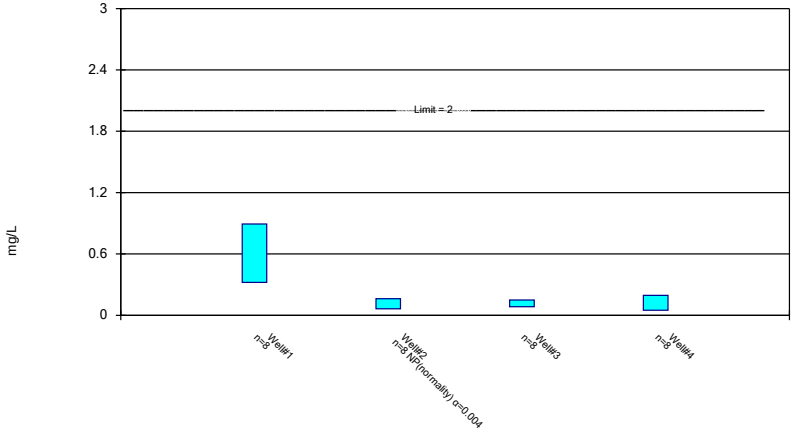
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Arsenic Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Parametric and Non-Parametric (NP) Confidence Interval

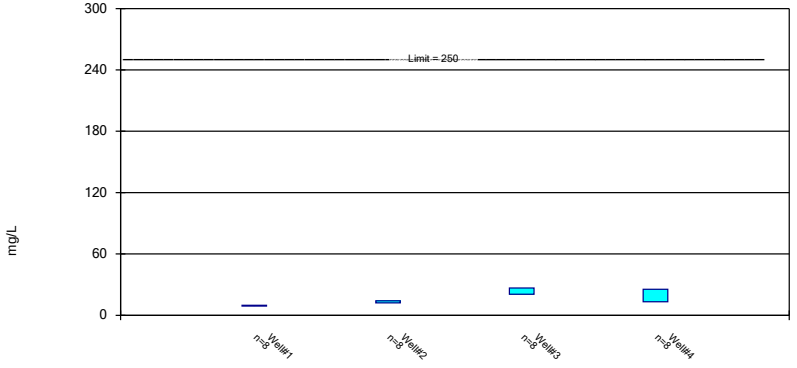
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Barium Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Parametric Confidence Interval

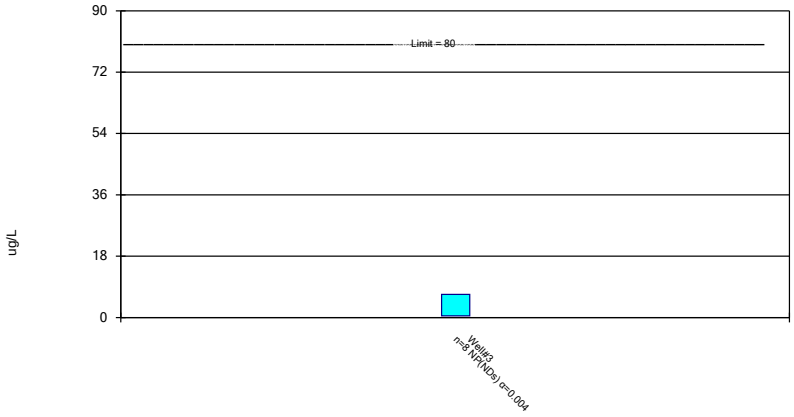
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Chloride Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Non-Parametric Confidence Interval

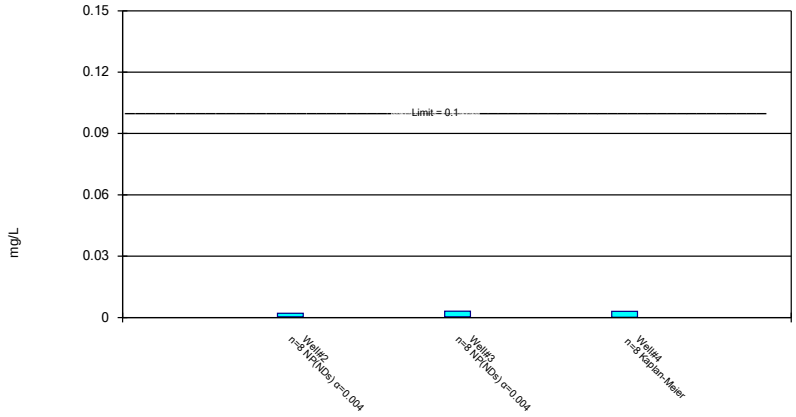
Compliance Limit is not exceeded.



Constituent: Chloroform Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Parametric and Non-Parametric (NP) Confidence Interval

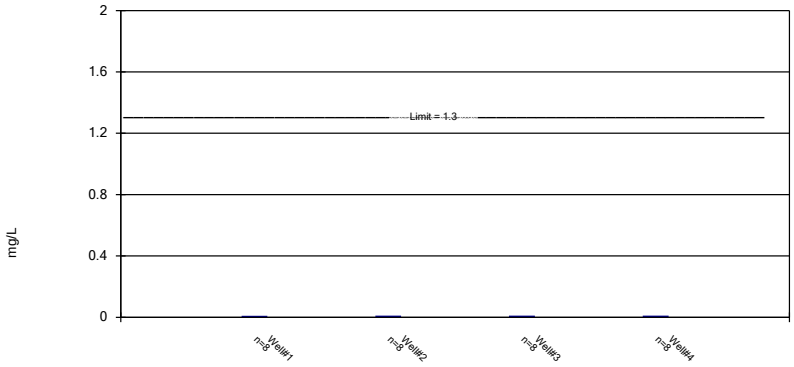
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Chromium Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Parametric Confidence Interval

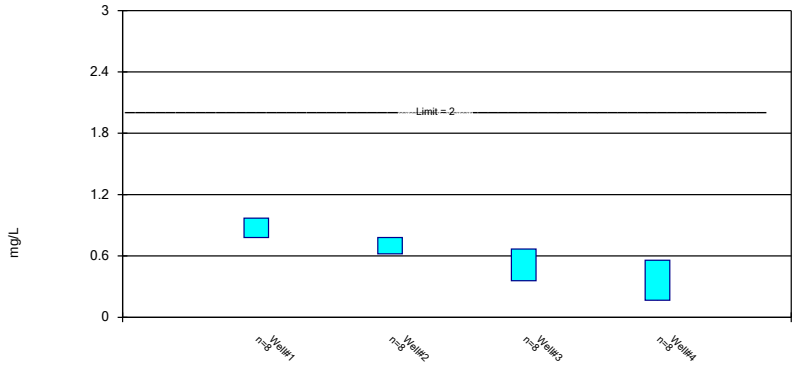
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Copper Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Parametric Confidence Interval

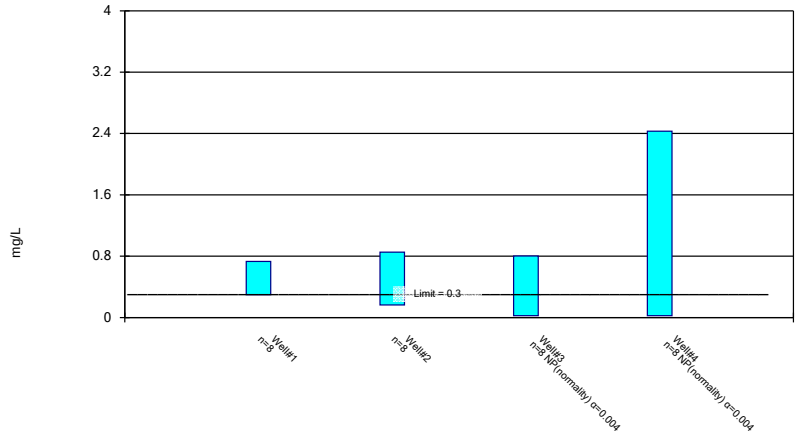
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Fluoride Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Parametric and Non-Parametric (NP) Confidence Interval

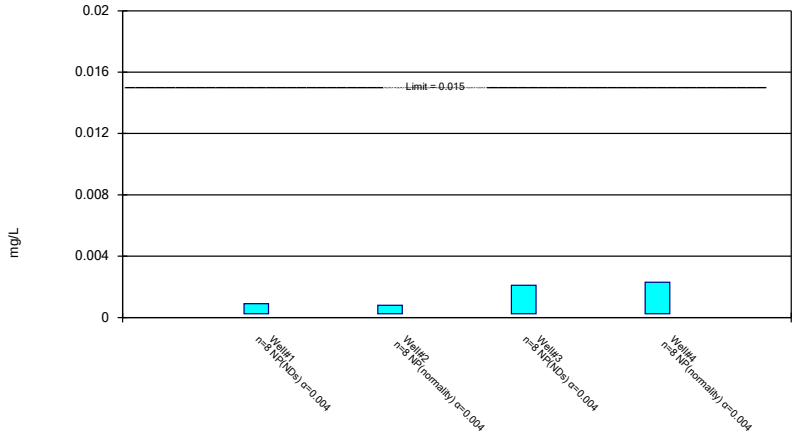
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Iron Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Non-Parametric Confidence Interval

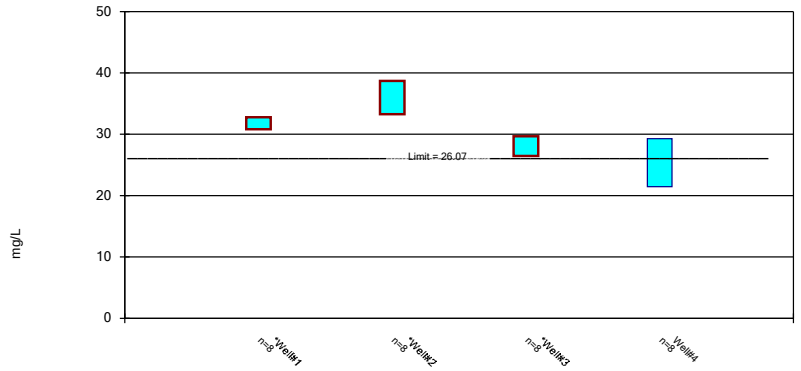
Compliance Limit is not exceeded.



Constituent: Lead Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Parametric Confidence Interval

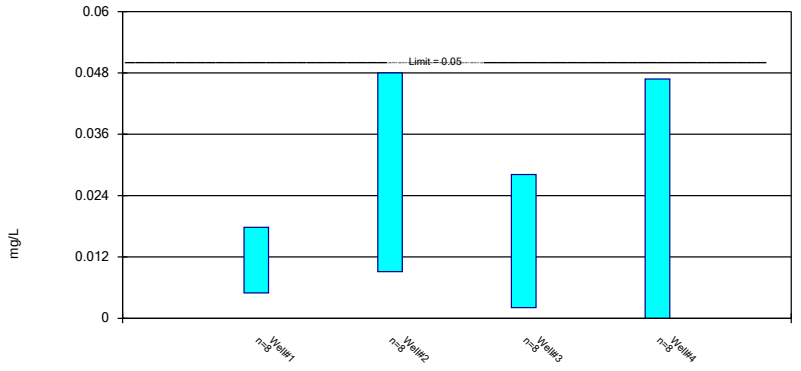
Compliance limit is exceeded.* Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Magnesium Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Parametric Confidence Interval

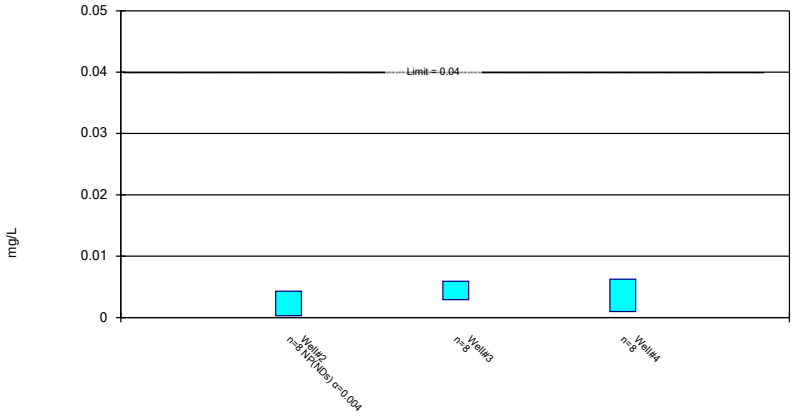
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Manganese Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Parametric and Non-Parametric (NP) Confidence Interval

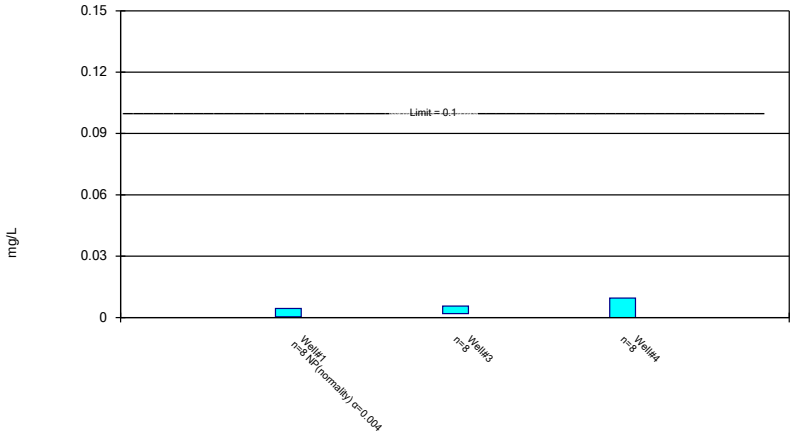
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Molybdenum Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Parametric and Non-Parametric (NP) Confidence Interval

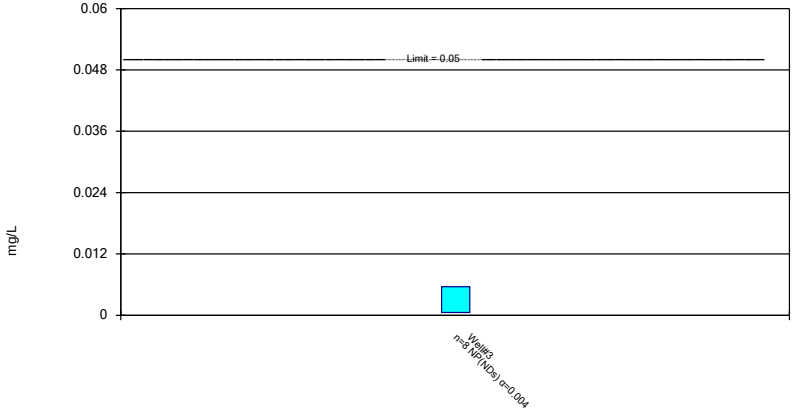
Compliance Limit is not exceeded. Per-well alpha = 0.01 except as noted. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Nickel Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Non-Parametric Confidence Interval

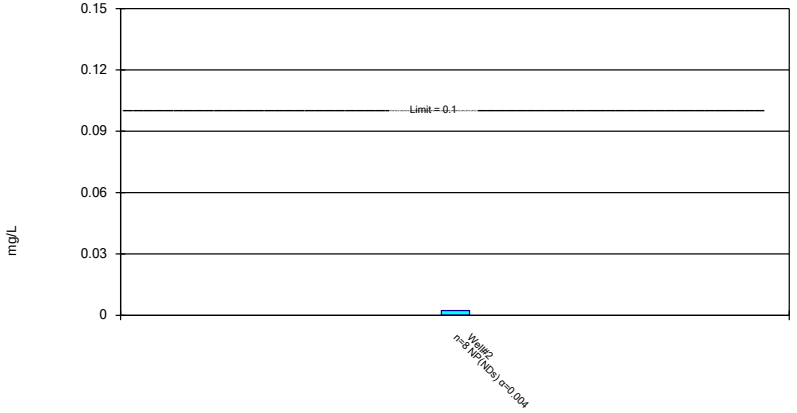
Compliance Limit is not exceeded.



Constituent: Selenium Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Non-Parametric Confidence Interval

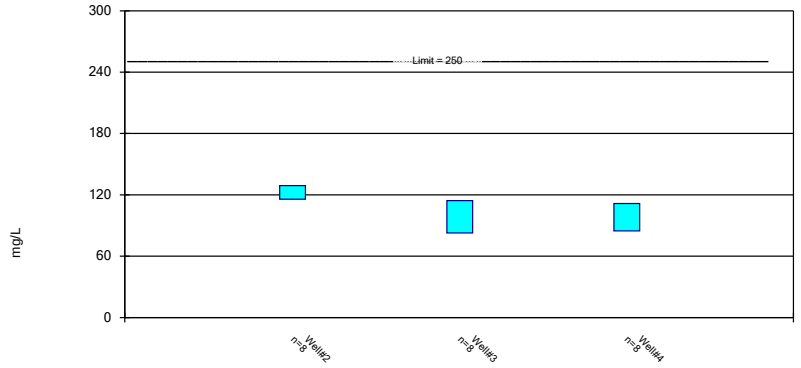
Compliance Limit is not exceeded.



Constituent: Silver Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Parametric Confidence Interval

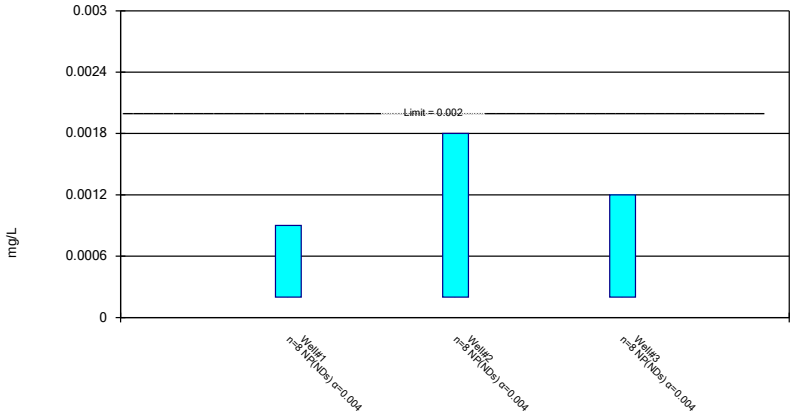
Compliance Limit is not exceeded. Per-well alpha = 0.01. Normality Test: Shapiro Wilk at Alpha = 0.01.



Constituent: Sulfate Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Non-Parametric Confidence Interval

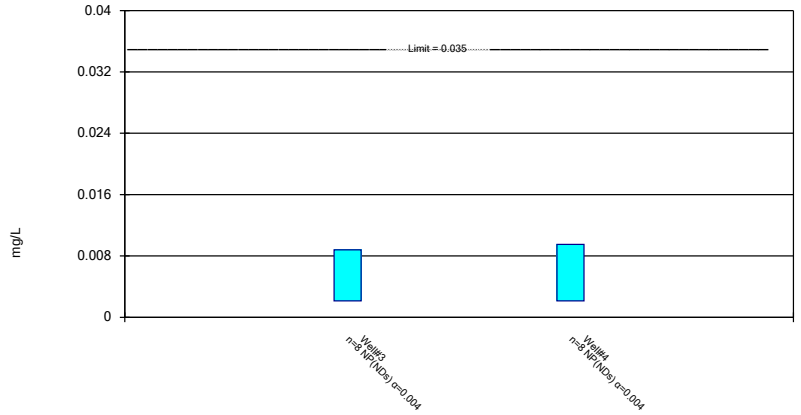
Compliance Limit is not exceeded.



Constituent: Thallium Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Non-Parametric Confidence Interval

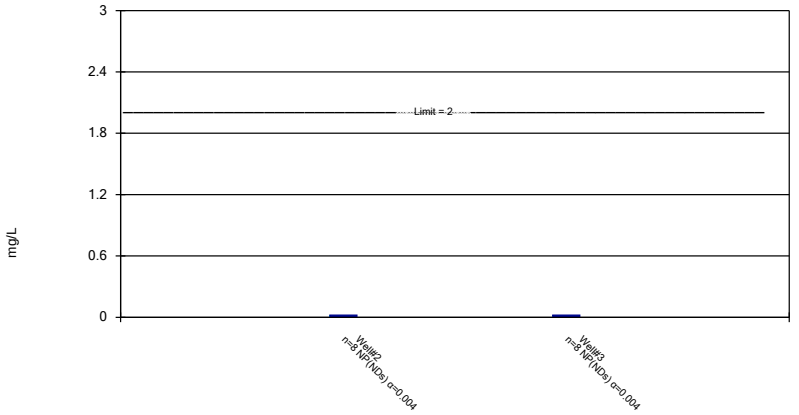
Compliance Limit is not exceeded.



Constituent: Vanadium Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Non-Parametric Confidence Interval

Compliance Limit is not exceeded.



Constituent: Zinc Analysis Run 1/31/2025 12:13 PM View: 2024AWQR-Confidence_Interval
BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Theil-Sen Trend Line and Confidence Bands Summary Table and Graphs

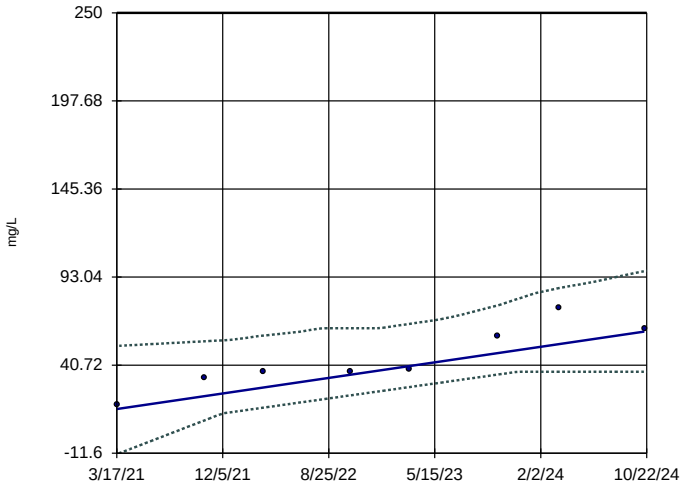
Theil Sen/Trend Test

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM Printed 1/31/2025, 12:28 PM

Constituent	Well	Slope	Calc.	Critical	Sig.	N	%NDs	Alpha	Method
Sulfate (mg/L)	**Well#1**	**12.83**	**24**	**21**	**Yes**	**8**	**0**	**0.01**	**NP**

Sen's Slope and 99% Confidence Band

Well#1



n = 8

Slope = 12.83 units per year.

Mann-Kendall statistic = 24 critical = 21

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

Confidence band is below SMCL mg/L (250).

Constituent: Sulfate Analysis Run 1/31/2025 12:26 PM View: 2024AWQR-Theil_Sen

BMC Quarry CCR Disposal Site Client: SCS Engineers Data: BMCAG-2024AWQR-AM

Appendix E
Mann-Kendall Output (α = 0.20)

Monitoring Well	Constituent Name	Calculated Statistic		
		Decreasing Trend	Stable Trend	Increasing Trend
Well#1	Aluminum		1	
	Arsenic		-2	
	Barium	-18		
	Chloride			15
	Copper		8	
	Fluoride		8	
	Iron		-6	
	Lead		-10	
	Magnesium		3	
	Manganese		-4	
	Nickel		1	
	Sulfate			24
	Thallium		1	
Well#2	Aluminum		-4	
	Arsenic			15
	Barium		10	
	Chloride		0	
	Chromium		-12	
	Copper		-8	
	Fluoride			14
	Iron		0	
	Lead		-10	
	Magnesium		6	
	Manganese		-6	
	Molybdenum		-1	
	Silver		12	
	Sulfate	-19		
	Thallium		-1	
	Zinc		-3	
Well#3	Aluminum		-2	
	Arsenic		8	
	Barium		-10	
	Chloride		-6	
	Chloroform		-7	
	Chromium		-8	
	Copper		-2	
	Fluoride		-1	
	Iron		2	
	Lead		-5	
	Magnesium		-5	
	Manganese		-2	
	Molybdenum		-6	
	Nickel		-12	
	Selenium		3	
	Sulfate		10	
	Thallium		-1	
	Vanadium		1	
	Zinc		-5	

Monitoring Well	Constituent Name	Calculated Statistic		
		Decreasing Trend	Stable Trend	Increasing Trend
Well#4	Aluminum		7	
	Arsenic		10	
	Barium		0	
	Chloride		10	
	Chromium		7	
	Copper		8	
	Fluoride		-1	
	Iron		4	
	Lead		9	
	Magnesium	-14		
	Manganese		2	
	Molybdenum		9	
	Nickel		4	
	Sulfate		8	
	Vanadium		6	